October 30, 2012

CITY OF BARRIE

Sustainable Waste Management Strategy

Submitted to:
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REPORT

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Executive Summary

Planning for the development of the SWMS included:

1. Community engagement
2. Review of Barrie's collection, diversion, and disposal systems
3. Integration of current and future waste policies, plans and directions
4. Exploring opportunities for sustainable change, including:
   - Collection, diversion and disposal system improvements
   - Program funding opportunities
   - Partnerships with neighboring municipalities
5. Development of an action plan

The City of Barrie's Sustainable Waste Management Strategy

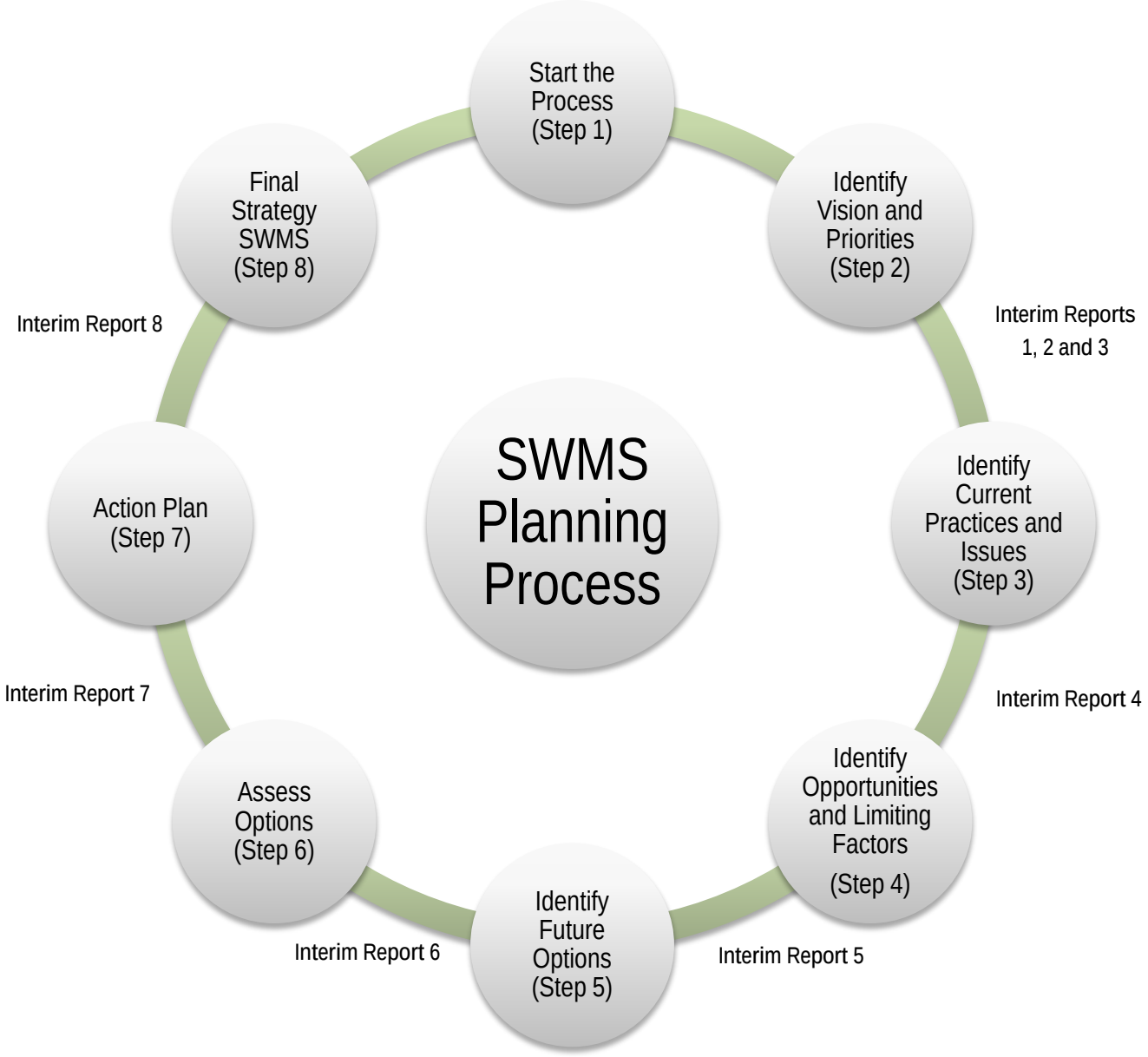
The City of Barrie's population has been growing, and over the next 20 years the population is expected to increase to over 200,000 people (or by 50%). Ongoing growth means challenges for existing waste management infrastructure, for example Barrie's landfill is expected to close in 2035.

Socially acceptable, financially responsible and environmentally sound waste management planning is an important part of Barrie's long term sustainable growth.

In January 2011, Barrie started working towards developing a Sustainable Waste Management Strategy (SWMS). The SWMS provides an action plan for effective, efficient, and responsible change to our waste collection, diversion and disposal systems over the next 20 years. It is a community-based plan, with goals, policies and a vision focusing on issues related to Barrie as a whole.

SWMS Methodology & Timeline

The SWMS planning process began in January 2011 and was completed in October 2012. This schematic shows each of the steps that were completed during the planning process.



Identify Vision & Guiding Principles

The SWMS is a community-based plan, with goals, policies and a vision focusing on issues related to Barrie as a whole.

SWMS Mission Statement:

"To develop a community strategy for sustainable waste management that supports current and future service expectations in a matter that is fiscally responsible, socially acceptable and environmentally sound"

SWMS Guiding Principles:

- **Achievement**: Lead by example with sustainable policies and practices
- **Dedication**: Seek integrated waste management solutions including diversion
- **Collaboration / Transparency**: Facilitate cooperation and collaboration, including encouraging partnerships
- **Service to our Community**: Engage the community to ensure the SWMS meets their needs and objectives
- **Sustainability / Integrity**: Recognize waste is a resource and find solutions that support reduction, reuse, recycling and energy recovery before disposal
- **Continuous Improvement**: Invest in infrastructure with the flexibility to accommodate growth, changing policies and encourage innovation

Governing Policies

The SWMS was developed in line with the following key policy documents

Policy Type	Policy (Date)	Description
Provincial policies for the Region	*Places to Grow Growth Plan for the Greater Golden Horseshoe (2006)*	- Identifies Downtown Barrie as an Urban Growth Centre
	Simcoe Area: A Strategic Vision for Growth (2009)	- Population and employment opportunities forecast for Barrie in 2031 are 210,000 and 101,000
	Barrie-Innisfil Boundary Adjustment (Bill 196) (2009)	- Extends the southern boundary of the City to include approximately 5,700 acres of land previously in the Town of Innisfil
Municipal	*Barrie's Strategic Plan for 2010 – 2014*	- Presents Council's five strategic goals for the 2010 to 2014 term
	Barrie's Growth Management Strategy (In Progress)	- Strategy for the future development of Barrie's downtown and existing built up areas, remaining designated greenfield area, and annexed lands
Provincial waste management	*Policy Statement on Waste Management Planning: Best Practices for Waste Managers (2007)*	- Establishes the Province's expectations for waste management - Outlines a framework for decision-making by all waste managers - Provides specific direction on the development of long-term municipal waste management plans
	Towards a Zero Waste Future: Review of Ontario's Waste Diversion Act (WDA) (2002)	- Result of the requirement that the province conduct a review of the WDA and the Blue Box Program Plan - Provides an opportunity to present the vision of zero waste as a goal
	From Waste to Worth: The Role of Waste Diversion in the Green Economy (2009)	- Provides the Minister's recommendations in response to the Review of Ontario's WDA
	Draft Guide to Applying for the Environmental Compliance Approval (ECA) (2012)	- All new ECA approvals are now multi-media, managing the environmental aspects of waste, air, noise and water in a single approval - Other enhancements of the ECA stream include single approvals for owners with multiple locations and increased flexibility for operational changes
	Ontario's Green Energy and Economy Act (2009)	- Major components of this Act include: the renewable energy Feed-in Tariff Program, a streamlined environmental approval process, and aggressive new conservation targets

Identify Current Practices & Issues

Issues Identification

Issues identification is an essential part of the SWMS. A preliminary review by Barrie of the existing waste management system identified several challenges that Barrie will face in future years that will have an impact on waste management.

Issue: Future population growth (50% growth over the next 20 years)

→ Accommodate changes in quantities and types of waste and recyclables

Issue: Higher density development

→ Encourage diversion practices in multi-residential buildings

Issue: Increased economic growth

→ Manage waste from Industrial, Commercial and Institutional sectors

Issue: City of Barrie's boundary expansion

→ Ensure waste services are accessible for all residents

Current Waste Management System

In addition to Barrie's curbside collection of waste and recyclables, the following services are also provided:

→ Operation of a landfill at the Barrie Environmental Centre (BEC)

→ Operation of a public drop-off depot at the BEC for the collection of hazardous waste

→ Operation of a public drop-off area at the BEC for the collection of:

- Bulky items and garbage
- Waste electronics
- Scrap tires
- Scrap metal and white goods
- Excess and/or over-sized recyclables (e.g. corrugated cardboard)
- Leaf and yard waste

→ Education and promotion of waste reduction and diversion program

→ Long term planning for waste management

Current Waste Management System & System Performance

Barrie's waste management programs include the following curbside collection programs:

Program	Single-Family Households	Multi-Residential Households	Industrial Commercial & Institutional (IC&I)
Blue Box Recyclables	✓	✓	✓
Source Separated Organics (SSO)	✓	×	×
Leaf and Yard Waste	✓	✓	✓
Garbage	✓	✓	✓
Bulky Items/White Goods[(1)]	✓	✓	✓

[(1)] Collection Service provided by partner not-for-profit organization

Waste Diversion Ontario (WDO) produces a Municipal Datacall, a statistical reporting process that compiles information on residential material disposed and diverted by Ontario municipalities. The City of Barrie is amongst the top of their group ('Medium Urban') for diversion.

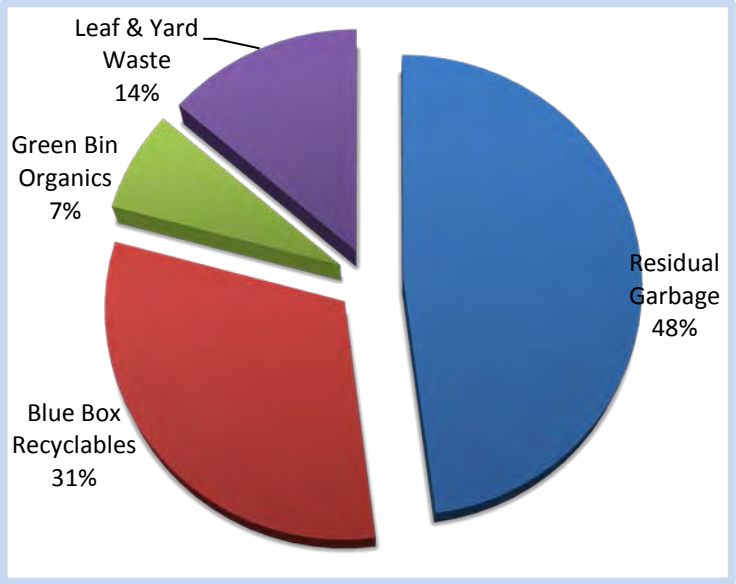
Municipality	GAP Waste Diversion Rate (2010)	Total Residential Waste Generated (Tonnes)	Total Residential Waste Diverted (Tonnes)	Total Residential Waste Disposed (Tonnes)
City of Peterborough	50.33 %	34,501	17,364	17,137
City of Barrie	**45.37 %**	**55,578**	**25,213**	**30,365**
City of Guelph	44.51 %	42,903	19,094	23,809
City of Sault Ste. Marie	33.50 %	33,887	11,352	22,535
City of Sarnia	35.17 %	28,824	10,137	18,687
City of Brantford	30.98 %	45,256	14,020	31,236
City of Thunder Bay	22.90 %	48,331	11,067	37,264

Current Waste Management System & Composition

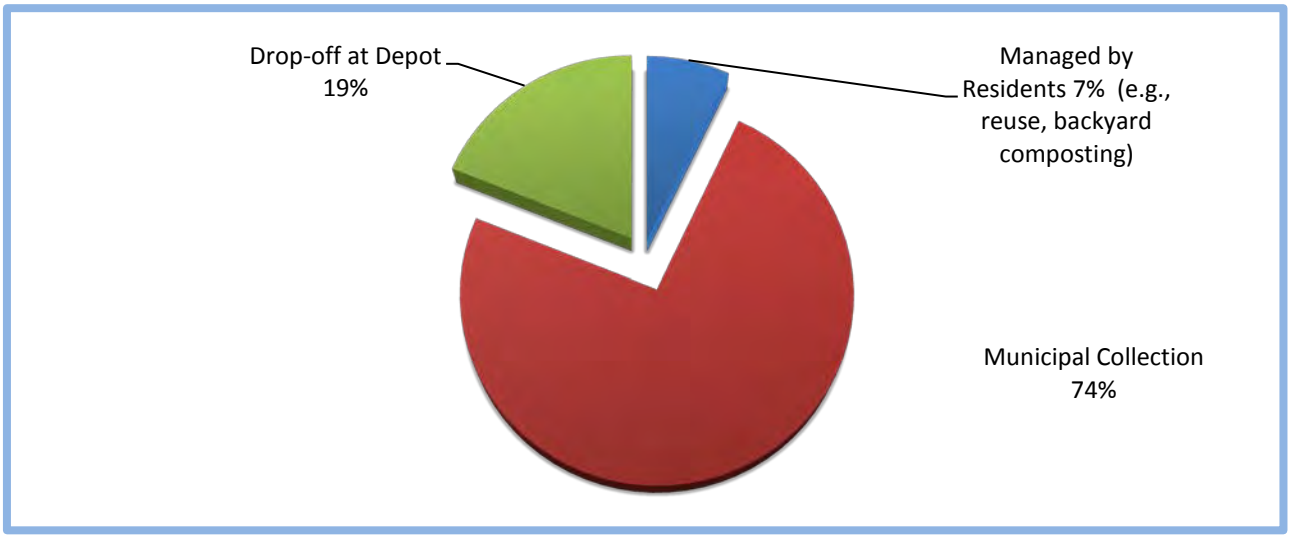
The majority of Barrie's residential waste is collected through the municipal collection system. The remainder is dropped-off at the depot or managed by residents at home.

Of the 41,264 tonnes of residential waste collected in the regular municipal collection system in 2010:

- 12,887 tonnes consisted of Blue Box recyclables
- 2,941 tonnes consisted of SSO waste
- 5,652 tonnes consisted of leaf of yard waste
- 19,784 tonnes consisted of garbage



Curbside Collection (Residential Waste)



Identifying Opportunities and Limiting Factors

A number of different factors influenced the development of the SWMS.

Provincial Policies: The political environment for waste management in Ontario is a constantly evolving platform that includes a number of regulatory and non-regulatory initiatives. Extended Producer Responsibility and Zero Waste, as well as other policies and laws relating to waste management will shape the future of Barrie's waste management system.

Changing Waste Stream: The waste stream in Ontario has changed significantly over the past few years and will continue to change as new technologies are introduced, as we become increasingly dependent on the internet, as existing policies change and new policies are introduced, and finally as lifestyle patterns and consumer demands evolve.

Potential Partnership Opportunities: Multi-municipal partnerships and public-private partnerships are becoming increasingly widespread in Ontario. Partnership opportunities can offer municipalities a range of benefits such as time and costs savings, shared risk management and increased capacity to explore new and innovative technologies and waste management methods.

Barrie's Long Range Plan: Barrie is in the midst of rapid population growth and urbanization. Therefore, strategic planning and growth management planning are a central component in ensuring that this growth occurs sustainably. It is important that Barrie take these plans into consideration when developing long-term waste management options that will accommodate future growth and be adaptable to changing community structure.

Community Engagement Activities

A vital component of the SWMS development was consultation with community stakeholders, including residents, neighbouring municipalities, local interest groups, school boards, and service providers. All feedback received was reviewed by the Community Liaison Committee (CLC) who made recommendations to the Project Steering Committee. The CLC included the following representatives:

- → Greater Barrie Chamber of Commerce
- → Barrie Alliance for Sustainability in Economy, Environment and Energy Task Force
- → Barrie Construction Association
- → Environmental Advisory Committee
- → Innisdale Secondary School Student
- → Georgian College Faculty and Student
- → Residential representatives (multi-residential and single family unit representatives)

Barrie was committed to working collaboratively with the community to develop the SWMS. To ensure waste management is sustainable, input was obtained from the public to:

- → Identify issues with the existing system
- → Comment on the proposed options to improve the system
- → Assist in the development of the SWMS

The community was engaged throughout the SWMS planning process using:

- → Open Houses
- → Workshops
- → Website
- → Radio, TV, newspaper
- → Social Media
- → Community events (EcoFest and Go Green Barrie)

The ***Barrie Intercommunity Collaboration Initiatives Workshop,*** conducted in May, 2011 was successful in identifying several service areas that could potentially benefit from a future multi-municipal collaboration program. In attendance at the meeting were representatives from 9 municipalities and 2 First Nation communities.

Options to Improve Waste System Effectiveness & Efficiency

Throughout the consultation process, a variety of options to improve the effectiveness and efficiency of Barrie's existing waste system were identified. These options serve as the basis for the development of the SWMS.

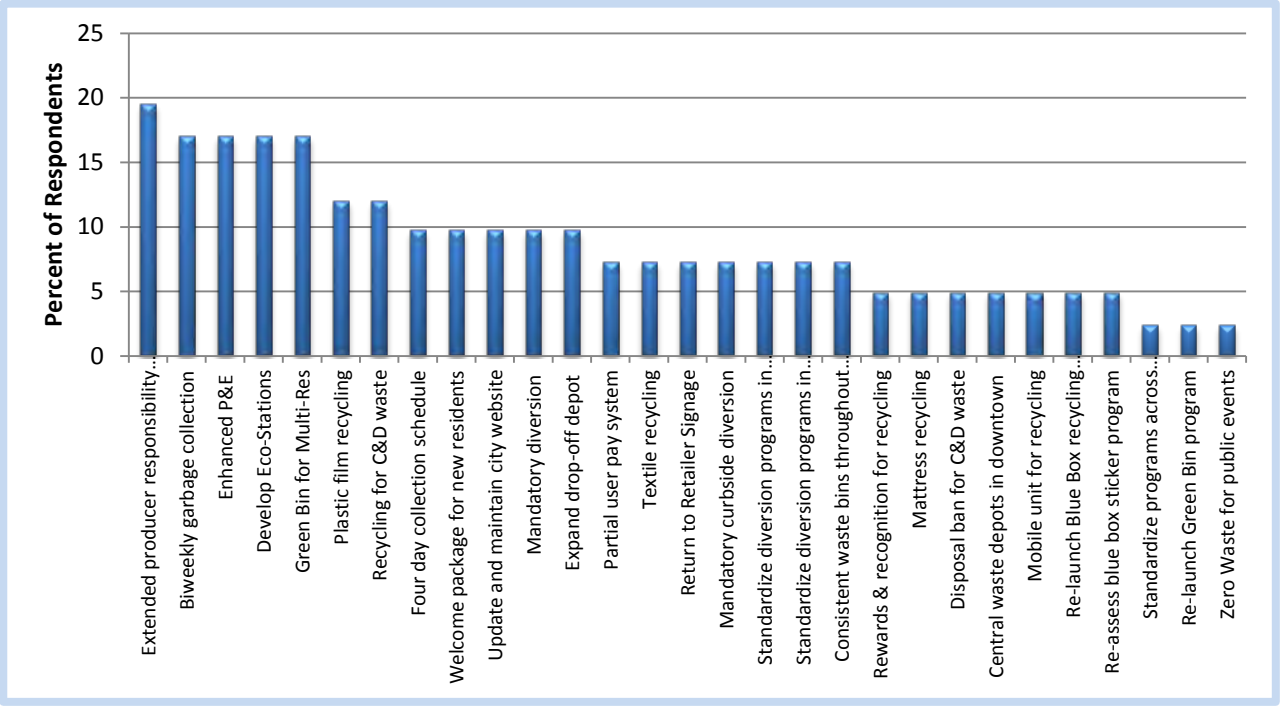
Options identified by the public included:

- **User Pay Systems for Collection**
- **Biweekly Garbage Collection**
- **Four Day Collection Cycle**
- **Standardized Diversion Programs**
- **Multi-family Green Bin Program**
- **Plastic Film, Textile and Mattress Recycling**
- **Reuse Centres/Bulky Collection for Reuse**
- **Zero Waste (an approach placing more responsibility on producers to reduce waste)**
- **Expand Diversion Depots**
- **Central Depots in Downtown**
- **Extended Producer Responsibility**
- **More Promotion and Education**
- **Mandatory Diversion Program**
- **Future Disposal Options**

Community Feedback on Options

The top priority options for improving Barrie's waste programs from community feedback were:

1. Extended Producer Responsibility
2. Bi-weekly Garbage Collection
3. Enhanced Promotion and Education
4. Develop/Enhance Eco-Stations
5. Green Bin Program for Multi-Residential Units

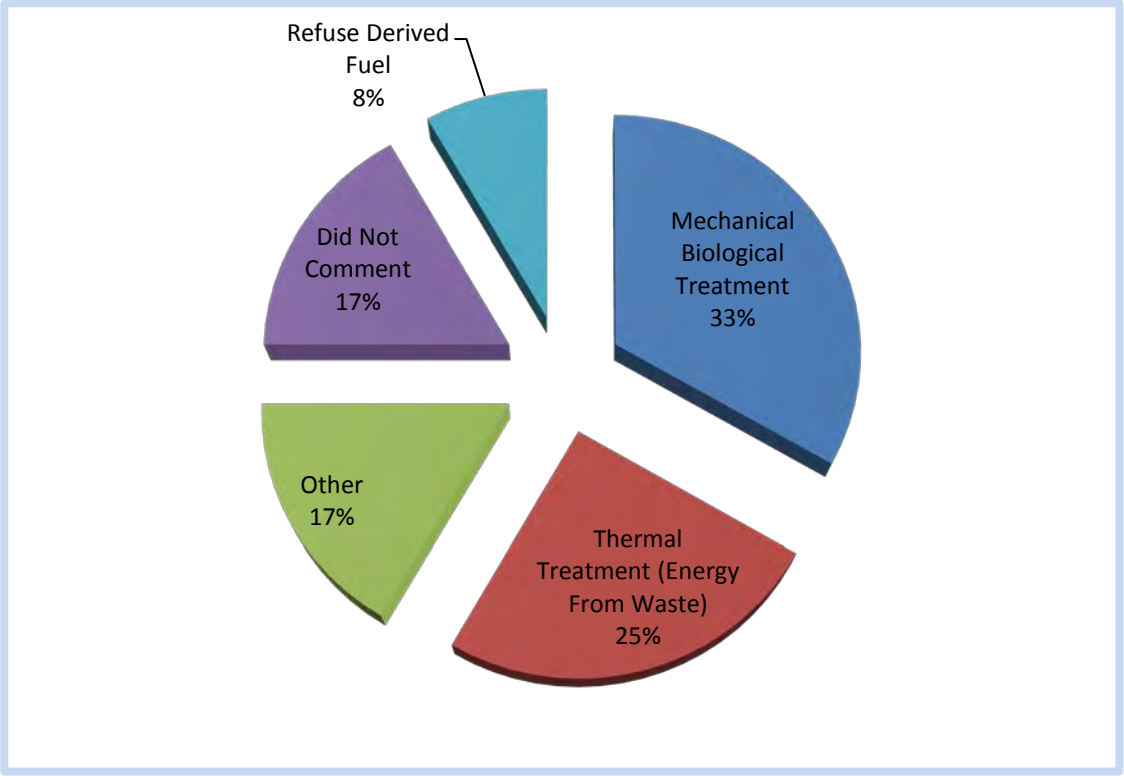


Top Priority Options for Improvement as selected by community members
General comments received from the community reflected:

- Residents want to achieve higher diversion rates
- Good understanding of relationship between diversion and disposal
- Need for more education on waste diversion
- Some concern with delivery of waste services to multi-residential and IC&I

Community Feedback on Disposal Options

When asked what options the City should consider for long term waste disposal, community members favoured mechanical biological treatment and thermal treatment (energy from waste).



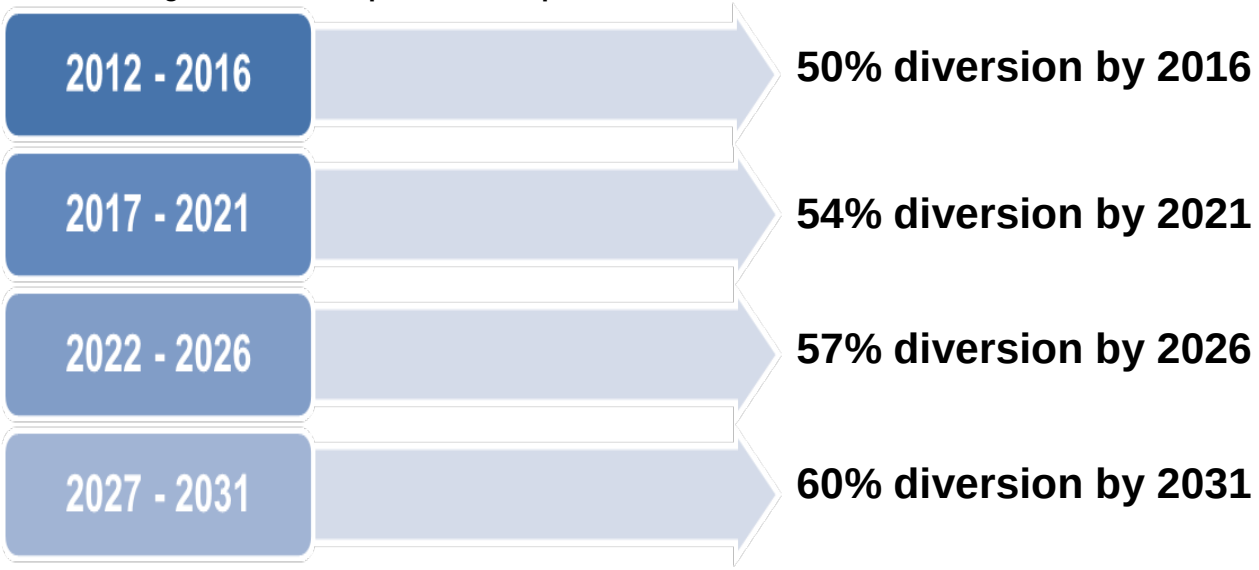
What Should the City Consider for Long Term Waste Disposal?

Diversion Target

Throughout the community engagement process, participants were asked for their feedback on what Barrie's waste diversion target should be and discussed challenges and incentives to reach these goals. Generally the public proposed aggressive waste diversion targets ranging from 60% to 100% diversion in 10 years, and 80% to 100% in 20 years.

The SWMS includes the recommendation that Barrie strive to meet a 60% waste diversion goal during the 20 year planning period. Achieving a 60% diversion rate is an ambitious goal, but can be achieved if effective waste diversion initiatives are implemented and realistic timelines are set.

Diversion targets for each implementation phase in Barrie's SWMS



For each 5% of increased waste diversion that is achieved, the City will preserve the equivalent of $300,000 in landfill capacity each year.

Evaluation of Waste Management Options

A variety of options to improve the effectiveness and efficiency of Barrie's existing waste management system were identified and discussed at public consultation events.

In addition, Barrie completed a Waste Service Review in November 2011, which identified a number of potential options to achieve net cost reductions in Barrie's Environmental Operations Branch. Although these initiatives may not contribute to increasing diversion or improving the effectiveness of Barrie's waste management system, their implementation may reduce the overall cost of providing waste services and therefore help to fund other program initiatives that have been indentified to improve the system.

The complete list of waste management options for Barrie was evaluated according to the following assessment criteria:

- Advantages
- Potential Disadvantages
- Compatibility with Guiding Principles for the SWMS
- Potential impact on waste diversion
- Community support and input
- Capital cost implications
- Operating cost implications
- Ease of Implementation

Implementation Schedule and Priority Initiatives

First Priority (2012-2016) Initiatives

Lobby for Extended Producer Responsibility

- Work with the Association of Municipalities of Ontario, the Ontario Waste Management Association, the Municipal Waste Association and other industry associations to lobby the Province for EPR

Enhanced Promotion and Education

- Complete a comprehensive Communications Plan for all of Barrie's waste management services and update annually
- Re-launch green bin program

Modify Collection of Waste, Recyclables and Organics

- Weekly garbage collection to bi-weekly to encourage diversion
- Four day collection cycle to reduce shifting collection on holidays
- Reduce IC&I garbage bag limit from 10 to 6 bags per week

Implement Multi Family Green Bin Program

- Provide necessary carts and bins
- Reduce garbage collection limits in multi-residential sector

Improve Diversion

- Implement curbside recycling programs for plastic film, empty paint cans and aerosol containers
- Expand collection depot at landfill to include construction and demolition waste and mattresses
- Plan for additional collection depot in south end of Barrie
- Charge a tipping fee for sweepings, grit and sand

Regional Partnership Initiatives

- Establish a Regional Partnership Committee to align programs, and consider joint processing and disposal opportunities
- Evaluate alternative disposal options (i.e. Thermal Treatment, Mechanical Biological Treatment)

Cost Saving Measures

- Provide replacement blue and grey bins and green carts to residents and businesses on a partial cost recovery basis
- Eliminate the annual 100 kg free load of garbage for residents

Second Priority Initiatives (2017-2021)

Coordinate Diversion Programs in Schools

- Provide bins and carts to schools at a shared cost
- Include joint tendering opportunities in 2020 contract

Enhanced Promotion and Education

- Promote multi-residential green bin program
- Promote recycling of construction & demolition waste
- Promote use of diversion depots

Mandatory Diversion Program

- Prepare by-law for mandatory diversion and blue and green bin rates
- Reduce free bags from 2 bags/2 weeks to 1 bag/2 weeks

Improve Public Space Collection Program

- Complete Public Space Rationalization Study

Improve Diversion Depots

- Provide textile collection at existing depots

Regional Partnership Initiatives

- Start joint public education program
- Consider joint marketing of recyclables
- Develop alternative waste disposal facility for residual waste

Beneficial Use of Landfill Gas

- Energy recovery from landfill gas

Cost Saving Measures

- Provide special event recycling on a cost- recovery basis
- Eliminate the 100 kg free yard waste allowance

Third Priority Initiatives (2022-2026)

Improve Public Space Collection Program

- Consolidate collection of recyclables and garbage from park interiors
- Utilize more advertising bins
- Remove inaccessible bins from service during winter months
- Standardize collection bin type and colours

Enhanced Promotion and Education

- Promote diversion programs in schools
- Promote mandatory diversion program

Improve Diversion Depots

- Consider establishing Reuse Centres at depots

Central Waste Depot in Downtown Area

- Establish Downtown Waste Management Committee
- Evaluate need for a central depot to collect garbage and recyclables in Downtown Area

Mandatory Diversion

- Require separation of recyclables and organics at curbside
- Disposal ban for construction & demolition waste
- Penalty at landfill for unsorted waste

Landfill

- Prepare for landfill closure
- Evaluate energy production from landfill gas collection system
- Review landfill monitoring requirements with respect to reduced environmental burden

Cost Saving Measures

- Eliminate leaf and yard waste collection to Industrial, Commercial & Institutional sector

Fourth Priority Initiatives (2027-2031)

Zero Waste Policy for Public Events

- Develop and implement Zero Waste Policy for Special Events

Improve Diversion

- Promote Return-to-Retailer Programs
- Evaluate need for mobile recycling unit

Mandatory Diversion

- Consider full User Pay System (no free bags)

Cost Saving Measures

- Modify City's involvement in Bulky Waste Collection Program

Business Case

In 2011, Barrie's municipal waste management system cost approximately $9.4 million to deliver. These costs included the delivery of a number of programs, including:

- Environmental investigation programs
- Environmental operations
- Waste collection
- Blue Box recycling
- SSO composting
- Leaf and yard waste processing
- MHSW collection and disposal
- Waste disposal

In order to fund these programs, Barrie receives revenue from a number of sources, including:

- Bag tag sales
- Product stewardship fees
- Tipping fees charged at the landfill

When these revenues are taken into account, the net cost to deliver Barrie's waste management programs was approximately $6.8 million in 2011.

The SWMS includes recommendations for several mechanisms that the City can use to fund the waste services that they provide to their residents, including:

- Property taxes
- Tipping Fees charged on waste and other materials brought to waste management facilities
- Flat fees per household for basic services available to households (e.g., recycling, disposal of limited bags of garbage)
- Variable rate user fees (i.e. bag tags)
- Extended Producer Responsibility (EPR)*

* The authority for the implementation of an EPR program rests with the province

Ongoing Monitoring

The SWMS includes a recommendation that the City compare its yearly outgoing recyclable waste quantities with the amount generated over the previous two years. The data will be reviewed on an annual basis to determine the influence of other factors on the performance of the recycling program (for example introduction of additional initiatives, revision of waste policies and by-laws, addition of new residences).

At the end of each five year implementation phase, the SWMS recommends that the City add an additional five year segment to the end of the overall planning period to maintain a current 20 year SWMS. Ongoing upkeep of a 20 year plan limits the potential for a narrow planning perspective and maintains a SWMS with an outward, long-term focus. A long-term focus is the foundation for a successful and sustainable SWMS.

The recommended approach includes the following steps:

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

Public Awareness & Communications Plan

An Awareness and Communication Plan has been developed for the SWMS and has been created in line with the overall SWMS mission and guiding principles. The purpose of the Plan is to outline how to effectively implement the SWMS and assess its value as the community grows and changes over time.

The Awareness and Communication Plan is meant to be a flexible document, and will be re-visited and updated in response to changes in the community and communication methods. Public feedback will be sought on communication methods on a regular basis to ensure that messaging and methods are being effectively implemented. Feedback may be collected through evaluation surveys or feedback questionnaires, either using verbal or written formats as appropriate.

The specific objectives of the Awareness and Communication Plan are to:

- Communicate changes in waste management services;
- Increase education and awareness of existing services, with the goal of increasing waste diversion;
- Facilitate ongoing dialogue between stakeholders and Barrie staff; and
- Provide a flexible framework to allow Barrie to easily adapt communications activities to the changing needs of the community.

List of Abbreviations

AD	Anaerobic Digestion
AMO	Association of Municipalities of Ontario
AMRC	Association of Municipal Recycling Coordinators
Barrie	City of Barrie
BBPP	Blue Box Program Plan
BEC	Barrie Environmental Centre
BFI	BFI Canada Inc.
C&D	Construction and Demolition
CAZ	Contaminant Attenuation Zone
CBD	Central Business District
CCME	Canadian Council of Ministers of the Environment
CEC	Community Environmental Centre
CFC	Chlorofluorocarbon
CIF	Continuous Improvement Fund
CLC	Community Liaison Committee
CMA	Census Metropolitan Area
CNA	Canadian Newspaper Association
CO_2	Carbon Dioxide
C of A	Certificate of Approval
CRC	Community Recycling Centre
EA	Environmental Assessment
EAA	Environmental Assessment Act
EASR	Environmental Activity and Sector Registry
ECA	Environmental Compliance Approval (formerly “Certificate of Approval”)
EFW	Energy-From-Waste
EIR	Environmental Investigation and Response

EPA	Environmental Protection Act
EPR	Extended Producer Responsibility
ESA	Environmental Site Assessment
FCM	Federation of Canadian Municipalities
Gallery	Groundwater Collection Gallery
GAP	Generally Accepted Principle
GHG	Greenhouse Gas
Golder	Golder Associates Ltd.
GPS	Global Positioning System
IC&I	Industrial, Commercial and Institutional
IFO	Industry Funding Organization
IWMF	Integrated Waste Management Facility
Kelleher	Kelleher Environmental
LCBO	Liquor Control Board of Ontario
MBT	Mechanical Biological Treatment
MHSW	Municipal Hazardous and Special Waste
MOE	Ministry of the Environment
MRF	Material Recovery Facility
MWA	Municipal Waste Association
NPRI	National Pollutant Release Inventory
OCC	Old Corrugated Cardboard
OES	Ontario Electronic Stewardship
OMBI	Ontario Municipal Benchmarking Initiative
O.Reg.	Ontario Regulation
OTS	Ontario Tire Stewardship
OWMA	Ontario Waste Management Association
OWRA	Ontario Water Resources Act
P3	Public Private Partnership

P&E	Promotion and Education
PET	Polyethylene Terephthalate
PTTW	Permit to Take Water
PWQO	Provincial Water Quality Objectives
RDF	Refuse Derived Fuel
RFP	Request for Proposal
RTR	Return-to-Retailer
SSO	Source Separated Organics (Green Bin)
SWMS	Sustainable Waste Management Strategy
UK	United Kingdom
US	United States
WDA	Waste Diversion Act, 2002
WDO	Waste Diversion Ontario
WEEE	Waste Electrical and Electronic Equipment
WRIC	Waste Resource Innovation Centre
%	Percent

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1.0 INTRODUCTION

1.1 Background

The City of Barrie (Barrie) is located in Southern Ontario, approximately 90 km north of Toronto, on the western shore of Lake Simcoe. For almost two decades, Barrie has been one of the fastest growing cities in Canada. Census data reveals that the City's population more than doubled from 62,700 in 1991 to 128,500 in 2006. A further growth rate of greater than 50% is anticipated over the next 20 years. This population growth is being accommodated, at least in part, by adjusted municipal boundaries and increased land for residential and business development. In 2010, the Barrie-Innisfil Boundary Adjustment Act provided Barrie with approximately 2,300 additional hectares of land for development (annexed lands), translating into approximately 12,000 new permanent residents.

Barrie has implemented various waste management programs over the past years, achieving a residential diversion rate of 45% in 2010 and surpassing other Ontario municipalities of similar size. However, recognizing provincial waste diversion targets, shifting dynamics in the waste industry and increasing pressures within the City itself relating to population growth and provincial planning visions, it is essential that Barrie continue to ensure that the current waste management system is sustainable and can accommodate future municipal needs.

Fiscally responsible, socially acceptable and environmentally sound waste management planning is an integral part in the long term sustainability of Barrie's growth. In January 2011, Barrie initiated the development of a Sustainable Waste Management Strategy (SWMS) to act as a master planning document to evaluate Barrie's current solid waste environment and recommend opportunities to promote effective, efficient, and socially acceptable change based on a 20 year planning period. The SWMS presented herein considers the social, environmental and economic implications of each opportunity, and was based on collaboration with other municipalities and the ongoing engagement of community residents and stakeholders throughout the planning process.

1.2 Current Waste Services

Barrie is a single tier municipality that has overall responsibility for providing waste management services to its residents, including waste collection, disposal and diversion (i.e. recycling, re-use and composting). Waste management services are made available to single family and multi-residential households, in addition to the Industrial, Commercial and Institutional (IC&I) sector, subject to program limitations and policies.

Barrie currently provides the following waste management services to an estimated 44,300 single-family households:

- Weekly collection of one container/bag of garbage (additional containers/bags require a $3.00 bag tag);
- Weekly two stream collection of Blue Box recyclables (i.e. comingled containers and paper fibres respectively);
- Weekly collection of source separated organics (SSO);
- Leaf and yard waste collection; and
- Subsidized backyard composters to encourage at-home organic waste composting.

Barrie provides garbage and recycling collection services to approximately 9,700 multi-residential households. Grey 95 gallon carts for paper fibres and blue 95 gallon carts for co-mingled containers are distributed free of charge to multi-residential buildings. SSO diversion is not currently available to this sector.

Additionally, Barrie offers garbage, recyclables and leaf and yard waste collection services to local IC&I establishments. IC&I establishments located in Barrie's Central Business District (CBD) (i.e. the Downtown Business Area and the Essa Road Special Collection Area) receive twice weekly collection services, as opposed to other IC&I establishments which receive weekly collection, reflecting the limited availability of set out space and dumpster space in the CBD area.

Barrie owns and operates the Barrie Environmental Centre (BEC), which includes an operating landfill site, a leaf and yard waste composting facility, a Municipal Hazardous and Special Waste (MHSW) depot, and a public drop-off area for large items, scrap tires, waste electrical and electronic equipment (WEEE), scrap metal and leaf and yard waste. As an alternative to self-hauling large items to the BEC, the municipality and Habitat for Humanity have partnered to provide bulky item collection to residents for a fee of $25 per item. The fee is retained by Habitat for Humanity.

Barrie has invested in aggressive Special Event and Public Space waste management programs, including 220 public space recycling bins located conveniently throughout the City. Responsibility for the management of garbage and recyclables collected through these programs is shared between the municipality and Barrie's contracted waste collection service provider.

As a result of these waste diversion programs, Barrie successfully achieved a residential waste diversion rate of 45% in 2010.

1.3 Issues identification

Issues identification is an essential component of the SWMS. A preliminary review by Barrie of the existing waste management system and its dynamic urban setting indentified several challenges that Barrie will face in future years. These issues are summarized in the sections that follow.

1.3.1 Population Growth

Generally, Barrie is challenged in the delivery of all of its waste management programs by the high rate of growth that has been experienced and is expected to continue into the future. This means that all components of the waste system must be designed with the ability to handle increasing quantities of waste and recyclables that will need to be collected, processed and/or disposed of.

Two provincial policy documents that comment upon Barrie's growth forecasts include:

- Ontario's Growth Plan for the Greater Golden Horseshoe (Ministry of Public Infrastructure Renewal, 2006), with "Proposed Amendment 1" released in October 2010
  - *This policy document defines Barrie as the "primary urban node" of the Simcoe Sub-area.*
- Simcoe Area: A Strategic Vision for Growth (Ministry of Infrastructure, 2009).
  - *This policy document was developed to promote intensification and revitalization in existing cities and towns. As identified in this policy document, downtown Barrie presents the greatest potential in the*

Simcoe area to accommodate growth through downtown revitalization, higher density development and intensification.

Given these policy documents, a primary focus for Barrie will be the intensification of its core and higher density development in order to accommodate projected growth. Intensification will result in an increasing percentage of high-density residential structures within Barrie, such as multi-story apartments. It is well recognized that multi-story apartments present additional challenges in promoting behaviours that support waste diversion.

Barrie will also accommodate approximately 40% of the Simcoe area's future job growth (Ministry of Infrastructure, 2009). The Barrie Urban Growth Centre will be the focal point for much of this employment growth, particularly major office and institutional development. Therefore, the SWMS will address the waste and recyclables generated from the growing IC&I sector within its boundaries.

To help ensure that Barrie fulfills its role as a growing urban node, the province passed Bill 196, the Barrie-Innisfil Boundary Adjustment Act in 2009. This legislation extended the southern boundary of Barrie to include approximately 2,300 hectares of land previously in the Town of Innisfil. Waste management services for the newly annexed area are now provided by Barrie. Waste system equalization and consistency are part of the foundation for an effective and efficient waste management system. The SWMS will account for Barrie providing an equalized level of service to residents in this newly acquired area.

1.3.2 Collection

Barrie currently contracts with BFI Canada Inc. (BFI) for the collection of waste and recyclables. The collection contract is scheduled to expire in May 2013. The collection contract includes:

- Curbside collection of garbage, recyclables, SSO, leaf and yard waste from single family households;
- Curbside collection of garbage and recyclables from multi-family dwellings;
- Curbside collection of garbage and recyclables from IC&I establishments;
- Collection of garbage and recyclables from public space receptacles;
- Collection of recyclables from special events;
- Collection of garbage and recyclables from municipal facilities;
- Occasional roll-off truck services at the BEC; and
- Processing and marketing of recyclables.

Garbage and SSO are co-collected each week in a "split" truck in order to increase collection efficiency. Garbage is taken for disposal to the Barrie Landfill Site. SSO is transferred at a private transfer station and then transported to a privately operated composting facility in Arthur, Ontario. Leaf and yard waste is dropped off at Barrie's leaf and yard waste composting facility located at the BEC and processed by municipal staff. Recyclables are managed by the collection service contractor.

As part of the SWMS, best practices for waste and recycling collection will be identified along with an examination of the following related issues:

- Potential service level changes to promote diversion (e.g., frequency, limits, tag costs);
- The option of joint tendering for waste and recycling collection with neighbouring municipalities; and

- How best to collect special materials such as bulky waste, MHSW and WEEE.

1.3.3 Diversion

Barrie contracts with the private sector to provide processing capacity for recyclables, scrap tires, SSO, WEEE and MHSW. Leaf and yard waste composting is operated by municipal staff at the BEC. Generally, this arrangement allows for flexible and cost-efficient delivery of waste diversion services.

Some issues that have initially been identified with respect to waste diversion include:

- The participation and capture rate for SSO materials is low;
- There is not currently any provision for the diversion of C&D waste materials;
- Intensification within Barrie will provide challenges to maximizing waste diversion from multi-family residential dwellings; and
- Having only one drop-off location for special materials, such as scrap tires, MHSW, WEEE and recyclables results in long wait times at the BEC.

Additional issues with the provision of waste diversion services have been identified through the community engagement process (Refer to Section 8.0).

1.3.4 Disposal

Historically, Barrie has managed its garbage within its boundaries and it is expected to be able to do so until 2035. Recognizing that the exhaustion of landfill capacity is expected to occur just subsequent to the planning period, the SWMS must incorporate, evaluate, and recommend viable garbage disposal options leading up to a proposed landfill closure date of 2035. Barrie recognizes that for the foreseeable future, there will be a requirement to dispose of some materials that are not currently recyclable or compostable. Due to the lack of available land within the boundaries of Barrie, the development of new landfill capacity would be challenging.

Consideration should be given to alternative management technologies for garbage, such as Energy-From-Waste (EFW), gasification, Mechanical Biological Treatment (MBT), waste pelletization, and steam classification. It is recognized that in order to be economically viable, these technologies typically require more throughput than is generated by Barrie alone. The consideration of alternative technologies should be conducted on a regional basis. As such, the SWMS explores potential partnerships for disposal with neighbouring municipalities.

1.4 Municipal Policy

Over the past two decades, Barrie has experienced tremendous growth over the last few years. Between 2001 and 2006, the Barrie Census Metropolitan Area was identified by Statistics Canada as the fastest growing metropolitan area in Canada. As a designated Urban Growth Centre in Ontario, Barrie is projected to account for one third of the population growth and 40% of future job growth in the Simcoe Area (*Places to Grow Simcoe Area, 2009*).

Barrie is also located inside the Greater Golden Horseshoe, one of the fastest growing regions in North America. By 2031, the population of this area is projected to grow by an additional 3.7 million (from 2001) to 11.5 million people, accounting for over 80% of Ontario's population growth (*Places to Grow, 2006*).

Given the current and forecasted growth in Barrie, long range planning has been a recent priority. In order to prepare for future growth, the following two planning documents have been developed to help to shape the long range plan for Barrie:

- Barrie's Strategic Plan for 2010 – 2014; and
- Barrie's Growth Management Strategy.

These two documents will be summarized in the sections that follow.

1.4.1 Strategic Plan for 2010-2014

Barrie's Strategic Plan for 2010 – 2014 presents Council's strategic direction for the 2010 –2014 term. The plan sets the agenda for the next four years and will be used to prioritize goals and develop and monitor Barrie's business plan and budget.

This Strategic Plan will contribute towards shaping the economic, environmental and social platform for Barrie's growth over the upcoming years and into the future. It will be the basis for infrastructure and political change and will inevitably have both direct and indirect impacts on Barrie's waste management system. The five strategic goals and corresponding strategies that define the Strategic Plan are summarized in Table 1.

With population growth and economic development forecasted in Barrie, it is anticipated that waste generation tonnages will also increase. Managing Barrie's waste through enhanced waste reduction and diversion programs and appropriate infrastructure will allow Barrie to grow and manage resources sustainably. Barrie's strategic goal to "Manage growth and protect the environment" outlines several strategies that directly and indirectly tie in with the City's commitment to enhanced waste reduction and diversion, such as exploring partnerships for joint servicing arrangements, updating infrastructure plans and bringing new employment lands to market. Barrie's Strategic Plan for 2010 – 2014 has helped to form the backbone for the development of SWMS.

Table 1: Barrie's Strategic Plan 2011-2014

Goals	Strategies	Anticipated Action Plan Results by 2014
Direct and manage economic development	■ Attracting and promoting sector clustering; ■ Engaging businesses, institutions and all levels of government to establish a competitive local economy; ■ Establishing Barrie as a centre for excellence in innovation and entrepreneurship; and ■ Developing the Lake Simcoe Regional Airport as an employment hub.	■ A post-secondary campus in the City Centre ■ New health care industries ■ A cancer care centre ■ An expanded community healthcare ■ New businesses at Lake Simcoe Regional Airport
Manage growth and protect the environment	■ Completing the secondary plan for the annexed lands; ■ Bringing new employment lands to market; ■ Exploring partnerships for joint servicing arrangements; ■ Expanding transportation choices, including active transportation; and ■ Advancing intensification projects in accordance with existing policies.	■ Developable lands in the annexation area ■ Up to date infrastructure plans ■ Urban design guidelines ■ A 2nd GO Station ■ An improved trail system ■ More active transportation opportunities ■ Improved transit service
Strengthen Barrie's financial condition	■ Balancing service demands with financial resources; ■ Developing affordable long range plans that reflect changes in our community's growth and/or economy; ■ Diversifying revenues; and ■ Pursuing innovation through our Journey of Excellence.	■ resource planning system ■ Updates to our Long Range Financial Plan ■ Updated financial policies ■ Annual asset condition reports ■ An updated Development Charge By-law ■ A Leadership Development Program ■ Level 3 Certification *(Best in Class)* with the National Quality Institute
Create a vibrant and Healthy City centre	■ Improving integration between the downtown and the waterfront; ■ Actively promoting the downtown and waterfront to residents and visitors; ■ Encouraging a mix of land uses in the downtown; and ■ Enhancing safety in the downtown.	■ A new community theatre ■ A Waterfront/Marina Plan ■ New Downtown signage and branding ■ Sidewalk patios in the City Centre ■ Improved Downtown and waterfront links ■ The development of the Foodland site (n/e

Goals	Strategies	Anticipated Action Plan Results by 2014
		corner of Mulcaster and Collier Streets) ■ Additional financial institutions in the City Centre ■ Increased residential housing in the City Centre ■ Increased office space in the City Centre ■ A completed parking strategy ■ Allandale Station will be restored ■ Updates to our Community Improvement Plans
Improve and expand community involvement and City interactions	■ Developing a customer service strategy and enhance customer experiences; ■ Improving and enhance communications with the public; and ■ Increasing opportunities for public input/feedback on City initiatives.	■ A biannual citizen surveying process ■ A Customer Service Strategy ■ New online opportunities ■ Increased opportunities for public feedback and information sharing ■ An improved customer service experience ■ Improved communications with the public

1.4.2 Growth Management Strategy

On January 1, 2010, Bill 196 (the Barrie-Innisfil Boundary Adjustment Act, 2009) came into effect. Bill 196 extended the southern boundary of Barrie to include 2,293 hectares of land previously in the Town of Innisfil. The expansion of Barrie's boundary provided opportunities for planning and managing the City's growth to support a strong and competitive economy, build a compact, vibrant and complete community, and create a sustainable future while addressing provincial growth management initiatives.

Barrie retained Watson & Associates Economists Ltd., Macaulay Shiomi Howson Ltd. and W. Scott Morgan & Associates Ltd. in the spring of 2010 to prepare a long-term Growth Management Strategy for the City to the year 2031.

The Growth Management Strategy, once completed, will provide a detailed growth forecast for Barrie and will inform how future population, housing and employment growth will be allocated within the City's built-up area, remaining greenfield lands and annexed area. This process will ultimately lead to a more detailed Secondary Plan for the annexed lands, which is required to establish land use patterns and master plans to service this area.

The study has been organized into six phases as follows:

Phase 1: City-wide Population, Housing and Employment Forecast, 2006 to 2031;

Phase 2: Retail Commercial Space and Land Requirements;

Phase 3: Employment Lands Comprehensive Review;

Phase 4: Allocation of City-wide Population, Housing and Employment Forecasts;

Phase 5: Residential, Commercial and Institutional Land Needs Analysis;

Phase 6: Residential, Commercial and Institutional Development Strategy

Collectively, the above phases will form a detailed Growth Management Strategy which will be used to guide and direct population and employment growth within Barrie for the next 20 years.

Phase 1 of the study has indicated that the total population within the former City limits (i.e. excluding the annexed area) is anticipated to increase by 30,200 between 2011 and 2031. The annexed area is expected to accommodate 38,800 persons, or 56% of population growth, over the forecast period. A Secondary Plan for the annexed area is to be developed and incorporated as an amendment to Barrie's Official Plan.

Phase 1 of the study also predicts that the housing mix will shift towards a higher percentage of high density housing by 2031. Currently the City-wide housing mix is at 66% low density, 15% medium density and 18% high density housing. By 2031, it is anticipated that the housing mix will shift to 31% low density, 28% medium density and 41% high density housing. Anticipating a higher density housing mix provides motivation for Barrie to consider waste management options that will encourage and facilitate the diversion of waste from the multi-residential sector.

1.5 Provincial Policies

The province's waste management framework is comprised of numerous regulatory and non-regulatory initiatives that provide direction to, and seek cooperative approaches with, the many players who share

responsibility for the management of Ontario's environment: producers, industry, commercial bodies, institutions, municipalities, environmental groups and the public.

A critical foundation of Ontario's waste management approach is the "3Rs Regulations" – Ontario Regulation (O.Reg.) 101/94, 102/94, 103/94 and 104/94 – which were made in 1994 under the Environmental Protection Act (EPA). These regulations aim to ensure that municipalities and businesses reduce non-hazardous waste from disposal through reduction, reuse and recycling programs. For a number of years following the introduction of the 3Rs regulations, few new policy or program initiatives were introduced at the provincial level.

In 2002, the province passed the Waste Diversion Act (WDA) to promote the reduction, reuse and recycling of waste, and to provide for the development and implementation of waste diversion programs. The WDA created WDO, a permanent non-government corporation, with a multi-stakeholder Board of Directors. The WDA is based on the principle of Extended Producer Responsibility (EPR). It requires the WDO to work with an Industry Funding Organization (IFO) for each waste diversion program requested by the Minister. Together WDO and the IFO develop diversion programs based on a funding model where fees are paid by industry stewards.

Ontario's municipal Blue Box program was the first program funded under the WDA in 2003. The Ministry has requested that WDO develop a program for municipal hazardous or special wastes, and signalled its intention to move forward with a program for WEEE.

In recent years Ontario has taken a number of important steps to strengthen and broaden the province's waste management approach and drive diversion, including:

- Changing the requirements for collecting, storing and transferring certain materials that can be recycled to encourage industries that produce waste materials to do more recycling;
- Making it easier for municipalities to set up recycling and composting facilities by exempting these facilities from the Environmental Assessment (EA) process;
- Encouraging greater use of organic wastes by permitting the production of ethanol and biodiesel as alternative fuels without having to get the ministry's approval;
- Making it easier to use wood waste to produce energy, thus reducing the amount of wood waste that ends up in landfills;
- Introducing a deposit return system for wine and spirit containers;
- Launching an extensive compliance effort to ensure that the IC&I sectors are meeting their obligations under O.Regs. 101 to 104:
  - *O.Reg. 101/94 (Recycling and Composting of Municipal Waste)*
  - *O.Reg. 102/94 (Waste Audits and Waste Reduction Work Plans)*
  - *O.Reg. 103/94 (IC&I and Source Separation Programs)* - requires owners of the IC&I facilities in Reg. 102/94 to have source separation programs in place for certain wastes
  - *O.Reg. 104/94 (Packaging Audits and Packaging Reduction)* - requires certain IC&I facilities to conduct waste audits and produce waste reduction workplans.

- Requesting the development of a program plan for municipal hazardous or special wastes (MHSW) (completed June 2007) and WEEE (winter 2008);
- Launching the Ontario Tire Stewardship (OTS), an IFO incorporated in September 2009 under the WDA. This program eliminates the "disposal fee" that consumers currently pay to dispose of their old tires;
- Pursuing a national strategy to reduce the environmental impacts of packaging throughout its life-cycle through the Canadian Council of Ministers of the Environment (CCME);
- Forming a partnership with Ontario industry and environmental organizations that will ensure a reduction in the use of plastic bags through expansion of reusable bag programs and consumer education;
- Committing to work with industry at the provincial and federal level to reduce the net environmental impacts of packaging; and,
- Supporting innovation and research to increase diversion, including projects on plastic bags, zero waste, litterless lunches, apartment recycling and mercury recover from florescent bulbs and tubes for recycling.

As part of Ontario's commitment to give waste managers the tools they need to develop sustainable waste management solutions, the province has also introduced a Policy Statement on Waste Management Planning, which aims to achieve more consistent and timely waste management planning across the province.

Key provincial waste policy initiatives that shape the SWMS and the future of Barrie's waste management system include:

- Zero Waste;
- EPR;
- Policy Statement on Waste Management Planning;
- WDA Review;
- Modernization of Environmental Approvals; and
- Ontario's Green Energy Act.

Each of these policies will be discussed in greater detail in the following sections.

1.5.1 Zero Waste & Extended Producer Responsibility

In Ontario, municipalities have long been responsible for the planning, development, and operation of management systems for the residential waste stream. The cost for these programs has traditionally been borne by the municipal taxpayers. In recent years, the concept of *Zero Waste* is gaining popularity in many jurisdictions around the world. Zero Waste generally refers to an approach that puts more responsibility on producers to redesign products in a more sustainable way in order to design waste out of products and packaging completely, and more responsibility on individual consumers to make more conscious choices to reduce, reuse and recycle.

A Zero Waste system would include changes in the way products are made, delivered to the marketplace, purchased, used and disposed of by consumers. It attempts to reduce a product's environmental footprint not only at end-of-life, but "upstream" during the stages of natural resource extraction, manufacturing, transportation and distribution. It attempts to extend the useful life of the product.

A key principle or policy behind the concept of Zero Waste is EPR. EPR is a producer-focused concept which promotes the idea that producers of products and packaging must assume “cradle to cradle” responsibility for their products, instead of transferring lifecycle costs onto the municipalities or taxpayers. With EPR in place, producers would be fully responsible for the end-of-life management of their products, and would therefore have a financial incentive to become truly sustainable.

The EPR vision is that products would be managed in manufacturer networks, reverse distribution systems or possibly by municipalities collecting material under contract to private businesses. Industry will pay for the reuse and recycling of its products, as well as anything that needs final disposal, which should be as close to zero as possible.

The roots of the EPR concept were established in Ontario in 2002 when the WDA was enacted to promote the reduction, reuse and recycling of waste and to provide for the development, implementation and operation of waste diversion programs.

1.5.2 Policy Statement on Waste Management Planning

The *Policy Statement on Waste Management Planning: Best Practices for Waste Managers* (Ministry of the Environment, MOE, 2007) is based on long-term, integrated planning for the provision of waste management services and systems. It establishes the province’s expectations for waste management, outlines a framework for decision-making by all waste managers, and provides specific direction on the development of long-term municipal waste management plans. This includes direction for large municipalities (with populations of 100,000 or greater) to develop municipal waste plans within two years of the Statement being finalized. Small municipalities (with populations under 100,000) should develop municipal waste plans within two and a half years.

Where a municipality has already developed, or is in the process of developing a waste management plan, the Ministry encourages that adjustments be made, where necessary, to ensure the plan (or planning process) reflects the principles and expectations established through the Policy Statement.

The Policy Statement encourages:

- Integrated waste management systems;
- Maximum diversion of materials from final disposal;
- Cooperation, where possible, between public and private sectors, and between neighbouring municipalities, to realize cost savings and maximize efficiencies;
- The management of waste as close to the source of generation as possible;
- Investment in infrastructure that helps accommodate growth;
- Recognition of waste as a resource;
- The incorporation of producer responsibility into waste reduction and management;
- Open and transparent decision-making; and
- An informed citizenry who support waste management choices and participate in waste prevention and diversion programs.

While the Policy Statement provides detailed guidance to municipalities, the overall approach and focus is to provide direction to all waste managers. The IC&I sector continues to generate significant quantities of waste that requires appropriate management. Therefore, the province also challenges these sectors to consider the principles established in the Policy Statement to minimize the amount of waste produced, and therefore minimize waste management requirements for both the business sector and municipalities.

1.5.3 Waste Diversion Act Review

In October 2008, the Ontario Ministry of the Environment (MOE) issued a discussion paper for public consultation entitled *"Towards a Zero Waste Future: Review of Ontario's Waste Diversion Act, 2002".* This paper was the result of the requirement that the province conduct a review of the WDA and the Blue Box Program Plan (BBPP). The discussion paper states:

> *"This review of the Act provides an opportunity to present the vision of zero waste as a goal, and discuss how we can make concrete steps in that direction today and take advantages of the opportunities that a zero waste vision presents."*

The MOE began the review of the WDA and launched a public dialogue on how to achieve greater waste diversion and to explore using EPR as the foundation for Ontario's waste diversion framework. Over 200 Ontarians participated in the review including producers, retailers, municipalities, environmental non-governmental organizations, waste management companies and concerned members of the public.

In October 2009, the Minister issued a report on the WDA Review, entitled, *From Waste to Worth: The Role of Waste Diversion in the Green Economy* (MOE, 2009). Some of the key recommendations of the report include:

- Making individual producers fully responsible for meeting waste diversion requirements for waste discarded in both the residential and IC&I sectors;
- Clarifying the concept of diversion to allow a wider range of processes and technologies to be used to meet diversion requirements and encourage innovation;
- Designating materials for diversion including materials discarded in both the residential and IC&I sectors;
- Banning designated materials from disposal;
- Implementing a disposal levy to narrow the gap between the cost of diversion and disposal, and shift behaviour toward greater diversion; and
- Using disposal levy revenues to support the waste diversion efforts.

Although (as of January, 2011) no decisions have been made by the Provincial government with respect to changes to the WDA, the principles of Zero Waste and EPR should be taken into consideration when developing the SWMS.

1.5.4 Modernizing Environmental Approvals

The MOE, as part of the province's Open for Business initiative, has modernized its approvals system. This initiative proposed a new two-tiered system for approvals. The potential risk that the activity poses to the environment and public health affects the level of approval that is required. As of October 31, 2011, lower risk, well understood processes are eligible for a registration process (the Environmental Activity and Sector Registry or EASR process), whereby the eligible operations agree to carry out their activities in accordance with a pre-established set of rules. Higher risk activities follow a technical review and permitting process (referred to as the

Environmental Compliance Approvals or ECA process) with a similar level of detail as the former Certificate of Approval (C of A) process. The new ECA approvals are multi-media, managing the environmental aspects of waste, air, noise and water in a single approval. Other enhancements of the ECA stream include single approvals for owners with multiple locations and increased flexibility for operational changes.

The new approvals process affects owners and operators of facilities that currently require a permit to operate lawfully in Ontario. Any facility that performs any of the following activities must have approval before it can operate lawfully today:

- releases emissions into the atmosphere;
- discharges contaminants into groundwater or surface water;
- provides potable water supplies; and
- stores, transports or disposes of waste.

The MOE's Discussion Paper (MOE, 2010) states that the Ministry has taken a number of initiatives to improve service delivery for environmental approvals in Ontario. These include:

- Guaranteed turnaround times for selected approvals;
- Streamlining the approvals process;
- Model applications;
- Expanding the use of comprehensive approvals to provide operational flexibility;
- Eliminating the backlog; and
- Introducing Renewable Energy Approvals with service guarantees.

Waste management activities eligible for the EASR process include waste collection and hauling. Currently, no other waste management activities have been confirmed for consideration as a potential EASR candidate and therefore remain subject to a comprehensive ECA process.

A *Draft Guide to Applying for the Environmental Compliance Approval* has been posted on the province's Environmental Registry for review and comment. Comments will be accepted until April 10, 2012.

1.5.5 Ontario's Green Energy Act

Ontario's Legislature passed the landmark Green Energy and Green Economy Act, 2009 (Bill 150) *on* May 14, 2009. The sweeping legislation creates a new stand-alone statute known as the Green Energy Act, and enables amendments to 15 other statutes. The Green Energy Act is intended to expand renewable energy production, encourage energy conservation and create green jobs and more economic growth for Ontario – a projected 50,000 jobs in the first three years.

Major components of the Green Energy Act include:

- the renewable energy Feed-in Tariff Program;
- the Renewable Energy Facilitation Office;
- a streamlined environmental approval process; and
- aggressive new conservation targets.

While the renewable energy approval process will not provide a true one approvals "window" for renewable energy projects, it does reduce the number of approvals required and should therefore assist proponents. Holders of a renewable energy approval would be exempt from requiring an ECA approval. This new form of approval also reduces a number of other traditional permits and approvals, as well as the EA process, consultation processes and land use planning considerations.

1.6 Strategy Mission Statement

A mission statement is a short statement established to spell out an overall goal, provide a sense of direction, and guide in the decision-making process. It is particularly useful in providing a framework or context when strategies are formulated.

To be effective a mission statement should consist of the following:

- a statement containing the reason for the process;
- a statement of some desired future state (vision);
- a statement of the key values the organization is committed to; and
- a statement of major goals.

At the corporate level, Barrie has already established a Community Vision, Mission Statement and set of Corporate Values, which define the way Barrie makes decisions and manages its existing operations. These items are identified below and will set the foundation for the development of the SWMS Mission Statement.

The Corporation of the City of Barrie

City Vision:

The City of Barrie will be progressive, diverse and prosperous with opportunities for all citizens to build a healthy and vibrant community.

Mission Statement:

The Corporation of the City of Barrie provides services and programs to build and support a prosperous, growing and sustainable community.

Corporate Values:

Achievement;

Dedication;

Collaboration;

Service to our Community;

Integrity; and

Continuous Improvement.

The following Mission Statement, Strategy Values and Goals for the SWMS have been drafted in consultation with the Community Liaison Committee (CLC) and the Project Steering Committee.

Barrie Sustainable Waste Management Strategy

Mission Statement

To develop a community strategy for sustainable waste management that supports current and future service expectation in a manner that is fiscally responsible, socially acceptable and environmentally sound.

Strategy Values

Achievement (clarity of scope and direction);
Dedication;
Collaboration;
Service to our Community (engagement, openness, inclusion);
Sustainability/Integrity; and
Continuous Improvement.

Goals:

Maximize Recovery of Resources;
Cost Effectiveness;
Pollution Prevention;
Clean and Healthy Environment;
Socially Responsible;
Optimization of Municipal and Public/Private Partnerships; and
Align with City and Provincial long range plans.

1.7 Strategy Guiding Principles

When developing municipal waste management strategies, the framework for waste management decisions should be made based on Guiding Principles. The following Guiding Principles have been developed for the SWMS in consultation with the Project Steering Committee and align with Barrie's Corporate Values.

Achievement:

- Lead by example by developing internal policies and practices that demonstrate Barrie's commitment to sustainable waste practices.
- Consider life-cycle aspects of waste management systems.

Dedication:

- Employ an integrated waste management system that combines waste diversion and disposal options in a way that is appropriate for local circumstances.

Collaboration:

- Facilitate administrative cooperation and participation with neighbouring municipalities to collaboratively seek out cost-effective solutions to common operating challenges.
- Encourage Public Private Partnerships (P3s) for the delivery of services, while remaining actively involved in the decision making process.
- Recognize that P3s may provide an opportunity for improved service delivery and cost-effectiveness, increased investment in public infrastructure, reduced public sector risk, improved budget certainty and faster capital project delivery.

Service to our Community:

- Education and awareness of the Public.
- Develop a SWMS that meets the needs and objectives of the community and stakeholders.
- Engage the community and stakeholders early and throughout the process in an open, transparent and meaningful way.
- Engage and motivate the public through an effective Community Engagement Plan.
- Present the social, financial and environmental effects of waste options in a way that is easily understood by residents.
- Provide a practical and affordable framework for long-term waste management that is responsible to Barrie's taxpayers.

Sustainability / Integrity:

- Reduction of waste wherever possible.
- Recognize that waste is a resource to be recovered if reasonably practical.
- Use waste management decision making that takes into account social, financial, and environmental considerations.
- Consider waste management options according to the Waste Value chain, which supports reduce, reuse, recycle and energy recovery, ahead of disposal.
- Maximize long range flexibility.

Continuous Improvement:

- Invest in infrastructure that is made to accommodate growth.
- Encourage diversion programs within the multi-family residential and IC&I sectors.
- Consider innovative regional recycling and waste management strategies.
- Accommodate changing legislation by incorporating flexibility.
- Establish meaningful performance measures.

2.0 OVERVIEW OF CURRENT WASTE SYSTEM

2.1 Service Levels

Barrie is a single tier municipality that has overall responsibility for providing waste management services, including waste collection, diversion (i.e. recycling, composting, re-use) and disposal. Waste management services are made available to single family and multi-residential households, in addition to the IC&I sector, subject to program limitations and policies.

Waste management services provided by Barrie include the following:

- Collection of Blue Box recyclables (i.e. containers and fibres);
- Collection of SSO (source separated organics);
- Collection and composting of leaf and yard waste;
- Collection of waste and recyclables from public spaces and special events;
- Collection of bulky items and white goods in partnership with Habitat for Humanity;
- Collection of residual waste (i.e. garbage);
- Operation of a landfill at the BEC;
- Operation of a public drop-off depot at the BEC for the collection of MHSW;
- Operation of a public drop-off area at the BEC for the collection of:
  - Bulky items and garbage;
  - WEEE;
  - Scrap tires;
  - Scrap metal and white goods;
  - Excess curbside recyclables and/or over-sized cardboard and
  - Leaf and yard waste.
- Education and promotion of waste reduction and diversion programs; and
- Long term planning for waste management.

Barrie also supports and promotes “at home” waste diversion programs, such as backyard composting with the provision of subsidized backyard composters.

In 2010, waste collection, diversion and disposal services were provided to approximately 54,026 residential households, of which 82% were single-family households and 18% were multi-residential households. Furthermore, an estimated 1,250 IC&I units, including approximately 400 units in Barrie’s CBD, were serviced under Barrie’s collection contract.

2.2 Waste Management By-Law

Barrie’s waste management authority was established under By-law Number 85-163, passed in 1985. By-law Number 85-163 was developed to establish and maintain a system for the collection, removal and disposal of garbage, ashes and other waste in Barrie. The following items are also outlined in the By-law:

- Proper provision, maintenance and placing of receptacles;

- Preparation of garbage, ashes, etc. for collection;
- Waste collection quantity limits;
- General nuisance avoidance;
- Proper preparation, transportation and disposal of waste not collected by Barrie; and
- The roles of the Director of Public Works and the Public Works Department.

2.3 Contracts

Barrie contracts with the private sector for many of its waste management services. Contracted services and service providers are summarized in Table 2. All other aspects of Barrie's waste management program are managed by municipal staff.

Table 2: Summary of Privately Contracted Services

Service Type	Contractor Name
Blue Box Recyclables Curbside Collection, Processing and Marketing	BFI
SSO Curbside Collection	BFI
SSO Processing and Marketing	Alltreat Farms (through BFI)
Leaf and Yard Waste Collection	BFI
Leaf and Yard Waste Grinding and Screening	NadCor
Garbage Curbside Collection	BFI
Collection of Garbage and Blue Box Recyclables from Public Space Bins	BFI
Collection and Processing of Blue Box Recyclables from Special Events	BFI
Bulky Item/White Good Collection	Habitat for Humanity (Partnership Agreement)
MHSW Depot Collection and Disposal	Brendar Environmental Incorporated
WEEE Hauling and Processing	Coordinated through Ontario Electronic Stewardship (OES)
Scrap Tire Hauling and Processing	Coordinated through OTS

2.4 Collection

2.4.1 Overview

Barrie currently contracts with BFI for the collection of waste and recyclables. The collection contract is currently scheduled to expire in May 2013. Items specified under the contract include the following:

- Curbside residential collection and collection from Barrie's CBD, consisting of,
  - Garbage collection,
  - Blue Box recyclables collection,
  - Leaf and yard waste collection,
  - SSO collection (single family homes only), and
  - Collection from the CBD;

- Collection from public spaces and special events, consisting of,
  - Blue Box recyclables collection from public receptacles,
  - Collection of garbage from public receptacles if accessible from the curb, and
  - Blue Box recyclables collection from special events; and
- City facility garbage and recycling container service, consisting of,
  - Garbage collection,
  - Cardboard collection,
- Occasional roll-off truck services at the BEC, and
- The processing and marketing of Blue Box recyclables.

Barrie is divided into five collection areas, each serviced weekly (Monday through Friday). The dividing boundaries for these areas are shown in Figure 1. Each of the five collection areas is sub-divided for every other week leaf and yard waste collection.

As indicated in Table 3, the number of residential households (single-family and multi-residential, combined) serviced by Barrie's waste collection programs has increased between 2006 and 2010.

Table 3: Residential Curbside Collection Program # Households Serviced (2006-2010)

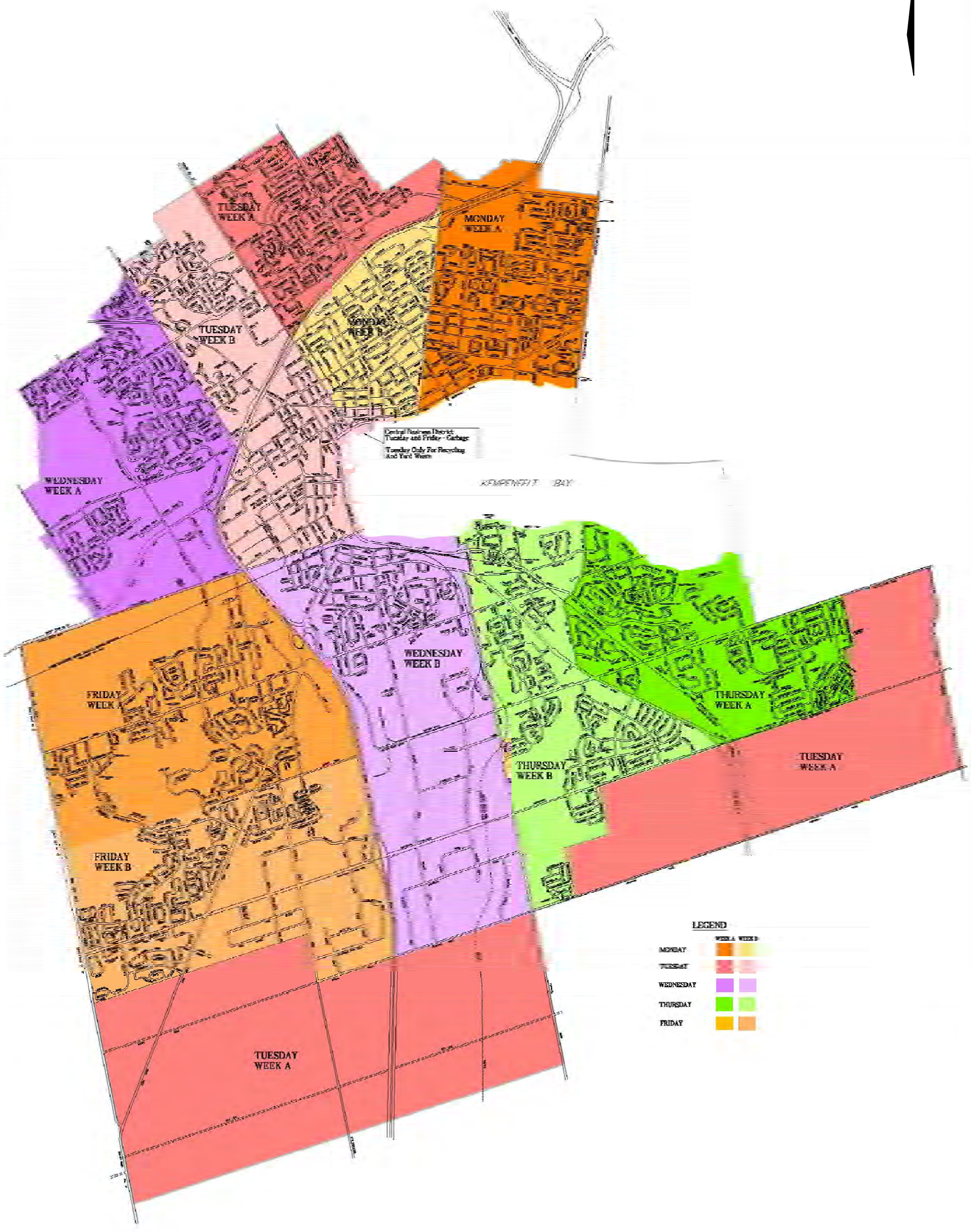
Collection Program	2006	2007	2008	2009	2010
Blue Box Recyclables	46,002	47,678	49,444	53,408	54,026
SSO[(1)]	37,708	39,217	40,785	44,306	44,306
Leaf and Yard Waste	46,002	47,678	49,444	53,408	54,026
Garbage	46,002	47,678	49,444	53,408	54,026

Source: WDO Municipal Datacall

(1) Excludes multi-residential households (refer to Section 2.4.4).

Approximately 1,250 IC&I units are currently serviced under Barrie's collection contract. The remaining IC&I establishments independently procure their own waste management services.

Single-family households source separate their waste into four different waste streams for curbside collection, while multi-residential households and IC&I establishments have access to three different waste management program streams. Bulky item/white good collection is also available to residents and is provided in a pilot partnership by Habitat for Humanity ReStore (refer to Section 2.4.6). Residential curbside collection waste streams are summarized in Table 4.



REFERENCE

Base plan by City of Barrie Entitled "2010 Garbage Collection Map Calendar", dated 2010 .

PROJECT

Barrie Sustainable Waste Management Strategy
Barrie, Ontario

TITLE

CITY OF BARRIE
WASTE COLLECTION ZONE MAP

Golder Associates
Whitby, Ontario

PROJECT No.11-1188-0055(4000)			FILE No.	BA01
DESIGN			SCALE N.T.S.	REV.
CADD	JT	Oct. 2011	**FIGURE 1**	
CHECK				
REVIEW				

Drawing file: N:\CAD\CAD support\AutoCAD Templates\Primary Mechanics\Support Systems\Start Up DWT File\golder-whi.dwt Oct 07, 2011 - 1:26pm

Table 4: Residential Curbside Collection Waste Streams

Program	Single-Family Households	Multi-Residential Households	IC&I Establishments
Blue Box Recyclables	✓	✓	✓
SSO	✓	×	×
Leaf and Yard Waste	✓	✓	✓
Garbage	✓	✓	✓
Bulky Items/White Goods[(1)]	✓	✓	✓

(1) Collection service provided by a partner not-for-profit organization. Refer to Section 2.4.6.

Each of the curbside collection programs referenced in Table 4 is described in Sections 2.4.2 through 2.4.6.

2.4.2 Garbage Collection

Curbside garbage collection services are available to all single-family and multi-residential households within Barrie. IC&I establishments are also eligible to receive garbage collection services. Garbage is hauled by Barrie's collection service contractor to the BEC for final disposal.

The garbage collection program administered by Barrie is outlined in Table 5: Curbside Garbage Collection Program.

Table 5: Curbside Garbage Collection Program

	Single Family Households	Multi-Residential Households	IC&I Establishments
Collection Frequency	Once per week	Once per week	CBD – twice weekly; All other IC&I establishments – once per week
Quantity Limitations	One bag/receptacle per household per week	Two bags/receptacles per unit per week	Ten bags/receptacles per business per week

IC&I establishments located in Barrie's CBD receive collection services twice weekly, as opposed to other IC&I establishments which receive weekly collection, reflecting the limited availability of set out space and dumpster space in the CBD area.

Historically, Barrie's IC&I sector had a large proportion of mid-sized industries with several hundreds of employees each. These industries typically managed their own process waste; however, cafeteria and office waste went to the curb for municipal collection. The standard residential bag limit was not sufficient for these industries and a ten bag/week limit was established. Today, the economy and technology have changed and mid-sized industries no longer operate in Barrie. As a result, the ten bag/week limit may not be as necessary as it once was.

The higher bag limit indicated in Table 5 for multi-residential households, compared to single-family households, reflects the fact that these residents do not have access to the SSO waste collection program. Where the number of bags/receptacles for collection exceeds allowable limits, residents and IC&I establishments may set out an unlimited number of additional bags/receptacles that have an affixed, pre-paid bag tag. Bag tags can be purchased from local retailers at a cost of $3.00 per tag as of May 1, 2012.

As an alternative to receiving curbside garbage collection services, multi-residential complexes (six units or greater) may be eligible to participate in Barrie's alternative Multi-Residential Tipping Fee Exemption Program. Through this program, multi-residential complexes contract privately with a waste hauler and are granted an exemption from the landfill tipping fees each week for a waste load approximately equal to two containers generated per unit (i.e. 1 yd^3 of garbage for every five multi-residential units). In order to be eligible for the Multi-Residential Tipping Fee Exemption Program, the multi-residential complex must report to Barrie the number of units in the complex, and property owners and building managers must agree to specific terms and conditions prescribed by Barrie, including effective participation in Barrie's multi-residential recycling programs and maximum allowable garbage container size.

The collection service provider is also required to conduct two garbage waste audits per year as directed by the Manager. Each waste audit is to consist of a selection of approximately 50 serviced units considered to be representative of each week-day collection service (i.e. 250 serviced units per audit). The results of these audits are discussed in Section 4.1.6.

2.4.3 Blue Box Collection

O.Reg.101/94 requires municipalities with a population greater than 5,000 people with a waste collection and disposal services program to offer recycling services to their residents. Barrie operates a two stream Blue Box recycling program, where recyclables are separated into blue box for containers and grey box for fibres. Container and paper fibre materials accepted by Barrie's Blue Box recycling program are listed in Table 6.

Table 6: Acceptable Blue Box Recyclables

Containers	Fibre
■ Rigid Plastic Containers #1- #7: ▪ Includes all plastic bottles, jugs, tubs and lids and styrene trays (meat trays). ▪ Packing Styrofoam, providing it fits into a standard size curbside recycling box ■ Glass bottles and jars ■ Food and beverage cans ■ Aluminum trays, pie plates and foil ■ Tetra Pak drinking boxes ■ Gable top juice and milk cartons ■ Spiral cardboard cans (metal portions included)	■ All household paper ■ Telephone books and catalogues ■ Boxboard and egg cartons ■ Cardboard boxes, including empty pizza boxes ▪ No waxed cardboard ▪ Must be flattened and bundled cardboard no larger than 75 cm x 75 cm x 20 cm

Unacceptable materials include plastic bags and wrap, pesticide and motor oil containers, toys, paint and aerosol cans, paper and waxed cups, glass dishes, lights bulbs, window panes, mirrors, and broken glass.

The Blue Box recycling collection program administered by Barrie is subject to the specifications and limitations outlined in Table 7.

Table 7: Blue Box Recycling Collection Specifications and Limitations

	Single Family Households	Multi-Residential Units	Multi-Residential Complexes	IC&I Establishments
Collection Frequency	Once per week	Once per week	Once per week[1]	Once per week
Collection Container Type[2]	16 gallon blue bin and 16 gallon grey bin	16 gallon blue bin and 16 gallon grey bin that use 95 gallon recycling carts	16 gallon blue bin and 16 gallon grey bin , and 95 gallon blue wheeled cart and 95 gallon grey wheeled cart	16 gallon blue bins and 16 gallon grey bins, or clear plastic bags for shredded paper
Quantity Limitations	Unlimited	Unlimited	Unlimited	Four blue one bundle of cardboard, and the equivalent of one grey box volume of fine paper may be in a clear plastic bag or a recycling box.

(1) Tuesday or Wednesday, depending on the location of the multi-residential complex.
(2) Metric Conversion: 16 gallon = 61 litres (approx.); 95 gallon = 360 litre (approx.).

All containers and carts are purchased by Barrie and distributed free of charge to residents and IC&I establishments, or are available for free pick up at the BEC. New, replacement, or additional 95 gallon wheeled carts can be requested by the property manager, owner or site superintendent of multi-residential complexes. The same applies to in-unit apartment recycling bins.

Replacement 16 gallon containers can be requested by single family residents by phoning Barrie directly (limit of one blue bin and one grey bin per residence (per delivery)). Barrie forwards the request(s) to the collection service provider who then delivers the container(s) to the resident within one week of the request. The collection service provider is also responsible for the collection of damaged containers set out from serviced units. New and replacement containers can also be picked up by residents at the BEC, and broken ones can be returned to this location as well.

Barrie's collection service provider is responsible for the collection of damaged containers set out from any stop that receives collection of waste, SSO, recyclables and leaf and yard waste. Damaged bins are stored at the BEC and then picked up and recycled by the manufacturer.

The cost to purchase new and replacement blue and grey recycling containers and carts and green bins totalled $161,000 in 2010. The distribution of the containers is provided as part of the waste collection contract therefore it is difficult to estimate the cost for the distribution.

Municipalities typically provide recycling and green bin carts to all residents when recycling and organics programs are originally implemented. However, it is not typical for municipalities to provide residents and businesses with free replacement containers. Most municipalities either require residents to purchase their own containers through retail outlets, or provide the containers on a cost recovery basis. According to the *Blue Box Enhancement and Best Practices Assessment Project (KPMG, 2007)*, the provision of free Blue Boxes is commonly done when programs are initiated and when materials are added and/or the program is re-promoted.

Participation in the Blue Box recycling program is mandatory for multi-residential complexes participating in the Multi-Residential Tipping Fee Exemption Program. Multi-residential institutions (i.e. complexes with central dining facilities) cannot participate in this program.

Blue Box recyclables are collected from single family and multi-residential households in a 'split' collection truck, comprised of two separate compartments for the segregation of containers and fibre material. A split truck makes collection more efficient instead of having one designated truck for each material. Recycling containers or carts containing unacceptable material are left upright at the curb with the unacceptable material left behind and a refusal sticker affixed with the problem checked.

Recyclables that are collected become the property of Barrie's collection contractor. The current contract provides collection and processing of Blue Box recyclables in the form of a combined contract (one price). The contractor is responsible for sending the material to one of two processing facilities operated by BFI in Barrie (fibres only) or Muskoka Containerized Services in Bracebridge (containers only) where recoverable products are separated and prepared for market. Contract payment is on a per household basis and does not offer rebates on material sales.

The collection service provider is required to conduct four recyclable material audits per year as directed by the Manager. Each recyclable material audit is to be representative of one week-day collection route to be mutually agreed upon between the Contractor and Barrie. The collection service provider is also responsible for providing Barrie with a monthly material and end market summary (i.e. weights and revenues).

2.4.4 SSO Collection

Since May 2006, all single family households in Barriehave had access to curbside SSO waste diversion (i.e. green bin program). When the program commenced, SSO Waste Collection Program Kits were delivered to all single family dwellings. Items included in these kits consisted of the following:

- One 21 gallon wheeled, curbside green cart;
- One 2 gallon kitchen SSO waste bin;
- An education package, including a fridge magnet; and
- A pack of 5 Kraft Bag to Earth paper bags to line the kitchen organics bin.

A similar program kit is provided to all new residents of Barrie.

Plastic shopping bags or other products consisting of plastic composites (e.g., diapers, plastic food liner bags) are not accepted in Barrie's SSO program because they do not break down and therefore contaminate the finished compost material.

When the SSO collection program commenced, compostable liners for the kitchen organics bin were not permitted. A few years later when certified standards for compostable liners were enacted, the City began accepting compostable liners in the SSO collection program.

Currently, acceptable curbside cart liners include:

- Paper bags (i.e. from the grocery or liquor store);
- Boxboard;
- Paper leaf and yard waste bags;

- Newspaper; or
- Other certified compostable liners.

Compostable liners must be certified by the US Composting Council or the Standards Council of Canada's Compostable Plastic Bag Program as evidenced by one of the following logos on the product packaging.

Materials accepted in Barrie's green bin program are listed in Table 8.

Table 8: Acceptable Green Bin Program SSO Waste

Organic Waste Type	Description/Examples
Food Waste	Fruits and vegetables, meat and bones, dairy products, breads and grains, rice and pasta, eggs and eggshells, cooking oils and grease, coffee grounds and filters, tea bags
Wet and Soiled Paper	Soiled newspapers/paper towels/paper plates, microwave popcorn bags, fast food drink trays and cups, cheesy pizza boxes, paper take-out containers, napkins and tissues, muffin paper cups, paper egg cartons
Other Household Organics	Sawdust, popsicle sticks, toothpicks (wooden), wood wine corks, wood ashes (cold), dryer lint and dust, hair and pet hair

The green bin program administered by Barrie provides services to single-family households only. There is currently no restriction on the amount of SSO waste that residents can set out at the curb. However, the weight of the green cart set out for collection must not exceed 20 kilograms (45 lbs.).

Barrie provides new, additional and/or replacement green carts free of charge to single-family households. Barrie's collection contractor is responsible for delivering these carts to the requesting household by the following collection date, and is also responsible for the pick-up of any damaged carts.

SSO waste is collected by a 'split' collection truck, with two separate compartments. The collector places the garbage material into the one side of the truck, and the organics into the other side. No intermixing occurs between compartments.

SSO waste collected by Barrie's green bin program is delivered to a privately owned transfer station and then transported to an off-site processing facility. The processing facility is owned and operated by All Treat Farms and is located in Arthur, Ontario. The processing facility is responsible for the costs associated with the disposal of residue and marketing of compost, and retains all revenues associated with the sale of the finished compost.

The collection service provider is responsible to conduct two organics waste audits per year as directed by the Manager. Each audit is to consist of a selection of approximately 50 serviced units considered to be representative of each week day collection area (i.e. 250 serviced units per audit).

2.4.5 Leaf and Yard Waste Collection

The leaf and yard waste collection program administered by Barrie, services the residential sector (all single-family and multi-residential households) and the IC&I sector, including the CBD. The collection schedule for leaf and yard waste from serviced units is weekly in the spring and summer months of April, May and June, and during the fall and winter months of September, October, November and January. Leaf and yard waste is collected bi-weekly during the months of July, August and December. No leaf and yard waste collection occurs in February or March.

Materials accepted in Barrie's leaf and yard waste program include:

- Leaves, brush, grass clipping, garden trimmings and tree trimmings;
- Fruit tree waste;
- Pumpkins;
- Christmas trees; and
- Bales of straw.

An unlimited quantity of leaf and yard waste may be set out for collection by residential households and IC&I establishments. Kraft paper leaf and yard waste bags, corrugated cardboard boxes, rigid receptacles, bushel baskets or burlap bags may be used for set out. Leaf and yard waste packaged in plastic bags or recycling boxes will not be accepted for collection.

For ease of collection and effective processing, Barrie has established the following packaging guidelines:

- Clippings from trees and shrubs should be tied securely in small bundles;
- Bundles must be no larger than 1.8 metres in length and 0.3m (1ft) in diameter and weigh no more than 20 kgs (45lbs); and,
- Tree limbs must be no larger than 10cm (4 inches) in diameter and no longer than 1.8m (6ft) and have a maximum height of 1.8 metres (6 feet).

Curbside collected leaf and yard waste is hauled by Barrie's collection contractor to the BEC for composting. Operations at the BEC leaf and yard waste composting facility are described in Section 2.5.

2.4.6 Bulky Item Collection

Barrie and Habitat for Humanity have partnered to provide a bulky item collection program in Barrie, which is available to the residential and IC&I sectors. A service charge of $25.00 per item applies and is retained by Habitat for Humanity. Acceptable bulky items generally consist of oversized household and furniture waste materials including mattresses, sinks, toilets, carpet and underlay, televisions, sofas, loveseats, dressers, vacuums, suitcases, desks, appliances, file cabinets, bed frames, air conditioners, bicycle frames, fridges, freezers, dehumidifiers and air conditioners.

Any appliances containing chlorofluorocarbons (CFCs) (e.g., refrigerators, freezers, air conditioners, dehumidifiers and water coolers) must be decommissioned and certified as "CFC-free" by a licensed technician with a certified notice of decommissioning affixed to the appliance. This service is included in the $25.00 fee per item.

Residents can arrange for bulky item collection by leaving a message on Barrie's Bulky Item Request Line through the City of Barrie and Habitat for Humanity will contact the resident directly to arrange a pick up.

2.4.7 Public Space and Parks Collection

Barrie has invested in an aggressive Public Space Collection Program. Most combined garbage and recycling containers are emptied on a weekly basis, typically on the collection day for that particular area. However, seasonal demands require some areas to receive more and other areas to receive less frequent collections. For example, containers along the waterfront are emptied three times weekly (Monday, Wednesday and Friday) during peak months from May to September. Receptacles at Barrie's some major sports fields are also emptied on weekends during peak periods and garbage receptacles in the waterfront parks are emptied daily during the summer season.

Barrie's contractor is responsible for collecting, processing and marketing the recyclable materials from public space recycling containers. Garbage in park interiors is collected by Barrie's Roads and Parks Branch, while the contractor collects the recyclables from park interiors and both garbage and recyclables from non-park bins located along roads.

In total, there are approximately 400 garbage receptacles placed in Barrie's parks during the summer season and an additional 330 combined or recycling containers located throughout the rest of Barrie.

Most public space bins serviced under the waste collection contract are tracked using Global Positioning System (GPS) technology. The garbage bins in the parks are emptied on average one to two times weekly, and are brought in during the winter months.

Recycling bins remain in Barrie's parks year round and are often difficult to access and become contaminated during the winter months. Although there are a variety of container styles, the ones located curbside are predominantly two or three sectioned, sandstone coloured, "All In Ones". Many of the public space recycling bins located in parks are blue 95 gallon (360 litre) carts. There are approximately 41 stainless steel curbside bins with advertising panels on the sides, which are not owned by Barrie.

A pilot project undertaken in Barrie installed 26 in-ground garbage bins at various parks throughout the City. These containers are emptied every three to four weeks during the summer and every one to two months during the winter, depending on usage. A hydraulic crane is required to remove the bags within these containers, which can hold the equivalent of 16 regular garbage bags.

2.4.8 Special Events and Recycling Collection

Barrie's collection service contractor is responsible for delivering 95 gallon carts (inventoried and provided by Barrie) to special event locations. Each cart is lined with a large clear plastic bag and locked while in use at a special event. All plastic bags, locks and keys are supplied by Barrie. The carts are delivered within 24 hours of the commencement of the event and all carts are removed within 24 to 48 hrs hours of the event closing and returned to the landfill site storage facility.

The contractor is responsible for collecting recyclables from the carts throughout the event as necessary. The contractor may be required to empty recycling carts up to three times per day during high generating events, such as *Promenade Days* and *Kempenfest* (during Kempenfest carts are only emptied once a day as there is too much pedestrian traffic to get collection vehicles in to empty the bins).

The contractor is also responsible for the marketing of recyclables, including obtaining and developing end markets. Barrie's collection service contractor retains all revenues from the sale of materials from these events.

2.5 The Barrie Environmental Centre

2.5.1 Overview

Barrie owns and operates the BEC, which it utilizes for the management of waste and as an administrative centre for Barrie's waste management program and operations. The site is located in the northwest part of the municipal limits (Figure 2) and is accessed off Ferndale Drive.

The boundaries of the BEC property owned by Barrie comprise a total area of 121.3 Ha, including the contaminant attenuation zone (CAZ) for the landfill. The CAZ has been registered on title of lands to the south and west of the landfill. This zone extends approximately 470 m to 570 m west of Cell 3 and approximately 200 m to 400 m south of the landfill. The outer boundary of this CAZ forms the Compliance Boundary of the Landfill. The limit of the landfill footprint encompasses an area of approximately 18.6 Ha. Figure 2 outlines the locations of the landfill limits, property boundaries, landfill site boundaries and compliance boundary of the landfill.

Residential land uses border the south, east and north property boundaries of the BEC. The west boundary of the site lies within a wooded area and is bounded by the TransCanada gas pipeline. This boundary is coincident with the border between the Barrie and Springwater (formerly Vespra) Township.

The site has been operated as a landfill since the early-mid 1960's, and is licensed under ECA No. A250101. In addition to landfill operations, the BEC is comprised of the following service areas, the locations of which are also indicated on Figure 3:

- Administration Centre;
- Environmental Education Centre;
- Scale House;
- Waste Segregation Area;
- MHSW Depot and Satellite MHSW Depot; and
- Compost Facility.

Engineered environmental control systems at the BEC include a leachate collection system, landfill gas collection and flaring system, purge well system, stormwater management system and a groundwater collection gallery. A fire training flashover unit is located south of the Administration Centre's equipment bays, but is not part of the waste management activities.

The BEC operates six days a week throughout the year, between 0800 to 1630 hours, totalling approximately 300 days per year. The site is only open to the public for the receipt of waste on Tuesday through Saturday, between 0900 and 1600 hours. Although waste is not accepted from the public on Mondays, curbside waste from contracted haulers is received at the landfill on that day. Administrative services are available at the BEC on Monday through Friday. The MHSW Depot operates on Saturdays only, from 0900 to 1600 hours.

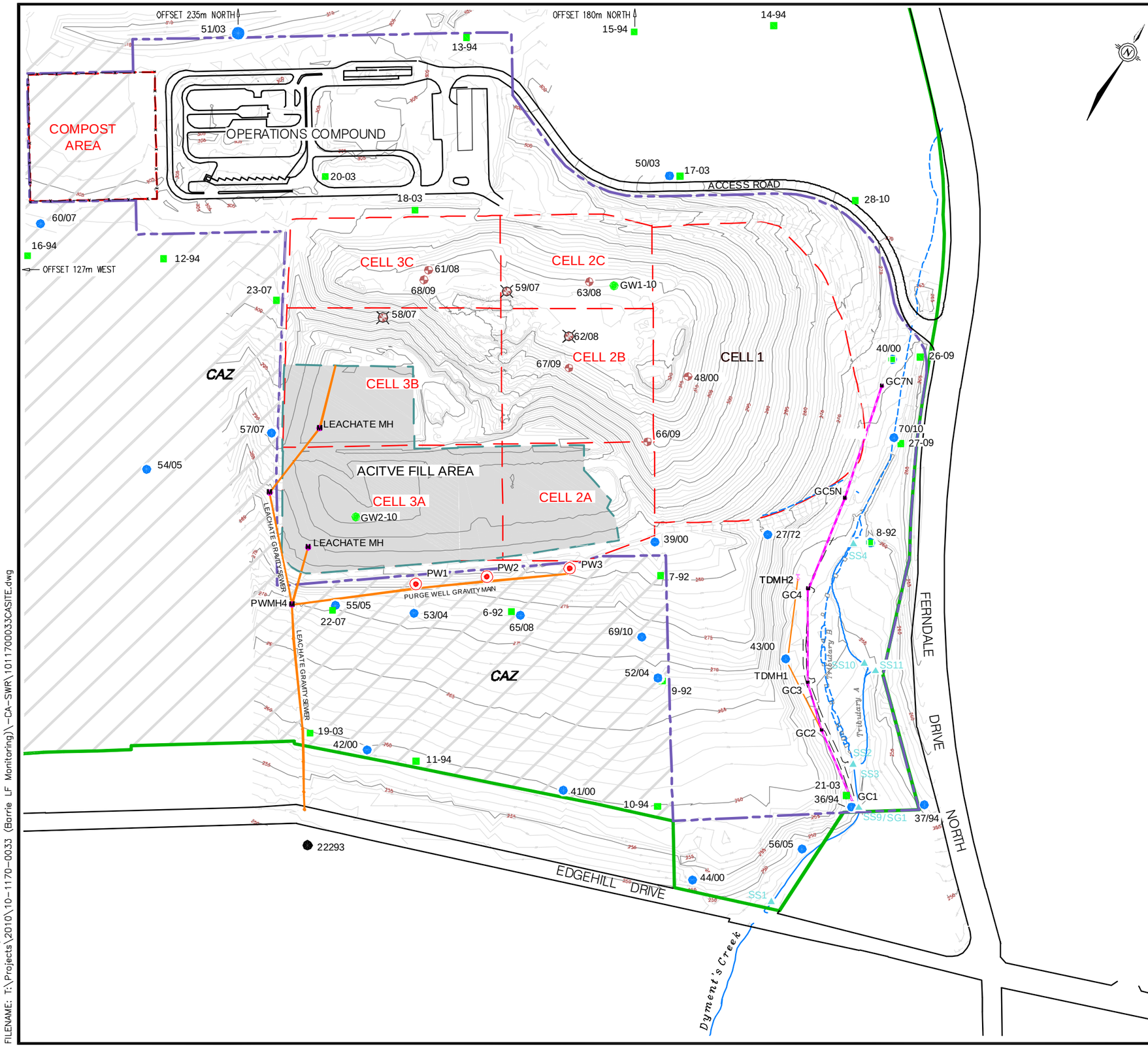
The BEC is enclosed by a 1.8 metre high fence. Site vehicle access is controlled by means of two gates, (i) the primary site access gate at the end of the paved main access road off Ferndale Drive leading directly to the scale house, and (ii) the secondary site access gate east of Cell 1. The second access gate is automated and is not accessible to the public, except when the Satellite MHSW Depot is open to the public. The gate at the top end of the main access road is closed during non-operating hours and is patrolled by on-site security personnel.

Low level lighting is maintained on site at all hours and buildings are protected with alarms that are monitored by security. A landfill gas monitoring system is in place in all on-site buildings. The buildings have all been designed to prevent build up of landfill gas from the adjacent landfill.

2.5.2 Administration Centre

The Administration Centre houses the majority of staff responsible for the waste management programs, landfilling operations and Barrie's waste reduction programs. Barrie's Environmental Investigation and Response (EIR) staff also work out of this building.

The Environmental Operations Branch is one of the five branches within Barrie's Operations Department and comprises 11% of the Department's staff resources. The staff compliment to administer the waste collection, diversion and disposal programs includes one Manager, two Waste Reduction Coordinators, one Waste Reduction Trainee, one Clerk Secretary, and occasional students.



LEGEND:

- LANDFILL SITE PROPERTY LIMIT
- LANDFILL COMPLIANCE BOUNDARY
- APPROXIMATE LIMIT OF LANDFILL
- GROUNDWATER COLLECTION GALLERY & MANHOLE
- TOE-DRAIN & MANHOLE
- STREAM (DASHED WHERE INTERMITTENT)
- SS4 — STREAM MONITORING STATION
- 52/04 — OBSERVATION WELL
- 58/07 — LANDFILL OBSERVATION WELL
- 7-92 — LANDFILL GAS MONITORING WELL
- 8-92 — COMBINED GAS / WATER MONITORING WELL
- PW2 — PURGE WELL
- 22293 — MOE RECORDED RESIDENTIAL WATER SUPPLY WELL
- GW1 — LANDFILL GAS PRODUCTION WELL
- WELL ABANDONED / DESTROYED 2010
- LINED LANDFILL CELL AREA
- 270 — GROUND CONTOUR masl (1m INTERVAL)
- CAZ — CONTAMINANT ATTENUATION ZONE (CAZ)

NOTES:

1. WELLS ABANDONED / DESTROYED PREVIOUS TO 2010 ARE NOT ILLUSTRATED

REFERENCES:

1. CITY OF BARRIE MUNICIPAL MAPPING
2. LEGAL SURVEY RUDY MAK S-6510-C (2003) AND CDN (2008)
3. TOPOGRAPHIC SURVEY HAZCO ENVIRONMENTAL (DEC 2010)

80 0 80
SCALE 1:4000 METRES

TITLE

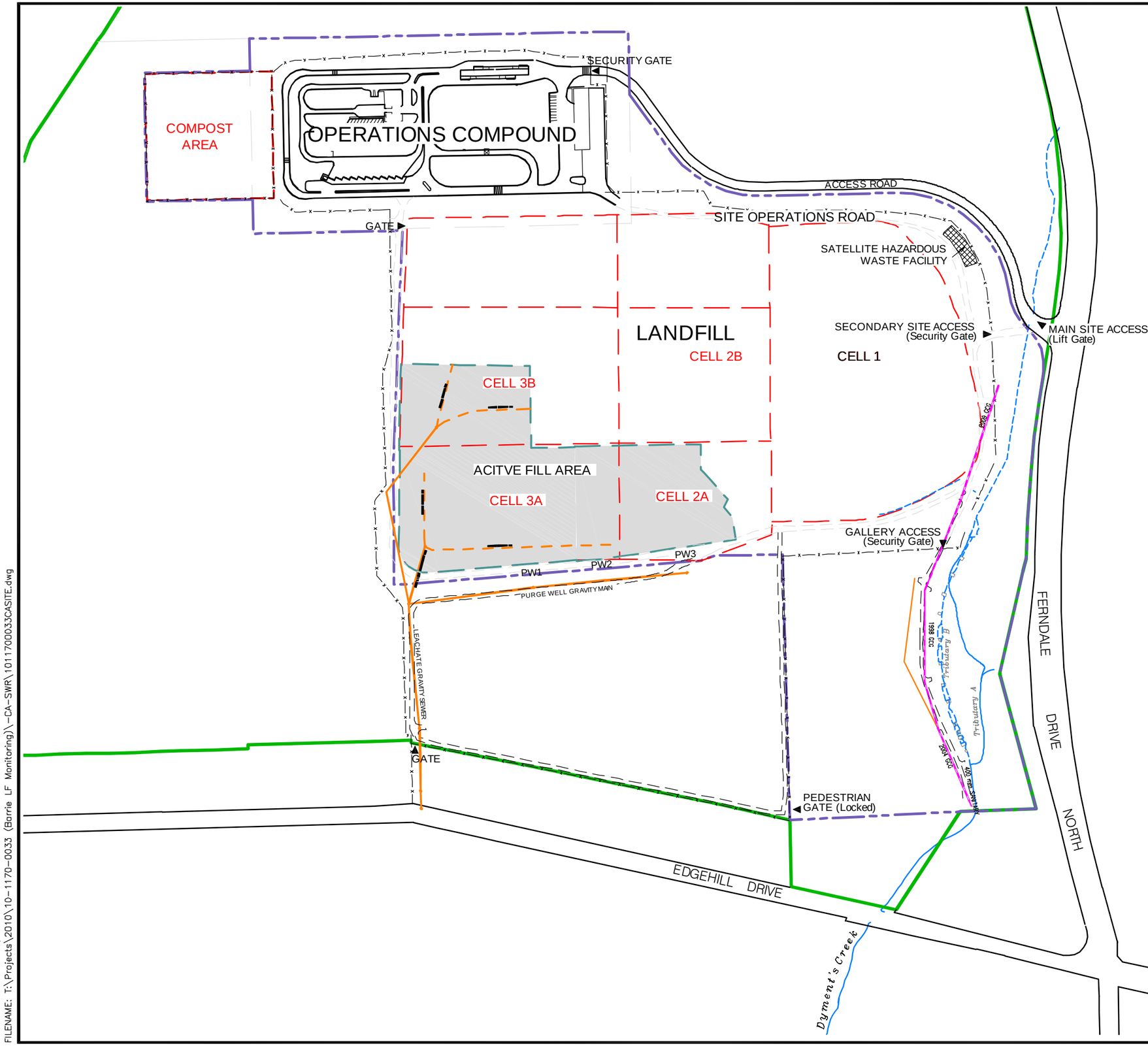
SITE LOCATION MAP

CITY OF BARRIE LANDFILL
2010 SOLID WASTE REPORT

Golder Associates
Barrie, Ontario, Canada

SCALE	AS SHOWN		
DATE	28 JUN 2011		
DESIGN			
CAD	J REGIER		
FILE No. 1011700033CASITE.dwg	CHECK	PS, CV	FIGURE 2
PROJECT No. 10-1170-0033 REV. CA	REVIEW		

PLOT DATE: June 28, 2011
FILENAME: T:\Projects\2010\10-1170-0033 (Barrie LF Monitoring)\-CA-SWR\1011700033CASITE.dwg



LEGEND:

- SITE SECURITY FENCE
- LANDFILL COMPLIANCE BOUNDARY
- APPROXIMATE LIMIT OF LANDFILL
- COMPOST AREA
- LINED AREA TO END OF 2009
- GROUNDWATER COLLECTION GALLERY
- TOE-DRAIN & MANHOLE
- STREAM (DASHED WHERE INTERMITTENT)
- PAVED ACCESS ROAD
- SITE OPERATIONS ROAD

NOTES:

1. NAD UTM 83 ZONE 17
2. LEACHATE HEADERS & MH LOCATION IN LINED CELLS ARE APPROXIMATE.

REFERENCES:

1. CITY OF BARRIE MUNICIPAL MAPPING
2. LEGAL SURVEY RUDY MAK (CDN 2008)

metres
0 25 50 100 200
SCALE 1:4000

TITLE

LANDFILL SITE FACILITIES

CITY OF BARRIE LANDFILL
2010 SOLID WASTE REPORT

Golder Associates
Barrie, Ontario, Canada

SCALE	AS SHOWN
DATE	28 JUN 2011
DESIGN	
CAD	J REGIER
CHECK	
REVIEW	
FILE No.	1011700033CASITE.dwg
PROJECT No.	10-1170-0033
REV.	
FIGURE	3

PLOT DATE: June 28, 2011
FILENAME: T:\Projects\2010\10-1170-0033 (Barrie LF Monitoring)\-CA-SWR\1011700033CASITE.dwg

The EIR unit is responsible for environmental investigation, response and litigation support. The approved staffing level for the group consists of one Supervisor, three Senior Environmental Officers, two Environmental Officers, and occasional students. This unit performs a wide range of tasks and administers a number of programs for the Operations Department and other departments within Barrie, including:

- Environmental spill response;
- Environmental Site Assessment (ESA) reporting and Permit to Take Water (PTTW) Application review;
- By-law enforcement for waste
- Site alteration by-law enforcement (erosion and siltation control);
- Sewer Use by-law enforcement;
- Contaminated Lands Management Sites;
- Waste water environmental monitoring;
- Groundwater environmental monitoring (including the trichloethylene program);
- Landfill MOE reporting and compliance monitoring for Certificates of Approval;
- Simcoe County leachate receiving program;
- Surface water quality monitoring;
- Source water protection;
- Monitoring of the land application of biosolids program;
- National Pollutant Release Inventory (NPRI) reporting;
- Beach water quality sampling;
- Over strength waste surcharge agreements;
- Sewer rate exemption program;
- ESA; and
- West Nile Virus monitoring program.

All of the heavy equipment that is used in landfill operations is stored in the Administration Centre equipment bays. There is an equipment wash bay for cleaning vehicles with sufficient room for minor mechanical maintenance. Equipment maintenance is carried out on-site, with the exception of light equipment (trucks) and the roll-off truck, which are serviced off-site.

2.5.3 Environmental Education Centre

Barrie constructed an Environmental Education Centre and Interpretative Berm at the BEC to encourage waste reduction values in education. City Waste Management staff conducts meetings and provides education to students and summer camps groups at the Environmental Education Centre.

2.5.4 Scale House

The Scale House is located west of the Administration Centre. With the exception of the Satellite MHSW area, all vehicles entering the waste receiving area of the BEC are required to pass through the Scale House facilities. Separate inbound and outbound scales are provided and are supervised by two attendants during operating hours. The weigh scales are connected to a computerized system that records weights, calculates fees, processes receipts and keeps records of all users of the landfill. The system consists of Geoware™ Waste Management Tracking software that automatically produces waste volume reports and invoices. The system records the following information:

- customer license plate and address;
- time and date of transaction;
- material description/classification;
- source of waste materials;
- gross (incoming) and tare (exiting) vehicle weights;
- rate charged for transaction and total transaction cost; and
- net weight of waste received.

2.5.5 Waste Segregation Area & Depot Diversion

The Waste Segregation Area at the BEC allows for the drop-off waste for either disposal or diversion. Material separation at the BEC Waste Segregation Area includes the following:

- Excess recyclables (i.e. corrugated cardboard, paper fibre materials, comingled containers);
- Excess/over-sized garbage;
- Scrap metal/white goods;
- Leaf and yard waste;
- WEEE; and
- Scrap tires.

When an IC&I waste hauler arrives at the BEC with a large waste load for disposal, the hauler may be directed to proceed to the landfill tipping face, rather than using the Waste Segregation Area.

The Waste Segregation Area consists of 10 elevated waste loading bays that accommodate 40 cubic yard roll-off bins at the base level. A concrete wall and curb are located at the end of the public drop-off area. This allows the bins to be loaded from a higher elevation, so that waste is thrown downward into the bins. In addition to the waste loading bays, the north side of the Waste Segregation Area is comprised of bunkers with concrete dividing walls. The bunker area generally facilitates the separation of WEEE, leaf and yard waste, scrap tires and dump trailers.

Once full, roll-off bins are removed and taken directly to the landfill tipping face for disposal, or if containing recyclable waste (i.e. cardboard, metal, WEEE, scrap tires), are stored until the materials can be transferred off-site to a licensed recycling facility. Leaf and yard waste is transferred directly to the on-site Composting Facility for processing (refer to Section 2.5.7).

WEEE and scrap tires received for diversion at the BEC Waste Segregation Area are managed through product stewardship programs established by WDO. Materials currently designated by the WEEE and Scrap Tire programs, and accepted from residents at the BEC, are summarized in Table 9. Barrie permits residents to drop off any of these designated waste types free of charge at the BEC. This material is collected by a private collection contractor for processing and recycling, the cost of which is subsidized by product stewards.

Table 9: WEEE and Scrap Tire Types Accepted for Diversion at the Barrie BEC

WEEE	Scrap Tires
Desktop and portable computers and peripherals Monitors Televisions and radios Printing devices, copies, scanners, typewriters Cellular phones and pagers Audio and video players and recorders Cameras Receivers, tuners and speakers Video players/projectors	On-road passenger tires On-road light truck tires Motorcycle, ATV and medium truck tires Agricultural tires Small, medium and large off-road tires Small, medium and large solid industrial tires

2.5.6 MHSW Depot & Satellite MHSW Depot

MHSW is accepted at the BEC on Saturdays between the hours of 0900 and 1600 throughout the year. The Satellite MHSW Depot is open from May 1st through to November 30th, while the MHSW Depot located west of the Administrative Building is open the from December 1st through April 30th.

The operation is of the MHSW Depot is contracted to Brendar Environmental Incorporated. Drop-off is free to all Barrie residents (and currently Simcoe County residents).

Acceptable MHSW items include the following:

- Aerosol cans
- Batteries
- Bleach
- Cleaning products
- Cosmetics
- Drain cleaners
- Pool chemicals
- Fire extinguishers
- Fluorescent light bulbs
- Lighters
- Thermometers
- Paint
- Paint thinners
- Propane/butane
- Antifreeze
- Empty oil containers
- Brake fluid
- Medicine
- Nail polish remover
- Gasoline
- Fertilizers
- Motor oil
- Sharps (needles)

Residents are not allowed to bring more than 25 L of MHSW or waste oil per residence per month, nor are they allowed to bring 5 gallon pails of oil, commercial and/or industrial waste, ammunition explosives, unidentifiable materials, radioactive or biohazardous materials. Collected MHSW material is transferred off-site by Brendar Environmental Inc. for proper processing and recycling or disposal.

The Satellite MHSW Depot was opened at the BEC to help alleviate concerns with respect to high traffic volumes at the BEC on Saturdays. Long line-ups experienced at the BEC on Saturdays have resulted in the delay in processing the many residents accessing the site through the Scale House. Even though residents dropping off only MHSW were not charged a tipping fee, they were required to wait in the queue to access the MHSW Depot.

The Satellite MHSW Depot has been constructed east of the landfill area, inside the fenced enclosure surrounding the landfill site. It consists of a Pro-tech building and a paved pad with spill containment. This area is accessed from the easterly landfill access gate, off Ferndale Drive adjacent to the Landfill site entrance roadway. Weather permitting, the Satellite MHSW Depot is operational during peak traffic periods from May 1 through November 30.

2.5.7 Compost Facility

Barrie collects leaf and yard waste materials through its curbside collection program (refer to Section 2.4.5) and accepts brush and leaf and yard waste delivered to the BEC from residents and businesses. Residential leaf and yard waste can be dropped off at BEC at no charge for loads under 100 kilograms. For loads exceeding this weight limit, a $58.00 per tonne tipping fee applies. A $6.00 minimum charge applies to IC&I loads under 100kg.

The BEC Compost Facility was originally located in the area currently licensed for Cell 3A. When landfilling operations progressed to the point that excavation of Cell 3A was required, the compost pad was relocated to its present location west of the Administration Centre (as shown in Figure 3). The proposed asphalt pad was originally designed to measure 130m by 130 m (1.7 ha). Following a phased approach to construction, a 130m by 75m pad was first constructed and paved. Due to an increase in the leaf and yard waste material being composted, the pad was expanded 55 m to the west in 2009, resulting in the completion of the 1.7 ha pad proposed in the original design.

The compost pad is asphalt surfaced, and slopes to the east. The pad was designed with catch basins to hold water for reuse. Overflow stormwater runoff during excessive rainfall events is collected in an existing ditch and combined with the runoff generated from the rest of the BEC.

Barrie utilizes an open windrow composting system at the Compost Facility. The open windrow composting system is an open-to-the-air passively aerated static pile system. The material is mixed at the site and placed into windrows through the use of a front end loader. The windrows are then turned on an as required basis, through the use of a front end loader.

Leaf and yard waste received at the site is placed and processed in batches to facilitate process management and record keeping. Each batch consists of a variable number of windrows, depending upon the volume and content of the incoming waste. The “overs” screened from each batch are incorporated into the subsequent batch for further processing.

Raw incoming leaf and yard waste is shredded by a private contractor (currently NadCor) to reduce particle sizes and mix the material. Grinding accelerates the decomposition process and reduced the length of the curing process.

Under normal operating conditions, composting is a moisture deficit process that requires the input of water to reach completion. The new compost pad was designed with the two catch basin collection sumps which allow Barrie to pump the excess moisture back onto the compost windrows, as needed. The catch basin sumps are connected to the stormwater management system. Barrie also adds moisture to the compost via a sprinkler system connected to the municipal water supply.

The Compost Facility is operated under ECA No. A250101, Amendment No.3, dated July 24, 2007.

Finished compost is used to top dress the landfill, distributed to the municipality's Roads and Parks Branch, or sold to the general public. As indicated in Table 10, compost is sold for between $5.00 and $10.00 a cubic metre.

Table 10: Compost Sale Rates

Description	Rate (excluding HST)
Finished Compost – Large load up to 1.5 cubic metres	$8.00
Finished Compost – Small load up to 0.3 cubic metres	$5.00
Commercial and non-resident	$15.00/tonne or $10.00 minimum

2.5.8 Landfill

The Barrie Landfill is licensed to receive municipal and industrial non-hazardous solid waste.

Details of the current approved design of the landfill are outlined in the Design and Operations report (Golder, 2005) and subsequent detailed design submissions. The landfill comprises a total area of 18.6 Ha and is divided into three cells. Filling of Cell 1 commenced in 1964; filling of Cells 2 and 3 commenced in 1985 and 1991, respectively. The current approved maximum elevation of the landfill is 320 metres above sea level (masl).

The total approved capacity of the landfill is 3.9 Mm^3. The approximate total area of each Cell is as follows:

- Cell 1 → 5.7 Ha
- Cell 2 → 5.0 Ha
- Cell 3 → 7.9 Ha

The majority of the Barrie Landfill is currently unlined and waste was historically deposited directly within the cells excavated into the native sandy materials. In 2008, the construction of Cell 3A, which included a leachate collection system underlain by a single composite liner (Golder, 2005) was completed. This was followed by similarly constructing Cell 2A in 2009.

Leachate Collection System

The leachate collection systems for Cell 2A and 3A consists of a series of collection pipes within a clear stone drainage layer over the base area of the landfill excavation. The single composite liner is comprised of an HDPE

geomembrane liner and an underlying geosynthetic clay liner. Leachate collected from Cell 2A and 3A is directed to a leachate collection system manhole located in the southwest corner of the cell. From this manhole the leachate is conveyed to an external manhole and gravity drain which also connects the Purge Well System to the municipal sanitary sewer along Edgehill Drive.

The future leachate collection system for Cells 2B and 3B will be independent to those of Cell 2A and 3A, and will connect separately to the external manhole through a new proposed gravity drain along the western landfill perimeter road.

Purge Well System

The Purge Well System was commissioned in October 2007 and allows gravity drainage sewers from the purge wells to the municipal sewer system along Edgehill Drive. The first purge well was installed in late 2004, whereas the second and third purge wells were installed in late 2005. The conveyance piping (gravity drain) between the southern edge of Cell 3A and Edgehill Drive was installed in December 2006.

Stormwater Management System

Surface water runoff from the BEC is directed into the stormwater pond located in the southeast part of the operations compound. The stormwater management system is operated under ECA No. 4703-4Y5J4D.

Two catch basins constructed within the paved compost pad receive some of the runoff. These catch basins are equipped with overflow pipes which also discharge to the ditch to the east of the pad. This ditch conveys storm flow to the site stormwater pond located within the BEC.

Groundwater Collection Gallery

A Groundwater Collection Gallery (Gallery) and an associated Toe Drain are located east and south-east of Cell 1. These systems were installed during the summer/fall of 2002 to intercept leachate-contaminated groundwater migrating in a south-east direction towards Dyment's Creek (CH2M Hill and Golder Associates, 2002). The systems replaced an older Gallery that had operated since 1977. Gallery Flow is monitored at a Parshall Flume at GC1. Barrie has a contractor clean the flume at GC1 on a weekly basis.

The Gallery consists of a nominal 200 mm to 300 mm diameter HDPE drainpipe within a granular filled trench. The depth of the trench ranges from about 2.5 m to 5.0 m below ground surface. The Gallery extends in an approximately north-south direction (immediately west of Dyment's Creek) over a total distance of about 450 m and has seven manhole access points (i.e. GCMH-1 through GCMH-7). The invert elevation of the perforated pipe is, at a minimum, 0.5 m below the invert elevation of the adjacent creek. The terminus of the Gallery is connected to a sanitary sewer leading to Edgehill Drive.

The Toe Drain is located along the toe of the natural slope immediately west of the Gallery and intercepts leachate impacted seepage along the toe of the slope, which would otherwise flow overland to Dyment's Creek. It has a total length of about 160 m, has three access manholes (i.e. TDMH-1 through TDMH-3) and consists of a nominal 300 mm diameter perforated HDPE drainpipe within a granular filled trench. The depth of the trench ranges from about 1.5 m to 2.5 m below ground surface. The Toe Drain connects to the Gallery at GCMH2.

Barrie retained a contractor (Terrasan Environmental Inc.) to construct the replacement section at the Gallery as recommended following an assessment completed in 2008. The work commenced in November 2009 to replace approximately 230 m of the Gallery between manholes MHGC-4 and MHGC-7. The objective was to replace

sections of the Gallery which were identified to be partially clogged resulting in reduced performance. To enable the replacement of this Gallery, dewatering operations were undertaken to collect landfill impacted groundwater while this section of the system was out of commission. Dewatering operations commenced on November 28, 2009 and was completed on January 8, 2010.

2.6 Public Promotion and Education

Public Promotion and Education (P&E) is a critical component of a waste management system, and plays an important role in increasing participation in waste diversion programs as well as increasing overall diversion rates. Current P&E tools used by Barrie include: display units, flyers, posters, magnets, radio and newspaper advertisements, online tools such as Barrie's municipal website and Facebook, as well as specialty give-away items.

Barrie also publishes an annual calendar which includes information on collection days, types of material accepted in each waste program, public drop-off, public space recycling, and waste reduction awareness events (e.g., composting awareness week in May). Barrie's waste management staff also provide education to students and summer camp groups at the BEC Environmental Education Centre. City staff participate in a number of outreach events such as Celebrate Barrie, Ecofest, Waste Reduction Week, and Canvas Bag Give-aways at the Farmer's Market, Home Show and other festivals. During the summer months, many day camps visit the Education Centre on a weekly basis to participate in presentations and children's activities dealing with waste reduction.

Other P&E programs undertaken by Barrie include the 'spring into clean' event which consists of a student participation day, corporate challenge, community clean-up and waterfront cleaning day. The purpose of this program is to encourage residents to remove litter generated in their community and concurrently raise awareness. Barrie also carries out a truckload composter and rain barrel sale at two locations in the City each May.

3.0 WIND TURBINE ASSESSMENT

In 2010, the City of Barrie was approached by the Barrie Windcatchers, a private organization that is proposing the development of a two megawatt (MW) wind turbine at the BEC. As a supplemental study to the SWMS, Barrie requested that Golder Associates Ltd. (Golder) evaluate the potential impacts that the construction and operation of the wind turbine may have on current and future waste management, as well as other operations undertaken at the BEC. The evaluation included the following factors: anticipated noise impacts; ice throw and ice shed; visual impact; potential impact of wind turbine on current and future BEC operations; as well as public feedback.

The site proposed for the wind turbine is located approximately 50 metres south of the public drop-off area of the BEC. Approximately seven staff members work at the drop-off area and an average of 225 residents access the location daily. Additional staff members work in offices at the BEC located approximately 320 m from the proposed wind tower, and at locations throughout the BEC.

The predicted noise levels from the assumed turbine (Enercon E-82) are below the noise exposure level limits specified in the Regulation for Industrial Establishments (Regulation 851) under the *Occupational Health and Safety Act*.

Studies have shown that when the wind turbine blades are stationary, ice will fall within 50 metres of the windmills and, while turning, ice could be thrown up to 300 metres.

The wind turbine will be visible from the four viewpoint/receptor locations due to their close proximity. As well, additional locations within the 5 km coverage from the project centre will have visible lines of sight to the wind turbine.

There are a number of setback requirements from the proposed wind turbine that would affect current and future use of the landfill property. The requirement that a setback of 10 metres plus the length of the blades of the wind turbine from any road allowance means that any roads within 51 metres of the turbine would need to be re-located. If deemed to be a "receptor", the Environmental Education Centre is located within the 550 metre required setback. The development of the turbine would mean that this building would need to be closed and, if possible, relocated to another area on the site. In the absence of a full risk assessment for the proposed wind turbine, it is anticipated that a minimum of 100 metres around the wind turbine would be sterilized for access by the public and staff, or any travel or parking of vehicles.

The development of the wind turbine in the proposed area could mean that the City would likely need to develop new Greenfield sites for any proposed future operations. The cost of developing these facilities on a Greenfield site is difficult to estimate, given the variable nature of the possible operations, so it can be estimated that land acquisition, planning and approvals costs would be on the order of $250,000 or more.

During the public consultation activities conducted as part of the SWMS, residents expressed both support and opposition for the proposed wind turbine project. Overall, community members identified that they would like to learn more about all provided topics of the potential wind turbine development. The most frequent responses indicated that potential human health impacts were of concern, followed by the effect of the turbine on waste management operations and wind turbine details.

4.0 CURRENT WASTE MANAGEMENT SYSTEM PERFORMANCE

Waste generated in Barrie comes from three sectors:

- Residential (single family and multi-residential households);
- IC&I establishments; and
- C&D activities.

Although waste collection services are available to all IC&I establishments in Barrie, IC&I waste (including C&D waste generated by IC&I establishments) is primarily collected by private contractors or direct hauled by IC&I establishments to a waste management site. This is due to the quantity limitations imposed by Barrie's IC&I collection program and the cost that would be incurred by the City if they were to provide collection services for all IC&I waste. In 2009, an estimated 1,250 IC&I units, including approximately 400 units in Barrie's CBD, were serviced under Barrie's collection contract. The proportion that this represents of the total number of IC&I units in Barrie cannot be determined.

The following section evaluates the quantity and composition of waste currently managed by Barrie, and includes an evaluation of the success of Barrie's waste diversion efforts. While a portion of the IC&I and C&D waste generated is received at the BEC, it is estimated that the majority is hauled to other privately operated waste management sites located either within or outside of Barrie's municipal boundaries. The quantity of IC&I

and C&D waste managed outside of Barrie's waste management system is not available and therefore, cannot be included within the following discussion.

4.1 Residential System Performance

The Municipal Datacall is a statistical waste generation reporting process functioning under the authority of WDO. Through the mandatory annual reporting process, information on residential material disposed and diverted by Ontario municipalities is compiled and reported. Unless otherwise indicated, the following data is based on records for the year 2010, which is the most current Municipal Datacall reporting period that has been verified through the WDO.

4.1.1 Residential Waste Generation

According to Barrie's 2010 WDO Municipal Datacall, a total of 55,578 tonnes of residential waste was generated in Barrie in 2010. This quantity includes:

- 41,264 tonnes of residential waste collected in the municipal waste collection system;
- 10,521 tonnes of waste delivered to the BEC; and
- 3,925 tonnes of waste managed directly by residents through programs such as backyard composting, re-use and the Liquor Control Board of Ontario (LCBO) bottle return program.

As shown in Figure 4, the amount of waste being managed directly by residents or dropped off at the BEC is relatively small compared to the quantity of waste being collected from the curbside.

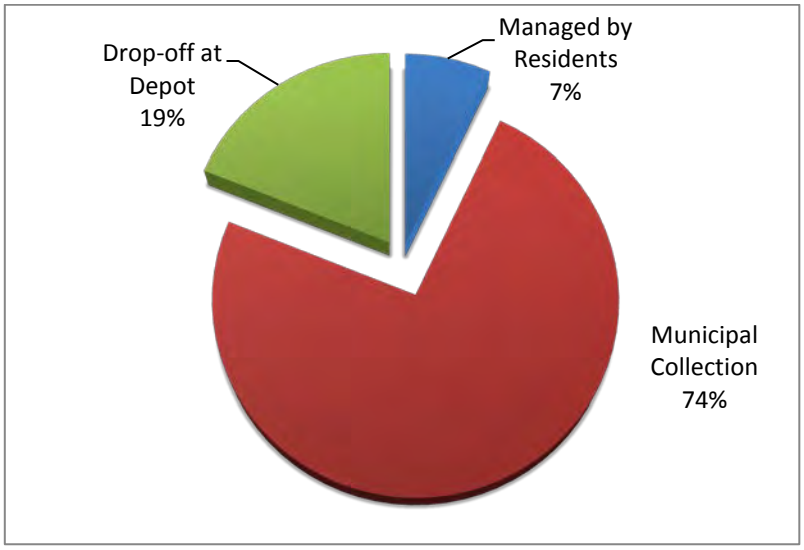


Figure 4: Proportional Management of Waste by Barrie's Waste Management System (2010)

Of the 41,264 tonnes of residential waste collected in the regular municipal collection system in 2010:

- 12,887 tonnes consisted of Blue Box recyclables;
- 2,941 tonnes consisted of SSO waste;

- 5,652 tonnes consisted of leaf of yard waste; and
- 19,784 tonnes consisted of garbage.

The relative proportion (by weight) of waste collected at the curbside is shown in Figure 5**.**

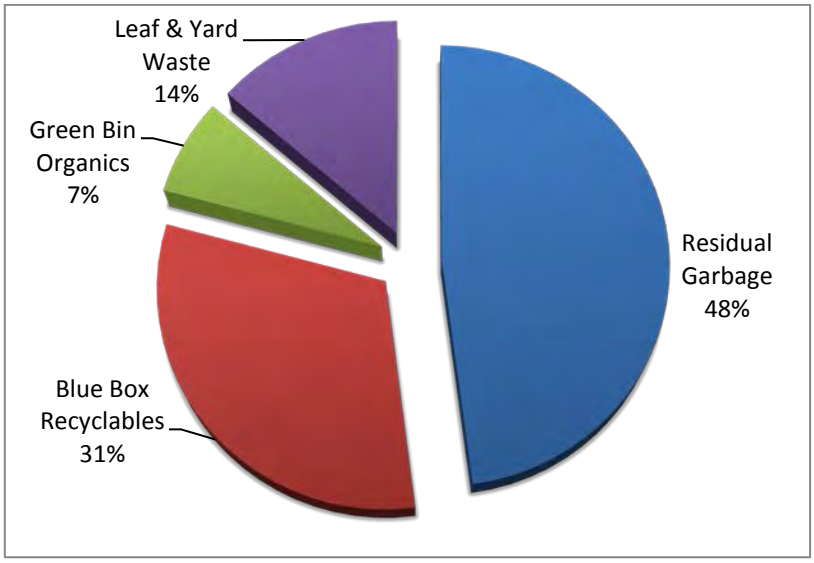


Figure 5: Contribution of Curbside Residential Waste (2010)

The relative proportion (by weight) of household collection quantities between 2006 and 2010 is summarized in Table 11. In 2010, the total quantity of waste collected for diversion exceeded the quantity of waste collected for disposal (i.e. 21,480 tonnes for diversion as compared to 19,784 tonnes for disposal).

Table 11: Residential Curbside Collection Quantities (2006-2010)

	Annual Tonnes Collected				
	2006	**2007**	**2008**	**2009**	**2010**
Garbage	20,659	23,858	23,232	17,918	19,784
Blue Box Recyclables	13,289	14,385	14,578	12,396	12,887
SSO	2,438	2,881	2,517	2,731	2,941
Leaf and Yard Waste	5,862	4,602	5,652	6,027	5,652
Total	42,248	45,726	45,979	39,072	41,264

As shown in Figure 6, the majority (8,700 tonnes) of residential waste delivered directly to BEC by residents in 2010 consisted of mixed loads of garbage and other non-recyclable waste (e.g. C&D debris), while approximately 20% of the waste received (1821 tonnes) was recovered through available waste diversion programs (i.e. Blue Box, leaf and yard, WEEE, scrap tires, white goods, scrap metal, and MHSW).

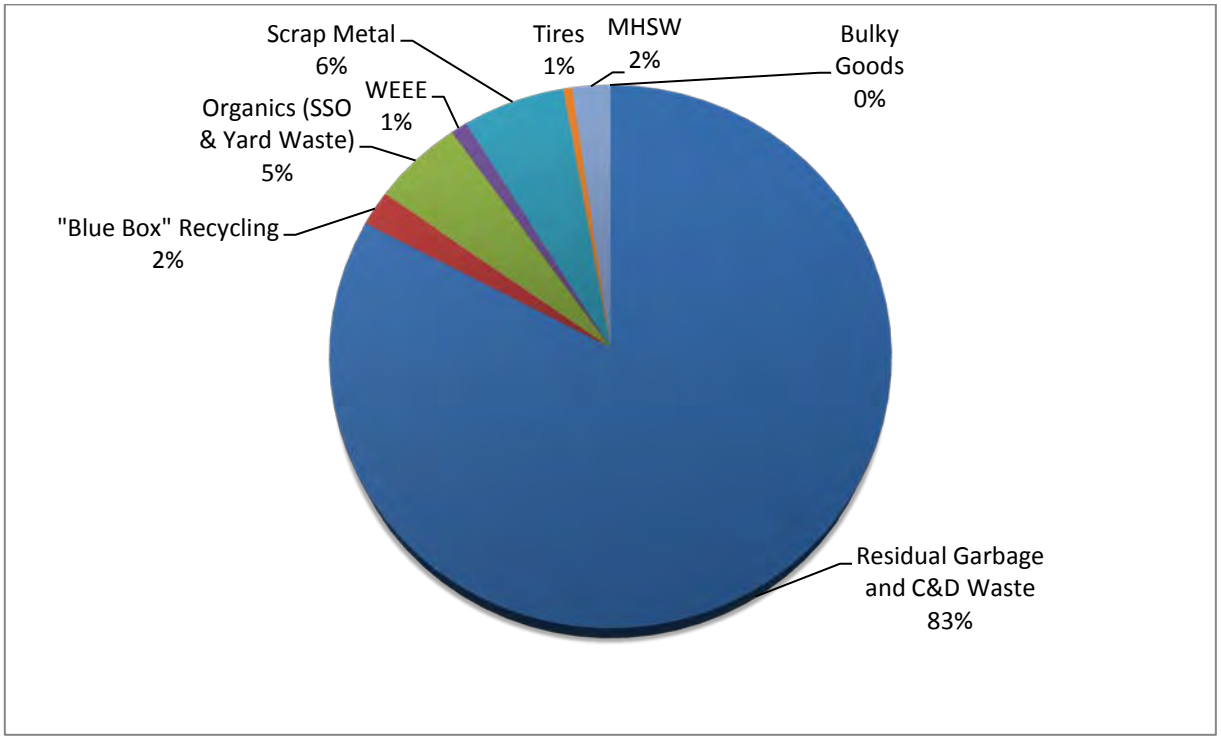


Figure 6: Composition of Residential Waste Collected at the BEC's Public Drop-off Depot/Area (2010)

4.1.2 Residential Waste Diversion

There are a number of different methodologies that can be utilized to calculate waste diversion. The most accepted methodology utilized in Ontario is the Generally Accepted Principle (GAP) analysis. GAP analysis has been adopted as a standard for municipal waste measurement reporting. The GAP analysis process was initiated in late 1999 to address a need to develop a common reporting framework that could be used by municipalities across Canada to report waste generation, diversion and disposal.

The annual Municipal Datacall carried out by the WDO compiles information on residential materials diverted and disposed by Ontario municipalities. This data can be utilized to calculate a Residential GAP analysis diversion rate for each municipality partnering in the Municipal Datacall.

The Municipal Datacall Residential GAP analysis diversion rate calculation includes:

- An allowance for provincial deposit systems based on the deposit containers returned from the residential sector (i.e. Beer Store);
- An allowance for residential on-property management through backyard composting, grasscycling and evapotranspiration resulting from the use of aerated carts for organics programs;
- Municipally operated (directly or through contracted services) recycling activities including Blue Box materials, other recyclables, MHSW and WEEE;
- Municipally operated (directly or through contracted services) centralized composting activities for household organics, leaf and yard waste; and

- Disposal of garbage, and recycling and composting processing residues through EFW and landfill.

Based on the GAP process, the waste diversion rate for Barrie in 2010 was 45%, as shown in Table 12. This is a significant increase in the waste diversion rate since 2006, when 37% of the waste generated in Barrie was diverted from landfill (Table 13). The increase in waste diversion during this period is due primarily to the implementation of the SSO waste diversion program to all single family households.

Table 12: 2010 GAP Waste Diversion Rate (Reported by Barrie)

	Managed by Residents (tonnes)	Collection (tonnes)	Drop-Off (tonnes)	Total (tonnes)
Reuse	0	N/A	N/A	0
LCBO Bottle Return	771.40	N/A	N/A	771.40
Backyard Composting	2,763.80	N/A	N/A	2763.80
Grasscycling	389.97	N/A	N/A	389.97
Blue Box Recycling	N/A	12,886.73	218.76	13,105.49
Organics (SSO & Leaf and Yard Waste)	N/A	8592.51	565.35	9,157.86
WEEE	0	0	102.18	102.18
Bulky Goods (*)	0	0	0	0
Scrap Metal	0	0	640.86	640.86
C&D Waste	0	0	0	0
Tires	0	0	55.75	55.75
MHSW (**)	0	0	237.65	237.65
Garbage	0	19,783.88	8,700.29	28,484.17
Blue Box Residue	--	--	--	786.15
Organics Residue	--	--	--	899.04
WEEE Residue	--	--	--	20.44
MHSW Residue	--	--	--	0
Total Waste Generation	3,925.17	41,263.12	10,520.84	55,709.13
Total Waste Diversion	3,925.17	21,479.24	1820.55 (**)	25,519.33 (**)
Waste Diversion Rate	100%	52% (*)	17% (**)	45% (**)

(*) Reflects pre-processing tonnage and diversion rate.

(**) Reflects post-processing tonnage and diversion rate; residue removed from Blue Box and organics diversion programs for landfill disposal.

Table 13: Annual Waste Generation, Diversion and Disposal and Waste Diversion Rates (2006 – 2010)

	2006 (Tonnes)	2007 (Tonnes)	2008 (Tonnes)	2009 (Tonnes)	2010 (Tonnes)
No. of Households	37,708	39,217	40,785	44,306	44, 306
Waste Generation	69,938	58,476	61,426	54,163	55, 578
Waste Diversion	25,793	24,645	26,815	25,531	25, 213
Waste Disposal	44,144	33,830	34,611	28,632	30, 365
Diversion Rate (%)	**37 %**	**42 %**	**44 %**	**47 %**	**45%**

Source: WDO GAP Diversion Rate 2006 - 2010.

The WDO website publishes the GAP waste diversion rates for all Ontario municipalities, calculated based on the audited Municipal Datacall information submitted annually. By comparison, the overall GAP waste diversion rate for all municipalities across Ontario was approximately 29% in 2010. The average GAP waste diversion for the medium Urban Municipal Grouping that includes Barrie was approximately 37.5% in 2010. Barrie has the second highest diversion rate reported in 2010 for its municipal grouping at 45.4%; which is just behind Peterborough at 50.3% diversion.

Table 14 shows the GAP waste diversion rate for other Medium Urban municipalities, including their respective waste generation, diversion and disposal tonnages.

Table 14: Gap Waste Diversion Rate for 'Medium Urban' Municipalities in Ontario

Municipality	GAP Waste Diversion Rate (2010)	Total Residential Waste Generated (Tonnes)	Total Residential Waste Diverted (Tonnes)	Total Residential Waste Disposed (Tonnes)
Peterborough, City of	50.33 %	34,501	17,364	17,137
Barrie, City of	**45.37 %**	**55,578**	**25,213**	**30,365**
Guelph, City of	44.51 %	42,903	19,094	23,809
Sault Ste. Marie, City of	33.50 %	33,887	11,352	22,535
Sarnia, City of	35.17 %	28,824	10,137	18,687
Brantford, City of	30.98 %	45,256	14,020	31,236
Thunder Bay, City of	22.90 %	48,331	11,067	37,264

Source: WDO 2010 Municipal Datacall

4.1.3 Residential Per Capita and Per Household Waste Generation and Diversion Rates

Per capita or per household waste generation rates are often credited to be a more inclusive indicator of waste management performance, as they reflect both population fluctuation and waste reduction efforts. According to the WDO Municipal Datacall, total per capita waste generation in Barrie decreased slightly between 2006 and 2010, from 437 kg/capita to 395 kg/capita, or 1,551 kg/household to 1,024 kg/household, respectively. Per capita and per household waste generation, diversion and disposal rates are shown in Table 15.

Table 15: Per Capita and Per Household Waste Generation Rates (2006 – 2010)

	2006		2007		2008		2009		2010	
	kg /capita	kg /Hhld	kg /capita	kg /Hhld	kg /capita	kg /Hhld	kg /capita	kg /Hhld	kg /capita	kg /Hhld
Waste Generation	437	1,551	427	1,481	451	1,481	399	1,222	395	1,024
Waste Diversion	198	702	181	628	200	657	188	576	179	463
Waste Disposal	239	849	246	853	251	824	211	646	217	561

Source: WDO GAP Diversion Rate 2006 - 2010.

Statistics Canada reports national waste generation, diversion and disposal data every two years. As outlined in the Statistics Canada Waste Management Industry Survey Business and Government Sectors 2008 (2010) residential waste generation in Canada was approximately 387 kg/capita in 2008. Refer to Table 16.

Table 16: National Residential Per Capita Waste Generation Rates

Year	Disposal (kg/capita)	Diversion (kg/capita)	Generation (kg/capita)	Waste Diversion Rate
1998	233	77	316	25%
2000	295	70	365	19%
2002	302	89	391	23%
2004	275	105	379	27%
2006	283	115	398	29%
2008	256	131	387	34%

Source: Statistics Canada *Waste Management Industry Survey Business and Government Sectors*, 2000, 2003, 2007, and 2008

The 2010 residential waste generation rate in Barrie was 395 kg/capita, which is just slightly higher than the National residential waste generation rate of 387 kg/capita. However, the quantity of waste diverted per capita in Barrie was higher than the National average (188 kg/capita for Barrie compared to the national average of approximately 131 kg/capita), while the quantity of waste disposed per capita in Barrie was lower than the 2008 national average (211 kg/capita for Barrie compared to the national average of approximately 256 kg/capita).

4.1.4 Residential Waste Reduction and Reuse

While the GAP waste diversion rate calculation includes many factors, it does not take into account waste reduction, which is the first and most important “R” in the 3R’s hierarchy. This can be attributed to the degree of difficulty in accurate measurement. Although a decrease in total waste generation following the implementation of a waste management strategy can be an indication of waste reduction, economic and social factors may also be at play.

Considerable effort has taken place in the past years to promote waste reduction, particularly in the area of light-weighting and downsizing packaging. Increased fuel costs have promoted a decrease in the bulk and weight of packaging. Packaging reduction initiatives have been made possible by concentrating the product (e.g. laundry detergent) in smaller containers, light-weighting the containers, and shifting from metal and glass containers to lighter weight plastic (e.g. pop, food and liquor bottles). Although this reduces the weight of the overall waste being generated, it means that the weight of materials collected for recycling decreases in a greater proportion to the general waste stream. Municipalities essentially need to collect more recyclables in order to recover the same amount of weight.

Barrie also promotes a number of “at home” initiatives that encourage waste reduction. These include the promotion of:

- Discouraging the use of plastic bags through hosting Canvas Bag Giveaway Events
- charitable organizations (e.g. Goodwill, Salvation Army and the Canadian Diabetes Association) for the donation of lightly used clothing, house wares and sporting goods;

- charitable organizations (e.g. Habitat for Humanity) for the donation of reusable construction and renovation materials; and
- the use of reusable bags and bottles.

In calculating a true waste diversion rate in Barrie, it is important that these waste reduction factors be taken into account in a manner that is measurable and traceable. Barrie's per capita waste generation rate decreased between 2006 and 2010 from 437 kg/capita to 395 kg/capita, respectively. This equates to a 42 kg/capita decrease in waste generation. As such, it is estimated that an additional 2-4% of diversion is realized as a result of the impact of waste reduction efforts within Barrie. In other words, the baseline waste diversion rate for Barrie increases between 47% and 49% for 2010.

4.1.5 Residential Program Participation

In 2010, a study was undertaken by Barrie to evaluate participation rates in residential waste diversion/collection programs (i.e. SSO, Blue Box and garbage). On average, fifty residential homes were surveyed per collection area during the one week duration of the study. In total, 252 households were surveyed.

Overall, participation in the SSO program (i.e. green bin) was significantly lower than the other residential diversion/collection programs. Of the households surveyed, participation in Blue Box and garbage collection programs was approximately 80%, while participation in the SSO program measured only 36%.

4.1.6 Residential Program Capture

It is generally unrealistic to expect 100% capture of all recyclable and compostable materials by municipal waste diversion programs. Moreover, contamination within a waste diversion stream is also not uncommon. Assessing the capture rates and residual rates for available waste diversion programs allows municipalities to determine where system challenges may exist.

Capture and residual rates can be evaluated based on the results of waste composition studies (also referred to as waste audits). Waste composition data for Barrie was compiled based on the results of waste audits carried out by Barrie in 2010 on curbside residential Blue Box recyclables (paper fibre and co-mingled container streams) and curbside residential garbage. Both waste audit programs (i.e. Blue Box recyclables and garbage) were conducted by Barrie's collection service contractor as per contract agreements under the direction and supervision of Barrie staff.

Based on the waste audit data for the curbside residential garbage stream, only 57% of the material found in the residential garbage sample required landfill disposal. Approximately 8% of the material observed in the garbage sample was acceptable to be diverted for recycling in Barrie's Blue Box recyclables program, while approximately 34% consisted of SSO material acceptable for composting.

In the absence of further analysis of the composition of the non-recoverable material properly placed in the garbage stream for landfill disposal, it is not possible to assess potential opportunities for new waste diversion programs. However, similar studies carried out for other municipalities in Ontario have indicated a high proportion (by weight) of pet waste and other plastics, including plastic film, expanded foam polystyrene, thermoform plastics and multi-composite plastic items, remaining in the garbage stream.

4.2 Materials Managed at the BEC

As discussed in previous sections, a variety of materials are managed at the BEC, either through disposal or diversion activities. Residents and IC&I establishments can access the BEC to drop off waste and recyclables. In addition, garbage and leaf and yard waste that is collected through Barrie's collection program is delivered to the BEC for disposal and composting, respectively. The following data is based on quantity information for the BEC tracked by the computerized Geoware™ system.

4.2.1 Waste Disposal Quantities

In 2010, approximately 36,000 tonnes of waste was disposed of at the Barrie Landfill. As shown in Figure 7, the majority of this waste was from the curbside collection program. Additional sources of waste brought for disposal at the site included:

- Residents bringing waste in for drop-off;
- Waste from the multi-residential sector delivered through the tipping fee exemption program;
- Sand, soil and grit;
- Waste delivered by the IC&I sector, including C&D waste and asbestos; and
- Waste delivered from municipal departments (i.e. Building Services, Violations, illegal dumping, Wastewater, Roads and Parks Branch).

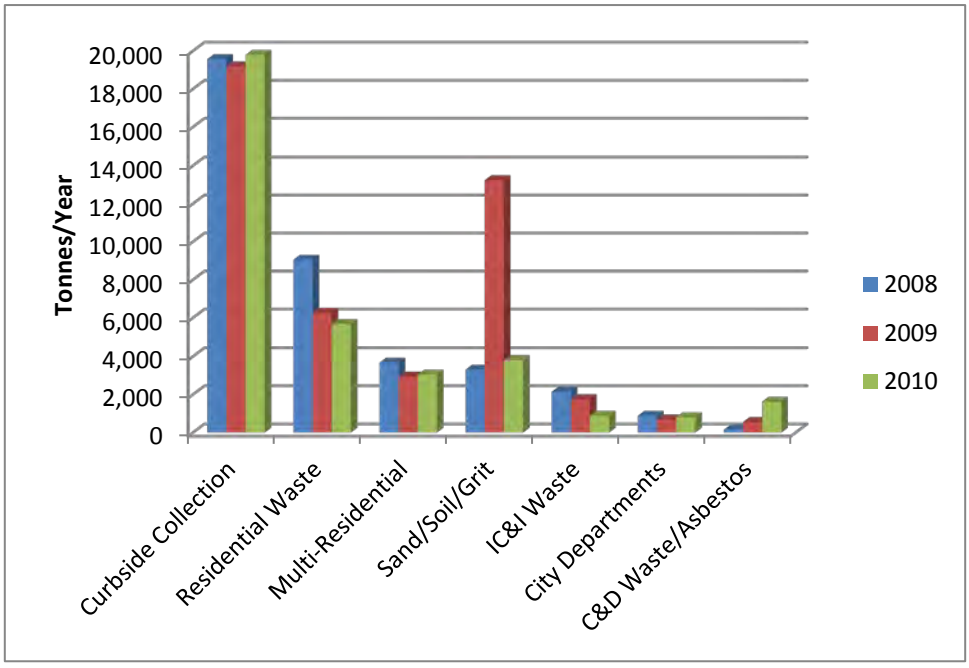


Figure 7: Wastes Disposed at the BEC

As shown in Figure 8, in 2009 and 2010, an average of 1000-1700 loads of garbage were accepted for disposal at the landfill each week. Based on the number of loads of garbage accepted, the majority of this was from the residential sector. In 2009, almost 80,000 loads of residential garbage were brought into the landfill, which

exceeds the number of households in Barrie. These small loads of residential waste contribute to the long lineups and queues at the site.

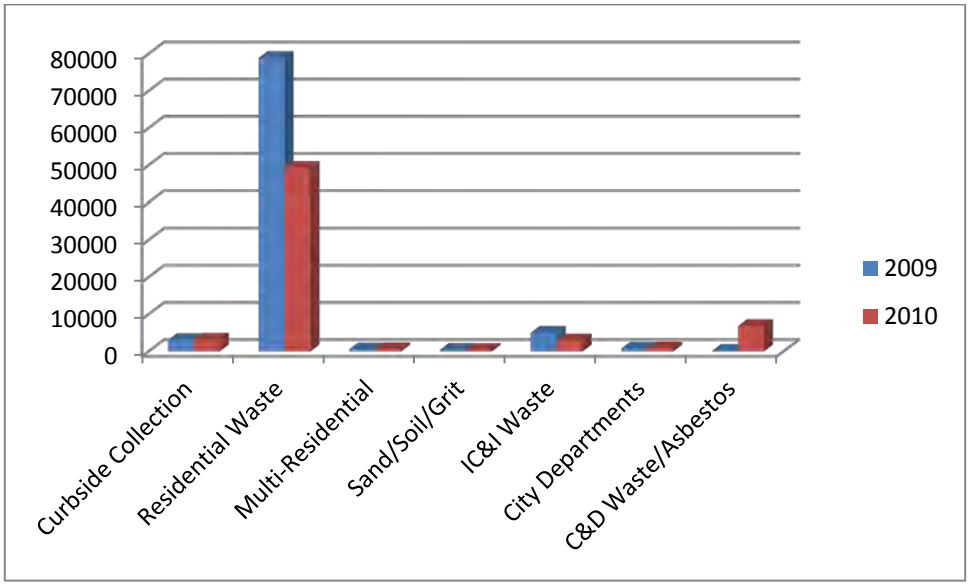


Figure 8: Number of Loads of Garbage Brought to the BEC

4.2.2 Waste Diversion Quantities

As indicated in Section 2.5, the BEC also accepts materials for diversion. As indicated in Figure 9, the majority of this material is leaf and yard waste collected in the municipal collection program. In 2010, the following quantity of material brought to the BEC was diverted from the landfill:

- 6,837 tonnes of leaves, yard waste and brush (includes curbside collected leaf and yard waste);
- 373 tonnes of scrap metal;
- 221 tonnes of corrugated cardboard;
- 133 tonnes of WEEE;
- 53 tonnes of scrap tires; and
- 170 tonnes of MHSW.

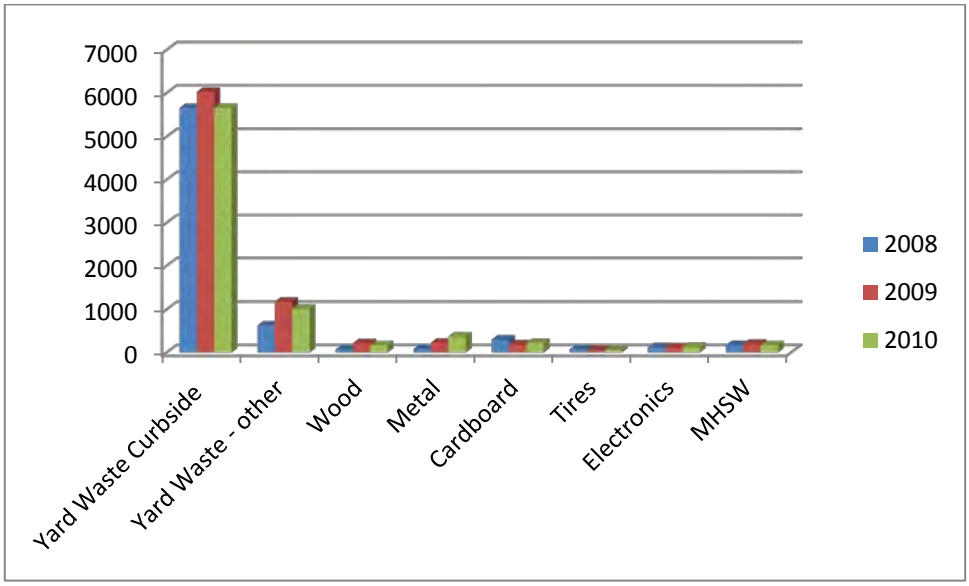


Figure 9: Wastes Diverted at the BEC

5.0 CURRENT WASTE MANAGEMENT SYSTEM COSTS

5.1 Overall System Costs and Revenues

In 2011, the budget for Barrie's municipal waste management system was $8.4 million. These costs were incurred for the delivery of a number of programs, including waste collection, diversion and disposal, as well as environmental investigations. In order to fund the delivery of these programs, Barrie receives revenue from a number of sources, including:

- Bag tag sales;
- Product stewardship fees; and
- Tipping fees charged at the landfill.

As outlined in Table 17, when these revenues are taken into account, the net cost to deliver the waste management programs was approximately $6.4 million.

Table 17: Waste Management Budget (2011)

Program	Activities	Annual Budget		
		Expenditures	Revenue	Net Costs
Environmental Investigation	Salaries, consulting costs and related expenses for overseeing environmental compliance	$180,000	-	$180,000
Environmental Operations	Salaries, consulting costs and related expenses for overseeing waste management programs	$1,517,900	-	$1,517,900 (*)
Waste Collections	Collection of waste from residents, multi-family and CBD	$1,622,200	$285,800 (bag tags)	$1,336,400
Waste	Collection and processing of Blue	$1,863,800	$650,000	$1,213,800

Program	Activities	Annual Budget		
Reduction	Box recyclables, WEEE, scrap tires, cost of Blue Boxes, carts, related P&E		(stewardship fees)	
SSO Composting	Collection and processing of SSO, related P&E	$826,800	-	$826,800
Leaf and Yard Waste	Collection of leaf and yard waste and contracts to grind and screen material	$394,600	-	$394,600
MHSW	Contracts to collect, pack, transport and manage MHSW	$370,800	$250,000 (stewardship fees)	$120,800
Waste Disposal	Landfill Site operations, consultants, scale house, landfill gas collection	$1,689,000	$900,000 (tipping fees)	$789,000 (**)
Total		$8,465,100	$2,085,800	$6,379,300

(*) Excludes one-time contribution from reserve.

(**) Includes GL Account Numbers 01-18-2720-000, 01-18-2725-000, 01-18-2726-000, and 01-18-2730-000.

As indicated in Figure 10, the majority (75%) of the costs to deliver waste management programs within Barrie are from property taxes, with some revenue from the sale of bag tags (3%), tipping fees (11%), and product stewardship programs (11%).

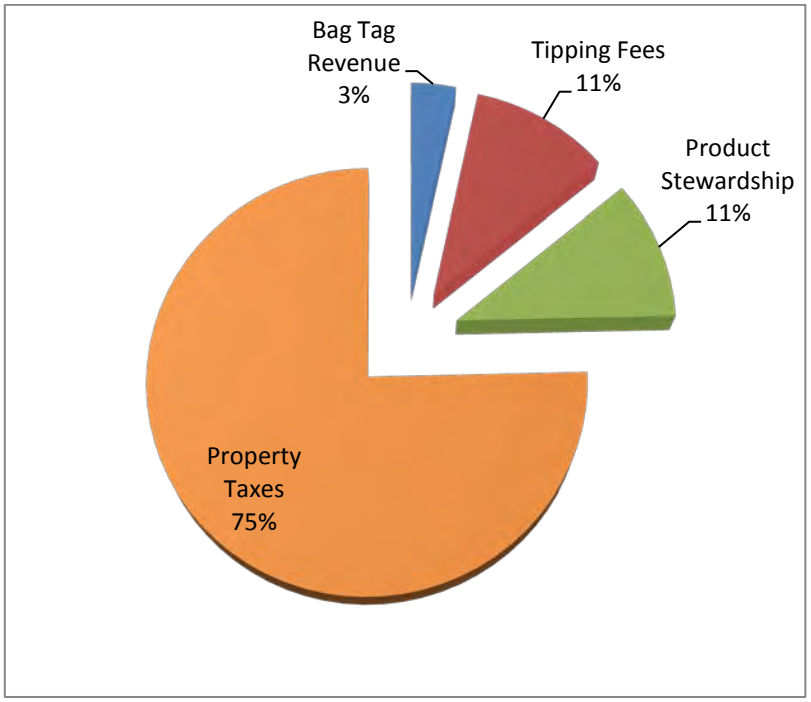


Figure 10: Sources of Revenue to Fund Current Waste System

As indicated in Figure 11, the total gross cost for waste services is $158.50 per household, and net cost is $119.44 per household.

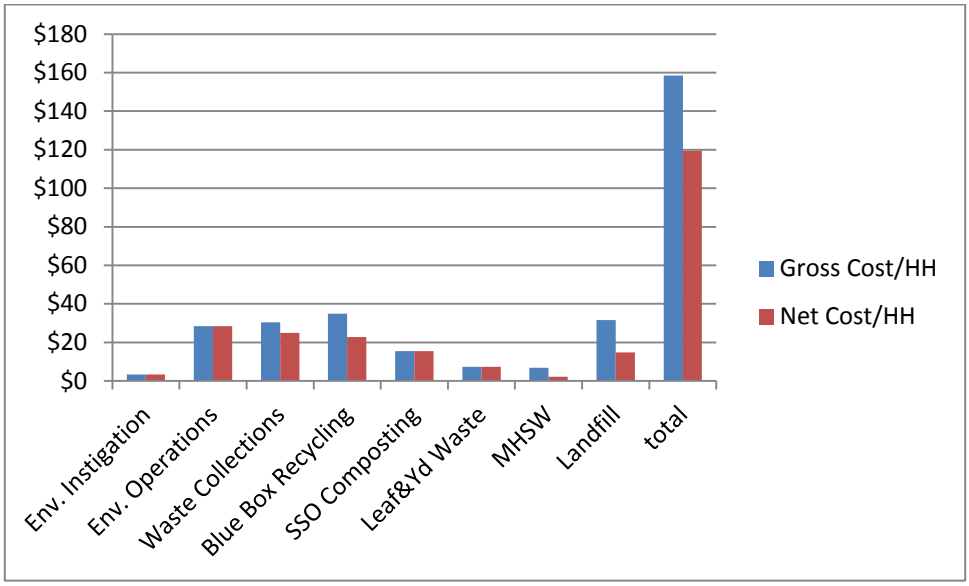


Figure 11: Cost per Household for Waste Services

5.2 Blue Box Recycling Costs

As outlined in Section 2.3, Barrie contracts for the collection and processing of Blue Box materials.

The WDO tracks the financial performance of Ontario municipalities by municipal grouping. As outlined in Section 4.1.2, Barrie is included in the Medium Urban municipal grouping. The audited gross and net costs incurred by the municipalities in this grouping for the collection and processing of Blue Box recyclables are shown in Table 18. The net costs factor in any revenue received for the sale of the recyclable material marketed. Barrie's recycling contract stipulates that the contractor retains the revenue realized for the material sold, and therefore Barrie does not show any revenue for the material that is marketed. It is important to note however, that revenue is received by the contractor for this material, which then offsets the fees that they charge to collect and process the material. As shown, Barrie's net cost of $141.43 per tonne compares favourably with the average cost for the municipal grouping of $205.24 per tonne.

Table 18: Blue Box Recycling Costs for Medium Urban Municipalities (2010)

Municipality	Tonnes Marketed	Gross Cost Per Tonne [1]	Revenue Per Tonne	Net Cost Per Tonne Marketed
Barrie	12,111	$141.43	$0.00	$141.43
Brantford	6,397	$361.45	$144.31	$217.14
Guelph	7,485	$589.34	$109.97	$479.36
Peterborough	7,976	$278.96	$131.95	$147.01
Sarnia	3,868	$266.04	$155.70	$110.34
Sault Ste. Marie	5,770	$226.32	$40.91	$185.41
Thunder Bay	6,028	$137.31	$0.01	$137.30
Average	**--**	**$278.51**	**$83.26**	**$205.24**

[1] Includes Interest on municipal capital

Barrie receives funding for the Blue Box recycling program through the BBPP. The BBPP was the first provincial waste diversion program established under the WDA, and received approval from the Ontario Minster of the Environment in December, 2003. Subsequently, the province's first IFO, Stewardship Ontario, was formed. As originally requested by the Minster of the Environment, the BBPP requires that all companies that introduce packaging and printed paper into the Ontario consumer marketplace share in the funding of 50% of Ontario's municipal Blue Box waste diversion programs.

In October 2008, with growth of the program and the emergence of growing challenges across the industry, a review of the BBPP was requested. Revisions to the original program plan aimed at boosting the recycling rate were requested by the Minister of the Environment in August 2009. After extensive consultation with stakeholders, a new revised draft was presented to the board of directors of Stewardship Ontario and subsequently the Board of Directors of WDO. The final revised program plan was submitted to the Minister of the Environment for review in April 2010; however, no further actions have been taken since then regarding this initiative.

5.3 Landfill Costs

A tipping fee (or gate fee) is a charge levied upon a given quantity of waste received at a waste processing facility. In the case of a landfill, it is generally levied to offset the cost of opening, maintaining and eventually closing the landfill site. It may also be used as a means of encouraging certain behaviours, such as waste reduction and recycling. Tipping fees can be charged based on weight, volume, or per visit. A tipping fee that is based on either weight or volume is preferred because it promotes waste reduction and diversion of materials.

All vehicles using the BEC in Barrie are subject to waste disposal charges (i.e. tipping fees). Tipping fees are applied on a weight basis. Applicable tipping fees and other applicable rates are provided in Table 19.

Table 19: BEC Tipping Fees

Description	Tipping Fees / Other Rates
Solid Waste - Basic Rate	**$125.00/tonne** (loads > 100kg) $10.00 minimum charge for loads < 100 kg Maximum 1 free load up to 100 kg/residence/year
Residential Leaf and Yard Waste (2)	No Charge for loads > 100kg **$58.00/tonne** for remainder of weight over 100kg
Commercial Garbage Rate	**$125.00/tonne** (loads > 100kg) $10.00 minimum charge for loads < 100 kg
Commercial Brush and Yard Waste	**$58.00/tonne** (loads > 100kg) $6.00 minimum charge for loads < 100 kg
Hard to Handle Solid Waste and Mixed Loads *(i.e. asbestos, spill cleanup materials)*	**$240.00/tonne**
Sweepings, Grit, Sand (Municipal operations only) (1)	No charge
Blue/Grey Box Materials (2)	No charge
Cardboard (2)	No charge
Tires **off** the rim	No charge
Tires < 17" **on** the rim	**$8.00**
Tires 17" < 19" **on** the rim	**$12.00**

Description	Tipping Fees / Other Rates
Tires >19" **on** the rim	**$34.00**
Waste Electronics	No charge

(1) Typically, between 11% and 30% of the material disposed of in the landfill each year consists of catch basin grit, ditching material and street sweepings brought into the site from City Operations.
(2) Sorting requirements for recyclables are the same at the landfill as they are for curbside collection. Recyclables and leaf and yard waste must be separated from mixed loads of garbage to qualify for No Charge consideration.

A survey of weight-based tipping fees being charged at municipal landfill sites in Southern Ontario is summarized in Table 20. As shown, there is a wide range of rates and fees schedules amongst these municipalities ($20 - $230 per tonne). As indicated in Table 20, Barrie falls at the higher end of the cost spectrum with respect to tipping fees charged at municipal landfill sites in Southern Ontario.

Private waste transfer stations located both within and outside of Barrie offer an alternative, often less expensive, waste disposal/diversion option for Barrie's residents and IC&I establishments. For example, Barrie Recycling and Waste Inc., located in close proximity to the BEC, accepts mixed garbage, roofing materials and scrap wood with tipping fees ranging from $80 to $88 / tonne.

Table 20: Non-Hazardous Waste Tipping Fees Being Charged at Landfill Sites in Ontario (By Weight) in 2010

Municipality	Tipping Fee(s)
Barrie(*)	FREE – first load up to 100 kg $10/load – loads under 100 kg **$122/tonne – loads 100kg and over**
Brantford(8)	$5/load– loads 150 kg or less **$65/tonne – loads 150 kg and over**
Guelph(*)	Transfer station only (no municipal landfill) $2/bag or equivalent **$70/tonne – loads 10 bags or more / 100 kg or more**
Peterborough(*)	$5/visit – loads 100 kg or less **$90/tonne – loads over 100 kg**
Sarnia(*)	No municipal landfill (Disposal contract with Waste Management) $59.71/visit – loads 500 kg or less **$85/tonne – loads over 500 kg**
Sault Ste. Marie(*)	$8/visit – loads 300 kg or less **$70/tonne – loads over 300 kg**
Thunder Bay(*)	$7/visit – loads 140 kg or less **$50.17/tonne – loads over 140 kg**
Greater Sudbury	FREE – first load up to100 kg (per week) $3/load – loads 100 kg or less* **$63/tonne – loads over 100 kg*** *after weekly exemption
Hanover (Town of)	$100/tonne – sorted waste **$160/tonne – unsorted mixed waste**
Kawartha Lakes	$3/bag for waste ; $5/item for bulky items

North Bay	$5/load – loads 6 bags or less **$20/tonne – loads over 6 bags**
Northumberland County	$2.75/bag – loads up to 5 bags **$95/tonne – loads over 100 kg**
Orillia	$115/tonne – sorted waste **$230/tonne – unsorted mixed waste**
Perth (Town of)	**$100/tonne**
Simcoe County	115$/tonne– sorted waste (min. $5/load) **$230/tonne – unsorted mixed waste (min. $10/load)**
Stratford	$2.60/bag – loads up to 5 bags **$72/tonne– loads over 5 bags** FREE – loads of recyclables, brush and yard waste less than 200 kg

(*) Municipality assigned to WDO's *Medium Urban Municipal Group*.

It is recognized that the costs of operating a landfill do not cease once the landfill has reached capacity and is closed. In addition to the ongoing operational costs associated with the landfill, it is prudent for any owner of a landfill to have in place a financial liability reserve to cover the closure and post-closure care of the landfill, as well as a contingency fund for unforeseen expenses or contingency/mitigative measures that may be required during the operational life of the landfill or the post-closure period.

The estimated waste disposal cost was calculated for the Barrie Landfill on a per tonne and a per cubic metre basis. The costs are based on the operating expenditures (i.e., OPEX costs) provided by the City for the 2011 operating year, including the following information and assumptions:

- Closure and Post-Closure Costs reflected on Table A-1, Table A-2, Table B-1 and Table C-1 found in Appendix A.
- The estimated inflation / escalation (2.5%) and discount (4%) rates are based on the City Finance Department rationale used in the 2011 Landfill Liability Calculations, as reflected on the Table B-1 in Appendix A.
- Landfill closure is estimated by the end of 2035, with a post-closure care period of 50 years (i.e., 2085). The actual date of closure will depend on the final volumes available at the end of landfill reclamation and the rate of waste fill placement from 2012 to closure.
- Leachate treatment volumes for the Purge Well and Groundwater Collection Gallery systems have not been included, since these systems are related to historical waste and landfill operations.
- The annual interest rate (2.3 %) for the amortization calculations are based on the 10 year average Bank of Canada interest rate.
- Landfilling operations will be completed by the Reclamation and Re-engineering contractor until the estimated Phase 3 completion in 2015. It is anticipated that landfilling operations shall be completed by the City's own forces from 2016 until landfill closure. Annual landfilling costs between 2016 and 2035 are based on the per tonne landfilling rate for the current Phase 2 Reclamation and Re-engineering contract, escalated annually by the inflation rate as discussed under bullet two.

The estimated cost for waste disposal at the Barrie Landfill is $135 per tonne ($101 per cubic metre), or $143 per tonne ($107 per cubic metre) if an annual provision for post closure costs is included.

6.0 THE CHANGING WASTE STREAM

Predicting the future of Barrie's waste stream is a challenging task. The waste stream is dynamic and will continue to change as policies change, new technologies are introduced, lifestyle patterns evolve and consumer demands grow.

According to a recent study completed by Kelleher Environmental (Kelleher) for the City of Toronto on the changing mix of packaging materials, we have seen a significant shift in the way people live, eat and shop (Kelleher, 2010). Over the past ten years, there has been a shift in meal patterns and expenditures resulting in fewer family dinners and more take-away and ready-to-eat meals. Additionally, the larger number of new immigrants to Canada has resulted in a wider variety of available food items in many different packaging formats. We have also seen the rise of the internet and rapid increase in internet sales which has resulted in greater amounts of product packaging. Societal and demographic trends indicate that Canadians are now living longer, households are becoming smaller and parents are having fewer children. The one-person household is also on the rise.

The Kelleher study predicts that packaging trends of the future will show the following:

- An increase in light weight and multi-material packaging;
- Material substitution with plastics replacing glass, aluminum and steel;
- More fruits and vegetables packaged in thermoform plastic; and
- An increase in plastic stand-up pouches and plastic re-sealable packaging.

These trends are largely influenced by changing lifestyles and family dynamics. For example, in the search for convenience, more take-away food is being purchased, and the sale of prepared meals (in thermoform polyethylene terephthalate (PET) plastic packaging) is increasing.

In addition to lifestyle factors having an impact on the changing waste stream, political changes and corporate pressures such as EPR and corporate social responsibility will inevitably have an impact on consumer purchasing as well as product and packaging design. We can expect to see consumers of the future demanding more transparency and accountability from producers and processors in terms of the sustainability of their products and where their waste ends up.

It is important for Barrie to understand how their waste stream might change in the future and be prepared to proactively manage these changes. The changing waste stream will have an impact on many aspects of Barrie's waste management system including:

- Collection;
- Processing (i.e. Material Recovery Facility (MRF) design);
- Material markets and revenues;
- Existing contracts; and

- Business planning.

Because the mix of materials going into the Blue Box is generally being “lightweighted”, it will be difficult to maintain high recycling rates, and MRF operators will generally need to do more sorts to process a given weight of material.

In light of a changing waste stream, it is important that Barrie’s existing waste management system be sufficiently flexible to accommodate these changes and evolve with them as necessary.

The following sections describe the reasons for changes in the waste stream and will attempt to predict future changes where possible.

6.1 Decrease in Glass

In February 2007, the Province of Ontario implemented a deposit return program for wine and spirit containers sold through the LCBO. In addition, a number of products, such as salad dressings and condiments have converted from glass packaging to plastic. This has resulted in a substantial reduction in the amount of glass managed by municipal curbside programs in Ontario.

Material substitution in the future will have plastics replacing glass in a number of different packaging markets (Kelleher, 2010). Kelleher predicts that over the next ten years, the municipalities might expect to see a reduction in glass in the Blue Box of approximately 50%.

6.2 Decrease in Newsprint

Over the past decade there has been a migration of readers and advertisers to other communication media, particularly electronic media. Publishers are cutting the size of their pages, as well as the number of pages per edition. Newspapers are also publishing fewer days per week and are looking to new publishing methods, particularly electronic versions.

As reported in the Canadian Newspaper Association (CNA)’s current annual *Circulation Data Report* (CNA, 2009), the average number of copies sold per publishing day in Canada decreased from 4,674,900 copies in 2007 to 4,295,238 in 2008, while in Ontario alone a 12.2% decrease was observed during this period. Demand for newsprint in Canada declined 21% between February 2008 and February 2009 (Bloomberg Update, 2009). Canadian newsprint production capacity has decreased by 3.7 million tonnes since 2000 (Natural Resources Canada, 2008). This trend is expected to continue as younger readers who are more likely to use electronic means to access news take over from older readership who have traditionally relied on hardcopy newspapers

The Kelleher study states that newsprint was down 15% from 2008 to 2009 for the City of Toronto and predicts that this trend continue over time, with an estimated reduction in total paper packaging of 18% over the next ten years. One source interviewed for the Kelleher study quoted the paper fibre stream as shifting from 55 % newsprint and 45 % other fibre, to 45 % newsprint and 55 % other fibre over time (Kelleher, 2010).

As the newsprint portion in the paper fibre stream decreases, it becomes harder to clean up the newsprint stream to a quality that mills find acceptable. While most of the quality challenges are blamed on the arrival of single-stream recycling systems, even two-stream systems face challenges in meeting newsprint quality standards.

6.3 Decrease in Telephone Directories

Another trend influenced by the internet is a reduction in the distribution of telephone directories. Many people find telephone numbers on the internet or via their smart phones, so use of the white and yellow pages has decreased. This has lead to the elimination of annual distribution of telephone directories in numerous municipalities. In Toronto, the elimination of these directories has resulted in a reduction of fibre in the Blue Box by over 3,000 tonnes per year.

6.4 Increase in Cardboard

According to the study completed by Kelleher for the City of Toronto, we should expect to see an increase in Old Corrugated Cardboard (OCC) over time. This is due to the increase in internet shopping leading to more delivery of products (i.e. books, clothes) to the home in cardboard boxes. In the past, such items purchased at a retail outlet might have been placed in a plastic or paper bag. In support of this prediction, MRF operators interviewed for the study noticed an increase in OCC in the Blue Box programs.

6.5 Decreased Packaging Size

Over the past several years, there has been increased consumer demand for single-serving carbonated and non-carbonated drink containers compared to larger sized multi-serving drink containers.

Packaging sizes are also decreasing for other products. As a result of pressure from retail chains that want to fit more bottles on store shelves, laundry detergent producers were pressured into packaging more-concentrated detergent into smaller containers. Procter and Gamble, who accounts for more than half of the liquid-detergent market, converted all of their liquid-detergent line to the smaller size packaging in 2007, with the rest of the industry following suit. In May 2008, Wal-Mart announced that it would only stock concentrated laundry detergent as of May 2008, with the goal of shrinking the size of detergent bottles by 50% (Wall Street Journal, 2007).

Downsizing laundry detergent packaging is beneficial to both retailers, who can stock shelves with more product, and manufacturers, who save on packaging costs. The effect on recycling processors is that the same numbers of laundry bottles are processed, yet the weight of the bottles and therefore their compensation for processing the bottle has decreased.

6.6 Thin-walling of PET Plastics

Light-weighting of Polyethylene Terephthalate (PET) bottles is considered an environmental achievement amongst North America's major beverage manufacturers. Ultra light weight water bottles decrease the demand for plastic resins, require less energy for production and generate less waste on a weight basis. PepsiCo. Inc., Coca Cola Company and Nestle, the three largest players amongst the North American beverage industry each have announced design improvements resulting in lighter PET beverage bottles for numerous brands routinely over the past several years. According to the *2007/2008 Sustainability Review* released by The Coca-Cola Company (no date), lightweighting efforts targeting the 500 ml Dasani brand bottles resulted in a 35% reduction in the use of PET in their U.S. market. In April of 2009, PepsiCo.'s Aquafina bottled water brand released the Eco-Fina Bottle™ into the market, weighing 10.9 grams (g). This change represents a 50% decrease in bottle weight for this product since 2002 (PepsiCo. Inc., March 2009). Research and design efforts reported by Nestle indicate a 17% reduction in the weight of a 1.5 litre PET bottle since 1996, from between 33g-39g to 28-33g (Nestle).

Based on a review of annual environmental performance evaluations and sustainability reports by these major beverage manufactures, lightweighting trends are expected to continue over at least the next few years as manufacturers expand the use of lighter weight bottles across their portfolio of brand names and bottle sizes. Other bottle components, such as caps, are also being focused on by packaging design engineers aiming to identify further opportunities for raw material efficiencies.

6.7 Metals

According to the Kelleher Study, the amount of metals in the waste stream is not expected to shift in the upcoming years.

6.8 Increase in Waste Electrical and Electronic Equipment

WEEE is a rapidly growing waste stream in Ontario and across Canada. The total amount of WEEE collected in Ontario between April 1, 2010 and March 31, 2011, through the OES Collection Network, was approximately 27,000 tonnes.

Although figures are not available for Canada, in the United Kingdom (UK), approximately 1 million tonnes of WEEE is produced each year and it is suggested that this figure may double over the next 15 years. WEEE is one of the fastest growing waste streams in the UK and is increasing at a rate three times that of average municipal waste growth. The increase in disposal of WEEE relates to a number of factors including the general increase in use of electronic and electrical equipment, the frequent upgrading of equipment and, in some cases, the relatively high cost of repair compared to the purchase of new equipment. Similar trends are anticipated in Canada.

In addition to taking up valuable landfill space, WEEE often contains significant amounts of heavy metals and halogenated substances which, once disposed of through landfill or incineration, may present hazards to public health and the environment. The diversion of WEEE also plays an important role in preserving our valuable resources, in particular metals and plastics.

In July 2008, the WEEE program, through the WDA, was approved in Canada. The program is funded by stewards through the OES, a not-for-profit organization formed by leading retail, information technology and consumer electronics companies. The OES collects fees from brand owners, first importers, franchisors, and assemblers who supply electrical and electronic equipment (EEE) to Ontario. Collected fees are used to operate the WEEE program.

7.0 PARTNERSHIP OPPORTUNITIES

7.1 Multi-Municipal Partnerships

According to the *Blue Box Program Enhancement and Best Practices Assessment Project* (KPMG, 2007), it is considered a fundamental Best Practice for municipalities to explore a multi-municipal approach to planning and/or providing recycling activities. This best practice approach applies not only to recycling activities, but also to waste management systems as a whole.

Multi-municipal partnerships have the potential to convey the following key benefits and outcomes to a waste management system:

- Economies of scale (i.e. economic efficiencies resulting from larger scale activities);
- Increased resident participation and satisfaction in collection and diversion programs;
- Optimized program funding (i.e. compliance with best practice standards will represent 15% of the 2011 Blue Box funding allocation, rising to 25% in 2012);
- Shared staff, time, costs, skills, and/or equipment (i.e. reduced need for management supervision, council time and attention);
- Improved supplier/contractor relations and increased bargaining power with private service providers;
- Increased capacity to adopt new and innovative technologies, methods and products;
- Material markets yielding higher revenues (i.e. markets are generally more willing to pay better prices for a larger, continuous supply of good quality market material);
- Shared risk management; and
- Shared capital requirements.

Multi-municipal partnerships are especially effective and can result in greater resident participation rates when residents commute and relocate from one community to another. An example might be the residents of Simcoe County commuting to Barrie for work. When waste management program characteristics are similar between municipalities, such as P&E and service level, it is much easier for residents to maintain their levels of participation and diversion. Cost savings can also be realized in this case through reduced re-education and collection rejections.

The *Blue Box Program Enhancement and Best Practices Assessment Project* (KPMG, 2007) also advices that municipalities interested in forming multi-municipal partnerships follow a Seven-Step Approach, as summarized in Figure 12.

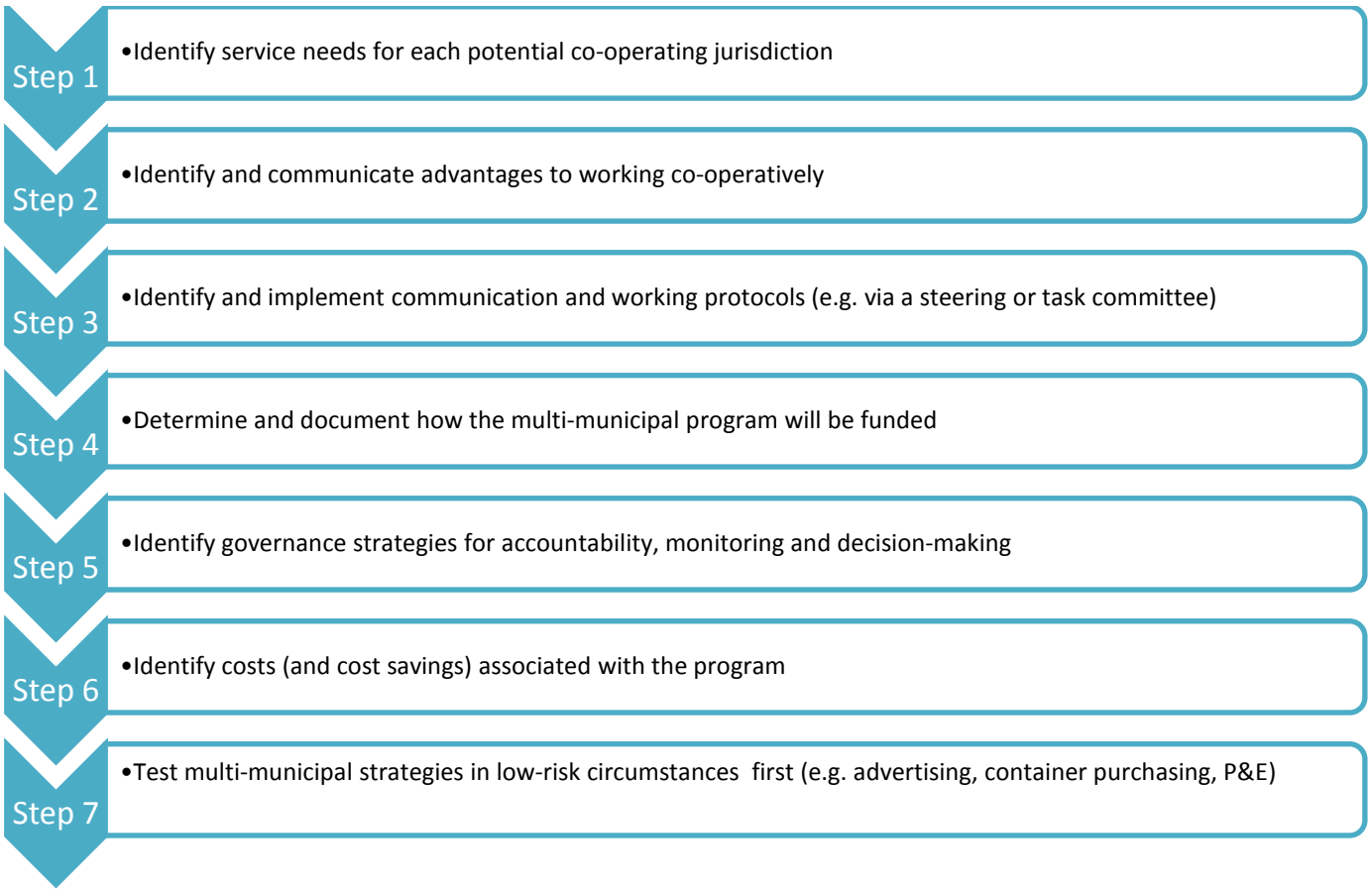


Figure 12: Seven-Step Approach to Implementing a Multi-Municipal Partnership

7.2 Intercommunity Workshop

Municipal partnerships generally work best when municipalities, within close proximity of each other, are in need of the same set of services. The Barrie Intercommunity Collaboration Initiatives Workshop, conducted on May 26, 2011 as part of SWMS consultation process, was successful in identifying several service areas that could potentially benefit from a future multi-municipal collaboration program. In attendance at the meeting were representatives from the following municipalities and First Nations groups:

- Chippewas of Georgina Island First Nation;
- Chippewas of Rama First Nation;
- City of Guelph;
- City of Hamilton;
- City of Orillia;
- City of Toronto;
- County of Simcoe;

- County of Dufferin;
- Halton Region;
- Region of Peel; and
- Region of York.

During this meeting, each municipality and First Nation representative provided a summary of their current waste management practices, including challenges and potential areas for collaboration. A summary of the potential areas for partnership is summarized below according to waste stream type.

Blue Box Recycling

- Joint-marketing of materials for revenue;
- Integrating collection and processing;
- Sharing ideas for markets, tenders, multi-residential delivery, Industrial, Commercial and Institutional (IC&I) delivery; and
- Regional standardization of materials/number of streams.

Source Separated Organics

- Long-term processing capacity identified as a challenge for many communities, joint facilities may provide a solution;
- Rural areas may be able to provide curing for digestate/compost produced from Anaerobic Digestion (AD) and composting facilities in the urban areas;
- Municipalities that have AD facilities may be able to process diapers, feminine hygiene products and pet waste from other municipalities; and
- Lobbyingfor use of compostable bags in SSO collection.

Residual Waste Management

- Lobbying for EPR programs for materials; and
- Alternatives to landfills needed in many communities, potential partnerships for joint facilities (e.g., EFW).

A complete overview of the discussion that took place at the intercommunity workshop is provided in **Appendix B.**

7.3 Public-Private Partnerships

P3s are a long-term approach for procuring public infrastructure where the private sector assumes a major share of the responsibility in terms of risk and financing for the delivery and the performance of the infrastructure, from design and structural planning, to long-term maintenance.

In Canada, as our existing public infrastructure continues to age and the requirements for replacement and new infrastructure continues to increase, governments have begun to recognize the value of engaging private-sector innovation to build more for less and help fill the infrastructure gap. In 2009, the Canadian federal government

established the $1.25-billion P3 Fund, which supports innovative projects that provide an alternative to traditional government infrastructure procurement. The Toronto Transit Commission recently indicated that it would be asking the fund for $333-million for a 25-kilometre underground line. Moncton New Brunswick is also applying for $25 million towards an entertainment centre. In fact, most advanced economies (26 European countries and significant number of Asian countries) are also increasingly employing P3s to address their infrastructure needs.

The benefits to the public sector of utilizing P3s often include:

- Access to private-sector capital and expertise;
- Faster completion of projects;
- Transfer of risk to the private sector; and
- Shifting of responsibility without losing public control

For the private sector, the benefits of P3s often include:

- Possible transfer of existing assets;
- Subsidies, grants and/or tax breaks; and
- Guaranteed annual revenues.

Although either partner may assume initial ownership of the facility, the roles and responsibilities between public and private participants are typically assigned as follows:

Public partner responsibilities:

- Maintains control over the facility (or service);
- Enters into a long-term contract with the private partner; and
- Has the option to take over the facility (or service) at any time.

Private partner responsibilities:

- Operates and maintains the facility (or required infrastructure);
- Provides total or partial financing of the facility (or required infrastructure); and
- Accepts the operational and maintenance risk.

In the waste management industry, it is not uncommon for municipalities to engage in P3s with private sector companies as well as charity groups. Local companies may be willing to act as collection points for scrap steel or paper wastes in return for being able to keep these materials, while existing charities (e.g. Salvation Army, Habitat for Humanity) may be interested in operating municipalities' reuse facilities in return for a share of the profits. It is important to note however, that currently in order for the municipality to be able to get credit for any diversion programs through the GAP waste diversion calculation; the municipality must actually operate the facility, either directly or through contract.

As of late, large-scale P3 projects relating to residual waste management have been increasing in Canada. Several examples include:

- The proposed City of Toronto MBT Facility;
- The Regions of Durham and York EFW Facility (Partnership with Covanta Energy Corporation);
- The City of Ottawa EFW Facility (Partnership with Plasco Energy Group);
- The Region of Peel EFW Facility (Partnership with Algonquin Power);
- The City of Edmonton Waste Management Centre of Excellence (Partnership with the University of Alberta, Alberta Innovates Technology Futures, Northern Alberta Institute of Technology, AMEC Earth & Environmental Ltd. and EPCOR).

In general, P3s are economically viable for large public infrastructure projects such as those described above, since they warrant the transaction costs and attract sufficient private sector interest. In addition, the value of the risk transferred for large complex projects is generally higher than the required financing costs. Nevertheless, P3s may not be ideal in every case or for every municipality, neither are they immune to financial and/or legal challenges. Therefore, it is recommended that prior to proceeding with a P3, Barrie should consider a detailed value for money analysis in order to evaluate whether the costs, do in fact, exceed the benefits.

8.0 COMMUNITY ENGAGEMENT

An important part of the SWMS planning process involved effectively engaging with the community to incorporate their ideas and suggestions into the long-term plan for Barrie's waste management system. As such, a Community Engagement Plan was developed (refer to **Appendix C**) to outline the recommended process for effective community engagement. In summary, Barrie's community engagement approach integrated community interests through the planning process by:

- Identifying stakeholders at the outset of the process;
- Carrying out several community engagement activities at varying levels of public participation;
- Documenting suggestions, issues and concerns; and
- Adjusting the SWMS development to respond to community input.

The Community Engagement Plan includes two series of consultation activities (i.e. Consultation Series # 1 and # 2). The first series of consultation activities was held in May 2011 and was aimed at identifying issues with the current system and options to improve its efficiency and effectiveness. The second series of consultation activities was held in the fall of 2011 and was aimed at assessing future waste management options (refer to Section 11.0).

Table 21: Summary of Public Engagement Events

Type of Community Engagement	Format	Date	Location	Number of Participants
Newsletter	Double sided single page delivered to all Barrie residences.	April 2011	N/A	54,000 newsletters sent
Open House	Drop in format, information boards, comment booklets, wind turbine information provided.	May 4, 2011	Holly Community Centre.	28
Open House	Drop in format, information boards, comment booklets, wind turbine information provided.	May 5, 2011	East Bayfield Community Centre	35
Workshop: Intercommunity Collaboration Initiative Workshop	Facilitated by Golder Associates and City staff. Municipalities and First Nations within 100 km radius of Barrie.	May 3, 2011	Holly Community Centre. 10:00 am to 3:00 pm	9 municipalities 2 First Nations
Workshop: Community Based	Facilitated by Golder Associates and City staff. Invited 14 community organizations including school boards, Georgian College, property managers and NGO's	May 3, 2011	Barrie Public Library. 5:00 pm to 9:00 pm	9 organizations represented through 18 attendees
Workshop: ICI Sector, Future Service Delivery	Facilitated by Golder Associates and City staff. Representatives for both school boards, Canadian Home Builders Association, Georgian College, NVCA	Nov 3, 2011	City Hall. 1:00 pm to 4:00 pm,	7 participants
Workshop: Residential Sector, Future Waste Collection/Diversion	Facilitated by Golder Associates and City staff. Representatives from AWARE Simcoe, Zero Waste, Transition Barrie and residents	Nov 3, 2011	City Hall. 5:00 pm to 8:00 pm	11 participants
Workshop; Multi-residential Sector	Facilitated by Golder Associates and City staff. Representatives from residents, owners and superintendents of various buildings.	Nov 10, 2011	City Hall. 1:00 pm to 4:00 pm	15 participants
Workshop: Barrie's Future Waste Disposal Options	Facilitated by Golder Associates and City staff. Representatives from AWARE Simcoe, Zero Waste, Transition Barrie and residents.	Nov 10, 2011	City Hall. 5:00 pm to 8:00 pm	13 participants
Case Study: Innisdale Secondary School	Facilitated by City staff. Grade 11 Environmental Studies Class	June 28, 2011	Innisdale Secondary School	21 participants
Community Services Committee	Strategy update presentations facilitated by Golder Associates and City Staff	May 17, 2011 Sept 1,		

Type of Community Engagement	Format	Date	Location	Number of Participants
		2011 Jan 18, 2011		
City Council	Strategy update presentation facilitated by Golder Associates and City Staff	Apr 16, 2012		
Environmental Advisory Committee	Strategy update by City Staff	Feb 1, 2012 Sept 5, 2012		

A summary of Consultation Series #1 is provided in **Appendix C**. The options identified by the public to improve the effectiveness and efficiency of Barrie's waste management system include the following:

- *Bi-weekly garbage collection would be acceptable (holiday exceptions)*
- *Partial user pay systems, but not full*
- *Four day collection cycle to prevent Saturday collections*
- *Standardize diversion programs locally (including schools, businesses and residential homes)and regionally, provide services to IC&I for fee, consistent bin colours throughout City*
- *Green bin program for multi-family units*
- *Plastic film, textile and mattress recycling*
- *Reuse centres or bulky collection for reuse (partnering with local charities)*
- *Encourage diversion and "Zero Waste" at public events*
- *Recycling program for C&D waste*
- *More diversion depots/ longer hours*
- *Central depots in downtown area for paper, cardboard and garbage*
- *Support for EPR, Zero Waste*
- *More P&E*
- *Support for EFW*
- *Policy of mandatory curbside diversion*
- *Identify potential partnerships for future disposal and EFW*

These options are elaborated upon in Section 9.0.

9.0 OPTIONS TO IMPROVE SYSTEM EFFICIENCY AND EFFECTIVENESS

As a result of the progressive waste management programs that Barrie has implemented over the past few years, the City has achieved a residential waste diversion rate of 45.4% in 2010, which is above the average for municipalities in Medium Urban municipal grouping (37.5%).

Throughout the consultation process, a variety of options to improve the efficiency and effectiveness of Barrie's existing waste system were identified. The options provide for both the diversion of waste and ultimate disposal options for residual waste. This section provides a discussion of these options, and serves as the basis for the development of the SWMS for Barrie.

9.1 Bi-weekly Garbage Collection

Comparisons of municipal waste programs have shown that decreasing the collection frequency of garbage typically leads to increased diversion rates.

According to the *Blue Box Enhancement and Best Practices Assessment Project (KPMG, 2007)*, the most effective waste management programs in the province, with respect to tonnage diversion, provide weekly collection of recyclables and household organics, with bi-weekly collection of garbage, and an effective garbage bag limit. A bi-weekly collection approach sends the message to residents that recycling and organics diversion are more important and convenient than setting out garbage.

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

In addition, reducing the frequency of garbage collection from weekly to bi-weekly can lead to reduced collection costs, assuming that the frequency of diversion programs remain constant. In theory, these cost savings are realized through having only half of all households serviced on one week, while the other half serviced on alternate weeks.

The selection of a collection frequency for garbage must take into consideration the types and volume of materials recovered through diversion programs, the type and volume of household containers supplied to residents, along with the type of collection equipment available. Moving to the bi-weekly collection of garbage is often more acceptable from the public's perspective when existing diversion programs are relatively inclusive. For example, if the organics stream is expanded to include odorous items such as pet waste, sanitary products and diapers, the public may be less adverse to a bi-weekly garbage collection system. Moreover, having larger Blue Box containers also supports a bi-weekly garbage collection system since residents will not be limited by bin space for their recyclables.

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

Refer to Table 25 for a description of waste collection programs for various municipalities in south western Ontario, including those that currently implement bi-weekly garbage collection (i.e. Region of Durham, Halton Region, York Region and the City of Toronto).

9.2 Multi-Residential Collection

All multi-residential establishments in Barrie are eligible to receive waste collection services for both garbage, yard waste and recyclables. Recyclables are collected in 16 gallon grey and blue bins or 95 gallon wheeled grey and blue carts, depending on the number of units serviced. Garbage is collected in bags (at the curb) or from garbage bins/dumpsters serviced by private contractors. Recycling containers are provided to each multi-residential establishment free of charge, whereas garbage bins are provided for a rental fee (refer to Table 22). There is no limit on the quantity of recycling boxes or carts provided by Barrie. Table 22 also provides a summary of the collection costs for garbage. Recyclable in contrast are collected free of charge regardless of quantity. Garbage collection limits must not exceed two bags/receptacles per unit per week. There is no limit on the quantity of recyclables or yard waste that will be collected.

Table 22: Waste Collection Fees for Garbage

Description of Service	Fee
Multi-Residential Buildings – Twice per week collection for buildings that received twice per week collection as of January 1, 2005 and new buildings that require twice per week collection.	$4.50 / unit / year
Multi-Residential Buildings that received once per week collection as of January 1, 2005 - extra collections	$130.00 / hour
Multi-Residential Buildings - bin rental	$25.00 / month / bin
Waste Management By-law WM12 Part 12 (Owner has failed to comply with WM12, Part 12; City collects waste at expense of owner)	$130.00 / hour; $130.00 min. / event

Source: Waste Management & Fees Charges By-law (WM-27, Consolidated August 30, 2011)

The green bin program has not yet been extended to multi-residential establishments.

As an alternative to receiving curbside garbage collection services at multi-residential complexes, multi-residential complexes may be eligible to participate in Barrie's alternative Multi-Residential Tipping Fee Exemption Program. Through this program, multi-residential complexes contract privately with a waste hauler and are granted an exemption from the landfill tipping fees each week for a waste load approximately equal to two bags/receptacles generated per unit (i.e. 1 yd^3 of garbage for every five multi-residential units). In order to be eligible for the Multi-Residential Tipping Fee Exemption Program, the multi-residential complex must report to Barrie the number of units in the complex, and property owners and building managers must agree to specific terms and conditions prescribed by Barrie, including effective participation in Barrie's multi-residential recycling programs and a maximum allowable garbage container size.

Multi-residential institutions and nursing homes (i.e. complexes with central dining facilities) are not eligible for the Tipping Fee Exemption Program.

Issues and concerns surrounding Barrie's current multi-residential collection brought forward during the SWMS consultation, include:

- Capacity issues with the 95 gallon carts;

- Accessibility of cart/recycling depots for tenants and staff; and
- Health & safety concern for collectors, building tenants and staff.

Additionally, there was a strong demand by the multi-residential sector for the development of a green bin program for multi-residential units. Refer to Section 9.7 for a discussion on this topic. A summary of multi-residential programs offered in various other municipalities across south western Ontario, including those within the same WDO municipal grouping as Barrie is provided in **Appendix D**.

9.3 User Pay System for Garbage

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

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

In a study completed by the Association of Municipal Recycling Coordinators (AMRC) it was found that in 2008, nearly 45% of the households in the province paid directly to dispose of at least some of their waste.

Barrie currently has a partial user pay program in effect, with single family residents being allowed to set out one bag of garbage each week for free. A two bag/can per unit limit is in effect for multi-residential households to reflect the fact that these residents do not have access to the green bin organics waste collection program. Barrie uses an internal formula to determine the maximum allowable garbage bin size for each multi-residential establishment. All landfill tipping fee exemption applications are approved only if the bin size does not exceed this maximum allowable size (i.e. 5 units = 1 cubic yard bin, based on a limit of two bags /unit).

IC&I establishments located in Barrie's CBD receive twice weekly collection services, reflecting the limited availability of set out space in the CBD area. Whether or not the IC&I establishments located in the CBD area set out garbage once or twice per week, a 10 bag/receptacle limit per week is applicable.

Where the number of bags/receptacles for collection exceeds allowable limits, residents and IC&I establishments may set out an unlimited number of additional bags/receptacles that have an affixed, pre-paid bag tag. Bag tags can be purchased from local retailers at a cost of $3.00 per tag as of May 1, 2012. Some municipalities provide a certain number of free bag tags to each resident at the beginning of each year, which allows residents to "ration" the way in which they use garbage collection services. For example, the City of Orillia provides its resident with 30 bag tags/household each year. The City of Barrie has a Medical Garbage Bag Tag Subsidy Program which provides up to 26 free tags per year per resident (subject to an approval process which requires a Physician's signature).

The City of Toronto has implemented a volume-based (i.e. variable-rate) full user pay program where residents are charged an annual rate based on the size of garbage cart they use. In a full user pay program, user fees can be used to fund the cost to deliver a portion of a municipality's waste management services (i.e. waste

collection) or all of the waste collection, diversion and disposal costs. In the City of Toronto, user fees fund 70% of the City's solid waste operating budget, while the remaining 30% is funded through tipping fees at transfer stations, revenue from recyclable material and producer responsibility programs.

The City of Toronto's user fee rate schedule for single-family household curbside waste is as follows:

- Small garbage bin (equivalent to 1 bag/wk): Net bin cost $ 2.84 (annual credit);
- Medium garbage bin (equivalent to 1 ½ bags/wk): Net bin cost $ 47.93 (annual cost);
- Large garbage bin (equivalent to 3 bags/wk): Net bin cost $ 145.31 (annual cost);
- Extra Large garbage bin (equivalent to 4 ½ bags/wk): $ 204.36 (annual cost); and
- Overflow Garbage: $3.10 per garbage bag tag.

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

- A fee of $2.00 per bag of garbage would cover the cost of collection of garbage and recycling;
- A fee of $2.60 per bag of garbage would cover the cost of collection of garbage and recycling and garbage disposal; and
- A fee of $3.50 per bag of garbage would cover the cost of collection of garbage and recycling, garbage disposal and recycling processing.

A full user pay program or partial user pay program with very limited "free" bags provides the greatest incentive to reduce waste. When a municipality implements a user pay program, they may decide to remove the corresponding cost for waste services from the general tax levy. Otherwise, the revenue received for the sale of bag tags may be utilized to fund new waste diversion programs and/or the administration costs of the program. The costs to administer a user pay program vary depending on how the tags are distributed, but are generally not significant.

While making individuals 100% responsible for the cost of managing their waste is very effective in reducing waste, Barrie should consider postponing a full user pay system until the effectiveness of all existing diversion programs have been fully investigated and improved upon as necessary. Public input to date has indicated that Barrie residents support the partial user pay system, but not full user pay.

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

On a final note, it is recommended that Barrie consider updating its waste management By-law to include a statement on its existing partial user pay program, as well as ensure that there is proper enforcement to prevent illegal dumping and sufficient P&E to prevent improper set-outs.

9.4 Four Day Collection Schedule

Barrie currently provides curbside waste collection services over a Monday to Friday, five day collection week. Barrie's collection contractor is compensated on a price per unit / household basis (and processing cost per tonne for organics and well as collection) as outlined in the contract. Many residents provided comments during Consultation Series #1 indicating that they would prefer a four day collection schedule (either Monday-Thursday or Tuesday-Friday). Currently, if waste is not collected due to a holiday, it results in the residents who have Friday collection moving to a Saturday collection day. This ends up inconveniencing these same residents each time there is a holiday since they may not be available to put their waste out or bring their containers in on the weekend. If the waste collection schedule was moved to a four day period, there would be an additional day during the week to allow for collection during a holiday week.

A four day waste collection schedule, versus a five day schedule, is listed as a *Best Practice (KPMG, 2007).* By extending the collection day, operators are able to get in their weekly hours in four days per week instead of five. The advantage of longer collection days is that fewer routes need to be operated to collect from the program because trucks stay on route longer and collect from more homes before ending the day. Fewer routes mean less non-productive time for drivers and therefore cost savings. Other financial benefits are realized through savings in overtime costs. With a five day collection schedule, staff are paid overtime for either working on the statutory holiday or having to work on a Saturday due to a shift in collection days. However, a four day collection schedule would result in the need for extending operating hours at the landfill site.

The City of Hamilton tendered for 14 different options for recycling collection in 2007, including four day and five day per week collection schedules. The bid prices were inconclusive as to whether a four day schedule or five day schedule was less costly due to the number of variables (in some scenarios the four day schedule resulted in a cost savings, while in other scenarios it resulted in increased cost). Generally, the cost variable appeared to be insignificant (2% or less) between the two options (Hamilton, 2007)

Several Ontario municipalities in Ontario provide four day waste collection services as outlined in Table 23.

Table 23: Four Day Waste Collection Schedule Description in Several Highlighted Ontario Municipalities

Municipality	Description of Four Day Collection Schedule	Stat Holidays
Town of Ajax (Durham Region)	Collection from Tuesday to Friday (No Collection on Mondays)	Collection is one day later for Good Friday and Canada Day
Town of Pickering (Durham Region)	Collection from Tuesday to Friday (No Collection on Mondays)	Collection is one day later for Good Friday and Canada Day
Town of Caledon (Region of Peel)	Collection from Tuesday to Friday (No Collection on Mondays)	Collection is one day later for Good Friday and Canada Day
Town of Richmond Hill	Collection from Tuesday to Friday (No Collection on Mondays)	Collection is one day later for Good Friday and Canada Day
City of Toronto	Collection from Tuesday to Friday	Collection is one day later for Good

Municipality	Description of Four Day Collection Schedule	Stat Holidays
	(No Collection on Mondays)	Friday and Canada Day
City of Vaughan	Collection from Tuesday to Friday (No Collection on Mondays)	Collection is one day later for Good Friday and Canada Day
County of Wellington	Collection from Tuesday to Friday (No Collection on Mondays)	Collection is one day later for Good Friday, Canada Day and Remembrance Day

It should also be noted that a four day collection schedule is conditional upon trucks having the capacity to collect waste from additional homes. In other words, if Barrie's trucks are mostly full at the end of a normal work day, it is likely not cost effective for them to go back out on route.

Moving to a four day collection schedule may require that landfill hours being extended to accommodate later collection from the routes.

9.5 Standardize Collection & Diversion Systems

During Consultation Series #1, there was considerable support for providing a standard waste collection system both within Barrie and with other municipalities throughout Ontario.

9.5.1 Standardization of Waste Programming Across School Boards and Georgian College

A reoccurring theme at the initial consultation events was the need to standardize the waste management programs with the School Boards in Barrie and with Georgian College. Currently, the opportunities for waste diversion within the schools are not as extensive as what residents have available at their homes.

The provision of consistent waste programs between local schools and residential diversion programs offers an opportunity for students and staff to practice the same concepts of recycling at home and at school. In addition, it is well recognized that children and young adults have the ability to play a significant role in influencing the behaviour of adults (i.e. parents, grandparents, care-givers) with respect to environmental initiatives such as waste diversion. This is particularly true for new immigrants to Canada who may not have as good an understanding of the English language or North American customs. It is believed that sending a consistent message to students about waste reduction and diversion has the potential to positively impact Barrie's waste diversion rate both immediately and in the long-term.

Support in forming joint partnerships between Barrie and academic institutions was clearly noted during the Consultation Workshop held on May 3, 2011 in Barrie. Interested potential partners included:

- Simcoe Muskoka Catholic District School Board;
- Simcoe County District School Board; and
- Georgian College.

The County of Simcoe initiated a Learning & Living Green program, which is a partnership between the County and local school boards to provide collection of recyclable materials (elementary & secondary schools) and

organic materials (elementary schools only) consistent with the materials accepted in the County of Simcoe residential recycling and green bin programs.

During the 2008/2009 and 2009/2010 school years, the County of Simcoe conducted a pilot program at three local schools. The pilot program was extremely successful and waste diversion rates at these schools increased from 37% to 79.5%. Since the September 2010 launch of the Learning and Living Green initiative, the program has now been launched in more than 100 elementary schools across the County and the amount of materials diverted has increased by 400 % compared to the same period in 2009.

Consistent waste diversion programming between homes and schools, combined with an effective school-focused P&E program, has the ability to further influence the success of waste reduction and reuse programs in schools.

Several examples of applicable P&E programs for schools may include:

- School certification programs such as *Ontario EcoSchools* (certification procedure and program guides available at: www.ontarioecoschools.org);
- Recycling drives;
- Intra or inter school waste reduction challenges;
- Awards (i.e. waste minimization champion, diversion rate champion, organics recycling champion, recycling champion);
- Waste reduction mascots;
- Special event days, school trips to a waste management facility, or guest speakers promoting waste diversion; and
- Mobile Education Unit (i.e. County of Simcoe Mobile Education Unit).

Barrie could provide support to these school-focused P&E programs by:

- Conducting yearly waste audits at each school;
- Tracking diversion rates and promoting school diversion initiatives on Barrie's website;
- Facilitating waste diversion challenges;
- Providing grants or prizes to schools demonstrating leadership; and
- Conducting landfill tours, leading demonstrations and utilizing the Environmental Education Centre at the landfill site.

9.5.2 Standardization of Waste Programming between Municipalities

Cross-program standardization between municipalities can result in greater resident participation and smoother operation of diversion programs. As residents commute and relocate from one community to another, consistent messaging (i.e. similar service levels/procedures, co-operative P&E programs) can make it easier for residents to maintain their participation and diversion levels.

The *Blue Box Enhancement and Best Practices Assessment Project* (KPMG, 2007) describes some advantages of program transferability between municipalities:

Overtime cost reductions will be realized through staff time and promotional savings obtained from less re-education and reduced collection rejection. Contamination levels often decrease and diversion is maintained or increased as a result of the diminished need to educate residents.

A summary of curbside collection programs offered by municipalities in close proximity to Barrie are provided in Table 24 and Table 25. Collection frequencies are summarized in Table 24, while details of the collection programs are summarized in Table 25. The selected municipalities represented in these tables were those that attended the Potential Partnerships Workshop held as part of the SWMS consultation process on May 3, 2011 in Barrie.

Table 24: Waste Collection Frequency for Various Municipalities

	Frequency of Collection								
	Garbage	Recyclables – Containers and Paper (Blue Box)	SSO (Green Bin)	Bulk Waste	Leaf and Yard				Metal and Appliances
					General	Months	Frequency	Exceptions	
City of Barrie	Weekly	Weekly	Weekly	User pay system	Seasonal	Weekly in Jan, Apr, May, June, Sept, Oct, Nov Bi-weekly in July, Aug, Dec No Collection in Feb and March			User pay system
County of Simcoe	Weekly	Weekly	Weekly	Special collection - annually for some areas	Seasonal	Varies by municipality within the County. Generally, leaf and yard waste collection is limited to a few days per year in the spring and fall*			Special collection - annually for some areas
Regional Municipality of Durham	Bi-Weekly	Weekly	Weekly	Bi-Weekly	Seasonal	April to November	Bi-weekly, same day as Garbage Collection	-	Bi-Weekly
Regional Municipality of Halton	Bi-Weekly	Weekly	Weekly	Monthly (on average)	Seasonal	April to December	Bi-weekly from April to Sept (same day as Garbage Collection) Weekly from October to November	-	Collected by Appointment
Regional Municipality of Peel	Weekly	Weekly	Weekly	Weekly	Seasonal	April to end of November	Weekly, occurs on collection day	Rural Areas of Caledon: leaf and yard waste is collected on three Mondays in Spring and three Mondays in Fall	Collected by Appointment
	Frequency of Collection								
	Garbage	**Recyclables - Containers and Paper (Blue Box)**	**SSO (Green Bin)**	**Bulk Waste**	**Leaf and Yard**				**Metal and Appliances**
					General	**Months**	**Frequency**	**Exceptions**	
City of Orillia	Weekly	Weekly	Weekly	None	Weekly	Year-round	Weekly, occurs on your regular collection day	-	None
City of Guelph	Bi-Weekly	Weekly	Weekly	User pay system	Seasonal	Spring and Fall	Leaf and yard waste collection takes place twice a year in Spring and Fall		None
City of Toronto	Bi-Weekly	Bi-Weekly	Weekly	Bi-Weekly	Seasonal	Mid-March into December	Bi-weekly, same day as Garbage Collection	-	Bi-Weekly

City of Hamilton	Weekly	Weekly	Weekly	Seasonal	Weekly	April into December	Bi-weekly, occurs on your regular collection day. The leaf and yard waste is collected is dependent on the area of the City, residents live in.	No leaf and yard waste is collected from end of July into September	None
Cityof Markham	Bi-Weekly	Weekly	Weekly	Bi-Weekly	Seasonal	Late March to Early December	Bi-weekly, occurs on garbage collection day	-	User pay system
	Frequency of Collection								
	Garbage	**Recyclables - Containers and Paper (Blue Box)**	**SSO (Green Bin)**	**Bulk Waste**	**Leaf and Yard**				**Metal and Appliances**
					General	**Months**	**Frequency**	**Exceptions**	
Town of Newmarket	Bi-Weekly	Weekly	Weekly	Bi-Weekly	Seasonal	April to November	Bi-weekly, collection is the week following garbage collection	-	User pay system
Town of Richmond Hill	Bi-Weekly	Weekly	Weekly	Bi-Weekly	Seasonal	April to November	collection is on select dates April (4 & 8), May (2, 16 & 39), June (13 & 27) July (11 & 25), August (8 & 29) Sept (19), Oct (3, 17, 24 & 31), Nov (7, 14, 21 & 28)		n/a
Town of Orangeville	Weekly	Weekly	n/a	User pay system	Seasonal	April to November	Bi-weekly, every other Tuesday	-	User pay system

*See special collection schedule.

Table 25: Waste Collection Program Details for Various Municipalities

Municipality	Garbage	Recyclables	SSO
City of Barrie	Limit of one bag per week. Additional bags or cans collected by purchasing tags	- 2-stream recycling* - Styrofoam accepted - Plastic film, empty paint cans and aerosol cans not accepted	Certified compostable bin liner, paper bags or newspaper can be used by residents. Acceptable items include food waste, wet and soiled paper products and other items (i.e. ashes, dryer lint, human and pet hair, sawdust, wood wine corks, popsicle sticks and wooden toothpicks). Diapers and pet waste not accepted.
County of Simcoe	Limit of one bag per week. Additional bags or cans collected by purchasing tags	- 2-stream recycling - Styrofoam and plastic film not accepted - Empty paint cans and aerosol cans accepted	Certified compostable bin liner, paper bags or newspaper can be used by residents. Acceptable items include food waste (including meat and dairy), wet and soiled paper products and other items (i.e. ashes, dryer lint, feathers, house plants, sawdust, popsicle sticks and wooden toothpicks). Diapers and pet waste not accepted.
Regional Municipality of Durham	Limit of four bags every two weeks (bi-weekly collection). Additional bags or cans collected by purchasing tags	- 2-stream recycling - Styrofoam and plastic film not accepted	Certified compostable line bags, paper bags or newspaper can be used by residents. Acceptable items include food waste (including meat and dairy), wet and soiled paper products and other items (i.e. dryer lint, wood shavings and sawdust, bedding from pet cages and hair). Diapers and pet waste not accepted.
Regional Municipality of Halton	Limit of six bags/cans every two weeks (bi-weekly collection). Additional bags or cans collected by purchasing tags	- Single-stream recycling** - Styrofoam and plastic film not accepted	Certified compostable liner bags or paper bags can be used by residents. Acceptable items include food waste (including meat and dairy), wet and soiled paper products and other items (i.e. ashes, dryer lint, human and pet hair, feathers, nail clippings, sawdust, woodchips, popsicle sticks, wooden toothpicks and household plants). Diapers and pet waste not accepted.

Municipality	Garbage	Recyclables	SSO
Regional Municipality of Peel	Limit of two bags per week. Additional bags or cans collected by purchasing tags.	- Single-stream recycling - Styrofoam and plastic film accepted	Certified compostable bags, paper bags, newspaper, or residents can place scraps loose in bin. Acceptable items include food waste, wet and soiled paper products and other items (i.e. cotton balls, peat moss flower pot, flowers, human and pet hair, feathers, nail clippings, woodchips/shavings/sawdust, popsicle sticks, wooden toothpicks and household plants). Diapers and pet waste not accepted.
City of Orillia	All garbage must be tagged for collection.	- 2-stream recycling - Styrofoam and plastic bags accepted - Plastic wrap and cereal box liners not accepted - Empty paint cans and aerosol cans accepted	Certified compostable bags or newspaper. Acceptable items include food waste (NOT including meat or dairy), wet and soiled paper products and other items (i.e. dryer lint and household plants). Diapers and pet waste not accepted.
City of Guelph	No bag limit - clear bags and/or containers only.	- Single-stream recycling - Styrofoam and plastic film not accepted	Green bags - wet for organics. Acceptable items include food waste (including meat and dairy), wet and soiled paper products and other items (i.e. ashes, household plants and flowers, sawdust, human and pet hair, feathers, pet bedding and pet waste/litter). Diapers not accepted.
City of Toronto	Limit of one bin every two weeks (bi-weekly collection). Additional bags or cans collected by purchasing tags.	- Single-stream recycling - Styrofoam, plastic retail and grocery bags accepted - plastic food wrap and bags, plastic bags with drawstrings and hard plastic handles not accepted	Bins can be lined with either plastic bag or Kraft paper bags. Acceptable items include food waste (including meat and dairy), wet and soiled paper products and other items (i.e. diapers and sanitary products, household plants and flowers including soil, pet bedding and pet waste/litter).
City of Hamilton	Limit of one bag per week. Additional bags or cans collected by purchasing tags.	- 2-stream recycling - Styrofoam and certain plastic bags accepted - Plastic food wrap and certain bags not accepted	Certified compostable bags or newspaper. Acceptable items include food waste (including meat and dairy), wet and soiled paper products and other items (i.e. dryer lint, flowers, household plants, peat moss flower pot, human and pet hair, feathers, nail clippings, woodchips/shavings/sawdust, popsicle sticks and

Municipality	Garbage	Recyclables	SSO
			wooden toothpicks). Diapers and pet waste not accepted.
City of Markham (York Region)	Limit of three bags every two weeks (bi-weekly collection) Additional bags or cans collected by purchasing tags.	- Single-stream recycling - Styrofoam and plastic film not accepted	Any type of bag is acceptable in green bin. Note that SSO cannot be loose in green bin. Acceptable items include food waste, wet and soiled paper products and other items (i.e. diapers and sanitary napkins, meat absorbent pads, flowers, household plants and soil, human and pet hair, pet bedding and pet waste/litter, nail clippings and sawdust).
Town of Newmarket (York Region)	Limit of six bags every two weeks, 3 tagged and 3 untagged (bi-weekly collection) Additional bags or cans collected by purchasing tags (up to 3 tagged per collection)	- Single-stream recycling - Styrofoam and plastic film not accepted	Compostable bags are mandatory. Acceptable items include food waste, wet and soiled paper products and other items (i.e. pet waste and diapers).
Richmond Hill (York Region)	Limit of three items every two weeks (bi-weekly collection). Items include any combination of the following: garbage bag, garbage can, bundle of material, furniture	- Single-stream recycling - Styrofoam and plastic film not accepted	Certified compostable bags or paper bags are accepted in green bin program. Acceptable items include food waste, wet and soiled paper products and other items (i.e. diapers and sanitary products, flowers, household plants and soil, human and pet hair, pet bedding and pet waste/litter, nail clippings and sawdust).
Town of Orangeville (County of Dufferin)	Limit of one bag per week	- Single-stream recycling - Styrofoam accepted - Plastic film not accepted	No green bin program. The Town advertises backyard composting.

*containers collected *separate* from paper fibers.

** containers collected *together* with paper fibers.

As indicated, Barrie's program is already generally aligned with its most immediate neighbours (i.e. the City of Orillia and the County of Simcoe), with the exception of some recyclable materials such as Styrofoam, plastic film, empty paint cans and aerosol containers, and organic material such as meat and dairy (refer to Table 26) Table 27).

Table 26: Variations in Recycling Programs

Material	City of Barrie	County of Simcoe	City of Orillia
Styrofoam	Accepted (no large Styrofoam or peanuts)	Not accepted	Accepted
Plastic film	Not accepted	Not accepted	Accepted
Empty paint cans	Not accepted	Accepted	Accepted
Aerosol containers	Not accepted	Accepted	Accepted

Table 27: Variations in Organics Programs

Material	City of Barrie	County of Simcoe	City of Orillia
Meat	Accepted	Accepted	Not accepted
Dairy	Accepted	Accepted	Not accepted

Though it may not be feasible, at least in the short-term, to align Barrie's waste diversion programs with those of other municipalities in the Greater Golden Horseshoe, it is strategic for Barrie to form partnerships with municipalities as opportunities arise and move forward with cross-program standardization where possible.

9.5.3 Consistency of Bin Colouring and Type Collection and Diversion

Consistent bin type and colouration is also an important part of maintaining high public participation rates. Wherever there is a waste collection point in Barrie (i.e. parks and public spaces, City buildings and special event venues) the types of bins available should be consistent with what resident's use at home. Where possible, bin colouration should be consistent with what the public uses at home (i.e. green for SSO, blue for containers, and grey for fibres). If the bins themselves are not able to match the corresponding at-home colour scheme, it is recommended that appropriate coloured labels or other colour-markers be used instead.

Sending mixed messages to the public in terms of what can be recycled, and where, can negatively impact the public's trust in the system or discourage the public about their own at-home diversion efforts. The concept of "practice what you preach" should be at the foundation of any successful waste program.

It is recommended that Barrie pursue the following two options to improve the standardization of collection bins throughout Barrie:

- Consistent bin types should be offered throughout Barrie at parks and public spaces, City buildings and special event venues (i.e. bins for SSO, two-stream recyclables and garbage should be available); and
- Where possible, bin colouration should be consistent with what the public uses at home (i.e. green for SSO, blue for containers, and grey for fibres). If the bins themselves are not able to match the corresponding at-home colour scheme, it is recommended that appropriate coloured labels or other colour-markers be used instead.

9.5.4 Leaf and Yard Waste Schedule

The quantity of leaf and yard waste varies considerably throughout the year. Barrie's current leaf and yard waste collection frequency schedule attempts to optimize the frequency of collection with the amount of leaf and yard waste generated through the growing season:

- *Weekly collection*: January; April - June; September - November;
- *Bi-weekly collection*: July - August; December; and
- *No collection*: February to March.

Table 28 outlines the amount of leaf and yard waste collected in Barrie each month throughout 2010 and 2011.

Table 28: Leaf and Yard Waste Collected by Month

Month	2010 Quantity (tonnes)	2011 Quantity (tonnes)	Frequency of Collection
Jan	88	90	Weekly
Feb	0	0	None
Mar	0	0	None
April	705	503	Weekly
May	860	937	Weekly
June	611	734	Weekly
July	394	272	Bi-weekly
Aug	468	451	Bi-weekly
Sept	535	468	Weekly
Oct	902	1031	Weekly
Nov	1099	1255	Weekly
Dec	11	42	Bi-weekly

Generally, Barrie's current collection frequency helps to optimize the use of collection vehicle and staff time, with the exception of the month of January. Although the quantity of leaf and yard waste generated in January may not be sufficient to justify weekly collection, Barrie has determined that it is preferable to get the Christmas trees collected on a weekly basis so that they do not become buried under the snow and frozen to the ground.

During Consultation Series #1, it was suggested that a more simple and standardized leaf and yard waste collection schedule may help facilitate participation for residents and reduce the need for additional program P&E.

9.6 Enhanced Promotion & Education

As suggested by the *Blue Box Enhancement and Best Practices Assessment Project* (KPMG, 2007), after nearly 20 years of recycling services in Ontario, most households are aware of the longstanding items that can be recycled. The current challenges include keeping individuals engaged and motivated and effectively educating households about items considered to be relatively new additions to waste diversion programming.

A well-designed and implemented P&E program can have positive effects on virtually all aspects of the waste management system, including planning, collection, processing, marketing and policy development. In addition to higher recovery rates, effective P&E can contribute to the reduced presence of unacceptable material types in waste diversion streams leading to increased collection efficiencies, improved processing efficiencies, decreased residue levels and higher marketing revenues. Moreover, having a P&E plan in place contributes toward the amount of WDO funding a municipality receives as identified in the Best Practices section of the WDO municipal data call.

One of the major themes recognized throughout Consultation Series #1 was the need for a more enhanced P&E program. In particular, many Barrie residents felt they would benefit from increased education in the following areas:

- Leaf and yard waste collection schedule;
- Return-to-Retailer (RTR) programs;
- MHSW program;
- Reuse services;
- Regular updates to Barrie's website; and
- Enhancement of New Resident packages.

Following this first round of public consultation events, a variety of proposed P&E initiatives was recommended by the CLC in order to incorporate the community's feedback into the development of the SWMS. The purpose of the following sections is to provide an overview of these recommendations.

9.6.1 Develop a Communications Plan

Ideally, P&E programs should begin with the development of a current and effective communications plan. The communications plan should include:

- A Statement of goals and objectives;
- Target audiences;
- Key messages;
- Tactics (i.e. campaigns and media types);
- Schedule of implementation;
- Budget; and
- Plans for monitoring and evaluation.

According to best practices, women have shown to be a particularly receptive audience for waste management messaging. The strong role that women play in households as primary recyclers is also emphasized in Stewardship Ontario's *Blue Box Program Promotion and Education Review Final Report* (Stewardship Ontario, 2007).

The effect that children have on a household's waste management practices is not quite as clearly understood. While children may often be perceived to be a motivating force behind a household's engagement in waste diversion practice, Praxis PR notes that their impact may depend greatly on age. Educational programming targeting youth is widely established by municipalities and other interest groups across Canada.

A communications plan is critical to any long term waste management plan, as it allows for coordinated public outreach. It is recommended that a communications plan be developed on an annual basis and coincide with budget development.

9.6.2 Establish an Adequate Promotion and Education Budget

According to the *Blue Box Enhancement and Best Practices Assessment Project* (KPMG, 2007), municipalities in Ontario that achieve at least 60% recovery levels, spend an average of $0.83 to $1.18/household/year on P&E for their waste management programs.

A United States (US) Curbside Value Partnership study uses $1/household/year as a general spending guide for existing recycling programs, but recommends $3 - $4/household for the implementation of a new program. Other research performed in the US found that an increase in P&E expenditures of $1.00/household/year could yield an increase in 1% in the recycling rate for communities with already high P&E expenditures (Iowa, 2002).

Barrie's 2011 P&E budget for all of its waste management programs is $79,946 or $1.48 per household (based on an estimate of 54,026 single and multi-family homes in 2010). In addition, Barrie has applied for P&E funding through the Continuous Improvement Fund (CIF) as part of its Multi-residential Program Application.

9.6.3 Employ a Mix of Communication Media to Create More Awareness

In embarking on a P&E strategy, best practices recommend an integrated communications campaign that utilizes a variety of media formats with both sustained and targeted messaging. It has been found that successful P&E programs typically employ a mix of media, including:

- Print (calendar, newspaper inserts, utility bill inserts or advertising on utility bill envelopes, paid ads, brochures, newsletters, billboards, advertising on public space bins);
- Broadcast (radio ads, Public Service Announcements, TV ads);
- Electronic (regularly updated and highly branded website, emails, social media such as Facebook and Twitter);
- Outreach (special events, presence at community celebrations, guest speakers, special events, school visits, facility tours for students, community education centres, door to door campaigns, landfill/depot contract, etc.); and,
- Icons & Incentives (magnets and other gifts, community mascots, etc.).

However, it should be noted that different types of media should be targeted towards residents belonging to different demographic groups. As an example, electronic communication (i.e. social medial outreach) may be a much more powerful tool for targeting younger residents and families than residents who are retired and/or have limited access to the internet.

Communications mediums utilized by Barrie include radio and newspaper advertising, as well as P&E materials (i.e. pamphlets, magnets, annual waste management calendar) made available at City facilities, and public events, and as downloadable documents on Barrie's website. The waste management calendar is distributed via the Barrie Examiner and is available on the City of Barrie website in a viewer friendly format.

Public education centres can offer a different, more personalized approach to P&E. The development of a waste management-focused education centre is currently being undertaken by the Regional Municipality of York, who opened the doors to their first of three Community Environment Centres in July 2009. In addition to complimenting the Region's P&E efforts, residents are able to drop-off materials that are difficult or inappropriate to dispose of at the curb, including reusable goods, building materials and WEEE.

Barrie opened an education centre in 2010 specifically targeted for P&E of waste diversion initiatives to complement Barrie's waste diversion efforts. The centre is located beside the Barrie Landfill at the BEC so that residents and school groups can obtain information regarding Barrie's waste diversion programs and tour the landfill to view first-hand the importance of properly segregating their recyclables. This building can only be used seasonally because it is not heated.

9.6.4 Establish a Recognition & Rewards Program for Recycling

A variation on the "polluter pays" concept (which is the basis of allocating user fees for residual garbage) is the concept of "recycler's win". The objective of the recycler's win concept is to recognize and reward households that fully participate in waste diversion programs. By providing an incentive (i.e. acknowledgement or compensation), recognition and reward programs can be successful in engaging households. Numerous rewards and recognition initiatives are currently being explored in the waste management industry – both in the public and private sectors.

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

An accompanying letter is delivered with each Gold Box to congratulate the winner and provide information on the Gold Box Program and ways to "Join the Conversation" and take part in additional contests through social media forums (i.e. Facebook and Twitter). The letter also contains a checklist where the audit team can identify additional areas for improvement for each winner (i.e. "take the lids off bottle / jars / cans", and "stack newspapers vertically so they don't blow away").

The City of Hamilton encourages the winners to use their Gold Box each week, instead of their Blue Box, to be a role model for others to follow. In addition to receiving a Gold Box, the City of Hamilton enters each winner into a draw to win a portion of their tax dollars back. The value of this cash rebate equals the average cost per household for garbage, recycling and green cart pick up as well as the cost of other services like the Community Recycling Centres (CRC) and landfill site (i.e. $180.00 in 2011). The cheque is handed to the winner of the draw by a local politician.

The estimated annual cost for the City of Hamilton's Gold Box program is approximately $31,800, as outlined in Table 29. This estimate is consistent with the City of Hamilton's actual cost per household of operating the Gold Box Program, which is just under $0.20 per household for 160,000 single family homes. An added benefit of conducting waste audits as part of the Gold Box Program is that it provides an economical means for face-to-face contact with residents.

Table 29: Estimated City of Hamilton Gold Box Program Yearly Costs Summary

Expenditure Type	Description	Estimated Annual Cost
Awards	3 x $180 awards per month (April to October)	$3,780
Gold Box	Maximum of 1,500 Gold Boxes awarded at a cost of $5 per box	$7,500
Visual Waste Auditing	15 audits at 1 full day and 2 waste audit personnel per audit	$8,000
P&E	Web-site maintenance, combined promotion with other programs	$4,000
Administration	Program coordination and communications with public	$8,500
Total Cost ($)		**$31,780**

A means of evaluating the impact of the Gold Box Program on overall waste diversion within the City of Hamilton is unavailable. To date, approximately 7,000 residents have registered with mygoldbox.ca, and there are approximately 900 Facebook users and 200 Twitter followers. In 2010, the City of Hamilton conducted a large blitz to launch the program in which approximately 10,000 homes were awarded with Gold Boxes. Since this blitz, approximately 2,000 additional Gold Boxes have been awarded (Hamilton, 2011).

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

In the private sector, Waste Management Inc. has been working on developing innovative rewards systems in the US though its GreenOps and Greenopolis Divisions.

Moreover, The Air Miles® Reward Program has established a new division, Air Miles® for Social Change, which is partnering with government agencies and other organizations to create incentives for energy conservation, public transit, waste reduction and other sustainable choices. For example, the Toronto Transit Commission boosted sales of their Metropass Discount Plan by having the Air Miles® Reward Miles as further incentive to sign up. In addition, there has also been mention of the City of Toronto hoping to at some point to introduce a similar Air Miles® Reward Program for good recyclers and green bin users.

9.6.5 Re-assess Collection Sticker Program

Barrie currently utilizes a sticker program to notify its residents of improper set-outs at the curb. The sticker program makes use of four colour-coded stickers:

- **Pink Sticker** for garbage,

- **Orange Sticker** for organics,
- **Yellow Sticker** for recyclables, and a
- **Green Sticker** for leaf and yard waste,

Each time the waste collector identifies material that has been improperly set out at the curb (i.e. glass in the grey bin) they are instructed to affix a sticker to the container and leave the misplaced material or bin behind. On each sticker there is a location for the collector to place a checkmark beside the particular problem so that residents are not left questioning the reason behind their uncollected waste. The collector records on a drivers' sheet the resident address, issue and type of material(s) left behind.

The sticker program works opposite to a rewards and recognition program in that a participant's negative actions are recognized, as opposed to their positive actions. There are proven benefits to utilizing both positive and negative reinforcement programs together.

9.6.6 Re-launch Green Bin Program

When the green bin program was initially launched in Barrie in May 2006, there were a number of concerns about the level of public education surrounding the program. A large portion of the public was unsure about the program requirements and what they could and could not put into their curbside green bins. Only bags made of fibre (i.e. paper bags, newsprint boxes) were originally accepted in the program. Other compostable liners were not accepted because, at that time, there was no certification process for ensuring that these liners were truly compostable. This meant that residents had to frequently wash their bins to prevent odour and pest issues. Barrie has since established a more structured and inclusive organics program where certified compostable bin liners are now considered acceptable and program elements are now clearly outlined on the City's website and their full-colour calendar.

According to the WDO Datacall, Barrie's diversion rate for organics was 14.9% in 2010. This is above average for its municipal grouping (Refer to Table 30). However as indicated in Table 30, several municipalities in the large urban and urban regional municipal groupings have higher organics diversion rates. It is important to note that the diversion rates shown in Table 30 are based on the diversion rates for both SSO and leaf and yard waste combined. Therefore, any differences in rates between municipalities cannot be attributed to SSO alone.

Table 30: Residential Organics Diversion Rates (2010)

Municipality	Residential Organics Diverted in 2010 (%)
Medium Urban Municipalities	
Sarnia, City of	16.7
Barrie, City of	*14.9*
Guelph, City of	14.1
Peterborough, City of	14.9
Brantford, City of	8.2
Sault Ste. Marie, City of	3.4
Thunder Bay, City of	2.4
Urban Regional Municipalities	
Durham, Regional Municipality of	21.7

Municipality	Residential Organics Diverted in 2010 (%)
Waterloo, Regional Municipality of	22.3
Simcoe, County of	19.4
Large Urban Municipalities	
York, Regional Municipality of	22.4
Halton, Regional Municipality of	26.4
Peel, Regional Municipality of	14.5

In 2010, Halton Region had the highest organics diversion rate of any Ontario municipality, even though the Region does not currently divert pet waste or personal hygiene products. York Region also has a very high organics diversion rate, relative to other Ontario municipalities, which could be partially due to the expanded list of accepted material in their green bin program, such as pet waste and personal hygiene products (including diapers, sanitary and incontinence items). Currently, Barrie's organic waste is processed by All Treat Farms, which does not accept pet waste or personal hygiene products.

It makes strategic sense from a diversion perspective to re-launch Barrie's green bin program under a new and revamped P&E campaign. The necessity for a revamped P&E campaign is especially important if the collection of green bin organics is extended to Barrie's muti-residential sector. This P&E campaign could be addressed as part of a comprehensive consultation plan, identifying the types of activities and media that should be utilized to engage all demographics in Barrie's green bin program. As part of this campaign, sample bin liners (i.e. certified compostable bags) as well as fact sheets on how to properly care for bins to prevent odours and pests, could also be provided.

Halton Region used federal gas tax dollars to support the 2008 launch of its GreenCart organic waste collection program, which was a $3.4 million project. Although this level of budget may not be economically feasible for Barrie, it highlights the importance of investment in any successful program launch.

In line with the previous discussion on waste program standardization (Section 9.5), Barrie may also wish to consider the approach that its neighbouring municipalities are taking with respect to organics diversion, and look into the possibility of initiating a partnership to align each other's P&E campaigns. Such a partnership could also result in cost savings through areas such as joint-tendering for communication and advertising services. Refer to Section 7.1 for a more thorough discussion on multi-municipal partnerships. The County of Simcoe offers a very comparable program to Barrie, and may be an ideal municipality for a potential P&E partnership program.

9.6.7 Re-launch Blue Box Recycling Program

To prepare for future growth and establish a strong foundation for its entire waste management system, it may be beneficial for Barrie to consider re-launching its Blue Box program under a new and revamped P&E campaign. This would be especially important should Barrie choose to incorporate additional material(s), such as plastic bags, into its existing Blue Box system.

According to the WDO Datacall, Barrie's diversion rate was 23.1% for recyclables in 2010. This is above average for its municipal grouping (Refer to

Table 31). The residential recycling diversion rates for large urban and urban regional municipal groupings have also been shown for comparison purposes.

Table 31: Residential Recyclables Diversion Rates for 2010

Municipality	Residential Recyclables Diverted (%)
Medium Urban	
Peterborough, City of	28.5
Sault Ste. Marie, City of	24.5
Barrie, City of	***23.1***
Guelph, City of	22.5
Brantford, City of	18.0
Sarnia, City of	13.4
Thunder Bay, City of	14.2
Urban Regional	
Simcoe, County of	33.4
Durham, Regional Municipality of	21.8
Waterloo, Regional Municipality of	20.2
Large Urban	
Peel, Regional Municipality of	24.3
Halton, Regional Municipality of	23.1
York, Regional Municipality of	23.7

An effective P&E program is best maintained on a year-round basis, with ongoing monitoring and evaluation as dictated by an effective communications plan.

9.6.8 Enhanced Welcome Package for New Residents

Barrie has developed Welcome Packages for new residents moving into the area to advise them about the City's waste management programs. This is especially important to prepare for future growth in Barrie and ensure proper integration of new residents, such as those incorporated through the Barrie/Innisfil boundary adjustment.

It may also be beneficial for Barrie to include other P&E materials such as kitchen magnets containing information on reuse services, a waste trivia game for children, and/or an invitation to attend an upcoming open house or tour at the Barrie Landfill.

Early communication to new residents, in particular when they are arriving from a municipality with different program requirements, is a proactive means of ensuring a successful waste management system with high participation rates.

9.6.9 Update and Maintain City Website

In 2011, Barrie released an updated version of its municipal website. For the most part, this new website is highly branded, contains up-to-date information and a significant number of graphics, eye-catching captions and relevant downloads.

On the website's homepage, Barrie established a link to "Learn More" about the SWMS. This link drew interested readers to the SWMS's mission statement, online feedback questionnaires as well as other relevant

SWMS information. Barrie has taken a proactive approach to involving its residents in the development of the SWMS and should continue to do so in the future as it implements SWMS recommendations.

To ensure that the waste management portion of Barrie's municipal website remains current, it is important that Barrie continue to update the site with new information or updates as required. Increasing the transparency of Barrie's waste management system on the website can also be an effective means for motivating residents to participate in diversion programs. For example, tracking Barrie's waste diversion rate against a target or remaining landfill capacity, will allow Barrie's residents to see how their efforts are contributing. In addition, recognizing local diversion efforts on the website, such as school recycling challenges or goals, can be an effective rewards and recognition program.

9.6.10 Relevant Promotion and Education Resources

There are a number of resources available to help design and implement a cost-effective and successful P&E program for waste management system and Barrie currently uses most of these resources.. Several resources include:

- CIF's Multi-residential P&E program materials:
  - Free P&E material for the multi-res sector
- WDO CNA Advertising Program:
  - Free newspaper lineage
- WDO "Ad Bank" :
  - Free P&E sample ads and graphics
- P&E module on the Recyclers "Knowledge Network" (http://vubiz.com/stewardship/Welcome.asp):
  - Best practices and program guidance
  - Municipal P&E Workbook
- E & E Fund Approved Communication and Education Projects

9.7 Green Bin Program for Multi-Residential Sector

In 2011, approximately 18% of all households in Barrie were high-density (i.e. multi-residential) homes (Hodgins, 2011). By 2031, it is estimated that the number of multi-residential homes in Barrie will increase to 41% of the total housing mix.

A large portion of this growth is predicted to occur in the "Old Barrie" Greenfield Area, with an estimated 59% of all households in this area to be multi-residential homes by 2031. Intensification or "densification" is also expected to occur in the downtown Barrie Urban Growth Centre with an estimated 150 residents and jobs per hectare.

In preparation for this forecasted densification, it would be beneficial for Barrie to investigate the option of extending its green bin organics program to include multi-residential homes, as opposed to only single family homes. Since limited information is present on organics collection from multi-residential homes, it may be

beneficial for Barrie to launch an organics pilot program for multi-residential homes prior to re-launching the program City-wide.

Multi-residential waste audit data from the City of Thunder Bay, which is part of the same “Medium Urban” municipal grouping as Barrie, indicated that the multi-residential waste stream produces approximately 3.0 kg per household per week of organic material suitable for an SSO program (Stewardship Ontario, 2007). With 9,720 multi-residential households in Barrie in 2010, this would equate to approximately 1,500 tonnes of acceptable SSO material in Barrie’s multi-residential waste stream.

Because of the challenges of storing SSO material in multi-residential units, it is reasonable to assume a capture rate of only 50% of this material, which would result in an additional 750 tonnes per year being captured for composting. This would equate to a 2.8% increase in waste diversion from a multi-residential SSO collection program. With the forecasted increase in number of multi-residential homes in Barrie, we would expect this tonnage to more than double by 2031.

Implementation of an SSO collection program in multi-residential units would involve both program initiation costs and ongoing operational costs. As with the implementation of the single family SSO program, it is important to supply participants with the tools necessary to encourage participation in the program.

In the case of the multi-residential residents, the tools necessary for participating in the SSO collection program include:

- Kitchen mini-bin container for each unit;
- Green bin collection cart(s) (32 gallon) located in an accessible area for all unit residents;
- Sample certified compostable liners for the mini-bins and cart(s); and
- Promotional materials.

Given the limited number of City staff, it would be beneficial for Barrie to initiate the program on a pilot basis to start. As part of the pilot, City staff could promote the program by distributing SSO carts and promotional materials and delivering face-to-face education to residents and building superintendents. This face-to-face education may involve displays set up in the building lobby at the time of material distribution and/or meetings with the building residents. The building superintendents could also be provided with posters and stickers to promote the SSO program. One of the additional benefits of a pilot is that it would allow Barrie to determine the staff resources that would be required for the full roll-out of the program.

The total initial capital cost for the implementation of a multi-residential SSO collection program, assuming that all existing multi-residential units (i.e. 9,720 units) are included in the program, is estimated to be approximately $156,000, as indicated in Table 32.

Table 32: Estimated Program Implementation Costs for Multi-residential SSO Collection (Manual Collection)

Cost Type	Estimated Unit Cost ($)	Number of Units (2010 Datacall)	Total Cost ($)
Kitchen Mini-Bin	$5	9,720	$48,600
32 Gallon Green Cart[1]	$33	262	$8,646
21 Gallon Green Cart[2]	*$29.25*	*518*	*$15,152*
Certified Compostable Liner Bags for Kitchen Mini-Bins[3]	$4.25	9,720	$41,310
Certified Compostable Liner Bags for Carts (10 bags)[4]	$9	262	$2,358
Promotional Materials			$25,000
Administration			$30,000
Total Cost ($)			**155,914**

1. Suggested cart size for **manual collection**. One 32 gallon cart will hold up to 150 kg of organics. Assuming that each unit produces on average 4.0 kg of organic material per week, approximately 37 units could be serviced by one 32 gallon cart in a weekly collection scenario. Therefore, a total of 262 green carts would be required.
2. Suggested cart size for **automated collection**. One 21 gallon cart will hold up to 75 kg of organics.
3. Approximately $51 for 12 boxes of 20 3 gallon bags (Source: Bag to Nature at www.idaco.ca). Assumption that each multi-residential unit is supplied with 1 box of 20 bags at $4.25 per box.
4. Approximately $108 for 12 boxes of 10 33 (or 36) gallon bags (Source: Bag to Nature at www.idaco.ca). Assumption that each 32 gallon cart is supplied with 1 box of 10 bags at $9 per box.

It is important to note that the costs presented in Table 32 are not inclusive of post-implementation costs for collection, processing and continued P&E, which are anticipated to be approximately $400,000 each year.

Due to the high cost of implementing and operating a green bin program, it is not recommended that the City extend the SSO collection program to the IC&I sector at this time, with the possible exception of schools (See Section 9.5.1), which are interested in partnering with the municipality to provide diversion programs on a cost recovery basis.

9.8 Bulk Purchase of Leaf and Yard Waste Bags

Barrie currently accepts the following types of containers in its leaf and yard waste collection program:

- Garbage cans (or rigid containers with handles);
- Bushel baskets;
- Burlap bags;
- Paper leaf and yard waste bags; and

- Corrugated cardboard boxes.

Paper bags tend to be the more popular choice of container used by Barrie residents and, from a collection and processing standpoint, tend to result in the greatest system efficiency. The durability of these bags is not generally jeopardized in wet weather conditions and they are relatively easy to manage at the composting facility.

Barrie does not provide paper bags to its residents; rather, it is the responsibility of each resident to select and purchase a container type that best suits their needs. Major hardware store chains, garden centres and some grocery stores carry the types of paper bags suitable for leaf and yard waste collection. Throughout the SWMS consultation process, some residents voiced their concern over the high price for these paper bags. A survey of three major retailers in Barrie revealed that the cost for paper leaf and yard waste bags ranges between $0.37 and $0.60 per bag.

Table 33: Cost for paper leaf and yard waste bags in Barrie

Retailer	Cost (Per 5 pack)	Unit Cost (Per bag)
Home Depot	$1.98	$ 0.40
Rona	$ 2.99	$ 0.60
Home Hardware	$ 2.99	$ 0.60
Canadian Tire	$1.85	$0.37

It is difficult to say whether the concern brought up during the SWMS consultation process regarding the high price of leaf and yard waste bags was based on real or perceived prices. Municipally-sold paper leaf and yard waste bags could be made available to the public at the BEC, City Hall, select retailers or at community events. As such, Barrie would need to consider additional administration and P&E costs associated with this municipal service.

9.9 By-laws and Policies

According to the FCM's Review of Waste Policies (FCM_a, 2004):

> *"Waste reduction can be most effectively achieved through policies and legislation, combined with appropriate technologies. While provinces and territories have the larger legislative role, municipal governments can contribute nevertheless by introducing policies and regulations that reduce waste through product design, and by requiring waste reduction in production and use, and promoting recovery of discarded materials."*

Municipalities have the ability to influence their citizens' behavior and attitudes towards waste management both directly and indirectly through policies such as bag limits, zero waste, EPR, green procurement, higher tipping fees or full life-cycle cost disposal charges, specific policies targeting IC&I waste, etc.

The "Review of Waste Policies" paper provides a review or 17 waste policy options, organized into five categories as described in Table 34.

Table 34: Waste Policy Options (FCM_a, 2004)

Category	Description	Policy Options	
Regulatory/Administrative	Options for mandating behaviour with by-laws or regulations	Disposal Bans	Making disposal of a material or product illegal
		Mandatory Recycling	Requiring source separation of materials and/or their subsequent recycling
		Target Systems	Negotiating targets for diversion of materials and monitoring progress
Economic Instruments	Options for using financial incentives or structures to influence behavior	Green Procurement	Establishing policies and procedures to ensure secondary-materials markets
		Tipping Fee Surcharges	Adding an extra component to tipping fees ensuring economic viability of alternatives
		Deposit-refund Systems	Placing deposits on items, which are refunded upon return for diversion
		Solid Waste Utility	Creating a financially self-sufficient agency with a strictly solid waste mandate
		Solid Waste Franchising	Assigning solid waste responsibilities (including billing) for given areas to private sector companies within the context of a comprehensive agreement governing rates, diversion options, frequency of pick-up
		User Pay Systems	Charging residents by unit volume or weight for waste services
		Carbon Credits	Selling credits for greenhouse gas (GHG) reduction from landfills (methane capture)
		EPR (1)	Collective systems for charging the consumer (via producer) for diversion costs
Voluntary Approaches	Methods of persuasion, education, and informal partnerships to influence behavior and alter	Extended Producer Responsibility (2)	Working with corporate producers to develop voluntary options (i.e. take-back)

Category	Description	Policy Options	
	community norms.	Enhanced Promotion	Emphasis on individual behaviour change through education, influencing norms
Strategic Approaches	Big-picture strategies providing direction for waste management programs.	Source Separation of Organics	Eliminating organics from disposal through source separation and curbside collection
		Integrated Solid Waste Management	Using a systematic, life cycle approach to choose a waste management options model
Community Linkages	Approaches or specific programs attempting to link solid waste solutions with other beneficial community goals and objectives.	Economic Development Programs	Integrating solid waste programs with economic development incentives
		Social Objectives	Integrating solid waste management programs with specific social objectives

The *Municipal Act, 2001* provides that a municipality may pass by-laws respecting matters within specific spheres of jurisdiction including but not limited to waste management. Across Ontario, waste management by-laws encompassing various aspects of municipal waste management systems are now common. Table 35 provides a summary of by-laws enacted amongst WDO's Medium Urban Municipal Grouping of provincial municipalities, including Barrie.

In order for by-laws to effectively encourage behavioural change in the community, they must be enforced. Active enforcement, rather than operating on a complaints basis, coupled with appropriate penalties mandate behavioural change. Maximum penalties for individual offences enforced by WDO's Medium Urban municipalities range from $50 to $10,000 for a first time offences, as shown in Table 35. Barrie has a maximum penalty of $2,000, which is rarely utilized.

In comparison to waste collection bans enforced by the collection authority or its representatives, enforcement by means of a by-law may be more consistent. Furthermore, by-law enforcement officers have the training and tools to manage potential conflict with residents. The enforcement of waste disposal policies is limited to processes where the waste is visible for inspection by the waste collector, disposal authority or a by-law enforcement officer.

Although the effect of dedicated by-law officers on waste diversion is difficult to quantify, it is reasonable to assume that consistent enforcement will augment program capture rate goals.

Table 35: Summary of Waste Management By Laws Enacted by WDO Medium Urban Municipalities in Ontario and County of Simcoe

	By-law	Material-Specific Collection Prohibition	Source Separated Mandate	Waste Preparation Standard	Waste Receptacle	Collection Guidelines (i.e. set-out time, location)	Conditions Governing Drop-off locations (i.e. landfill)	Scavenging	Penalties and Enforcement
County of Simcoe	By-law 5764	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes[1]
Region of Durham	By- law 46-2011	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes[2]
City of Guelph	By- law 2003-17070	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes[3]
City of Peterborough	Chapter 594 Garbage - Collection	Yes	No	Yes	Yes	Yes	No	Yes	Yes[1]
Sault Ste. Marie	By- law 2004-68 and By-Law 2003-140	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes[4]
Brantford	Chapter 440 (Garbage – Collection – Removal)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes[5]
Sarnia	By- law 62 of 2006	Yes	Yes*	Yes	Yes	Yes	No	Yes	Yes[6]
Thunder Bay[7]	-	-	-	-	-	-	-	-	-
Barrie[8]	By- law 85-163	Yes (Very general)	No	Yes	Yes	Yes	No	Yes	Yes[5]

* Source separation is not explicitly mandated, but implied in section 4 of by-law

1. Any person who contravenes this Chapter is guilty of an offence and shall be liable upon conviction to a fine imposed by law, and the same shall be recoverable pursuant to the Provincial Offences Acts.

2. Upon conviction, every Person who contravenes any provision of this By-law is subject to a fine of not less than $50.00 and not more than $10,000.00 for a first offence, and not less than $50.00 and not more than $25,000.00 for any subsequent offence of this By-law.

3. Every Person who is convicted of an offence under any provision of this By-law shall be liable to a maximum penalty as set out in Section 77 of the *Municipal Act, 2001,* S.O. 2001, c. 25, as amended from time to time or any successor thereof.

4. Every person who contravenes any provision of this By-Law is guilty of an offence and on conviction is liable to a fine as provided for in the Provincial Offences Act.

5. Penalty of not more than $2,000.

6. Any person who contravenes the By-Law is guilty of an offence and is liable: (a) On a first conviction, to a fine of not more than $10,000; and (b) on any subsequent conviction, to a fine of not more than $25,000. Note that corporations faces a maximum fine are $50,000 and $100,000 on first and subsequent conviction respectively.

7. No waste management by-law exists for Thunder Bay.

8. By-law is outdated. No mention of Blue Box or green bin.

In developing Table 35, it became apparent that Barrie's By-law is out-of-date (passed in 1985) and that there is no mention of Barrie's Blue Box program or green bin program or bag limits. It is recommended that Barrie update its By-law to reflect current system standards and requirements, as well as consider implementing some of the policies outlined in Table 34 where feasible.

Based on the recommendations put forth by the CLC, as well as the review of Barrie's existing waste management system, the following policies have been proposed as suitable options for Barrie:

- Zero Waste Policy for Public Event Diversion;
- Mandatory Source Separation and Curbside Diversion of recyclables and organics.
- Disposal Ban for C&D Waste;
- Partial User Pay System (Refer to Section 9.3); and
- By-Law for Retailers to Post Prominent Recycling Signage (where materials are accepted for recycling).

Each of these policy options are discussed briefly as follows.

9.9.1 Zero Waste Policy

In 2008, the City of Markham's Council committed to implement at Zero Waste policy, where all City sponsored events and all functions held at City facilities are required to adhere to the policy's statements. The policy also applies to all City facilities (owned and leased), all City staff, foodservice suppliers, foodservice sub-contractors and caterers, as well as all new and renewed foodservice contracts. The Zero Waste policy was developed as a means of "leading by example" and to-date has been very successful at diverting the City's waste from landfill.

Several examples of other locations that have adopted a "Zero Waste" policy include:

- Toronto, Ontario by 2012;
- Annapolis Royal, Nova Scotia by 2005;
- Nanaimo, British Columbia;
- Kootenay, British Columbia;
- Seattle, Washington; and
- The Country of New Zealand.

Although Zero Waste may not be achievable in reality, as a policy it provides motivation for the public and the private sector to think outside the box about waste reduction strategies. Zero Waste is also an essential component of a SWMS as it relates to the basic concepts of waste reduction, waste prevention and closed-loop resource utilization.

As such, Barrie may want to consider implementing a Zero Waste policy as part of its long-term sustainability objectives. However, rather than aiming to enact a system-wide Zero Waste policy, the policy could be on a smaller scale first, such as for public event diversion only, which would have a high public education impact factor. From there, Barrie could consider extending the policy to other areas such as City foodservice contracts, suppliers, staff etc.

9.9.2 Mandatory Diversion

Combined with a strong P&E program, a mandatory diversion policy for recyclables and organic waste has the potential to increase participation and diversion rates. Two US studies of recycling programs which surveyed more than 300 small communities in Pennsylvania on recycling and composting concluded that mandatory recycling programs have a higher level of participation than voluntary ones (79 % versus 62 %). Despite this fact, voluntary programs offered a 2 (two)% higher diversion rate than mandatory programs (Daniels et al., 2001). Higher diversion rates were obtained for the voluntary programs when participants were engaged in the program design.

The results of this study strongly point to the need for public engagement in the design of any (mandatory or voluntary) diversion program. Moreover, it is recommended that the implementation of a waste diversion policy be coupled with an effective P&E campaign to minimize the risk of a reduced "waste reduction ethic" from residents, which may cause diversion rates to lag behind participation rates.

Prior to implementing a mandatory diversion policy, Barrie should consult with the public in order to determine the social feasibility of this option and whether or not it has the potential to negatively or positively impact the development of the community's waste reduction ethic.

9.9.3 Disposal Ban

If properly enforced, disposal bans can provide an effective means of increasing the diversion rate of a municipality. Another positive spinoff from disposal bans is that they may stimulate new business opportunities in the areas of product development and the management of these banned materials.

In Nova Scotia, landfill bans helped the province reach its goal of 50% diversion by 2000, and have also led to the creation of 18 composting plants. The Greater Vancouver Regional District has also banned certain C&D items, along with newspaper, office paper and telephone books. Many other municipalities in Canada ban the disposal of hazardous wastes.

The City of Orillia has instituted a ban on divertible items whereby landfill customers bringing in loads of garbage that contain more than 10% recyclable material are charged double the base tipping fee or $230 per tonne (instead of $115 per tonne for regular garbage), The City claims that such measures have worked well to ensure that landfill customers using the site are properly separating recyclable materials (Orillia, 2011).

From an administrative perspective, disposal bans are relatively easy to implement, yet potentially tricky to enforce. The potential risks associated with disposal bans include the possibility of illegal dumping and the movement of waste to disposal facilities in neighbouring jurisdictions where the disposal ban is not in effect. The former can be controlled through proper enforcement, while the latter can be eliminated through inter-municipal cooperation (i.e. agreements with neighbouring municipalities to not accept banned materials).

In addition to proper enforcement and co-operation amongst neighbouring municipalities, the following requirements should also be in place in order to support an effective disposal ban policy:

- Recycling or diversion infrastructure to process the banned materials; and a
- Strong P&E program.

Given these considerations, Barrie may wish to reassess its waste diversion infrastructure prior to implementing a waste diversion ban. In particular, Barrie may need to increase its recycling depots as well as ensure that both single family and multi-family homes are properly equipped with appropriate containers to meet the ban's requirements.

Depending on the type of ban(s) enforced, larger curbside bins may be necessary. It would also be worthwhile for Barrie to ensure that the multi-residential organics program is up and running with limited issues prior to enforcing such a ban, in order to limit resident frustration and non-compliance.

Including the multi-residential sector in a disposal ban also aligns with the recommendation to standardize waste diversion programs locally (Section 9.5.2). Finally, Barrie might also consider connecting the implementation of a disposal ban to the roll-out of a new and revamped P&E campaign (refer to Sections 9.6 and 9.9) to promote cost efficiencies.

9.9.4 Partial User Pay

Refer to Section 9.3 for a discussion on user pay programs; their benefits and risks, and their role in Barrie's waste management system.

9.9.5 By-law for Retailers

One suggestion from the CLC meeting held following Consultation Series #1 is that it would be beneficial for Barrie to implement a by-law for retailers to post prominent signage where materials are accepted for recycling. Such a policy could be considered a type of EPR policy (refer to Table 34) relating to Corporate Social Responsibility.

Corporate Social Responsibility EPRs are where brand owners or retailers accept a certain level of responsibility with respect to their own products. While these programs are typically voluntary, they can also be enforced through government legislation. EPR programs emphasize individual responsibility by placing the financial burden on producer and/or retailers. In turn, these programs theoretically promote product-design changes and innovative waste management systems and technology.

By implementing a by-law requiring retailers to post prominent signage where materials are accepted for recycling, this would minimize some of Barrie's P&E costs. Signage would also promote a retailers image as being "environmentally responsible" and could also lead to more retailers participating in voluntary take-back programs through the copycat effect, thereby stimulating additional waste minimization in Barrie. Enhanced signage posted in retail locations would help to alleviate some of the confusion that residents have about "other recycling programs" (i.e. take-back programs, reuse partnerships) as identified during Consultation Series #1.

Since individual retailers are responsible for the majority of the costs and administration associated with such a policy, the costs incurred to Barrie would be minimal. However, this noted, it would be beneficial for Barrie to allocate some P&E funding towards educating the community about the cost implications (i.e. environmental and financial) of having Barrie collect these materials versus returning them to retailers. A simple P&E solution could be to dedicate a section to this concern in the annual Barrie Waste Management Calendar.

9.10 Improve Depot and Drop-Off Program

As previously described, the BEC operates one public drop-off depot for the collection of MHSW, as well as one public drop-off area for the collection of garbage for disposal and the following items for recycling:

- Scrap metal/white goods;
- WEEE;
- Scrap tires;
- Excess and/or over-sized recyclables (i.e. corrugated cardboard, paper fibre materials, comingled containers); and
- Leaf and yard waste.

The public drop-off area is open to the public every Tuesday through Saturday, between 0900 and 1600 hours, while the MHSW drop-off depot is only open on Saturdays, between 0900 and 1600 hours.

There were several concerns brought up by the public during Consultation Series # 1 regarding the public drop-off depots. These concerns include:

- Inconvenient depot hours; and
- Long wait times at the depot.

Research completed by the Ohio Environmental Protection Agency (Ohio EPA, 2004) found that one of the biggest factors for a successful drop-off recycling facility was that the site be open full-time (40 hours a week or more) instead of part-time. The explanation provided for the finding is that residents have more opportunity to drive by a site that operates full-time, and are more likely to load their recyclables and bring them to a site if they are certain it will be open.

In order to reduce wait times at Barrie's drop-off depot/area, a drop-off for MHSW has been moved to an area before the scales from May through October. This change has alleviated some of the bottleneck effect occurring at the scales, and makes the drop off of MHSW more convenient for residents.

In anticipation of future population growth, and as a means of increasing diversion, Barrie may want to consider the following additional depot enhancement options:

- Development of Eco-Stations:
  - Expand the existing drop-off depot / area at the BEC into an Eco-station; and
  - Develop an additional staffed Eco-station at an alternative location.
- Enhanced C&D Waste Diversion;
- Centralized IC&I Drop-off Depot; and
- Mobile Unit for collection of specific items.

These options are discussed in greater detail in the following sections:

9.10.1 Development of Eco-Stations

An Eco-station is a waste management facility that provides residents with a convenient location where they can drop off a variety of materials, including reusable goods, as well as recyclable materials that cannot be collected in an efficient and cost effective manner through a curbside collection program. The concept of Eco-stations differs from the Integrated Waste Management Facility (IWMF) depot model commonly found across Ontario.

An IWMF depot model allows for the drop-off of residual garbage and non-recoverable C&D debris (i.e. Barrie's BEC), whereas, Eco-stations facilitate the management of reusable goods or recyclables, exclusively. When coupled with a public education component that includes waste reduction solutions, Eco-stations can address all elements of the 3R's hierarchy. Moreover, Eco-stations provide an opportunity for municipalities to partner with not-for-profit organizations, such as Habitat for Humanity and Goodwill, to promote the reuse of certain materials. It is also recommended that the Eco-station(s) be properly staffed in order to reduce illegal dumping and improper segregation of waste and recyclable materials.

Eco-stations provide the opportunity for the diversion of specific materials that are not recovered through the Blue Box, yard waste or green bin programs, such as:

- Large size polystyrene;
- Large quantities of leaf and yard waste;
- Large size corrugated cardboard;
- Wood;
- Scrap metal;
- Tires;
- Appliances/white goods;
- WEEE;
- Textiles;
- Mattresses;
- Reusable items;
- Drywall; and
- MHSW.

As indicated in Table 36, York Region, the Region of Peel and the City of Hamilton operate similar facilities for residents to bring special waste streams for recovery. The City of Toronto is also planning to develop Reuse Centres for the reuse, disassembly, and recycling of electronics and other durable goods.

Table 36: Municipal Depot Facilities for York Region, the Region of Peel and City of Hamilton

Municipality	Terminology	Materials Accepted	Hours of Operation	Fees
York Region	Community Environmental Centres (CEC)	Building materials, WEEE, appliances, plastic film, polystyrene Goodwill: clothing, housewares, books, textiles, electronics, Habitat for Humanity lumber, cabinetry, windows, doors, hardware, plumbing and lighting fixtures	Thurs – Mon, 9:30am - 4:30pm	No fees for recyclable materials from residents
Region of Peel	Community Recycling Centres (CRC)	MHSW, Blue Box recyclables, large metal appliances, WEEE, scrap wood, scrap metal, drywall, tires, leaf and yard waste Goodwill – reusable items	Varies, but generally Mon – Sun, 8:30am – 4:30pm	No fees for leaf and yard waste, appliances. Blue Box materials, tires, MHSW, reusable goods
City of Hamilton	CRC	Blue Box recyclables, WEEE, leaf and yard waste, scrap metal, clean wood, tires Reusable items at Mountain CRC	Mon – Sat, 8:00am - 6:00pm	No fees for recyclable materials from residents

Barrie may wish to consider developing Eco-stations for the collection of recoverable materials not suitable for the Blue Box, yard waste or green bin program, and for other over-sized recoverable materials. The establishment of Eco-stations would offer opportunity for Barrie to increase the performance of drop-off based waste diversion programs and provide a new approach to public education.

As indicated in Table 37, the development of two Eco-stations in Barrie by 2031 would bring the City in line with the coverage provided by other municipalities.

Table 37: Comparison of Number of Eco-station Sites

Municipality	Number of Eco-stations	Land Area (km^2)	Land Area/Depot	Population	Pop/Depot
City of Barrie (2011)	*0**	*77*	*N/A*	*140,000*	*N/A*
City of Barrie (2031)	*2***	*77*	*38.5*	*210,000*	*105,000*
York Region	3	1,756	585	873,000	291,000
Region of Peel	5	1,254	251	1,160,000	232,000
City of Hamilton	3	1,130	377	513,000	171,000
Region of Durham (proposed)	6	2,590	432	574,000	95,700

* Current number of Eco-stations in 2011

** Recommended number of Eco-station by 2031

9.10.2 Centralized IC&I Depot

Barrie currently offers curbside collection services to the IC&I sector, whereby IC&I establishments are permitted to set out a maximum of ten untagged bags/receptacles of garbage week per week, in addition to an unlimited number of tagged bags. Collection frequency is once weekly for all IC&I establishments, except for those located within the CBD, which receives twice weekly garbage collection. This more frequent collection reflects the limited availability of set out space for the CBD establishments.

Some concern was raised during Consultation Series #1 regarding the collection of waste from the IC&I establishments located in Barrie's CBD. These concerns included:

- Aesthetic issue of having garbage bags sitting out on the curb twice weekly (and recyclables once weekly); and
- Related odour issues, in particular during the summer season.

One option to improve the aesthetic environment of Barrie's downtown, as well as minimize collection costs, is to establish a centralized IC&I drop-off location. The drop-off location could collect:

- Residual garbage;
- Blue Box paper fibres and co-mingled containers;
- Large quantities of and over-sized OCC;
- Food waste organics, and
- Designated wastes (i.e. WEEE, MHSW, tires).

A complimentary by-law could be developed whereby the IC&I sector (in particular food producers/ generators) would be required to source-separate their food waste organics at the depot. Similar by-laws could be developed for the proper separation and diversion of Blue Box materials as well as designated wastes.

Rather than operating a City-owned IC&I drop-off depot, Barrie may wish to cut down on capital and operating costs by inviting a third party service provider to site, design, build and operate the facility in exchange for the following:

- Market revenue received from the sale of recyclables (and compost);
- Reimbursement for the haulage of waste to Barrie's landfill site; and
- Reimbursement for the haulage of food waste organics to the Alltreat Farms composting facility.

The transportation of waste to the drop-off depot would be the responsibility of the IC&I sector. It would be at the discretion of each IC&I establishment to determine whether or not they would require a private hauler to transport the material to the centralized depot or whether they would manage it on their own.

9.10.3 Enhanced C&D Waste Diversion

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

C&D waste is accepted at the Barrie's landfill site according to the tipping fee rate for solid waste or commercial garbage. The material is currently landfilled and not diverted for recycling or reuse.

C&D waste is different from IC&I waste and therefore should be managed under a different set of policies and programs. According to Statistics Canada, in 2002, 1.2 million tonnes of C&D waste was generated by the C&D sector, whereas 4.4 million tonnes was generated by the residential sector and 6.5 million tonnes was generated by the IC&I sector.

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

- Wood;
- Concrete;
- Asphalt (i.e. shingles);
- Gypsum (i.e. drywall);
- Paper; and,
- Metals.

The following two regulations for C&D waste management projects apply under Ontario's 3Rs Regulations:

O.Reg. 102/94

This regulation applies to C&D projects where the total floor area is at least 2,000 square metres. It requires owners to conduct a waste audit, and develop and implement waste reduction plans, and update them annually.

O.Reg. 103/94:

This regulation applies to C&D projects where the total floor area is at least 2,000 square metres. It requires owners to have source separation and to ensure that the wastes are recycled. Materials to be recycled include:

Construction: Cardboard, Brick and Concrete, Drywall (unpainted), Steel, Wood (untreated)

Demolition: Brick and Concrete, Drywall (unpainted), Steel, Wood (untreated)

Unfortunately, although these regulations were created to maximize diversion, their effectiveness is limited by the lack of third party review and enforcement of the policies.

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

There is currently no specific program in place for the collection of C&D waste within Barrie. While scrap metal and cardboard are collected and diverted from the public drop-off area, other C&D materials such as wood, concrete, asphalt and gypsum are not currently diverted.

A primary recommendation would be for Barrie to enhance its C&D waste diversion efforts at the BEC by expanding its diversion services to include the following items:

- Concrete;
- Asphalt (i.e. shingles); and
- Gypsum (i.e. drywall).

The expansion of the C&D program could be launched under a new P&E campaign, including advertisements on Barrie's municipal website and via promotional material and signage at the BEC. Program enforcement, and supplemental education, could be provided by site attendants at the BEC.

Collection bins for C&D waste could be organized together, in a separate area from other diversion bins, with signage designating the area as a special "C&D Diversion Area". Depending on future population growth pressures and the success of the program, the site could be expanded as necessary, assuming sufficient site space is available.

According to the *Blue Box Enhancement and Best Practices Assessment Project* (KPMG, 2007), there are a number of key attributes for effective recycling depots, including:

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

All of these contribute to a higher rate of community participation and overall capture rate.

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

It is also important to ensure that all depot attendants are properly trained in the various programs offered by Barrie. In a report entitled "Evaluation of Best Practices for Rural Recycling Depot Programs" prepared for Quinte Waste Solutions by SGS Lakefield Research Limited (Quinte Waste Solutions, 2006), it was identified that the depot attendant is a key factor in:

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

Barrie may also wish to consider hiring a summer or co-op student to assist the depot attendant, encourage proper material separation and promote waste diversion programs where possible (i.e. distribute P&E literature or facilitate site tours).

9.10.4 Mobile Waste Drop-off Unit

Typically participation in public depot programs is between 15 and 20% (FCM_b, 2004). The reason for this moderate participation rate is that depot diversion is typically less convenient, for the majority of residents, than curbside collection. One method of increasing participation in depot drop-off is to consider implementing a mobile drop-off unit.

A mobile unit would travel across Barrie, visiting various collection points on a regular basis, in order to improve accessibility for all residents (i.e. the sector of the population that may not otherwise travel the distance to a permanent depot). A mobile unit would be supplemental to the existing stationary depot and could offer material specific collection opportunities. For example, the mobile unit could be specific for the collection of designated waste materials (i.e. MHSW, WEEE and tires) or other materials such as reusable household items, and bulky items and white goods.

A mobile unit could also provide additional opportunity for partnership. For example, the City of Ottawa recently announced that it would be joining forces with the Kanata Research Park Organization to host a mobile MHSW collection depot.

Finally, mobile units provide an opportunity to engage with the public face-to-face, alerting residents of any programs changes, answering questions and providing technical support, as needed.

9.11 Reuse Programming & Partnerships with Local Charities

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

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

A variety of program strategies have been established across municipalities to encourage and facilitate reuse of lightly used residential goods. These reuse strategies are summarized in the sections that follow.

9.11.1 Community Reuse Events

Two interesting examples of community reuse events that help to divert useable materials from landfill are:

- City of Toronto Community Environment Days; and
- City of Ottawa Give Away Weekends.

City of Toronto Environment Days

One Community Environment Day is hosted annually by each City of Toronto Councillor within their respective ward. A total of 45 Community Environment Days were scheduled in 2011 between May and October. Neighbourhood residents are encouraged to bring unwanted and used household items to a pre-established central collection location, such as a park or a community centre, where items can be donated to attending organizations for reuse or are segregated for proper disposal.

Participating organizations include charities that turn around and sell donated items at their second hand retail outlets (i.e. Goodwill) and the Toronto District School Board who collected art supplies, school supplies and costumes for use in schools. In addition to facilitating reuse, the City of Toronto Community Environment Days program provides an opportunity for public education and offers a convenient drop-off location for specialized recycling programs (i.e. WEEE, MHSW, printer cartridges, cell phones and plastic shopping bags). During these events, the City also sells rain barrels, backyard composters and recycling containers.

City of Ottawa Give Away Weekends

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

Barrie currently has a similar giveaway event for the second Saturday each June. On this designated “Free Goods Exchange Day”, residents can place unwanted household items such as useable furniture, clothing, books, tools etc., at the end of their driveway or on the edge of their lawn. Anyone wanting those items can pick them up at no charge. Residents are required to remove the items by 9pm that day and to date there have not been any significant issues with materials remaining at curbside after this event.

9.11.2 Electronic Forums

The internet has become a readily accessible, convenient means of advertising and coordinating the sale of unwanted household goods, often across vast distances. Public internet sites, such as EBay, Kijiji and Craig’s List are well known searchable electronic classifieds where individuals and organizations can seek out and sell anything from toys and games to jewellery and art. Meanwhile, goods exchange software programs are

appearing on the market for purchase by municipalities to facilitate their reuse strategies (i.e. iWasteNot Systems). The City and County of Peterborough's *PeterboroughReuses.com* website and the City of Ottawa's *Take it Back!* program offer good examples of municipally-facilitated reuse systems.

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

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

The City of Ottawa's Take it Back! program provides an alternate approach to electronic forums. Through the Take it Back! program, residents can search and access an online database of nearly 600 local retailers registered with the City of Ottawa as either a reuse or recycle depot for a specific waste good(s). Retailers are responsible for sustainable management of the waste types collected at their own cost. In partnering with the City of Ottawa to increase improved product stewardship, retailers receive increased awareness of their business through City-wide advertising of the program and participating partners. An evaluation of the program's contribution to the City's waste management program revealed that approximately 500 tonnes of waste are diverted from the municipal waste management to program partners each year.

9.11.3 Reuse Centres and Partnerships with Charities

Municipal reuse centres function in a similar capacity to charitable second hand goods stores. Waste items, including dishes, furniture, small appliances, books and magazines, lighting fixtures, sporting goods, toys and games, sinks, doors, faucets, and other useable goods resulting from renovation projects are accepted from residents free of charge. After an assessment of their condition, sorting and weighing for the purposes of tracking waste diversion, all delivered items in clean, working order are made available for use by others rather than sent for landfill disposal. Goods considered to be in too poor of a condition for reuse (i.e. residue) are sent to landfill for disposal. Benefits of municipal reuse centres include:

- Promotion of the idea and benefits of reuse;
- Provide affordable items to individuals and organizations;
- Serve as a centre for waste diversion education; and
- Contribute to municipal social programming through partnerships with local community organizations.

Barrie currently does not operate a reuse centre; however a partnership with Habitat for Humanity has been formed for the collection of bulky items. The partnership provides bulky item collection to residents of Barrie for a charge of $25 per item. In 2011, the Barrie Habitat for Humanity Re-store diverted approximately 375 tonnes of waste from landfill (Habitat for Humanity, 2012). All items brought to the Habitat Restore are sold back to the

public at bargain prices. All profits are directed towards Habitat for Humanity's homebuilding program (i.e. building homes for low-income families in need).

In addition to the existing bulky waste collection partnership between Barrie and Habitat for Humanity, it would be beneficial for Barrie to consider developing a fixed reuse centre to accommodate future growth and facilitate reuse efforts for its residents. Four interesting examples of community reuse centres and events that help to divert useable materials from landfill are summarized as follows:

Region of Peel Community Recycling Centres

Partnership: Three-Way Partnership between Region of Peel, Goodwill and Ontario Works (2002 – present)

Facilities: Five CRCs located in Bolton, Brampton, Caledon and Mississauga. Reusable Goods Stores and Education Centres located at specified sites. Facilities managed by Goodwill.

Materials Collected: recyclables (i.e. cardboard, drywall, large metal appliances s and fixtures, Blue Box items, scrap wood and metal, tires, leaf and yard waste), electronics, HHW, reusable goods.

Community Benefits: Sale proceeds are used to offer workforce development opportunities to people facing employment barriers in the Peel Region.

Point of Interest: Used cooking oil dropped off by residents is converted to biodiesel for use in Regional vehicles.

York Region Community Environmental Centre

Partnership: Three-Way Partnership between York Region, Goodwill and Habitat for Humanity (2009 - present)

Facility: McCleary Court CEC in Vaughan. Facility managed by Goodwill and Habitat for Humanity York.

Image 1. York Region CEC

Materials Collected: clothing, house wares, books, textiles, electronics and small appliances, as well as renovation and household materials such as lumber, cabinetry, windows, doors, hardware and plumbing and lighting fixtures.

Community Benefits: Materials collected are distributed for re-sale at the charities' retail locations throughout the Region.

City of Ottawa Reuse Centre

Partnership: Partnership between Ottawa Region, Waste Management and Habitat for Humanity (2009-present)

Facility: Free public drop-off centre located just north of the Carp Rd. Landfill. This center will also be a storage depot for Ottawa's two Habitat Restore Centres.

Materials Collected: Interior and exterior doors, thermal glass and newer windows, kitchen and bathroom fixtures and cabinets, new building materials, trim and shelving, working light fixtures, residential hardware, plumbing and electrical supplies, tiles and flooring, framed mirrors, seasonal products and tools.

Point of Interest: WM has also opened a free recycling center (same location) to collect: e-waste, cardboard, tires and plastics.

Northumberland County "Beyond the Blue Box Boutique" Reuse Centre

Partnership: Beyond the Blue Box is a Not-for-Profit organization operated in close collaboration with Community Living West Northumberland, an organization which provides support to individuals with intellectual disabilities. The organization is managed by a volunteer Board of Directors.

Funding: Beyond the Blue Box commenced operation in 1992 with assistance from a 3-year Federal Environmental Partners' grant of $100,000. The operation is now fully funded through proceeds from the sale of reusable items and donations from the community. In 2008, Beyond the Blue Box applied for a grant from the Ontario Trillium Foundation. They received a grant in the amount of $125,000 for the renovation of what is now known as "Beyond the Blue Box Boutique." Municipal support for the operation includes a tax rebate from the Town of Cobourg (approximately $9000) and a rebate on landfill tipping fees from the County of Northumberland (approximately $6000).

Facility: Beyond the Blue Box Boutique located in Cobourg.

Image 2. **Northumberland County "Beyond the Blue Box Boutique"**

Materials Collected: A wide range of useable items that may otherwise be destined for disposal, such as clothing, sports equipment, dishes, furniture, lighting, toys, electronics, mattresses, etc. Approximately 900 tonnes of materials went for reuse from the facility in 2010, which is equivalent to the amount of waste sent to landfill from 5,000 homes in Northumberland County.

Point of Interest: Another objective of this operation is to provide work, social interaction and training opportunities for developmentally challenged individuals. The facility employs 13 full and part-time staff and provides work experience for 11 developmentally challenged individuals; of whom four are full-time and seven part-time. They have also helped over 100 young people perform hundreds of hours of community service under the Community Probations Services Program.

The operating model established by Beyond the Blue Box could be utilized as an example in setting up and operating a municipal Reuse Centre. The operation is currently self-funded with revenues for the facility exceeding $200,000 a year, consisting mainly of revenue from sales of donated used merchandise, along with some public donations and investment interest.

9.11.4 Return-to-Retailer Programs

RTR programs are considered a means of advancing the principle of EPR. Through RTR programs, responsibility for the physical and financial management of a product is transferred away from the municipal waste management system towards a supplier, importer and/or manufacturer.

Often RTR programs function on a very local scale and are advertised at a grass roots level. As RTR programs shift the responsibility for the management of a product away from the municipal waste management system, the City is limited with respect to its role in developing RTR collection system.

The City of Ottawa and Halton Region provide examples of measures taken at the municipal level to encourage voluntary RTR programs. Through identically named *Take It Back!* programs, the City of Ottawa and Halton Region residents can search and access a database of local retailers registered with the municipality as a reuse

site or recycler for specific waste goods. Retailers are responsible for sustainable management of the waste types collected at their own cost.

In partnering with the municipalities to increase improved product stewardship, retailers receive increased awareness of their business through municipality-wide advertising of the program and participating partners. Waste items advertised for RTR through these programs include automotive parts, garden supplies, health equipment, electronics and many other household products (i.e. clothing, furniture, dry cleaning bags).

Elements required for the implementation of these *Take It Back!* programs include the following:

- Retailer registration and verification processes;
- Program policies and guidelines;
- A searchable database hosted by the municipal website;
- Routine database/website maintenance and content updating;
- A recognizable program identifier that approved retailers can use to advertise that they meet the established program standards; and
- Additional promotional materials.

Currently, Barrie residents are able to participate in various RTR programs including programs for used tires, WEEE, MHSW and used batteries and cell phones. The Call 2 Recycle Program for rechargeable batteries and cell phones, managed through the Battery Recycling Corporation, accepts the following types of rechargeable batteries:

- Nickel cadmium;
- Alkaline;
- Lithium Primary;
- Nickel Metal Hydride;
- Lithium Ion; and
- Small sealed lead acid (weighing less than 11 lbs).

Currently, there are approximately 21 Call 2 Recycle locations in Barrie, including Home Depot, Canadian Tire, Sears, Lowe's, The Source, etc. A complete listing of locations can be found at *http://www.call2recycle.ca/drop-off-your-old-batteries.php?c=149&d=486&w=9913.* The program is open to all businesses for participation. Businesses participate by signing up with the Rechargeable Battery Corporation, who will then add them to the roster of Participating Call 2 Recycle Ontario Business Sites and supply them with boxes to collect batteries. Promotion of the success of this program on Barrie's website and/or Waste Management Calendar could contribute to additional diversion success and draw in new business participants (i.e. schools, shopping centres, apartment buildings, etc.).

In Barrie, there are a growing number of retail outlets that are taking back used plant pots and garden trays, and a number of retailers are taking back WEEE, MHSW, used tires along with other materials. On Barrie's website,

links are provided to current databases for the collection of WEEE, MHSW, scrap tires. These websites include *recycleyourelectronics.ca, makethedrop.ca and greenmytires.ca* respectively.

In order to further promote RTR programs, Barrie may wish to:

- Investigate current RTR programs that exist in the area;
- Develop a retailer promotion program OR require retailers to post prominent signage in their stores indicating the materials they accept;
- Advertise these programs in one central location such as an online database.

9.12 Lobby for Extended Producer Responsibility

EPR is a policy that places the responsibility of costs associated with the management of products at end of life on producers. Currently there are more than 100 EPR-type programs across Canada.

The advantages of EPR include:

- Costs shifted off tax base: This protects waste reduction programs from pressures created by government deficits, changes in political direction, and competing priorities, and free up tax dollars for other services
- Promotion of better product and packaging: When required to pay for recycling or composting, manufacturers have an incentive to redesign for greater recyclability, decreased toxicity, and less material usage
- Increasing waste diversion: Increased funding (for new and enhanced programs) and a strong commitment by partners usually leads to higher participation rates, greater coverage and more materials recycled.

Municipal governments, alone, in partnership with other groups, or through municipal associations may lobby provincial and federal governments for EPR legislation. Municipal associations that Barrie may wish to partner with to lobby for EPR include:

- Association of Municipalities of Ontario (AMO);
- FCM Partners for Climate Protection Program.

It is beneficial for municipalities to group together in their lobby efforts for EPR since multiple voices carry more weight than one. Moreover, EPR is a policy that is best implemented at the provincial or federal level as opposed to the local level. From the perspective of both the public and private sector, a harmonized approach to the implementation of EPR would be much more efficient and cost-effective from an administrative perspective than a patchwork of laws.

9.13 Additional Waste Diversion Opportunities and Market Conditions

It is realistic to expect that Barrie's waste diversion rate can be increased through increased participation in existing waste diversion programs. However, in order to achieve a significant increase in waste diversion, it may be necessary for Barrie to provide additional waste diversion opportunities for the residential waste stream.

Based on the current waste management system and a review of the waste composition data, it is recommended that the following waste diversion programs be considered:

- Plastic film recycling,

- Mattress recycling; and
- Textile recycling.

It is also important to ensure that any materials that are accepted for diversion in Barrie's waste management system have stable markets in order for the material to be efficiently and effectively diverted from landfill. If residents segregate specific materials and those materials are then disposed of, the public confidence in the whole waste diversion program is eroded.

9.13.1 Plastic Film Recycling

Plastic film is not currently accepted in Barrie's Blue Box program. This includes products such as plastic grocery bags, plastic wrap, retail store carry out bags, rinsed milk pouches and outer bags, bread bags, dry cleaning bags, diaper outer bags, frozen food bags, and overwrap for toilet tissue and paper towels. Given the lightweight nature of plastic film, its presence in the waste stream is not a significant contributor to overall waste tonnage amounts or diversion rate values (approximately 1-2%). Despite this fact, when striving for Zero Waste, this waste stream cannot be dismissed.

Markets for plastic film have been somewhat volatile over the past decades. In the late 1990's recyclers had to pay to get rid of plastic film, however the value of this commodity increased to over $100 per tonne in 2005 and 2006. In the first quarter of 2009, recyclers once again had to pay to market their plastic film, however the current value of plastic film is $10/tonne (StewardEdge, 2012) and it is considered that in the long term there will be sustainable, positive value markets to manage this material.

Plastic film can be difficult to manage in a MRF due to the lightweight and fluffy nature of the material. If loose, it wraps around pulleys, conveyors and other equipment, and makes it difficult to access other, more valuable, commodities. The *Blue Box Enhancement and Best Practices Assessment Project* (KPMG, 2007) recommends that plastic film be kept separate from other materials in the Blue Box (KPMG, 2007). Residents should be advised to place plastic film separate in either one small grocery bag, or a large clear bag.

The addition of plastic film to the Blue Box collection program should not increase collection costs since it does not require a separate collection and is material that is already being collected with the residual garbage stream. The incremental cost for processing plastic film will be somewhat offset by material revenue and the savings in the cost for disposal of the material; however it is still an expensive product to recover. Based on the amount of plastic film recovered in other municipal programs, it is estimated that the City of Barrie would be expected to recover approximately 300 tonnes of plastic film annually.

9.13.2 Mattress Recycling

Currently Barrie does not have a program in place for the collection or diversion of mattresses. Bulky waste, including mattresses, is collected though a partnership with Habitat for Humanity. However, along with many other bulky waste items collected, mattresses are not recycled or reused.

Discarded mattresses take up a significant amount of space in the disposal containers at the waste disposal sites and are bulky to transport to landfill or other disposal facilities. Mattress recycling facilities separate mattresses into the following components for further reuse or recycling:

- Foam is utilized in carpet under pad;
- Metal springs are recycled as scrap metal;

- Wood is used for wood chips or heating products; and
- Felt is used in insulation.

Although retail outlets and mattress associations recommend that people replace their mattresses every five to seven years, it is probably more typical that mattresses are replaced at a frequency of every 10 years. If there is a 1:1 mix of single occupancy to double occupancy for mattresses per household, there would be approximately 10,500 mattresses from the residential sector in Barrie reaching end-of-life each year. This does not include mattresses from hospitals, long-term care facilities and hotels.

Mattress recycling is a relatively new industry in North America, and until recently the availability of mattress recycling in Ontario has been non-existent. Currently, one mattress recycling service provider operates within the Greater Toronto Area (Recycle Mattress Depot) and MattCanada, a Montreal based operation, will be opening a second facility in Toronto soon. These recyclers receive clean, dry mattresses on a drop-off basis or offer collection services for a fee. On average a tipping fee of $10 is charged for each mattress. Coinciding with efforts focused towards corporate environmental responsibility, retailers such as Sleep Country Canada, have established mattress exchange programs. Customers purchasing new mattresses can have the old one taken away by Sleep Country at the time of delivery. Not-for-profit community organizations will also sometimes accept donations of gently used, unsoiled mattresses.

The City of Guelph operates a bulky item pick-up program where large items such as mattresses can be picked up from the curb at a cost of $20 per item and $15 for each additional item. In order to have a bulky item picked up residents are required to purchase a bulky item ticket from one of the location listed on the City's website, and then schedule a pick-up date by calling the Waste Resource Innovation Centre (WRIC). All collected mattresses are delivered to the WRIC depot to be subsequently picked up and recycled by the processor.

Program costs are on a per item basis and depend on transportation distances. In order to gain a true estimate of the total annual cost to Barrie for this program, a pilot study is required in order evaluate incoming waste flows on a per item basis. By also obtaining tonnages for the quantity of mattresses diverted through the program, Barrie can assess whether current tipping fees are sufficient to off-set the overall cost of the program.

9.13.3 Textile Reuse

Charitable organizations (i.e. Canadian Diabetes Association, Ontario Federation for Cerebral Palsy, Ontario Association for Community Living, Goodwill, Salvation Army, Value Village) are the most common end market currently used by municipalities for textiles. Many of these organizations rely on the funds raised through the resale of the gently used clothing, collected as a primary means of funding to support their programming and services. For example, the sale of used textiles and other goods represented the second largest source of revenue for the Salvation Army during their 2008 / 2009 financial review period (Salvation Army, 2009). In an increasingly competitive market, thrift retailer organizations such as Goodwill are demonstrating continued efforts aimed at increasing the level of services that they provide in the community. In order to do so, Goodwill has established a goal to collect 36,000 tonnes of recycled goods per year by 2010. In 2006, approximately 18,000 tonnes of recycled goods were received, indicating significant on-going market availability (Goodwill, no date). It is recommended that Barrie consider partnering with a charitable organization such as Goodwill or Salvation Army to set up a drop-off box or collection area at the BEC and/or other City owned facility (ies). The Habitat Re-Store, an existing and successful charity operating in Barrie, has expressed interest in taking the lead on coordinating various charities for the collection of reusable materials at the Barrie BEC. Promoting the success

of reuse programs on Barrie's website could encourage others (i.e. schools, apartment building or condo owners/superintendents, etc.) to follow suit and initiate a similar reuse program and/or charity partnership of their own.

9.14 Improve the Waste Services Contract

Barrie will issue a new tender or Request for Proposal (RFP) for waste collection and processing to commence in 2014. Historically, waste collection and processing contracts have followed the traditional approach whereby Barrie defines the scope and specifies the services, and the contractor supplies those services. These types of contracts worked well for defined packages of work, however as waste management systems become more complex, there are advantages for municipalities to allow bidders to design the most efficient and competitive system.

The contract should also reflect the inherent limitations associated with the inability to foresee and cover every eventuality. The challenge is to be clear in defining the desired outcomes of the contract without being so prescriptive that the contractor cannot provide innovative solutions. A contract that is too specific about how services must be provided, for example by designating the use of particular trucks or specific processors, reduces opportunities for innovation by contractors.

There are a number potential cost savings opportunities that could be built into the new tender, including:

- A fuel surcharge in the waste services contract;
- A methodology for establishing and updating the house count;
- A mechanism for Barrie to obtain a share of revenue for the sale of recyclables;
- A weight-based pay schedule;
- Rationalization for public space bins; and
- Conversion of public space bins into advertising bins.

10.0 ALTERNATIVE WASTE DISPOSAL OPTIONS

Barrie achieved a 45% residential waste diversion rate in 2010 and is attempting to reduce the amount of waste going for disposal. One of the goals of the SWMS is to maximize the recovery of resources. However, for the foreseeable future there will continue to be the need to dispose of residual waste that is not recyclable or compostable.

There are a limited number of options to consider for managing residual waste. Generally these options fit into the following categories:

- Landfilling;
- MBT;
- Thermal Treatment; and
- Refuse Derived Fuel (RDF) Production.

Each of these technologies is discussed further in the following sections.

10.1 Landfilling

The EPA defines landfilling as the *disposal of waste by deposit, under controlled conditions, on land or on land covered by water, and includes compaction of the waste into a cell and covering the waste with cover materials at regular intervals*[1]. Landfills that are built today are typically engineered facilities that are designed and operated to minimize public health and environmental impacts.

Waste placed in an engineered landfill undergoes a number of interrelated biological, chemical, and physical changes. The most important biological reactions occurring in landfills are those related to the conversion of the organic material in the residual waste, leading to the evolution of landfill gases and leachate. Important chemical reactions that occur within the landfill include dissolution and suspension of landfill materials and biological conversion products in the liquid percolating through the waste, evaporation and vaporization of chemical compounds and water into the evolving landfill gas, sorption of volatile and semivolatile organic compounds into the landfilled material, dehalogenation and decomposition of organic compounds, and oxidation-reduction reactions affecting metals and the solubility of metal salts. Among the more important physical changes in landfills is the settlement caused by consolidation and decomposition of landfilled material.

Concerns with the landfilling of solid waste are typically related to the potential release of landfill gases and or the release of leachate that might migrate to underlying groundwater or to surface streams. The goal for the design and operation of a landfill is to eliminate or minimize the impacts associated with these aforementioned concerns. The siting of a new landfill is often contentious and should be completed with involvement of the local community. Factors that should be considered in evaluating potential sites for the long-term disposal of solid waste include:

- Haul distance;
- Location restrictions;

[1] The Environmental Protection Act – R.R.O 1990, Reg. 347

- Available land area;
- Site access;
- Soil conditions and topography;
- Surface-water hydrology;
- Geologic and hydrogeologic conditions;
- Existing land use patterns;
- Local environmental conditions; and
- Potential ultimate uses for the completed site.

The cost of developing and operating a landfill are variable and influenced by numerous site-specific factors, such as the cost of land, site permitting, public consultation, host community agreements, input rates, site development, control systems, potential for energy recovery, and the need for remedial measures. As a broad generalization, tipping fees for landfill disposal of waste in Ontario generally fall within the range of $50 to $150/tonne.

There are numerous advantages and disadvantages associated with landfilling, including those presented below.

Advantages of Landfilling include:

- Low cost per tonne compared to other disposal options;
- Potential energy recovery from landfill gas; and
- Simple and proven technology.

Disadvantages of Landfilling include:

- Public opposition;
- Requires large land area;
- Potential for surface water and groundwater contamination;
- Potential for odours; and
- Public perception/opposition is such that siting of new facilities is difficult.

10.1.1 Landfill Regulations in Ontario

Landfill sites and other waste management activities are subject to Part V of the EPA and the regulations made under the Act. The EPA is the overarching piece of legislation that provides the basic legislative framework for waste management in Ontario. Table 38 provides a summary of the key points of this legislation.

Table 38 Part V of the EPA

EPA Legislation	Relation to Landfills
Section 27 of the EPA	• Requires that an ECA must be obtained from the MOE prior to using, operating, establishing, altering, enlarging or extending a waste management system or a waste disposal site. • To obtain approval for a new or expanding landfill site, a detailed assessment of the site must be carried out to identify any potential effects on the environment including groundwater, surface water, air and soil and to show how these potential effects can be satisfactorily addressed. • The ECA defines: - Capacity of the landfill; - Types of waste to be accepted; - Conditions for design and operation; - Site closure; and - Post-closure to ensure the site is properly maintained and monitored for the long-term protection of the environment.
Section 30 of the EPA	• Specifies when a mandatory or discretionary hearing may be held for waste proposals. • A hearing is mandatory for the disposal (i.e. landfiling or incineration) of hazardous waste, hauled liquid industrial waste, or waste considered to be the equivalent of the domestic waste of 1,500 persons or more. • For all other landfill proposal, the hearing is discretionary as determined by the Director.
Regulation 232/98	• New standards became effective on August 1, 1998. • Standards apply to all new or expanding municipal (i.e. non-hazardous) waste landfill sites larger than 40,000 cubic metres. • Sets standards for landfills including: - Mandatory air emissions control for sites larger than 1.5 million cubic metres; - Assessment of groundwater and surface water conditions; - Design specifications for groundwater protection; - Buffer areas, final cover design, surface water control and landfill gas control; - Site monitoring, record keeping and reporting; - Contingency planning for leachate control; and - Financial assurance requirements for private sector landfills.
Regulation 347 (R.R.O. 1990 Regulation 347)	• Provides definitions of waste. • Designates, classifies and exempts waste sites (i.e. “hazardous” vs. “municipal” waste). • Establishes standards for waste disposal sites and waste management systems (other than new or expanding landfill sites now covered by Reg. 232/98).
Regulation 217/08	• Requires mandatory landfill gas collection and use or flaring (thermal destruction) for all operating or proposed new or expanding landfills with total waste disposal capacities larger than 1.5 million cubic metres.

Landfill sites may also be subject to approval under the Ontario Water Resources Act (OWRA) and the Environmental Assessment Act (EAA) as shown in Table 39.

Table 39 Other Ontario Acts that affect landfill site management

EPA Legislation	Relation to Landfills
OWRA	• Leachate Collection systems that discharge to surface water require approval under the OWRA. • Provincial Water Quality Objectives (PWQO) have been established by the MOE and any surface water discharges from a landfill site must meet these criteria. • For a landfill discharging to a sewer, the quality and quantity of the discharge is controlled by local sewer use by-laws, and the requirements or limitations of the receiving wastewater treatment plant.
EAA	• Many landfill proposals, particularly larger sites, may require approval under the EAA. • Under the EAA, a broader view of the environment is taken and issues beyond the effects on the natural environment must be addressed. • An EA is triggered by the proposed capacity of the landfill. • Once a landfill is subject to EAA approval, the decision to hold a public hearing and give approval for the undertaking rests with the Minister.
Regulation 101/07	• Typically, sites smaller than 40,000 cubic metres are not subject to the requirements of the EAA. Sites that are larger than 40,000 cubic metres but are less than 100,000 cubic metres are subject to the EA Screening Process. • Sites larger than 100,000 cubic metres are subject to an Individual EA.

10.2 Mechanical Biological Treatment

MBT is a generic term for a range of processes that may be used to treat residual waste using a combination of mechanical separation and biological treatment.

An MBT system is a type of waste processing facility that combines a sorting facility (i.e. mechanical stage) with a form of biological treatment such as composting or AD to facilitate the stabilization of the biodegradable component of the waste (i.e. biological stage). MBT plants are designed to process mixed household waste as well as IC&I waste. The sorting component of the plant typically resemble a MRF. This component is either configured to recover the individual elements of the waste or produce a refuse-derived fuel that can be used for the generation of power. The components of the mixed waste stream that can be recovered typically include: ferrous metal, non-ferrous metal, plastic and glass. MBT reduces the mass and volume of wastes, due to the removal of materials for recycling and both carbon and moisture losses. The amount of reduction is very dependent on the design and characteristics of each plant.

Figure 13 provides a generic schematic for a MBT facility.

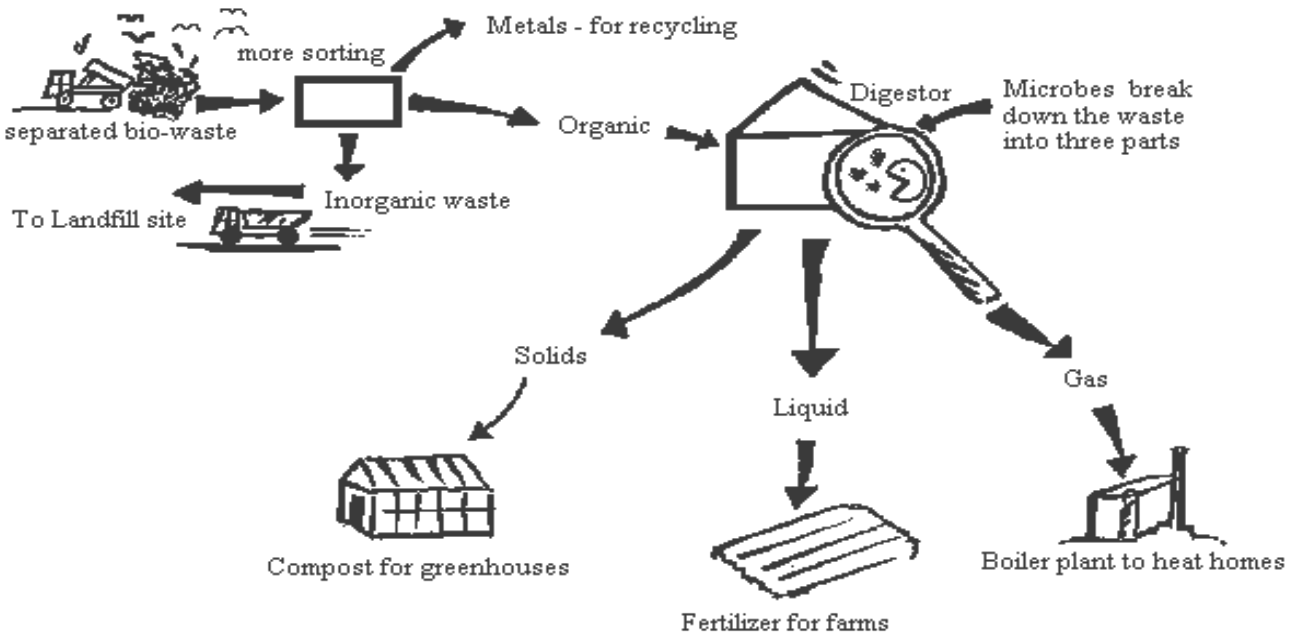


Figure 13: MBT Process Schematic

The principal objectives for which MBT include:

- Reducing quantities (mass and volume) to landfill;
- Stabilization of waste prior to landfill;
- Collection of biogas for energy production; and
- Composting of the resulting digestate.

The biological treatment process can be completed through either aerobic or anaerobic processes, as described in the following sections.

10.2.1 Aerobic Composting

Aerobic composting is a controlled aerobic microbiological process that decomposes organic matter into carbon dioxide (CO_2), water, minerals and stabilized organic matter. The following key variables govern the decomposition process:

- Nutrients, the carbon-nitrogen ratio, which may be controlled through appropriate mixing of feedstocks, will facilitate an efficient composting process;
- Oxygen content, which is controlled through turning the compost windrows;
- Moisture content, which is initially set during feedstock preparation, can be controlled through turning (i.e. exposing wet surfaces to air) or by addition of water from on-site sources; and

- Particle size, which is effected by the equipment used to turn the piles and any equipment used to process the material before composting.

There are many aerobic composting technologies and vendors available, all of which can work in a range of applications and scales. The outputs will depend on the feedstock inputs, ranging from high quality compost to low quality products. It is unlikely that the material produced from composting a residual waste stream will meet the 2004 Ontario Interim Guidelines quality standards for compost. It must be noted that Ontario does not currently have a Class B compost standard.

10.2.2 Anaerobic Digestion Processes

AD is a biological process that uses microbes to break down organic material in the absence of oxygen. AD occurs in a reactor of enclosed chamber, where environmental conditions such as moisture content, temperature and pH levels, can be controlled to maximize microbial generation, gas generation (i.e. methane and CO_2) and waste decomposition rates. AD is a proven technology for a variety of waste streams, including municipal sewage sludge and animal manures. This technology can work well in Canada; however it is a more costly option than landfilling.

The biological and engineering principles of AD are well understood and have been implemented worldwide. However, most examples of AD facilities treating municipal waste (SSO or mixed waste) are in Europe, primarily in Spain, Denmark, Belgium, France, Germany and Switzerland.

The majority of European AD plants, many of which are 10 to 15 years old, have an annual processing capacity that ranges between 8,000 and 12,000 tonnes/year. In the last 10 years, due to engineering advancements, there has been an emergence of larger plants ranging in capacity between 30,000 and 300,000 tonnes per year.

In Canada, there are only a couple of AD plants currently in existence:

- The Canada Composting Inc. facility in the Town of Newmarket, ON. This facility uses BTA technology (a German technology which involves a wet pre-processing stage followed by digestion) and can process up to 150,000 tonnes/year of SSO, plus some mixed waste loads.
- The City of Toronto's facility located at the Dufferin Transfer Station in Toronto, ON. This facility has been in operation since 2002 and is designed to process 30,000 tonnes of SSO per year.

The operation of an AD plant typically involves the following three steps:

- **Pre-treatment**. Mechanical process whereby incoming organic material is converted into raw material that is fed into the digestion reactor. Pre-treatment may involve size reduction, screening, mechanical and manual sorting of contaminants and recyclables. Equipment required for an AD pre-treatment system is similar to that found in a MRF that processes dry recyclables.
- **Digestion**. Chemical process whereby pre-treated organic material is converted into an organic digestate product and biogas. Biogas is approximately 55% methane and 45% CO_2. Chemical reactions in the digestion step include hydrolysis, acidification and methanogenesis. Digested material is pumped into a dewatering machine where excess liquid is collected for treatment.

- **Aerobic curing**: The dewatered digestate requires approximately 60 to 120 days of aerobic curing where pathogens are killed by high temperature in compost piles. This step can be carried out in an outdoor or in-vessel aerobic composting facility.

The residue rate for an AD facility processing mixed MSW (where recyclables have been removed) will likely be in the order of 25 to 40% of all incoming waste, depending on the quality of feedstock and type of pre-treatment system used. As a planning guide, a mixed MSW AD plant could expect to divert approximately 60 to 75% of all incoming waste, so long as there is an end market for the diverted material.

According to the *Review of Waste Technologies* Report (FCM_b, 2004), the minimum throughput required to justify the cost of an AD facility is at least 10,000 tonnes per year. This amount is equal to the amount of mixed MSW produced by 18,000 households per year, assuming 550kg/household/year is sent to the AD digestor (note: Statistics Canada reports that the average Canadian household disposes of approximately 700 kg/ household per year). The rationale for this minimum design capacity is partly based on the range of commercially available technologies and cost, given that small-scale facilities tend to have relatively high per tonne operating budgets.

According to this same report, the facility size and service area requirements for an AD facility processing different feedstock are indicated in Table 40.

Table 40: Facility Sizes required for different feedstock.

Households Served	Feedstock	Plant Size (tonnes per year)	Population Served*
40,000	SSO	10,000	110,000
18,000	Mixed MSW	10,000	50,000
100,000	SSO	25,000	275,000
45,000	Mixed MSW	25,000	125,000
200,000	SSO	50,000	550,000
90,000	Mixed MSW	50,000	250,000
400,000	SSO	100,000	1.1 million
180,000	Mixed MSW	10,000	500,000

*This table assumes an average household size of 2.7 people.

The service area requirements for an AD plant processing MSW is considerably smaller than for a facility only processing SSO because the amount of waste collected per household would be greater. It is also important to note that the service area for an AD facility could incorporate multiple communities.

The capital and operating costs for a generic AD facility are presented in Table 41. This table is a replicate of Table 4.2 presented in the *Review of Waste Technologies* Report (FCM_b, 2004).

Table 41: Estimated Capital and Operating Costs for "Generic" AD Plants

	10,000 tonne/year (tpy)		50,000 tpy		100,000 tpy	
	SSO	MSW	SSO	MSW	SSO	MSW
Capital Costs						
Capital Investment	$10,000,000	$10,000,000	$22,000,000	$23,000,000	$33,000,000	$35,000,000
Capital Cost/Design Tonne	$920	$990	$440	$465	$330	$350
Net Operating Costs						
Annualized Capital	$1,000,000	$1,100,000	$2,400,000	$2,600,000	$3,600,000	$3,800,000
Operating Expenses	$900,000	$900,000	$3,500,000	$3,200,000	$6,600,000	$6,000,000
Subtotal Gross Operating	$1,900,000	$2,000,000	$5,900,000	$5,800,000	$10,200,000	$9,800,000
Revenue	300,000	200,000	1,500,000	1,000,000	3,000,000	2,000,000
Net Annual Cost	$1,600,000	$1,800,000	$4,400,000	$4,800,000	$7,200,000	$7,800,000
Households Served	40,000	18,000	200,000	90,000	400,000	180,000
Cost/Tonne Feed	$160	$180	$90	$100	$75	$80
Cost/Household/YR	$40	$100	$22	$54	$18	$44

*The following assumptions were used to create this table:

1) Cost of residue transfer and disposal has been assumed at $55 per tonne;

2) Cost of curing is $15 per tonne of unfinished digestate at an open windrow facility located close to the AD plant, so transportation costs are minimal;

3) Plants processing mixed MSW require additional expenses to cover costs of manual sorting of incoming feedstock;

4) Cost figures for SSO options exclude the purchase of vehicles and household bins, bags, or other receptacles used for the separate collection of the SSO stream;

5) Figures for each SSO option include a $7 per tonne design capacity planning estimate to develop, produce, and staff a P&E program that would need to accompany any significant changes to a municipality's current residential curbside collection system

The City of Toronto has recently proposed the development of a new AD facility to be located adjacent to the City's Green Lane Landfill. The selection of this technology was based on a life-cycle assessment and health impact assessment comparing alternative technologies and treatment methods. The facility is to accept 150,000 tonnes per year of the City's residual waste and it is anticipated that it will divert approximately 67% of the incoming feedstock. The total property requirement for this facility is expected to be between 13 and 17 hectares, including approximately 4.5 to 5.5 hectares for final curing of the compost-like output. The projected capital of the facility is $115 million and operating cost is estimated at $140 per tonne.

There are numerous advantages and disadvantages to MBT with AD technology, including those presented below.

Advantages of MBT with AD include:

- Increased diversion of waste from disposal;
- Avoidance of GHG emissions produced in a landfill;

  - Methane produced by AD plants is collected is converted to CO_2, which is less damaging as a GHG than methane;
- Net energy production;
  - Methane produced in the digester can be used as a fuel to displace non-renewable fuel (i.e. oil, natural gas or coal);
  - Production of "green" power;
  - Emergency power applications;
  - Conversion of collection and transfer vehicles to natural gas;
- Reduced reliance on traditional waste disposal methods, the cost of which may not always reflect broader environmental effects;
- AD plants need small footprints, therefore do not cause significant displacement of land; and
- Residue waste is stabilized outside of a landfill, reducing effects on landfill leachate production and quality.

Disadvantages of AD include:

- Higher cost per tonne compared to landfilling or composting in Canada;
- AD cannot process the entire waste stream, but rather only the biodegradable organic fraction;
- The markets for by-products, such as soil conditioner and liquid fertilizer, are somewhat uncertain;
- Potential for odours; and
- AD of mixed waste is an emerging practice in North America, and is therefore not considered fully proven.

There are a variety of AD systems now being used as part of MBT systems for residual wastes. The AD component of these processes varies according to (amongst other things):

- Temperature of operation (thermophilic and mesophilic);
- Solids content of treated waste (divided between low- and high-solids content); and
- Whether single- or multi-step.

Most processes are continuous flow in nature, though batch processes also exist.

The operational performance of AD based MBT facilities appear to have been quite variable. One reason for this may be that many technology suppliers have come from a background in waste water treatment and have, perhaps, tended to see the addition of municipal solid waste as a simple extension of their activities. However, reliable suppliers are emerging. In recent years, the number of AD-based MBT plants commissioned has increased significantly. The developing nature of the technology is reflected in the fact that the suppliers are a mix of wet- and dry-digestion suppliers.

10.3 Thermal Treatment

Thermal treatment technologies involve high temperature processing to achieve waste volume reduction, physical/chemical stabilization and energy and recyclable material recovery. Thermal treatment technologies are designed to process waste of high heating value; therefore glass and metal with no heat value are generally removed prior to treatment through recycling program. The operations of thermal treatment facilities generally involve the following five processes:

- **Waste pre-processing and feed rate control**
  - Pre-processing involves the mechanical separation of waste (i.e. shredding and screening, manual removal) in order to recover recyclable and over-sized materials and create a uniform waste mix that will not jeopardize the integrity of the technology.
  - Feed rate control is required in order to protect and optimize the design capacities of the "downstream elements" (i.e. thermal units, air pollution control systems, energy recovery and power generation systems).
- **Thermal treatment/destruction unit (i.e. combustion or gasification chambers)**
  - Waste is treated and/or destroyed by high temperatures under various chemical environments (principally oxygen concentrations). The products of thermal treatment may include: CO_2, water, constituent oils, carbon monoxide and hydrogen gas.
- **Heat and/or energy recovery system**
  - The energy recovery/conversion efficiency associated with conventional thermal treatment ("incineration") is typically between 20 and 30 %. The heat energy recovered can be transformed to steam (or hot water, which can be used directly in industrial manufacturing processes. The use of newer gasification technologies can yield energy efficiencies of 40 to 60 % and when RDF is used to fuel existing thermo-chemical applications, energy efficiencies of up to 80 % can be reached
- **Air pollution control system**
  - Air pollution control systems are used to treat and monitor gaseous products (typically flue gas) from the thermal treatment/destruction units. Typically these systems are designed to capture and remove: acids, heavy metals, trace organics (i.e. dioxins and furans) and particulate.
- **Ash management system**
  - The solid residue remaining after treatment/destruction is collected, cooled, magnetically/electrically screened to recover metals, and typically landfilled.

There are two general categories of thermal treatment technologies including conventional combustion (i.e. Rotary kiln, mass burn, starved air incineration and fluidized bed units) and advanced thermal treatment (i.e. gasification and pyrolysis). Differences between technologies relate to process temperature, process oxygen concentration, point of application of gas cleaning/air pollution control, and physical location where the energy is recovered.

Conventional combustion is a well-established waste to energy treatment process and has been used extensively for the past 50 years in Europe and Canada. In fact, in the European Union over 90% of waste to energy facilities use mass burn incineration technology (Malkow, 2004). Advanced thermal treatment technologies such as pyrolysis / gasification and thermo-chemical reduction technologies are still in their pre-mature stage for the treatment of municipal waste and not as widespread. These technologies have historically been utilized for the management of special wastes (i.e. hazardous wastes and homogeneous industrial wastes streams such as paper pulp sludge).

The implication and success of different thermal treatments or technologies will vary according to the wide variety of contexts, conditions and situations where they take place. More often, the assessment of waste management options through decision supporting tools (i.e. Life Cycle Assessment) provides a holistic evaluation that considers all of the inputs and outputs of systems in a cradle-to-grave approach.

Currently in Ontario, the environmental and site plan approvals for the Durham York Energy Centre, a mass burn thermal treatment facility to be located in the Municipality of Clarington, was recently approved. The proposed Facility is the result of a private-public partnership between Durham-York (the facility Owners) and Covanta Energy Corporation. Covanta will design, build and operate the facility, which will be capable of processing 140,000 tonnes/year of post-diversion residual waste, while recovering energy to export to the marketplace and metals from the waste stream after processing for recycling. The total capital cost for the facility is $245 million, and it is expected to be operational by 2014.

Table 42 provides a summary of several examples of thermal treatment facilities that are currently operating in Canada.

Table 42 Canadian Examples of Thermal Treatment Technologies

Canadian Example	Technology	Capacity	Cost (Capital and Operating)	Environmental Effects	Energy Implications	Other
Algonquin Power Peel Energy –from-Waste Facility Brampton, ON	Starved Air Incinerator (Two-staged Combustion)	500 t/d	$122/t	Facility uses a state-of-the-art Air Pollution Control System which ensures that emissions from the facility are well below provincial air emission standards. Emission results are discussed at a Public Liaison Committee held every two months. Fly ash collected from the baghouse filtering system is hazardous and must be disposed of at a secure hazardous waste landfill site.	Facility produces a maximum of 15 MW of electrical energy per year.	The bottom ash generated is processed to remove ferrous material and then screened into two size groups. The majority of the processed bottom ash is less than one inch in diameter and is currently being used as landfill daily cover.
GM Autoplex, Oshawa ,ON	Rotary Kiln Incinerator	50 t/d	$125 to $150 /t	Ash quality must be controlled by removing non-combustible or large-size material from the feed waste		Facility processes non-hazardous solid wastes, reasonably typical of the garbage component of municipal residential three-stream waste programs. Higher operating maintenance costs than other conventional technologies
Burnaby Incinerator, Burnaby, B.C.	Mass Burning	720t/d	$65/t	Facility exceeds existing requirements and proposed new CCME metals and organics emission concentration guidelines	Facility has excellent efficiency as steam is used by nearby paper recycling facility to replace natural gas use	Well established technology, more than 50 years old. State of the art technology for large facilities.
KMS, Brampton, Ont.	Starved Air Incinerator (Two-staged Combustion) Continuous Feeding	140 t/d	$100/t	Facility has consistently incorporated state-of-the-art air pollution control technology upgrades and, as a result, enjoys strong support from the host community	Heat recovery can be economically advantageous. An economic study is recommended	Extensively used. Well-known technology and stable operation. Sensitive to operating conditions
EcoWaste Solutions, Burlington, Ont.	Starved Air Incinerator (Two-staged Combustion) Batch Operation	0.5 to 3 t/d	$72 to $200 /t	Long residence time yields good ash quality. May require additional air pollution control equipment to meet future air emission regulations. Or community education programs could result in removal of significant amounts of contaminant precursors from incoming waste streams	Electrical energy production not generally economical given small facility size. Heat recovery for heat energy use in industrial applications adjacent to facility can make energy recovery viable	**Extensively used** Well-known technology
Enerkem, Sherbrooke, Que.	Fluidized Bed	0.1 to 3.5 t/d (European facility capacity: 100 t/d)	N/A	Potential significant net environmental life cycle benefits of resources recovery	Significant benefits may be achieved through the use of synthetic gas, including in fuel cells	Completion of Sherbrooke pilot testing and ability to scale up and receive typical MSW under current and forecast project application specific energy and landfill tipping fee circumstances requires address
HUWS, Caledon, Ont.	RDF	10 to 30 t/d	N/A	Potential for net life cycle environmental benefits of displacement of conventional fuels used in heat-intensive industrial applications, such as cement manufacture		No commercial applications established for RDF produced by current technology/facility
Enerkem, Sherbrooke, Que.	Pyrolysis / Gasification	Refer to Enerkem – fluidized bed, above				
RCL, Ottawa, Ont.	Plasma Technology	To date, only bench scale applications to selected waste streams. Ability to scale up to process typical MSW streams must be established				
Eli Eco Logic, Rockwood, Ont.	Thermo-chemical Reduction	No demonstration of commercially viable application to municipal solid waste streams				

Note: The majority of this table was adapted from Table 5.1 of the *Review of Waste Technologies* Report (FCM_b, 2004)

There are numerous advantages and disadvantages associated with thermal treatment technology, including those presented below.

Advantages of Thermal Treatment include:

- Increased diversion of waste from landfill, therefore minimizing generation of acidic leachate and methane;
- Energy recovery;
- Mineral and chemical recovery, which can be re-used or recycled; and
- Destruction of contaminants in waste stream.

Disadvantages of Thermal Treatment include:

- Higher cost per tonne compared to landfilling in Canada;
- Thermal treatment is a high-tech system that requires skilled operators;
- The availability of local energy markets is a critical factor in determining the feasibility of this technology;
- Thermal treatment cannot process the entire waste stream, but rather waste of high heating value; and
- Although technically sound and proven in Canada in terms of environmental and energy considerations, public perception/opposition is such that siting new facilities may be difficult.

10.4 Refuse Derived Fuel Production

One of the main objectives of Mechanical Separation with RDF Production is to produce a product that can be used as an energy source or RDF for cement kilns, greenhouses, biomass power facilities or paper mills.

The residual waste is pre-sorted to remove large objects, followed by some recovery of the non-combustible glass and metal streams through traditional material recovery equipment, such as air knife separators, and ferrous and non-ferrous magnets.

The remaining material is then positively sorted to segregate the combustible stream including the paper, plastics, wood products, and organics, which is further processed to produce pellets, fibre or fluff that can be used as an energy product.

The Dongara Pellet Plant is an operating waste processing facility located at the northeast corner of Highway 407 and Highway 27 in the City of Vaughan, Ontario. The Plant received operating permits from the Ontario Ministry of Environment in 2006 and, following construction, commenced operations in 2008. The Plant is permitted to receive a maximum of 208,000 tonnes of municipal waste annually from the Greater Toronto Area and the Regions of York, Durham and Peel and process that waste into the Dongara trademarked EnerPax+ fuel pellets. The fuel pellets have an energy content of approximately 10,000 BTUs, similar to medium grade coal. The pellets are currently being used to provide heat energy to greenhouses in south western Ontario.

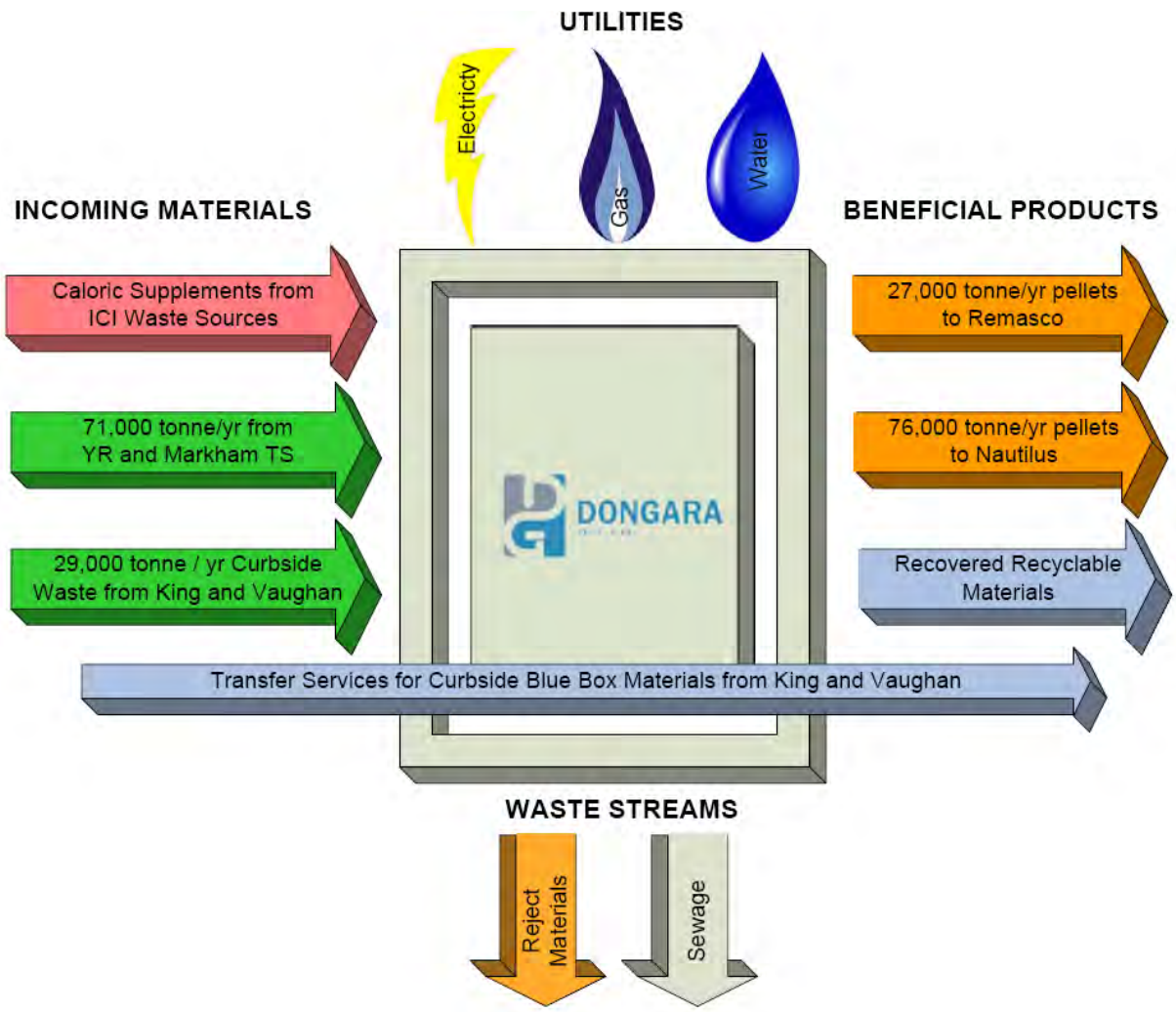


Figure 14: Dongara Process Schematic

A schematic of the Dongara process is shown in Figure 14. The facility can accept a range of residual waste, however unacceptable materials include oversized brush, appliances, oversized lumber, tires, consumer electronics, hazardous waste, C&D waste, and radioactive materials.

Currently Dongara is under long term contract to process 100,000 tonnes per year of waste from the Region of York at a cost of $93 per tonne.

Although Mechanical Separation with RDF Production is a generally proven technology, RDF is classified as a "waste" in Ontario meaning that facilities that use RDF for a fuel require an ECA to accept the material, therefore final markets for the fuel pellets are not well established.

The advantages and disadvantages associated with RDF production are outlined below.

Advantages of RDF production include:

- Costs are similar to other disposal options; and

- Produces a clean fuel product.

Disadvantages of RDF production include:

- Product is considered a waste therefore hauling and receiving facilities require permits;
- Markets for fuel pellets not well established; and
- Unacceptable wastes result in processing issues.

10.5 Site Selection

Based on the assumption that Barrie will maintain ownership of a future residual waste management facility, an assessment of potential sites should include a full review of available land at the BEC, as well as other City-owned sites to assess suitability. The first step in the site assessment process will be to identify goals, objectives and any constraints for the process. It is anticipated that the overall goals of the site selection process may include:

- No significant risk to public health and safety;
- No significant impact on natural environment;
- Close proximity to the areas of the principal sources of waste generation; and
- To maximize potential efficiencies through the use of existing waste management infrastructure.

Proposed assessment criteria for potential candidate sites may include:

- Zoning/land use designation;
- Proximity to sensitive receptors (i.e. residences, schools, hospitals);
- Site size;
- Potential factors constraining development;
- Proximity to high waste generation areas;
- Land preparation and servicing costs;
- Proximity to wells for potable water;
- Proximity to surface water;
- Buffer zones; and
- Potential traffic impact.

The completion of a comprehensive site and technology selection processes provides a decision-supporting tool for moving forward to the final review of viable waste disposal options through an EA process.

11.0 COMMUNITY FEEDBACK ON OPTIONS

As part of Consultation Series #2, Barrie used a focused workshop approach with the intention of confirming the options identified in Consultation Series #1 and understanding how community representatives see these options being implemented as part of the SWMS.

Four workshops were held with community representatives that were identified during Consultation Series #1. Table 43 describes the workshop topics, dates and community representatives in attendance.

Table 43: Series #2 workshops

Workshop Topic	Date and Location	Representative Community Groups	Number of Participants
IC&I Sector: Future Service Delivery	November 3, 2011 1:00 – 4:00 pm City Hall	Canadian Home Builders Association School of Environmental Studies, Georgian College Greater Barrie Chamber of Commerce Royal Victoria Hospital Simcoe County District School Board Simcoe Muskoka Catholic District School Board Nottawasaga Valley Conservation Authority	7
Residential Sector: Future Waste Collection/Diversion	November 3, 2011 5:00 – 8:00 pm City Hall	AWARE Simcoe Zero Waste Simcoe Transition Barrie Residents	11
Multi-residential Sector: Future Service Delivery	November 10, 2011 1:00 – 4:00 pm City Hall	Residents Multi-Residential Building Owner/Managers/Supervisors	15
Barrie's Future Waste Disposal Options	November 10, 2011 5:00 – 8:00 pm City Hall	AWARE Simcoe Zero Waste Simcoe Transition Barrie Residents	13

Workshop invitees were identified through participation in previous consultation activities and recommendations from community members. Invitees were either emailed or mailed an invitation a minimum of three weeks prior to the workshops. Newspaper, radio, and television advertisements were also placed to allow a broader spectrum of the population to register for the workshops. To encourage more meaningful participation, each participant was provided with a copy of the presentation to be given at their workshop the week prior to the event. A copy of all notification materials is included as **Appendix E**.

In addition to the four workshops identified above, a new survey was posted on Barrie's website. The survey asked similar questions to those posed on the Comment Forms to ensure that questions being asked of the online community and those participating in face-to-face activities were consistent.

Following the completion of workshop activities, the feedback was presented and discussed with the CLC.

11.1 Feedback Methods

During Consultation Series #2, public comments were collected through the following methods:

- Workshop;
- Online surveys; and
- Email.

The workshops were structured to allow feedback using a variety of mediums. Each meeting began with a presentation about the SWMS's goals, an overview of the options identified, and provided information on the specific options relevant to each workshop topic. The opportunity to provide feedback was encouraged through an open space activity, where participants were invited to circulate the room and discuss or post comments on four broad topics related to each workshop theme. Discussions were documented by facilitators. This format allowed participants to engage in conversation with a number of others participants and experts, and allowed participants who were not comfortable making comments in front of the larger group to participate. Following the open space activity, feedback was invited through a more structured round-table discussion. A copy of the presentations from each workshop, as well as open space questions are provided in **Appendix E**.

Participants were also asked to fill out a comment form at the end of each workshop. Copies of the comment forms are included in **Appendix E**. In total, 36 workshop comment forms were completed. Notably, only one survey response was provided online. The feedback received is discussed in the following section.

11.2 Community Feedback

Attendees at all of the workshops were requested to complete worksheets that asked them to identify priorities for implementation of waste management options, timelines for implementation, and to provide answers to key questions identified by Barrie. This section provides a summary of the responses received on the worksheets, as well as additional options that were identified through discussion.

11.2.1 Community Feedback

Each attendee was asked to rank options that were identified to improve the effectiveness and efficiency of Barrie's waste management system. Figure 15 shows a summary of the number of times each option was ranked in the top three options.

Appendix E includes a table outlining how frequently each option was ranked in the top three options and verbatim comments associated with each option.

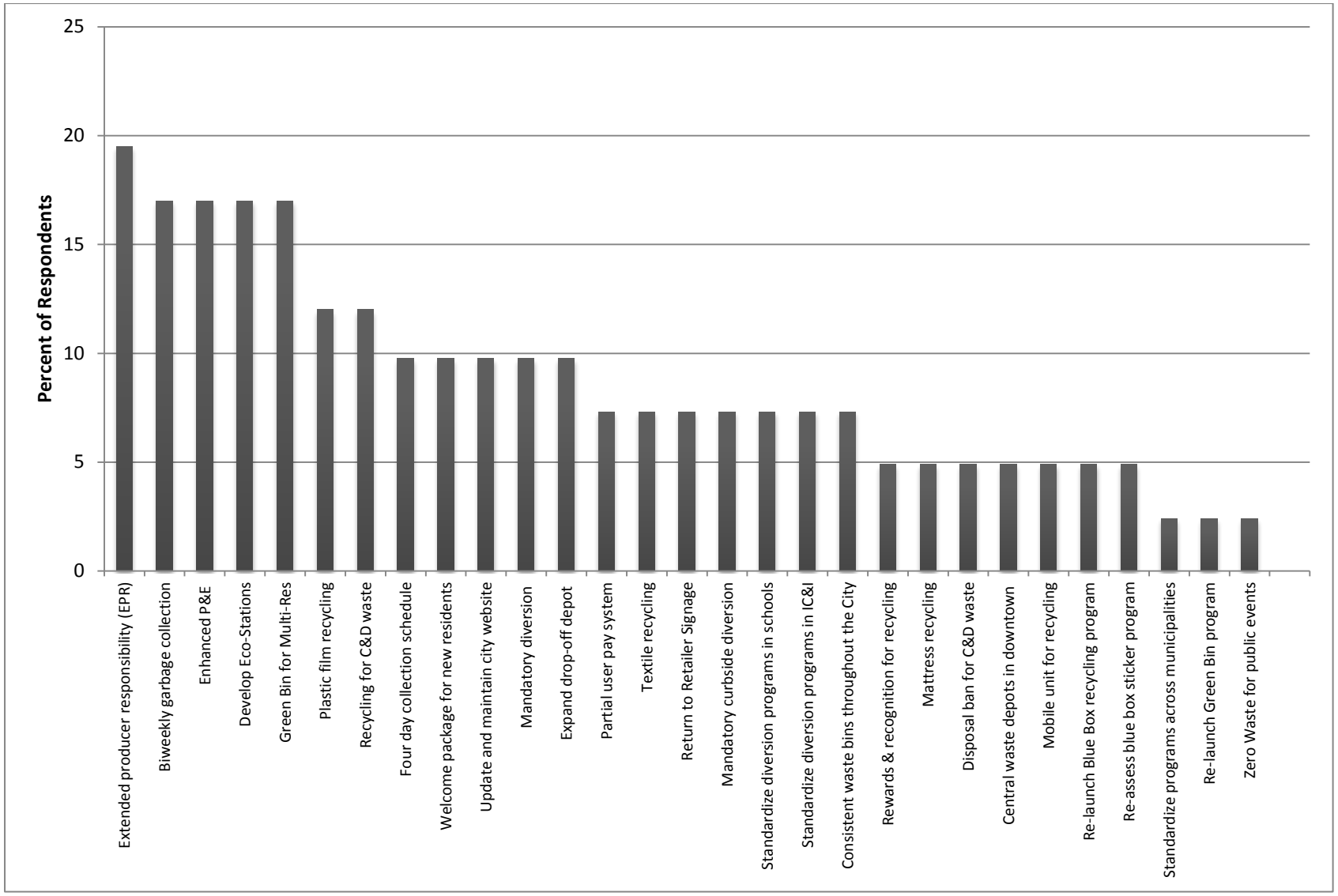


Figure 15: Options ranked in the top three by workshop participants

11.2.2 Timeline for Implementation

Participants were asked to identify if they thought each option should be implemented in the short term, medium term and long term. Table 44 summarizes how many times participants identified each implementation timeline for each waste management option.

Table 44: Timeline for implementation of waste management options

Waste Management Option	Short Term	Medium Term	Long Term
Develop recycling program for C&D waste	12	3	
Expand the existing drop-off depot / area at the BEC	12	2	
Extended producer responsibility (EPR)	9	4	1
Enhanced P&E using a mix of media	11	1	1
Establish a rewards & recognition program for recycling	9	3	1
Update and maintain city website	12	1	
Zero Waste Policy for public event diversion	5	6	2
Mandatory source separation and curbside diversion of recyclables and organics	7	4	2
Disposal ban for C&D waste	5	6	2
Development of Eco-Stations	10	3	
Develop Green Bin Program for Multi-Residential (Multi-Residential Workshop Only)	9	4	
Four day collection schedule	7	3	2
Develop welcome package for new residents	12		
Plastic film recycling	10	2	
Mattress recycling	6	5	1
By-Law for retailers to post prominent recycling signage	8	3	1
Central waste depots in downtown area	7	4	1
Partial user pay system	6	4	1
Policy of mandatory curbside diversion	6	2	3
Mobile unit for recycling	5	3	3
Textile recycling	6	3	
Re-assess Blue Box sticker program	7	1	1
Bi-weekly garbage collection	3	4	1
Re-launch Blue Box recycling program	7	1	
Re-launch Green Bin program	3	1	
Standardize programs with neighbouring municipalities	4		
Simplified, standardized leaf and yard waste collection schedule	1		
More P&E for Blue and Grey Box recycling program	1		
Total number of times participants identified an option as being short, medium or long term in implementation	200	73	23

The following figures show which options were identified to be implemented on the short, medium and long term.

As indicated in Figure 16, the following options were identified as being the highest priority for short term implementation:

- Develop recycling program for C&D waste;
- Expand the existing drop-off depot/area at the BEC;
- Develop/enhance welcome packages for new residents;
- Update and maintain City website; and
- Enhanced P&E using a mix of media.

As indicated in Figure *17*, the following options were identified as being the highest priority for medium term implementation:

- Zero waste policy for public events;
- Disposal ban for C&D waste; and
- Mattress recycling.

As indicated in Figure 18, the following options were identified as being the highest priority for long term implementation:

- Mobile unit for recycling collection; and
- Policy for mandatory curbside diversion.

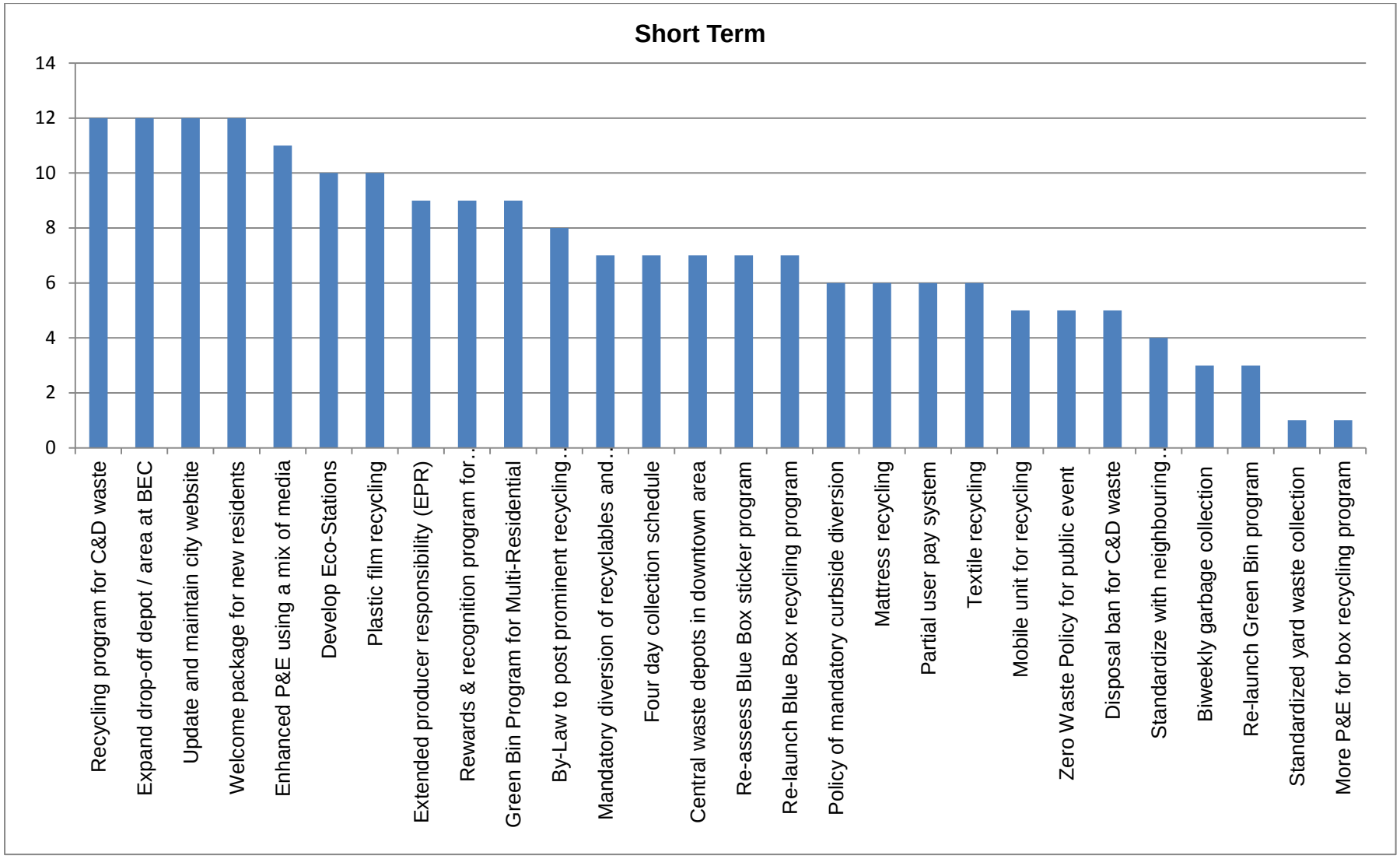


Figure 16: Options identified by workshop participants to be implemented in the short term.

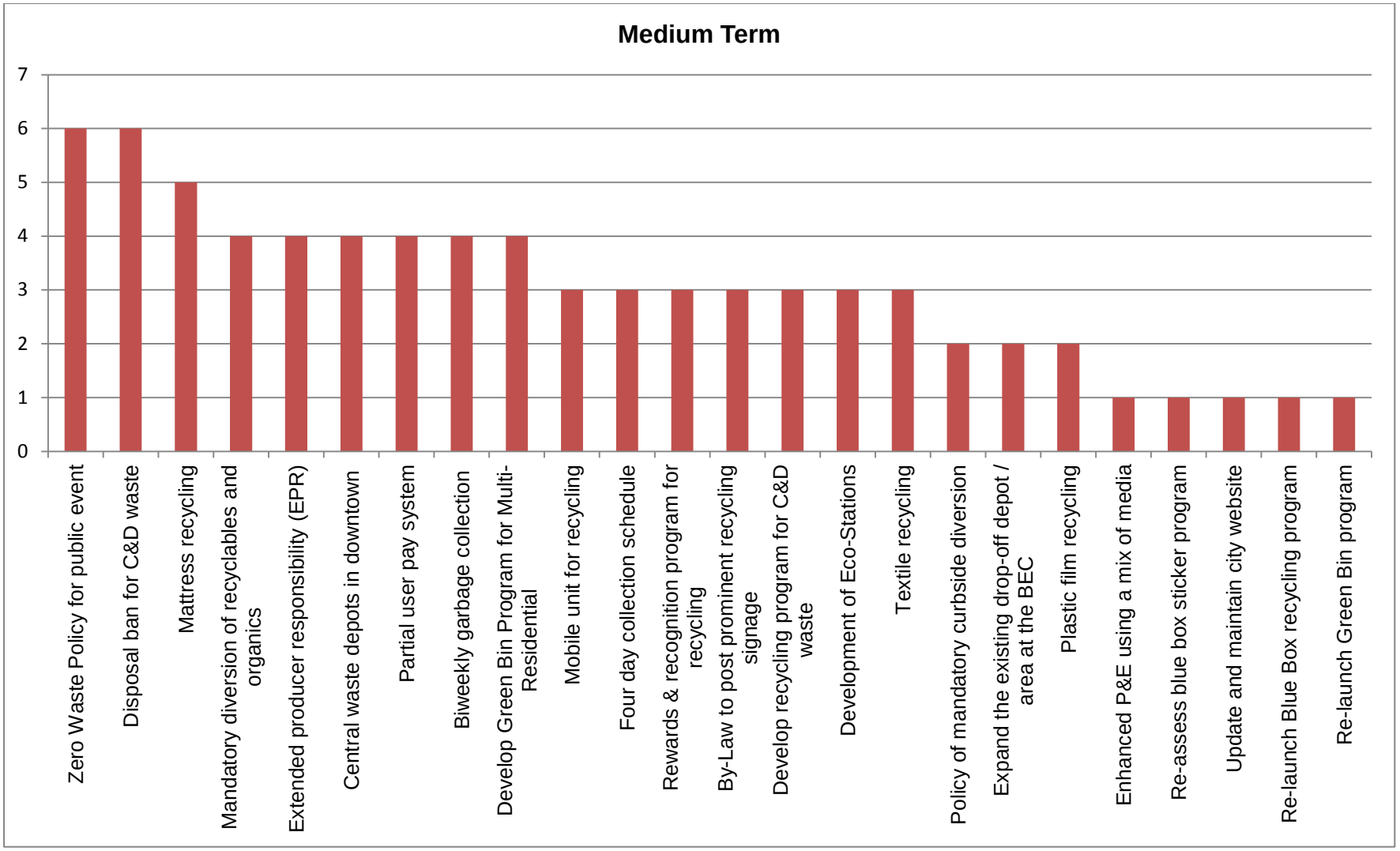


Figure 17: Options identified by workshop participants to be implemented in the medium term.

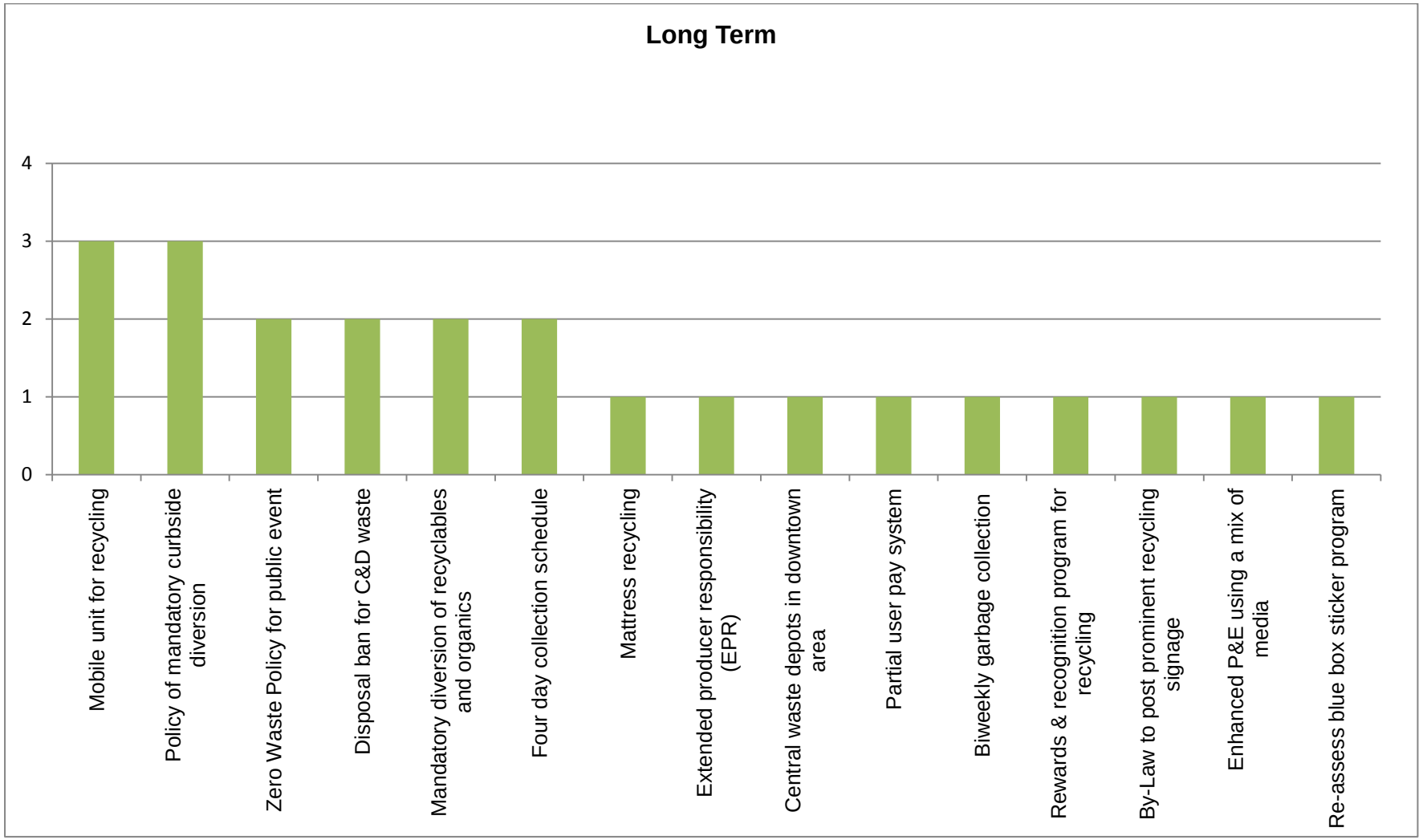


Figure 18: Options identified by workshop participants to be implemented in the long term.

In addition to the options identified above, the discussion at the IC&I Workshop identified standardized diversion programs in schools and across businesses as high priority with short-term implementation goals. Partnerships with school boards were discussed as another way to improve the current system. School boards and Georgian College recommended that Barrie explore joint partnership options for collection contracts and P&E activities. Also, consistently labelling waste bins throughout Barrie was discussed as a good short term option for improving the current system. Incentives for meeting future diversion targets included competitions between municipalities and businesses.

It should be noted that options that were ranked in the top three by participants were not necessarily ranked top priority for short, medium or long term implementation. This inconsistency can be explained by the fact that not all participants completed every question on the workshop comment forms. Table 45 provides an overview of the options as they were ranked for priority, and timeline for implementation.

Table 45: Summary of feedback on the prioritization of options and implementation timeline

Waste Management Option in Order of Priority		Short Term	Medium Term	Long Term
1	Extended producer responsibility (EPR)			
2	Bi-weekly garbage collection			
3	Enhanced P&E using a mix of media			
4	Development of Eco-Stations			
5	Develop green bin program for multi-residential sector			
6	Plastic film recycling			
7	Develop recycling program for C&D waste			
8	Four day collection schedule			
9	Develop/Enhance welcome package for new residents			
10	Update and maintain city website			
11	Mandatory curbside diversion of recyclables and organics			
12	Expand the existing drop-off depot / area at the BEC			
13	Partial user pay system			
14	Textile recycling			
15	By-Law for retailers to post prominent recycling signage			
16	Policy of mandatory curbside diversion			
17	Standardize diversion programs in schools			
18	Standardize diversion programs across businesses			
19	Consistent waste bins throughout City			
20	Establish a rewards & recognition program for recycling			
21	Mattress recycling			
22	Disposal ban for C&D waste			

Waste Management Option in Order of Priority		Short Term	Medium Term	Long Term
23	Central waste depots in downtown area			
24	Mobile unit for recycling			
25	Re-launch Blue Box recycling program			
26	Re-assess blue box sticker program			
27	Re-launch green bin program			
28	Zero Waste Policy for public event diversion			
29	Standardize programs with neighbouring municipalities			
30	Simplified, standardized leaf and yard waste collection schedule			
31	More P&E for blue and grey box recycling program			

11.2.3 Future Waste Diversion Targets

In addition to discussing specific options for the SWMS, future waste diversion targets were discussed during the open space and round table discussions at the Residential, Multi-residential and IC&I workshops. Comments on this topic were also received through the workshop comment forms. Participants were asked for their feedback on what Barrie's waste diversion target should be, and discussed challenges and incentives for obtaining these goals. The current waste diversion target for the province is 60 %. In 2010, Barrie's residential diversion was 45 % (with an estimated 21 % diversion in the multi-residential sector) and the provincial IC&I waste diversion rate was estimated to be 12 %. It was suggested that future diversion targets should be set for 10 % above what the actual goal is to motivate participation, however not so high that it would be seen as unattainable. Participants identified that diversion could be encouraged by establishing appropriate diversion targets by sector, that is one target for residential, one for the IC&I sector, and a separate target for institutions. It was felt that for the residential sector, the waste diversion target should be set as high as possible (i.e. 90 %). The multi-residential sector and IC&I sectors should strive for the provincial target or above. Participants were asked to identify what the diversion target for their sector should be in 10 and 30 years on their comment forms. The question was:

The current provincial waste diversion target is 60 %. The provincial IC&I recycling rate is currently estimated at 12 %. Barrie's current multi-residential diversion rate is 21 %, while the residential diversion rate was 45 % in 2010. With respect to waste diversion, where should your sector be in 10 years? 30 years?

The specific feedback received for each workshop is shown in Table 46.

Table 46: Community Feedback on Waste Diversion Targets

Workshop	10 years	30 years
Residential Workshop	• 60-70% - explain the benefits to citizens and the heavy cost of new landfill • 70-75% • 90% - measure amount of waste going to landfill only not diversion rate • 75% • 60% • 100% • 80%	• 80-90% • 80+% • 99% - 100% • 85% • 80% • We don't have this much time! • 100%
Multi-residential Workshop	• Bump it to 5 years. Multi-residential needs to know that they do not meet current City of Barrie standard of 40% • 45% • You tell me. Depends on how well you take our recommendations. • 60% • 40% • 26% • 60% • 50% • 50% • Ideally at 60% • 60%	• 100% goal - why not • Possibly 60%. I think it will require a complete change in the mindset of people which may take one or two generations • By this time we will probably be 100% compliant • 90% • 60% • 35% • higher if possible • 75% • 65% • 100%!!! • 80%
IC&I Workshop	• Rates are too hard to quantify by a simple %age • Increased, but as we discussed this problem is more than just a numbers game • up to 50%, if end markets are available	• move to zero waste

Participants identified some issues with the current method of calculating waste diversion rates. It was discussed that measuring diversion by weight was not effective (i.e. pet waste and diapers increase disposal rates disproportionately due to high density of these materials), and suggested that volume may be a better way of measuring diversion. Alternatively, diversion may be increased if instead of establishing goals for waste diversion, Barrie could set goals to reduce waste going into the landfill. Recommended goals would be to cut waste to landfill by 80% in 10 years, and 90-100% in 20 years. These goals would provide residents and taxpayers with a tangible goal of extending Barrie's landfill site life.

Multi-residential building mangers identified several challenges with enforcing diversion in their buildings due to the lack of legislation and accountability among tenants. Behavioural changes in multi-residential units are needed to increase diversion rates and reduce levels of contamination. These behavioural changes could be

encouraged by improving infrastructure in buildings, increasing education, implementing fines for non-compliance, or legislating landlords to evict tenants who do not separate their waste appropriately.

Overall, it was identified that education and awareness could be used to attain higher diversion rates in the future. Education should be implemented through schools; children who learn proper diversion practices will often encourage and teach their parents to recycle at home. A public waste "thermometer" at City Hall and other locations could be used to gauge how close the community is to obtaining the waste diversion target. A diversion contest with a neighbouring municipality or sister city could also be initiated to raise awareness and encourage diversion. Competitions between businesses or schools could also increase publicity and encourage diversion. Informing residents on the cost of a new landfill or alternative disposal infrastructure may provide incentive to increase diversion and landfill life. Other incentives identified were to voice success stories and to provide recognition for organizations and individuals that achieve high rates of waste diversion, such as waste awards for businesses through the Chamber of Commerce, or "Gold Box" program for residents.

11.2.4 Implementation of Options

Barrie developed a series of key questions that would help participants move forward with an assessment of the implementation of options. Participants were asked to respond to these multiple choice questions. The answers to these key questions are shown in the following graphs.

Participants were asked if they felt it was important for Barrie to develop a recycling program for C&D waste. The majority of participants (83 %) identified that they felt it was very important.

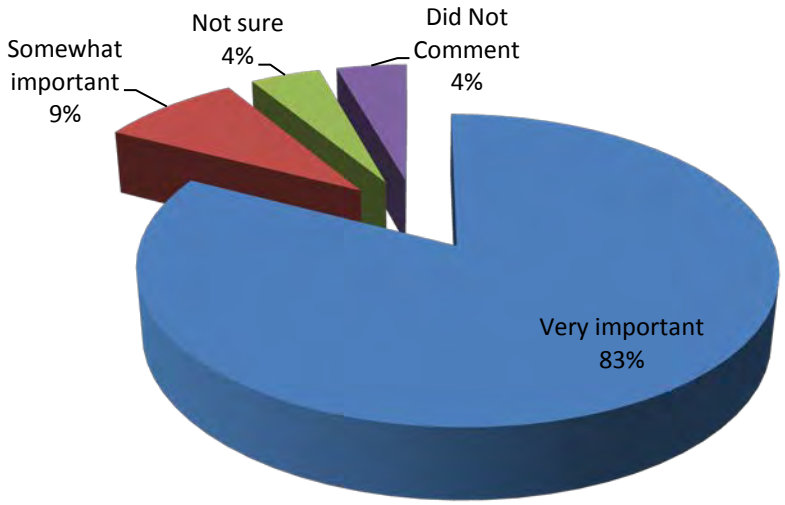


Figure 19: Do you think it's important for Barrie to develop a recycling program for C&D waste?

The majority of participants felt that it was very important (52 %) or somewhat important (37 %) that businesses and institutions manage their own waste disposal. The CLC identified that while institutions should remain financially responsible, partnerships with institutions should be formed where possible. Partnerships on collections contracts could allow cost savings for both Barrie and publically funded institutions, and increase diversion rates through more effective and consistent education and signage.

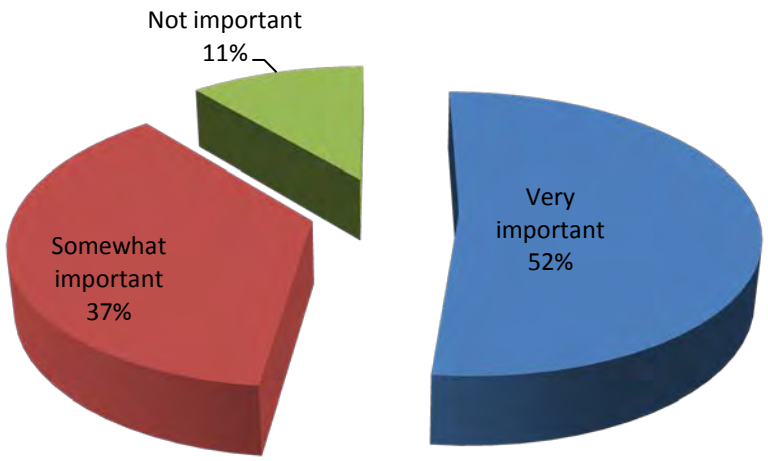


Figure 20: How important is it that businesses and institution (including school, and hospitals) remain responsible for the collection, processing and disposal of their own waste?

Participants were asked to select the behavioural changes they would make to decrease the amount of waste they generate. Similar numbers of participants felt that they could reduce the amount of waste generated by composting and/or recycling (32 %), and reuse (23 %). The CLC identified that this question may have been too broad to solicit meaningful feedback.

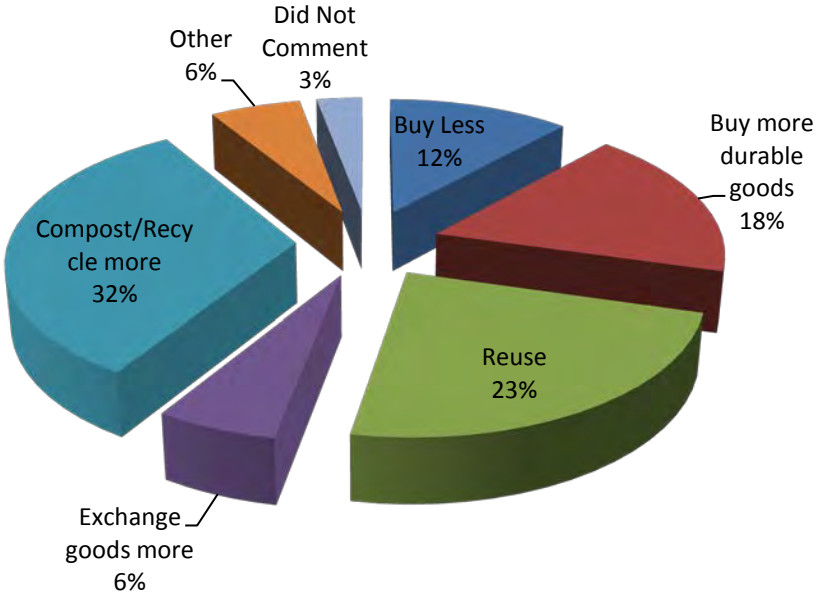


Figure 21: Which of the following would you be most likely to do in order to reduce the amount of waste you generate?

A large majority of participants responded that they felt that it is very important that Barrie manage its own waste locally (87 %). The CLC identified that this question was too broad, and while it is important to maintain supervision of waste management it is not necessary to locate future disposal and collection facilities within Barrie. It was felt that although Barrie needed to maintain local control of the waste recycling and disposal programs, the most efficient and cost effective methods for managing recyclables and residual waste should be selected.

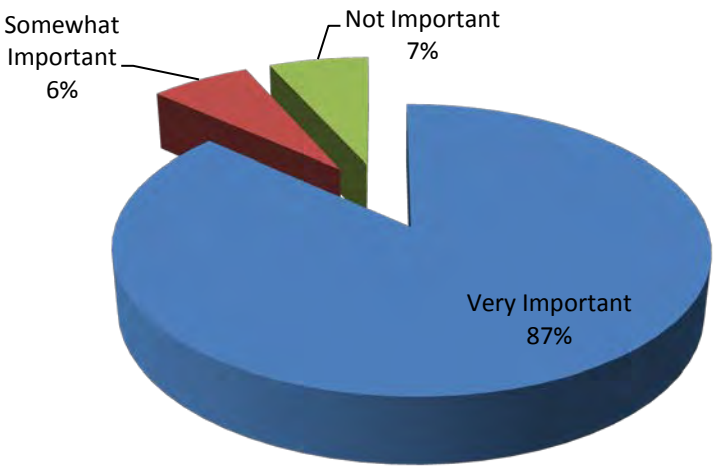


Figure 22: How important is it that Barrie maintains responsibility for its own waste (including, recyclables, organics and garbage) locally?

4.3.1 Future Waste Disposal Options

The following questions were only asked to participants at the Future Disposal Options workshop. Prior to answering the questions, participants at this workshop were presented with an overview of each potential waste disposal technology to ensure feedback was informed and meaningful.

Feedback was requested on the ownership of future waste disposal facilities. The majority of participants (57 %) would prefer that a waste disposal facility be owned by a public/private partnership.

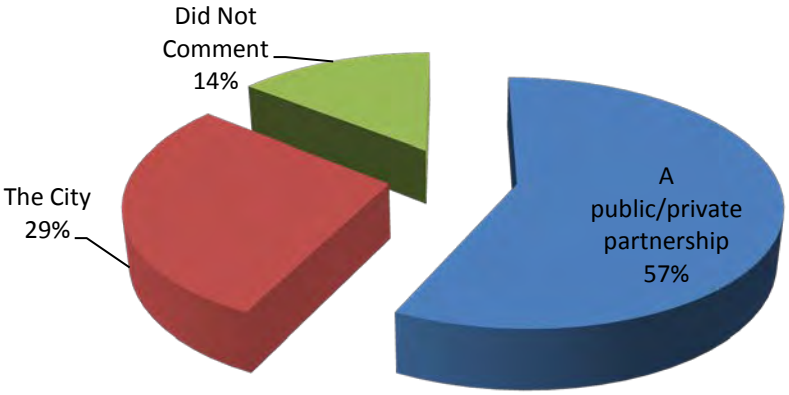


Figure 23: If Barrie plans to develop a waste disposal facility, who should it be owned by?

Participants were asked if it was important for Barrie to be a leader in regional waste planning. The majority of participants (67 %) felt that Barrie should take a leadership role in exploring and planning regional waste facilities. Building on this question, the CLC identified that future waste management would be most effective and efficient if conducted on a regional scale.

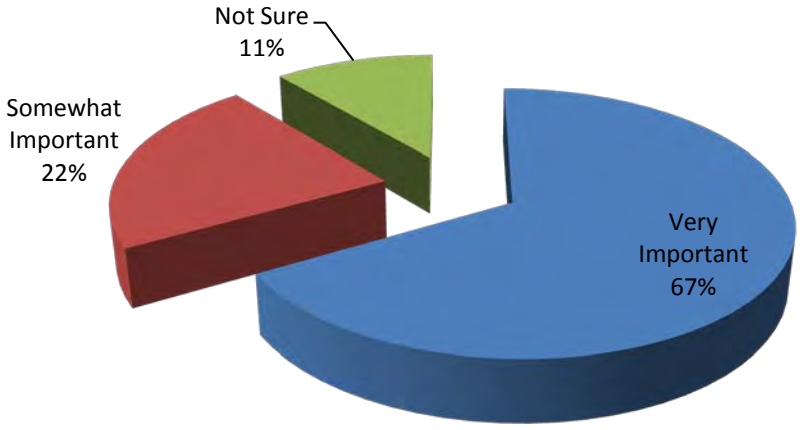


Figure 24: Is it important to you that Barrie take a leadership role in exploring and planning regional waste facilities? These waste facilities could serve other communities, and may or may not be located in Barrie.

The majority of participants felt that Barrie should consider MBT (33 %) or Thermal Treatment (25 %) as the preferred residual waste management option. Notably, no one chose landfill as an option.

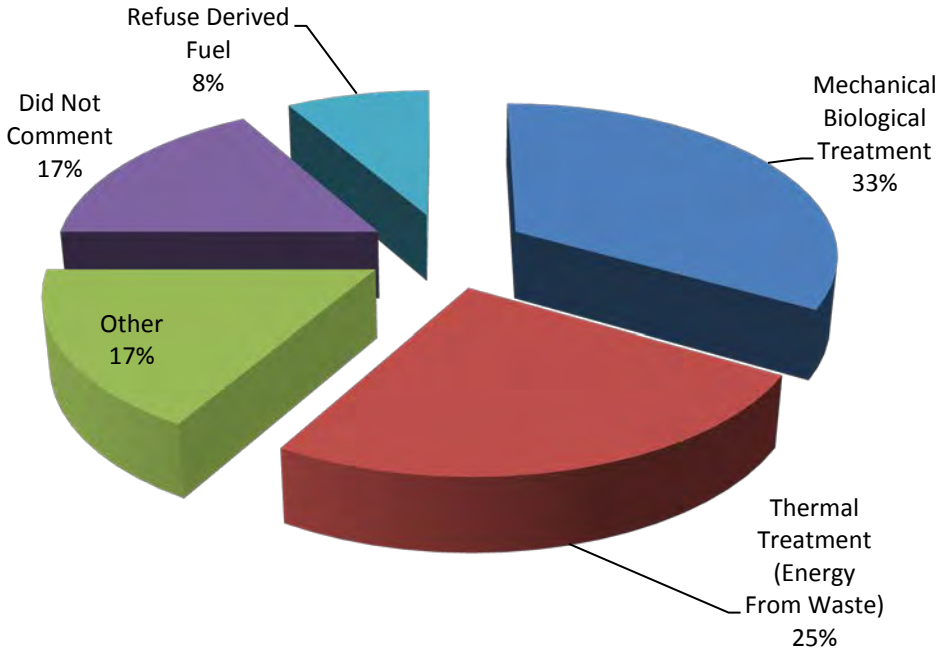


Figure 25: What options should Barrie consider for long term waste disposal?

11.2.5 Decision-Making Criteria

Decision-making criteria were used to identify which waste management options should take priority over others. The decision-making criteria were divided into three broad categories, including environmental, social and economic. During the Future Waste Disposal Workshop, the priority of these three categories was discussed at a high level. Additionally, as part of an open space session at the workshop, participants were asked to identify new, and discuss existing decision-making criteria.

The general consensus from workshop participants regarding the priority of the three broad categories was that an “ideal” ranking for the criteria is:

- Rank 1 - Environmental
- Rank 2 - Economic
- Rank 3 - Social

However, the group acknowledged that a more “realistic” ranking for the criteria categories is:

- Rank 1 - Economic
- Rank 2 - Environmental
- Rank 3 - Social

The acceptance of this less preferred ranking was qualified with a statement that Barrie should look at short-term and long-term costs when considering economic criteria. The purpose of the qualifying statement was to recommend that Barrie not choose the cheapest option without considering long-term economic and environmental costs.

The CLC identified that the three criteria should be considered in combination, and that none of the three criteria should be ranked one above the other.

12.0 PREFERRED WASTE MANAGEMENT SYSTEM

12.1 Waste Diversion Target

Waste management best practices stress the importance of establishing measurable and achievable waste diversion targets. Barrie's most current audited waste diversion rate is 45% (2010 Datacall). The current waste diversion target for the province is 60%.

Throughout the community engagement process, participants were asked for their feedback on what Barrie's waste diversion target should be and discussed challenges and incentives for obtaining these goals. Generally the public proposed aggressive waste diversion targets, with participants at the residential workshop suggesting waste diversion targets that ranged from 60% to 100% diversion in 10 years, and 80% to 100% diversion in 20 years.

It is recommended that Barrie strive to meet a 60% waste diversion goal during the 20 year planning period. Achieving a 60% diversion rate is an ambitious goal, but can be achieved if effective waste diversion initiatives are implemented and realistic timelines are set. It has taken 20 years to reach Barrie's current diversion rate of 45%. It should be recognized that Barrie already has in place the waste diversion programs for the "low hanging fruit" and additional waste diversion efforts may be more difficult, more costly to implement and operate, and may not have the high returns of the current programs.

When new waste diversion programs are implemented, the anticipated increase in waste diversion does not happen immediately. There is typically a phase-in period of two to five years when the program is put in place, residents are educated about the program, and the behaviour of residents shifts so that the desired results are achieved. Sometimes the phase-in period can happen fairly quickly; for example, when residents that are accustomed to weekly garbage collection are reduced to bi-weekly garbage collection. Other times the phase-in period may be longer, such as when reuse opportunities are put in place and residents must adapt to taking advantage of these opportunities.

Due to these challenges, the goal of 60% diversion is best achieved through a staged approach, whereby the preferred waste management system initiatives, discussed herein, be implemented according to schedule with a series of goals and timelines.

The staged waste diversion targets recommended for Barrie are shown below:

- 50% diversion by 2016
  - Short term "highest priority" initiatives to be implemented between 2012 -2016
- 54% diversion by 2021
  - Medium term initiatives to be implemented between 2017 -2021
- 57% diversion by 2026
  - Medium term initiatives to be implemented between 2022 -2026
- 60% diversion by 2031
  - Long term "lowest priority" initiatives to be implemented between 2026 -2031

12.2 Evaluation of Options

Throughout the consultation process, a variety of options to improve the effectiveness and efficiency of Barrie's existing waste management system were identified and discussed at public consultation events (i.e. openhouses and workshops).

In addition, Barrie completed a Waste Service Review in November 2011, which identified a number of potential options to achieve net cost reductions in Barrie's Environmental Operations Branch. Some of the options that were identified as being easy to implement and without potential negative impacts or public opposition are scheduled for implementation in 2013. It was recommended that the remaining initiatives be studied further to determine if they should be incorporated into Barrie's SWMS. These initiatives are included in the evaluation of waste system options. Although they may not contribute to increasing diversion or improving the effectiveness of Barrie's waste management system, their implementation may reduce the overall cost of providing waste services and therefore help to fund other program initiatives that have been indentified to improve the system. Timing did not allow for public consultation on the initiatives proposed in the Waste Service Review.

As part of the Waste Service Review, the following criteria were used to quantify the cost savings potential of each proposed initiative:

- Low = under $10,000 annually
- Medium = between $10,000 to $100,000 annually
- High = over $100,000 annually

Table 47 outlines the full list of initiatives that were identified in the Waste Service Review and the cost saving potential associated with each.

Table 47: Potential Cost Saving Initiatives

Initiative	Cost Saving Potential
Eliminate accepting street sweepings, catch basin material and excess soils from construction projects for free at the landfill	High
Joint P&E of common waste management programs with the County of Simcoe and the City of Orillia	Medium
Complete a rationalization study to determine if the number of public space collection locations can be reduced	Low
Consolidate collection of recyclables and garbage from park interiors when garbage is collected from those locations	Low
Convert all public space bins into advertising bins to pay for cost of public space recycling	Low
Remove from service inaccessible recycling containers in parks during the winter months	Low
Utilize event volunteers to empty recycling carts into a central roll-off bin at Special Events	Low
Eliminate delivery of Blue Box containers	Low
Eliminate delivery of green bins	Low
Promote alternative local waste management facilities (i.e. Reuse Centres, WEEE, MHSW, scrap tire collection points)	Low

Initiative	Cost Saving Potential
Reduce curbside collection of waste from weekly to bi-weekly	High
Reduce curbside collection of recyclables from weekly to bi-weekly	High
Eliminate the Multi-Residential Tipping Fee Exemption Program	High
Regional partnership for joint marketing of recyclables	High
Eliminate the one free load of waste up to 100 kg/residence/year, or reduce the allowed quantity	High
Charge a fee for Blue Boxes and green bins	High
Reduce garbage limits in the IC&I sector from 10 bags to 6 bags per week	Medium
Reduce garbage collection from multi-family residential from 2 bags to 1 bag per week	Medium
Eliminate recycling collection from the IC&I sector	Medium
Eliminate leaf and yard waste collection from the IC&I sector	Medium
Eliminate leaf and yard waste collection from multi-residential units	Medium
Eliminate the special event recycling collection program	Medium
Offer special event recycling service based on full cost recovery from event organizer	Medium
Eliminate the first 100 kg of leaf and yard waste allowance, or reduce the allowed quantity	Medium
Contract weigh scale operations instead of using in-house staff	Medium
Recycle C&D waste	Medium
Eliminate Barrie's involvement in processing work orders for bulky item collection	Low
Investigate opportunities to improve the Waste Services Contract, such as including a fuel surcharge, a methodology for establishing and updating house count, using a weight-based pay schedule, rationalize public space bins, convert public space bins to advertising and/or a mechanism for Barrie to share revenue from recyclables	TBD
Full user pay system/increase bag tag cost	High
Utilize neighbourhood collection depots for garbage	High
Utilize neighbourhood collection depots for recyclables	High
Utilize neighbourhood collection depots for SSO waste	Medium
Utilize neighbourhood collection depots for the collection of leaf and yard waste	High
Eliminate garbage collection from the IC&I sector	High
Reduce curbside collection of waste in the CBD from twice weekly to weekly	Medium
Eliminate recycling collection from multi-residential units	Medium
Reduce the curbside collection of leaf and yard waste from weekly to bi-weekly for the months of January, April, May, June, September, October and November	Medium

The complete list of options being considered in the development of the Preferred Waste Management System for Barrie have been grouped together into the following categories based on the various components of the waste management system:

- Modify the Collection of Waste, Recyclables and Organics;
- Standardize Diversion Programs;
- Modify Services to the Multi-Residential Sector;
- Modify Services to the IC&I Sector;
- Improve Diversion Depots;
- EPR;
- Enhanced P&E;
- Mandatory Diversion Program;
- Promote RTR Programs;
- Modify the Fee Schedule at the Landfill;
- Modify Public Space Recycling;
- Modify Bulky Waste Collection;
- Modify the Special Event Program; and
- Partnerships and Contracts.

Each of these broad categories includes a number of related waste initiatives (options) that may be implemented on their own, or in concert with other initiatives. Each waste initiative was evaluated (refer to Table 48 to Table 61) according to the following assessment criteria:

- Advantages;
- Potential Disadvantages;
- Compatibility with Guiding Principles for the SWMS;
- Potential impact on waste diversion;
- Community support and input;
- Capital cost implications;
- Operating cost implications; and
- Ease of Implementation.

The assessment of each proposed initiative resulted in a final recommendation as to whether or not the initiative should be included in Barrie's preferred waste system (refer to the last row in each assessment table).

Table 48: Modify the Collection of Waste, Recyclables and Organics

	Bi-weekly Garbage Collection	Four Day Collection Cycle	Full User Pay System	Standardized Leaf and Yard Waste Collection	Eliminating Provision of Free Recycling and Green Bin Containers	Waste and Recyclable Neighbourhood Collection Depots
Advantages	• Makes it more convenient to recycle and compost than to dispose of waste • Sends message to residents that recycling and composting is more important and convenient than setting out garbage • Considered as a "Best Practice"	• Eliminates inconveniencing residents who have Friday collection • Promotes fairness • Seen as "Best Practice"	• Increased revenue from bag tags • May support increased diversion	Easier for residents to remember a standard collection schedule	Cost savings for Barrie	May provide cost savings for Barrie
Potential Disadvantages	• May be seen as a reduction in service • Could pose a challenge to families with young children in diapers • Potential for odours resulting from organic material not accepted in green bin program (i.e. diapers, pet waste) • If collection is missed one week, garbage is held for another two weeks	• Extended hours at the landfill site • Declining productivity near the end of the day and increasing potential for injury or accidents	• Not supported by public • Counterfeiting of bag tags	• May need additional collection vehicles • Not the most efficient use of staff and collection vehicles	• Could encourage residents / businesses to steal containers • Less convenient (no delivery) and more costly for residents • Providing bins at less than cost is a Best Practice • Residents will improvise and use their own containers (laundry baskets, large boxes etc and if contractor damages them or they go missing the City will have to deal with complaints and requests for replacement of all sorts of containers	• Each depot would require an ECA • Difficulty siting depots • High capital, maintenance and P&E costs, • Odour and vermin issues • Cost of providing site supervision at depots
Compatibility with Guiding Principles	• Recognizes that waste is a resource to be recovered • Supports the Waste Value Chain	Meets the needs and objectives of community and stakeholders	• Recognizes that waste is a resource to be recovered • Supports the Waste Value Chain	Not applicable	Practical and affordable framework for long-term waste management	Practical and affordable framework for long-term waste management
Potential impact on waste diversion	Proven to increase diversion	None	No data available	Residents may throw leaf and yard waste into garbage if collection frequency is not convenient	Could decrease diversion	May increase diversion as attendant can speak one-on-one with residents
Community Input	High Priority	Medium Priority	Low Priority (Public not in favour of full user pay)	Low priority	Not available	Not available, however public opposition anticipated
Capital cost implications	None	None	Cost to purchase bag tags	May require contractor to have more trucks available	None	High cost
Operating cost implications	Estimated cost savings of approximately 25% ($300,000 per year)	Minimal	• Administrative costs of bag tag sales • Increased revenue • Increased complaints and inquiries requires more staff time	No data available	• Annual savings of $161,000 (or $80,500 with a 50% subsidy), • Barrie would collect the fees • Potential implementation costs associated with this option • Would potentially negatively impact WDO funding since providing bins at less than cost is Best Practice	No savings anticipated
Ease of Implementation	Can be implemented with new contract	Can be implemented with new contract	Can be implemented with new contract	Can be implemented with new contract	Residents would need to be educated about the change and where containers are sold	• Difficulty siting neighbourhood depots, • large system change would require a significant investment in P&E

Include in Preferred Waste System?	Yes	Yes	Potential long term initiative	Not at this time	• Yes (with a 50% subsidy provided to residents) • During the phase in period, it may be beneficial for Barrie to continue to provide free containers to new residents or for new programs (i.e. green bin programs for multi-residential units).	No

Table 49: Modify Public Space Recycling

	Public Space Bin Rationalization Study	**Consolidate Collection of Recyclables and Garbage from Park Interiors**	**Convert Public Space Bins into Advertising Bins**	**Remove from Service Inaccessible Recycling Containers in Parks during Winter Months**
Advantages	Will allow Barrie to identify additional cost saving opportunities for public space recycling	Reduced cost and environmental impacts (i.e. reduced fuel usage, traffic and safety impacts on community streets)	• Increased revenue from advertising • Opportunity for City to promote waste management programs	Reduced collection costs during the winter
Potential Disadvantages	• Consultant or staff time to complete study • May remove bins from locations that residents are accustomed to or locations that have been specifically requested and could result in complaints from the residents in that area	None	• Cost of new bins and program itself • Potential for inconsistency with the standardization of bins (if not all bins are converted into advertising bins). However, the model of bin, messaging and colour coding of streams would still be consistent with the curbside program • Ads on bins may be considered unsightly	• Could result in reduced funding from WDO, increased litter and dog waste • Many bins are GPS tagged, which could create a problem with removing and returning them • May remove bins from locations that residents are accustomed to or locations that have been specifically requested
Compatibility with Guiding Principles	Provide a practical and affordable framework for long-term waste management	Provide a practical and affordable framework for long-term waste management	Provide a practical and affordable framework for long-term waste management	Provide a practical and affordable framework for long-term waste management
Potential impact on waste diversion	Reduced diversion	None	Increased diversion, if some bins are used to promote City waste management programs	• Unlikely to negatively impact diversion (residents spend more time indoors during the winter) • Recyclables collected during the winter are often contaminated; therefore removing recycling containers would have a positive impact on diversion
Community Input	Not available	Not available; No opposition anticipated	Not available; no opposition anticipated	Not available
Capital cost implications	None	Depends on who provides the service	Cost of new bins	None
Operating cost implications	Low cost savings	Low cost savings (determined from rationalization study)	• Medium cost savings (i.e. revenue generated from advertising) • Cost to develop and run program (a third party service provider may be necessary to develop and run program and/or ensure that the bins are cleared of snow and kept clean) and the messaging in the ads is consistent with Corporate policies	None to Low cost savings, The cost to remove and reinstate recycling containers may be greater than the savings gained from the temporary elimination of collections.
Ease of Implementation	Could be initiated immediately	Decision required on whether it will be the contractor or Roads and Parks Branch that will collect waste from park interiors	Time required to develop and implement program	Recycling containers could be co-collected with garbage containers which are already removed from service during the winter months
Include in Preferred Waste System	Yes	Yes	Yes	Yes

Table 50: Standardize Diversion Programs

	Standardize Diversion Program with Schools	Standardize Diversion Programs with Neighbouring Municipalities	Standardize Collection Bin Types and Colours
Advantages	• Standardizes waste diversion programs between home and school • Increases waste diversion opportunities in schools • Children can educate parents about recycling	• Considered a "Best Practice" (if a superior service will be offered though standardization) • Reduces the need to constantly educate new residents • Allows for joint public P&E with other municipalities • Provides an opportunity for collection/processing contract partnerships with other municipalities • Materials have stable markets	Sends consistent message on diversion
Potential Disadvantages	Need cooperation from schools	Requires cooperation from other municipalities	Public space recycling bins typically contain a lot of cross contamination
Compatibility with Guiding Principles	Education and Awareness of Public Encourages diversion programs in the IC&I sector	Facilitates cooperation and participation with neighbouring municipalities	Education and awareness of Public
Potential impact on waste diversion	Increases diversion	Increased diversion	May increase diversion
Community Input	• Ranked as Medium Priority with overall workshop attendees • Ranked as High Priority with school board representatives	High priority for recycling film plastic	Medium Priority
Capital cost implications	Cost for bins and carts may be shared between City and school boards	None	Capital cost for bins
Operating cost implications	May provide on a "for fee" basis	Increased costs slightly for recycling lower value plastic film	• May increase cost to service public space bins • Additional staff time required to coordinate the advertising/sales program
Ease of Implementation	Would involve City staff time to coordinate	Can be implemented at time of new collection contract	Can be included with new collection contract
Include in Preferred Waste System?	Yes (on a "for fee" basis, with Barrie providing program administration and joint tender opportunities)	• Yes, is recommended that Barrie attempt to standardize its diversion programs with the County of Simcoe and the City of Orillia. In other words, Barrie should include plastic film, empty paint cans and aerosol containers in its new recycling contract. • Barrie should also work with the County of Simcoe and the City of Orillia to explore opportunities for joint processing and marketing of Blue Box recyclables and other materials, and eventually provide joint P&E for waste diversion programs. • Barrie should also continue with the same level of service for its organics	• Yes • In addition, a rationalization study should be completed to determine if the public space collection locations should be revised and if any of the bins can be converted into advertising bins to help offset the cost of providing this service. • Also, the City should determine if the collection of recyclables and garbage from park interiors can be consolidated instead of being serviced by both the City staff and the private contractor.

	Standardize Diversion Program with Schools	Standardize Diversion Programs with Neighbouring Municipalities	Standardize Collection Bin Types and Colours
Advantages	• Standardizes waste diversion programs between home and school • Increases waste diversion opportunities in schools • Children can educate parents about recycling	• Considered a "Best Practice" (if a superior service will be offered though standardization) • Reduces the need to constantly educate new residents • Allows for joint public P&E with other municipalities • Provides an opportunity for collection/processing contract partnerships with other municipalities • Materials have stable markets	Sends consistent message on diversion
Potential Disadvantages	Need cooperation from schools	Requires cooperation from other municipalities	Public space recycling bins typically contain a lot of cross contamination
		program.	

Table 51: Modify Services to the Multi-residential Sector

	Eliminate the Multi-Residential Tipping Fee Exemption Program	Eliminate the Leaf & Yard Collection from Multi-Residential Units	Multi-Family Green Bin Program	Reduce Garbage Collection Limits in the Multi-residential Sector
Advantages	• Cost savings for Barrie • All multi-residential complexes with adequate curbside accessibility would be eligible to receive garbage collection services provided by Barrie	• Cost savings for Barrie • May encourage multi-residential sector leaf and yard waste composting	Increased equity and fairness	• Cost savings for Barrie • Reduce the amount of garbage going to landfill by encouraging residents to divert materials via the Blue Box and green bin
Potential Disadvantages	Unequal service level between single family and multi-residential households, despite paying same property taxes Could result in decreased participation in the Multi-residential recycling program as this is a condition of being approved in the Tipping Fee Exemption program A number of different arrangements could be difficult to keep track of and would require additional staff to document and monitor	Creates unequal service level for residents living in multi-residential establishments	• Increased cost • Getting participation in green bin programs at multi-family facilities can be challenging • Anticipated increase in contamination levels	• Could result in illegal dumping • Could also result in increased contamination in recycling stream • Difficult to determine number of bags generated by each unit • Difficult to monitor and enforce if private haulers are providing this service
Compatibility with Guiding Principles	Practical and affordable framework for long-term waste management	Practical and affordable framework for long-term waste management	• Encourages diversion programs in the multi-family sector • Supports the Waste Value chain • Recognizes that waste is a resource to be recovered	• Practical and affordable framework for long-term waste management • Supports the Waste Value chain
Potential impact on waste diversion	Potential for decreased diversion since the Tipping Fee Exemption Program is the only reason that some buildings have recycling programs in place	Could reduce diversion rate if leaf and yard waste ends up in garbage stream via improper disposal in dumpsters (i.e. landfill)	Increased diversion	Potential for increased diversion due to stricter garbage limits, but also decreased diversion due to contamination

Community Input	Not available; however, strong opposition anticipated	Not available, however public opposition anticipated	High priority	Not available; however opposition anticipated
Capital cost implications	None	None	Capital cost of bins, carts	None
Operating cost implications	High cost savings	Lowcost savings	Increased costs for servicing	Medium cost savings
Ease of Implementation	Straightforward to implement; however, alternative funding strategy may be a challenge to develop and implement	• Can be implemented with new contract • Additional P&E for composting may be required	Can be included with new collection contract	• Can be included with new collection contract • Challenge to enforce (i.e. difficult to determine number of bags generated by each unit)
Include in Preferred Waste System?	Consider alternative funding strategy. Alternative strategy will need to create an incentive to recycle	• No • To limit the potential for reduced diversion, this recommendation could be supplemented by a by-law to ban the disposal of leaf and yard waste, which is currently supported by Council.	• Yes • This would also allow Barrie to reduce the number of free bags from multi-residential units from 2 bags per week per unit to 1 bag per week per unit.	Yes

Table 52: Modify Services to the IC&I Sector

	Reduce Frequency of Curbside Collection of Waste in CBD	**Eliminate Leaf and Yard Waste Collection to IC&I Sector**	**Eliminate Garbage Collection to IC&I Sector**	**Reduce Garbage Limits for IC&I Sector**	**Eliminate Recycling Collection to IC&I**	**Central Depots in Downtown**
Advantages	• Cost savings for Barrie • Reducing collection frequency may increase participation in diversion programs (Although not likely to be significant, unless garbage limits are simultaneously reduced)	• Cost savings for Barrie • May encourage IC&I sector leaf and yard waste composting	Cost savings for Barrie	• Cost savings for Barrie • May incentivize the IC&I sector to divert more recyclables	Cost savings for Barrie	Reduced aesthetic and odour issue of having waste sitting out on the curb twice weekly
Potential Disadvantages	• May cause unsightly accumulation of waste in CBD • Space issues (i.e. limited availability of set out space) • Increased complaints	Efficiency associated with eliminating such a program is unknown, given that many IC&I establishments are located in and around residential areas	• IC&I sector pays property taxes and should be entitled to same/similar services as residential sector • Efficiency associated with eliminating collection is unknown since many IC&I establishments are located in/around residential areas • Potential for increased contamination if diversion programs are still provided by Barrie	If garbage limits are insufficient, could result in the temporary storage of garbage and associated health and nuisance concerns (i.e. odour, pests), vandalism, illegal dumping and space issues Increased complaints for unclaimed garbage	Negative impact on diversion rate and would definitely have to happen with a garbage limit reduction	• Health and nuisance concerns (i.e. odours, pests) • Difficulty in enforcing bag limits, allowable materials • Permitting requirements • Illegal dumping
Compatibility with Guiding Principles	• Practical and affordable framework for long-term waste management • Supports the Waste Value chain	Practical and affordable framework for long-term waste management	Practical and affordable framework for long-term waste management	Practical and affordable framework for long-term waste management	Practical and affordable framework for long-term waste management	Encourages diversion programs within the IC&I sector

Potential impact on waste diversion	Slightly increased diversion	Could reduce diversion rate if leaf and yard waste ends up in garbage stream (i.e. landfill)	Potential to increase diversion (assuming that recyclables are still collected from IC&I sector). However, contamination rates may increase (unless recycling container limits are eliminated)	Increased diversion	Reduced diversion	Potential for decreased diversion
Community Input	Not available; however, opposition anticipated from both the public and IC&I sector	Not available; however, opposition anticipated from the IC&I sector	Not available; however, strong opposition anticipated from the IC&I sector	Not available; potential opposition from the IC&I sector anticipated (although less than what is anticipated if garbage collection were to be eliminated altogether)	Not available; potential opposition from the IC&I sector anticipated	Low priority
Capital cost implications	None	None	None	None	None	High capital costs (i.e. siting, permitting, design and construction costs)
Operating cost implications	Medium cost savings	Medium cost savings	High cost savings	• Medium cost savings • Reduced municipal collection costs	Medium cost savings	• Cost savings from reduced number of collection stops • Depot maintenance and repair costs
Ease of Implementation	Can be implemented with new collection contract	• Can be implemented with new contract • Additional P&E for composting may be required	Can be implemented with new collection contract	Can be implemented with new collection contract	Can be implemented with new collection contract	• Challenges associated with siting central depot locations • Can be implemented with new collection contract
Include in Preferred Waste System?	No	Yes. To limit the potential for reduced diversion, this recommendation could be supplemented by a by-law to ban the disposal of leaf and yard waste.	No	Yes. it is recommended that Barrie reduce garbage bag limits from the IC&I sector from 10 bags to 6 bags per week.	No	Potential long term initiative

Table 53: Improve Diversion Depots

	Expand Diversion Depots	**Recycling of Textiles and Mattresses**	**Establishment of Reuse Centres**	**Mobile Unit for Recycling**
Advantages	• Increased performance and accessibility of drop-off based waste diversion • Could provide a new approach to public education • Opportunity for partnership with charity groups	• Potential for increased diversion and revenue from the sale of marketed material • Opportunity for partnership with local charity groups (i.e. Habitat Re-Store, Goodwill and Salvation Army)	• Opportunity for partnership with local charity groups (i.e. Habitat Re-Store, Goodwill and Salvation Army) • Promotion of the idea and benefits of reuse • Provides affordable items to individuals and organizations	• Improve accessibility to all residents • Opportunity for material specific collection • Opportunity to engage with the public face-to-face • Additional opportunity to partner with charity groups
Potential Disadvantages	Potential high costs	May be challenging to find a nearby market and/or convenient collection method for mattress recycling.	Requires ongoing communication with partnering charity groups	High capital and ongoing costs
Compatibility with Guiding Principles	• Employs an integrated waste management system that combines waste diversion and disposal options in a way that is appropriate for local circumstances • Supports the Waste Value chain • Recognizes that waste is a resource to be recovered	• Supports the Waste Value chain • Recognizes that waste is a resource to be recovered	• Reduction of waste wherever possible • Supports the Waste Value chain • Recognizes that waste is a resource to be recovered	• Supports the Waste Value chain • Recognizes that waste is a resource to be recovered

Potential impact on waste diversion	Increased diversion	Increased diversion	Increased diversion	Increases diversion
Community Input	High priority	Recycling textiles and mattresses ranked medium priority	Low priority	Low priority
Capital cost implications	Potentially high (permitting requirements)	Minor	Depends on how the program is implemented	High (cost of mobile unit and permitting costs)
Operating cost implications	Some cost increases – depending of value received for materials recovered	Some cost increases – depending on value received for materials recovered	Ongoing centre maintenance, administration and P&E costs	Ongoing maintenance, staffing and P&E cost
Ease of Implementation	Relatively easy to expand existing depot	Relatively easy for textiles.	Depends on how the program is implemented (i.e. support received from charities)	Would involve City staff and time to coordinate
Include in Preferred Waste System?	Yes	• Yes, as a future implementation initiative. • Partnership(s) with charity groups is also strongly encouraged to enhance this recommendation and potentially reduce associated costs.	• Potential long term initiative • It is suggested that Barrie initiate preliminary brainstorming discussions with potentially interested charity groups prior to initiating this recommendation.	Potential long term initiative

Table 54: Lobby for Extended Producer Responsibility

Advantages	• Freed tax dollars for other services • Improved product and packaging design (less waste) Potential for greater diversion
Potential Disadvantages	• Benefits are long-term • Requires strong political sway (i.e. municipalities to form one common voice)
Compatibility with Guiding Principles	• Supports the Waste Value chain • Recognizes that waste is a resource to be recovered • Encourages Public Private Partnerships for the delivery of services
Potential impact on waste diversion	Increased diversion
Community Input	High priority
Capital cost implications	None; however, long-term costs may be substantial if publicly owned waste infrastructure becomes obsolete
Operating cost implications	Minor , Staff time
Ease of Implementation	Requires action from the provincial government
Include in Preferred Waste System	Yes

Table 55: Enhanced Promotion and Education

Advantages	• Reduced presence of unacceptable material types in waste diversion streams • Increased collection efficiencies • Improved processing efficiencies with decreased residue levels • Higher marketing revenues • Improved overall awareness of waste diversion
Disadvantages	Upfront costs (despite long term savings)
Compatibility with Guiding Principles	Education and awareness of public
Potential impact on waste diversion	Increased diversion
Community Input	High Priority
Capital cost implications	None to minimal (i.e. new printers)
Operating cost implications	• Medium to high depending on programs implemented • Additional staff may be required to develop / implement various P&E programs and measure impact
Ease of Implementation	Would involve City staff and time to coordinate
Include in Preferred Waste System	Yes

Table 56: Mandatory Diversion Program

	Mandatory Diversion Programs	Zero Waste for Special Events	Disposal Ban on C&D Waste
Advantages	Potential for increased participation and diversion rates	• High public education impact factor • Increased creativity for waste diversion efforts	• Increased waste diversion • Landfill site life extended • Reduced disposal costs for residents (diversion of C&D would be free)
Potential Disadvantages	• Requires continual monitoring and enforcement • More challenging to identify individual violators in multi-residential sector • Potential for illegal dumping • Potential increase in contamination rates for diversion programs	May be challenging to implement in reality	Additional material sorting required
Compatibility with Guiding Principles	• Supports the Waste Value chain • Recognizes that waste is a resource to be recovered	• Supports the Waste Value chain • Reduction of waste wherever possible	• Supports the Waste Value chain • Reduction of waste wherever possible
Potential impact on waste diversion	Increased diversion	Increased diversion	Increased diversion
Community Input	Medium priority	Low priority	Low priority
Capital cost implications	None	Low (additional diversion containers)	• None to low depending on C&D program • Additional diversion containers may be required if residents bring C&D waste to municipal drop-off depot(s) vs. a C&D facility directly
Operating cost implications	Medium to high (monitoring and enforcement costs)	Low to medium (administration costs, P&E, staff costs for monitoring and or training of event staff and enforcement)	Low (P&E, material transfer/processing costs may be required), staff to oversee the proper sorting
Ease of Implementation	Time requirements to update policies and by-law and coordinate enforcement program (which should be in-place at the time of by-law approval)	Would involve City staff and time to coordinate	• Can be implemented with a new by-law • City staff and time to coordinate (depending on program) • Two program options: 1) Collection depot(s) and municipal transfer to a C&D recycling facility, or 2) Direct drop-off of C&D waste by residents at a C&D recycling facility
Include in Preferred Waste System	Yes, it is recommended that a by-law be prepared that stipulates mandatory diversion of materials that can be recycled in Barrie's recycling programs.	Yes	Yes

Table 57: Promote Return to Retailer Programs

Advantages	• Provides convenient collection locations for residents • Promotes EPR
Potential Disadvantages	Materials that are diverted through third party programs do not count towards Barrie's waste diversion rate and their tonnages cannot be tracked
Compatibility with Guiding Principles	• Provides public education and awareness • Recognizes that waste is a resource to be recovered
Potential impact on waste diversion	Depends on items collected
Community Input	Identified as a lower priority option
Capital cost implications	Low
Operating cost implications	Staff time to compile and update information and liaise with retailers
Ease of Implementation	Relatively easy
Include in Preferred Waste System	Yes

Table 58: Modify Fee Schedule at the Landfill

	Charge for Sweepings, Grit, and Sand	Eliminate the 100Kg Free Load of Garbage	Eliminate the 100kg Leaf and Yard Waste Allowance
Advantages	• Increased revenue from tipping fees • If material is brought elsewhere, landfill life would be extended(1)	• Increased revenue from tipping fees • May promote increased diversion	• Increased revenue from tipping fees • May encourage backyard composting • Increase in use of curbside program
Potential Disadvantages	City would be charging itself (i.e. Roads, Parks and Fleet Department)	• Could encourage illegal dumping • Need to comply with weights and measures requirements	Need to comply with weights and measures requirements
Compatibility with Guiding Principles	Provide a practical and affordable framework for long-term waste management	Provide a practical and affordable framework for long-term waste management	Provide a practical and affordable framework for long-term waste management
Potential impact on waste diversion	N/A - Reuse activities would be costly	Potential for increased diversion	No impact on diversion anticipated
Community Input	Not available	Not available; potential opposition anticipated	Not available; potential opposition anticipated
Capital cost implications	None	None	None
Operating cost implications	Increased revenue from tipping fees	• High cost savings • Increased revenue from tipping fees P&E costs	• Medium cost savings (if Barrie continues with a serviced unit payment system, as opposed to a payment by tonnage system) • Increased revenue from tipping fees • P&E requirements
Ease of Implementation	Can be implemented with the next Fees By-Law	Can be implemented with the next Fees By-Law	Can be implemented with the next Fees By-Law
Include in Preferred Waste System	Yes	• Yes (via a phased in approach) • This recommendation would be complimented by an effective enforcement program to prevent illegal dumping.	Yes

(1) In theory, this material could be used as cover material for waste; however, the landfill remediation project is generating more than enough “fines” that are used for cover material. Therefore, the sand, catch basin grit and street sweepings are taking up landfill capacity, without Barrie receiving any benefit or tipping fees.

Table 59: Modify Bulky Waste Collection – Eliminate Barrie's Involvement in Processing Work Orders for Bulky Item Collection

Advantages	• Cost efficiencies associated with reduced administration • Responsibility might be shifted to Habitat for Humanity • Barrie will no longer be accountable when Habitat for Humanity ReStore provides poor customer service
Potential Disadvantages	Resident confusion regarding who to call for pick-up
Compatibility with Guiding Principles	Provide a practical and affordable framework for long-term waste management
Potential impact on waste diversion	Resident confusion could result in reduced participation in Habitat for Humanity collection program
Community Input	Not available
Capital cost implications	None
Operating cost implications	Low cost savings (reduced administration costs, educate residents about program changes)
Ease of Implementation	Relatively easy
Include in Preferred Waste System	Yes

Table 60: Modify Special Event Program – Eliminate Special Event Recycling Program

Advantages	• Cost savings for Barrie • Responsibility could be shifted to event organizer(s) and private sector for collection
Potential Disadvantages	• Potential for reduced diversion rates • May be challenging to implement this recommendation along with a Zero Waste Policy for Special Events • Depending on the private haulers there could be an inconsistency with what is accepted at the event and what is accepted in Barrie;s diversion programs (ie if film plastic was accepted at an event but not in curbside program)
Compatibility with Guiding Principles	Provide a practical and affordable framework for long-term waste management
Potential impact on waste diversion	Decreased diversion
Community Input	Not available
Capital cost implications	None
Operating cost implications	• Low to medium cost savings • Collection costs transferred to event organizer(s) or additional garbage cans would be required.
Ease of Implementation	Can be implemented with new collection contract
Include in Preferred Waste System	No. However, it is recommended that the service be offered on a full cost recovery basis and that the event organizers be responsible for ensuring that the recycling carts are emptied into roll-off bins to reduce the contractor's costs for servicing this program and that they accept materials consistent with Barrie's curbside collection programm

Table 61: Partnerships and Contracts

	Regional Partnerships for Joint Marketing of Recyclables	Investigate Opportunities to Improve the Waste Services Contract
Advantages	• Better prices for larger quantity of recyclables • Able to obtain full revenue for value of recyclables (Composite index in December 2011 of $131/tonne[1])	• Cost savings and increased revenue from the sale of recyclables • Reduced risk for contractor in some cases • Allows contractor to provide innovative solutions
Potential Disadvantages	Cooperation and harmonization of recycling programs with neighbouring municipalities may be challenging	• Some recommendations may not be favoured by contractor • May increase risk to City if recyclables market declines
Compatibility with Guiding Principles	• Provide a practical and affordable framework for long-term waste management • Cooperation and participation with neighbouring municipalities to seek out cost-effective solutions	• Recognize that P3s may provide an opportunity for improved service delivery and cost-effectiveness • Encourage P3s for the delivery of services, while remaining actively involved in the decision making process
Potential impact on waste diversion	No impact	No impact anticipated
Community Input	Not available	Not available
Capital cost implications	Central collection location required	Difficult to quantify
Operating cost implications	• High cost savings • Would involve City staff time to coordinate and find markets	Difficult to quantify
Ease of Implementation	Requires cooperation and harmonization of recycling programs with neighbouring municipalities	• Can be implemented with new contract • May require staff time to establish and update house count inventory if a serviced unit count is the preferred method for billing
Include in Preferred Waste System	Yes, once recycling programs with neighbouring municipalities are aligned and interest is confirmed.	Yes

1. Stewart Edge. The Price Sheet. December 2011.

13.0 IMPLEMENTATION SCHEDULE

Since the Blue Box recycling program was introduced in the 1980s, Barrie has developed a comprehensive waste diversion program and is currently achieving a relatively high waste diversion rate of 45%. It is important that efforts to increase waste diversion be well planned and that programs are implemented in a manner that will not jeopardize the system that is already in place. As indicated in the SWMS Mission Statement, it is also important that the waste management system that is implemented be able to balance the objectives of being *fiscally responsible, socially acceptable and environmentally sound.* Also, it is critical that new programs be communicated to Barrie's residents, who are an integral component of the program's success.

Residents who participated in the SWMS Community Consultation events actively support ongoing efforts to increase the amount of waste that is diverted from landfill and have a desire for Barrie to exceed a 60% waste diversion rate during the planning period for the SWMS, with an eventual goal of Zero Waste. This is an ambitious goal, particularly in light of the fact that it has taken Barrie over 25 years to reach the current diversion rate of 45%.

It should be recognized that Barrie already has in place the waste diversion programs for the "low hanging fruit" and additional waste diversion efforts will be more difficult, costly to implement and operate, and may not have the high returns of the current programs. The Implementation Schedule outlined in the following sections takes into account the priority issues identified by residents and stakeholders through the Community Consultation process and the ease and cost of implementing the various programs.

13.1 First Priority Initiatives

It is recommended that the first priority waste management initiatives, as shown in Table 62, be implemented in the 2012-2016 period. The action plan to implement these initiatives and the associated costs are outlined in more detail in Section 14.0.

Table 62: 2012-2016 Initiatives

Initiative	Components
Lobby for Extended Producer Responsibility	■ Work with AMO, OWMA, MWA[1] and other industry associations to lobby province for EPR
Enhanced Promotion and Education	■ Complete a comprehensive Communications Plan for all of Barrie's waste management services and update annually ■ Relaunch green bin program
Modify Collection of Waste, Recyclables and Organics	■ Reduce collection of garbage to bi-weekly to encourage diversion ■ Four day collection cycle to reduce shifting collection days on holiday weeks ■ Reduce free garbage bag limit to the IC&I sector from 10 per week to 6 per week

Initiative	Components
Implement Multi Family Green Bin Program	■ Provide necessary carts and bins ■ Implement green bin program ■ Reduce garbage collection limits in multi-residential sector
Improve Diversion	■ Curbside recycling of plastic film, empty paint cans and aerosol containers ■ Expand current collection depot at landfill to include C&D waste and mattresses ■ Plan for additional collection depot in south end of Barrie ■ Charge a tipping fee for sweepings, grit and sand ■ Provide collection at existing depots
Regional Partnership Initiatives	■ Establish a Regional Partnership Committee to align programs, and consider joint processing and disposal opportunities ■ Evaluate alternative disposal options (i.e. Thermal Treatment, MBT)
Cost Saving Measures	■ Provide replacement blue and grey bins and green carts to residents and businesses on a partial cost recovery basis ■ Eliminate the annual 100 kg free load for residents
SWMS Monitoring and Continued Planning	■ Monitor progress with waste diversion targets and re-evaluate proposed initiatives up to year 2031. ■ Add an additional five year segment to the end of the planning period (i.e. 2032 to 2036) to maintain a current 20 year SWMS. ■ Initiate next five years of SWMS (i.e. 2017-2021)

1. AMO – Association of Municipalities of Ontario; OWMA – Ontario Waste Management Association; MWA – Municipal Waste Association

13.2 Second Priority Initiatives

It is recommended that the second priority waste management initiatives, as shown in Table 63, be implemented in the 2017-2021 period. It is recommended that the action plan to implement these initiatives and the associated costs be developed as part of the first update to the SWMS, which is recommended to be completed in 2016.

Table 63: 2017-2021 Initiatives

Initiatives	Components
Coordinate Diversion Programs in Schools	■ Provide bins and carts to schools at shared cost ■ Include joint tendering opportunities in 2020 contract
Enhanced Promotion and Education	■ Promote multi-residential green bin program ■ Promote recycling of C&D waste ■ Promote use of diversion depots
Mandatory Diversion Program	■ Prepare by-law specifying mandatory diversion and blue bin and green bin rates. ■ Reduce free bags from 2bags/2weeks to 1bag/2 weeks
Improve Public Space Collection Program	■ Complete Public Space Rationalization Study
Improve Diversion Depots	■ Provide textile collection at existing depots
Regional Partnership Initiatives	■ Commence joint P&E program ■ Consider joint marketing of recyclables ■ Develop alternative waste disposal facility for residual waste
Beneficial Use of Landfill Gas	■ Energy recovery from landfill gas
Cost Saving Measures	■ Provide Special Event Recycling on a cost- recovery basis ■ Eliminate the 100 kg free yard waste allowance
SWMS Monitoring and Continued Planning	■ Monitor progress with waste diversion targets and re-evaluate proposed initiatives up to year 2036. ■ Add an additional five year segment to the end of the planning period (i.e. 2037 to 2041) to maintain a current 20 year SWMS. ■ Initiate next five years of SWMS (i.e. 2022-2026)

13.3 Third Priority Initiatives

It is recommended that the third priority waste management initiatives, as shown in Table 64, be implemented in the 2022-2026 period. It is recommended that the action plan to implement these initiatives and the associated costs be developed as part of the second update to the SWMS, which is recommended to be completed in 2021.

Table 64: 2022-2026 Initiatives

Initiative	Components
Improve Public Space Collection Program	■ Consolidate collection of recyclables & garbage from park interiors ■ Utilize more advertising bins ■ Remove inaccessible bins from service during winter months ■ Standardize collection bin type and colours
Enhanced Promotion and Education	■ Promote diversion programs in schools ■ Promote mandatory diversion program
Improve Diversion Depots	■ Consider establishing Reuse Centres at depots
Central Waste Depot in Downtown Area	■ Establish Downtown Waste Management Committee ■ Evaluate need for a central depot to collect garbage and recyclables in Downtown Area
Mandatory Diversion	■ Require separation of recyclables and organics at curbside ■ Disposal Ban for C&D waste ■ Penalty at landfill for unsorted waste
Landfill	■ Prepare for landfill closure ■ Evaluate energy production from landfill gas collection system ■ Review landfill monitoring requirements with respect to reduced environmental burden
Cost Saving Measures	■ Eliminate leaf and yard waste collection to IC&I sector
SWMS Monitoring and Continued Planning	■ Monitor progress with waste diversion targets and re-evaluate proposed initiatives up to year 2041. ■ Add an additional five year segment to the end of the planning period (i.e. 2042 to 2046) to maintain a current 20 year SWMS. ■ Initiate next five years of SWMS (i.e. 2027-2031)

13.4 Fourth Priority Initiatives

It is recommended that the forth priority waste management initiatives, as shown in Table 65, be implemented in the 2027-2031 period. It is recommended that the action plan to implement these initiatives and the associated costs be developed as part of the third update to the SWMS, which is recommended to be completed in 2026.

Table 65: 2027-2031 Initiatives

Initiative	Components
Zero Waste Policy for Public Events	■ Develop and implement Zero Waste Policy for Special Events
Improve Diversion	■ Promote RTR Programs ■ Evaluate need for mobile recycling unit
Mandatory Diversion	■ Consider full User Pay System (no free bags)
Cost Saving Measures	■ Modify City's involvement in Bulky Waste Collection Program
SWMS Monitoring and Continued Planning	■ Monitor progress with waste diversion targets and re-evaluate proposed initiatives up to year 2046. ■ Add an additional five year segment to the end of the planning period (i.e. 2047 to 2051) to maintain a current 20 year SWMS.

14.0 STRATEGY ACTION PLAN (FIRST PRIORITY INITIATIVES)

This section outlines estimated costs and the action plan for the implementation of the waste management initiatives that are proposed during the first five years of SWMS (i.e. 2012 – 20126).

14.1 Lobby for Extended Producer Responsibility

EPR is premised on the concept that the producers of products and packaging bear responsibility for ensuring those products and packages are properly managed at the end of their life-cycle. The concept of EPR goes hand in hand with Zero Waste. A Zero Waste approach focuses on the opportunities that industry has to re-design products and processes to reduce waste before it is made, as well as designing products for greater reuse. It encourages the development of innovative ways to make the wastes of one product, the inputs of another, thus building more sustainable methods of production and supporting opportunities for industry to make a green transformation. By definition, a Zero Waste approach recognizes that almost all waste materials have some form of inherent value that can be recovered.

The WDA is Ontario's main legislation to promote the reduction, reuse and recycling of waste through the development, implementation and operation of waste diversion programs. This Act is considered the main tool available for the province to move towards the principles of EPR and Zero Waste.

Section 44 of the WDA requires the Minister to undertake a review of the Act, to inform the public of the review, prepare a written report on the review and make the report available to the public. The Ministry initiated this review in October 2008, by releasing a discussion paper: *Towards a Zero Waste Future: Review of the Waste Diversion Act, 2002*, and undertaking a public consultation process which closed February 1, 2010. Over 200 Ontarians participated in the review including producers, retailers, municipalities, environmental non-governmental organizations, waste management companies and concerned members of the public.

It is recommended that Barrie lobby the province to implement the recommendations proposed through the WDA review. In particular, a joint position paper submitted by the AMO, Regional Public Works Commissioners of Ontario, and the Municipal Waste Association (MWA) strongly supported making individual producers fully and financially responsible for all designated materials sold in the Ontario marketplace. The Ontario Waste Management Association (OWMA) has also been involved in lobbying the province regarding the WDA.

The roles and responsibilities of the various parties under a full EPR system are outlined below:

Brand Owners/Stewards/First Importers of Designated Materials

- Financially responsible for all designated materials sold in Ontario;
- Create material management scheme or develop an individual waste diversion plan after transition period;
- Responsible for meeting diversion targets and obligations under the WDA;
- Register and submit waste diversion plans and data annually;
- Paying of disposal levies for unrecovered materials;
- Reimburse municipalities for disposal levy costs; and
- P&E relating to their material management scheme or individual waste diversion plan.

Service Provider on Behalf of Steward

- Collector/processor could be municipal or private contractor;
- Contracted by stewards or collective schemes to provide collection and processing services and marketing for designated materials;
- Collect and report tonnage data for Stewards/Collective schemes;
- Data for tonnage collected, processed, recycled and residue for disposal should be clear and transparent;
- Managing items banned from disposal according to schemes/waste diversion plans developed by Stewards; and
- Providing customer service functions.

Municipalities

- Managing residual waste including designated materials within residual waste stream;
- Waste audits and enforcement of designated material bans at first point of resident disposal at curbside (i.e. transfer stations and disposal sites) on behalf of Stewards;
- Municipalities should be financially compensated for audit and enforcement work;
- Manage integrated municipal waste management infrastructure and manage material bans at curbside, transfer stations and disposal sites;
- Municipalities should be financially reimbursed for managing designated materials in residue (targets not met by Stewards); and
- P&E and customer service functions not related to Steward schemes and waste diversion plans.

It is recommended that Barrie maintain membership in AMO, MWA, and the OWMA and continue to lobby for the above EPR principles.

14.2 Enhanced Promotion and Education

Enhanced P&E will be critical to achieving 60% waste diversion in Barrie. In order to ensure that P&E efforts are effective, it is recommended that a new approach to waste management P&E in Barrie be considered.

Preliminary considerations of local statistical data reported in the 2006 Census by Statistics Canada revealed the following key facts:

- The average age of residents in Barrie is 35.4 years. In general, this age demographic has an established career, a young family and an active lifestyle, and is perhaps best targeted by means of quick, efficient and attention grabbing messaging.
- Almost all (99.7%) of the population responded that they spoke either English only or English and French. However, it is important not to overlook increasing minority populations and the presence of other non-official languages in the area.

- Forty % of Barrie's labour force that are 15 years of age and over, work outside of the City borders. These residents spend up to half of their available daytime hours in another municipality where different programming and corresponding messaging exists.

The close proximity of the City to the Greater Toronto Area cannot be overlooked when planning a P&E program. Popular radio and television programming from both the Greater Toronto Area and elsewhere dominate the air waves, rather than Barrie's local stations contracted to advertise for the City. Over the past decade there has been a migration of readers and advertisers to other communication media, particularly electronic media. Publishers are cutting the size of their pages, as well as the number of pages per edition. Newspapers are also publishing fewer days per week and are looking to new publishing methods, particularly electronic versions. This trend is expected to continue as younger readers who are more likely to use electronic means to access news take over from older readership that have traditionally relied on hardcopy newspapers. Although Barrie's waste management website is fully understandable and accessible by most residents, it is important not to overlook the increasing effectiveness of other forms of communication, such as social networking, as well as the effect that these mediums can have on overshadowing Barrie's P&E efforts.

An effective P&E program should consider the following elements:

- Design – understanding the target audience and communicating a clear message; and
- Deployment – using appropriate media formats, with both sustained and targeted messages.

Barrie's waste management P&E budget for 2011 was $122,000 or $2.25 per household based on 54,026 households. Barrie is spending slightly above the recommended Best Practice range of 0.81 to $1.18 per household for programs achieving 60% diversion targets. Programs implementing new initiatives are recommended to spend $3-$4 per household. Based on this suggestion, if Barrie is proposing to implement additional program components to service the existing 54,026 households, it can be anticipated that P&E costs should increase to $216,000. Other factors to consider is additional staff support necessary to implement the new diversion programs. It is anticipated that a City vehicle or a monthly car allowance would be necessary for this position.

14.3 Modify Collection of Waste, Recyclables and Organics

It is anticipated that Barrie will issue a new tender or RFP for waste collection and processing in May 2013. Historically, waste collection and processing contracts have followed the traditional approach whereby Barrie defines the scope and specifies the services, and the contractor supplies those services. These types of contracts worked well for defined packages of work, however as waste management systems become more complex, there are advantages for municipalities to allow bidders to design the most efficient and competitive system. The contract should also reflect the inherent limitations associated with the inability to foresee and cover every eventuality. The challenge is to be clear in defining the desired outcomes of the contract without being so prescriptive that the contractor cannot provide innovative solutions. A contract that is too specific about how services must be provided, for example by designating the use of particular trucks or specific processors, reduces opportunities for innovation by contractors. Instead, contract terms should specify standards of outcomes, such as frequency of service, materials to be recycled, and other clearly definable and measurable goals.

In general, the procurement process should:

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

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

There are a number of potential cost savings opportunities that could be built into the new tender, including:

- Issue a joint waste services tender with neighbouring municipalities;
- Include a fuel surcharge in the waste services contract;
- Include a methodology for establishing and updating the house count;
- Include a mechanism for Barrie to obtain a share of revenue for the sale of recyclables;
- Change to a fee per tonne for collection; and
- Tender collection and processing separately.

It is also recommended that the collection schedule be reduced from five days a week to four days to reduce the need to move the collection to Saturday during holiday weeks. It is difficult to determine how much cost savings would result from incorporating these initiatives into the new waste services contract. There are two proposed modifications that are being recommended that will most likely provide for cost reductions in the new contract. These include:

- Reducing the collection of residual waste from weekly to bi-weekly, and
- Reducing the free bag limit for IC&I sector from 10 bags per week to 6 bags per week.

It is anticipated that these modifications will result in annual cost savings of $325,000 and $25,000 respectively.

14.4 Implement Multi Family Green Bin Program

Although programs to divert SSO waste from the single family waste stream are becoming common across North America, SSO collection programs in multi-family residences are comparatively rare, despite the large number of residents living in this sector in major urban centers. Multi-family SSO collection programs have been initiated in a limited number of urban centers in North America. The Halifax Regional Municipality in Nova Scotia, City of Hamilton, Halton Region, Town of Markham, Town of Richmond Hill, and the City of San Francisco have developed programs that involve multi-family buildings. The Cities of Toronto, Seattle, and Port Coquitlam

(British Columbia) and the Region of Waterloo have recently undertaken pilot programs and are currently in the process of expanding organics collection programs to all multi-family buildings.

Overall capture rates are significantly lower in the multi-family sector than the single-family sector. The Cities of Toronto and Hamilton suggest that on average each multi-family unit diverts approximately 1kg to 2kg per week. For the purpose of estimating costs for Barrie, 1kg per unit per week has been used.

Specific to Barrie, the multi-family sector is generally considered to encompass all residential buildings comprised of six or more units. The 2010 Datacall depicts a total of 9,720 multi-residential units or 18% of the total households.

Organic waste has a higher density than municipal garbage. The Cities of Hamilton and Toronto found that one 120 litre cart has service capacity for 15 apartment units based on 1kg per unit per week. Based on the 9,720 units, Barrie would require approximately 800 carts ($30 per cart) and 9,800 individual apartment unit kitchen containers ($5 per container) to launch the program. It is anticipated that larger buildings with 100 units or more may require twice per week collection to reduce the number of carts required. Barrie's multi-residential recycling cart collection costs (2010) was $8.67 per cart to service 214 buildings This estimate was applied to calculate anticipated collection costs for the green cart program servicing the multi-residential sector. It is anticipated that economies of scale will be realized in the upcoming tender process with combined service options of co-collecting waste and organics to the single and multi-family sectors within Barrie. Barrie's processing fee of $142 per tonne was applied to the costs to manage approximately 500 tonnes (1kg per week x 9,720 units) of organic material collected from the multi-residential sector.

Based on the system outlined, the cost to implement a green cart program within Barrie would range $35 to $45 per unit with the high range being approximately $400,000 per year.

The roll-out of the Green Cart Program will require additional permanent staff resources to support the program changes and ensure participation and waste diversion. The City of Toronto hired by-law Compliance Officers and associated managerial and administrative support to enforce the mandatory diversion procedures outlined for multi-family residences. Toronto amended the collection by-law to require the source separation of green bin organics once the green bin program was fully implemented in single-family homes across the City and SSO collection in apartments will be mandatory once the SSO program is fully implemented in participating buildings.

As shown in Table 66, program start-up costs, including P&E requirements, additional staff and cart purchase costs are estimated to be $215,000.

Table 66: Program Implementation Costs for Multi-Residential Green Bin Program

Cost Type	Unit Cost ($)	Number of Units	Total Cost ($)
Kitchen Mini-bin	$5	9800	$49,000
Green Cart	$30	800	$24,000
Compostable Liner Bags (20 bags)	$5	9800	$49,000
Promotional Materials			$25,000
Administration (i.e. work station, vehicle, etc.)			$68,000
		Total Cost	**$215,000**

14.5 Improve Diversion

14.5.1 Recycle Plastic Film, Empty Paint Cans and Aerosol Containers

Plastic film, empty paint cans and aerosol containers are not currently accepted in Barrie's Blue Box program. Markets for these materials have developed significantly over the past several years and are generally considered stable at this time.

Plastic film includes products such as plastic grocery bags, retail store carry out bags, rinsed milk pouches and outer bags, bread bags, dry cleaning bags, diaper outer bags, frozen food bags, and overwrap for toilet tissue and paper towels. In the late 1990's recyclers had to pay to get rid of plastic film, however the value of this commodity increased to over $100 per tonne in 2005 and 2006. Market prices for plastic film have dropped since that time, due to the economic downturn and the falling price of oil. It is considered, however, that in the long term there will be sustainable, positive value markets to manage this material.

Plastic film can be difficult to manage in a MRF due to the lightweight and fluffy nature of the material. If loose, it wraps around pulleys, conveyors and other equipment, and makes it difficult to access other, more valuable, commodities. Best Practices Guidelines (EPIC, 2008) recommend that plastic film be kept separate from other materials in the Blue Box. Residents should be advised to place plastic film separate in either one small grocery bag, or a large clear bag.

The addition of plastic film, empty paint cans and aerosol containers to the Blue Box collection program should not increase collection costs since it does not require a separate collection and is material that is already being collected with the residual garbage stream. The incremental cost for processing these materials will be somewhat offset by material revenue, however plastic film is still an expensive product to recover. The net cost of recycling plastic film as calculated by Stewardship Ontario is $272 per tonne[2]. Taking into account WDO funding it is estimated that the incremental cost for recycling plastic film will be approximately $900 per tonne. Based on typical waste audit data, it is estimated that Barrie would capture approximately 960 tonnes of plastic film per year for recycling.

14.5.2 Development of Eco-stations

An Eco-station is a diversion depot that provides residents with a convenient location where they can drop off a variety of materials, including reusable goods, drywall, building materials and other material not accepted through the Blue Box or green bin programs (refer to Section 9.10.1 for a list of commonly accepted materials). These materials are dropped off by residents or small commercial operators into larger containers or onto larger vehicles, and hauled to an off-site management facility for further processing.

It is important to clearly differentiate Eco-station facilities from waste disposal sites/transfer stations already being operated by Barrie. It is therefore recommended that the Eco-stations be located separately from where waste is accepted for disposal. There may be some benefits in siting an Eco-station and a waste disposal site / transfer station on the same property, provided there is separation between the two functions. It is important that residents know that the purpose of the Eco-station is to recover and recycle the materials brought to the site, so that they will ensure that the materials are clean and properly segregated.

[2] 2012 Steward Fee Setting Methodology

14.5.2.1 Siting Eco-stations

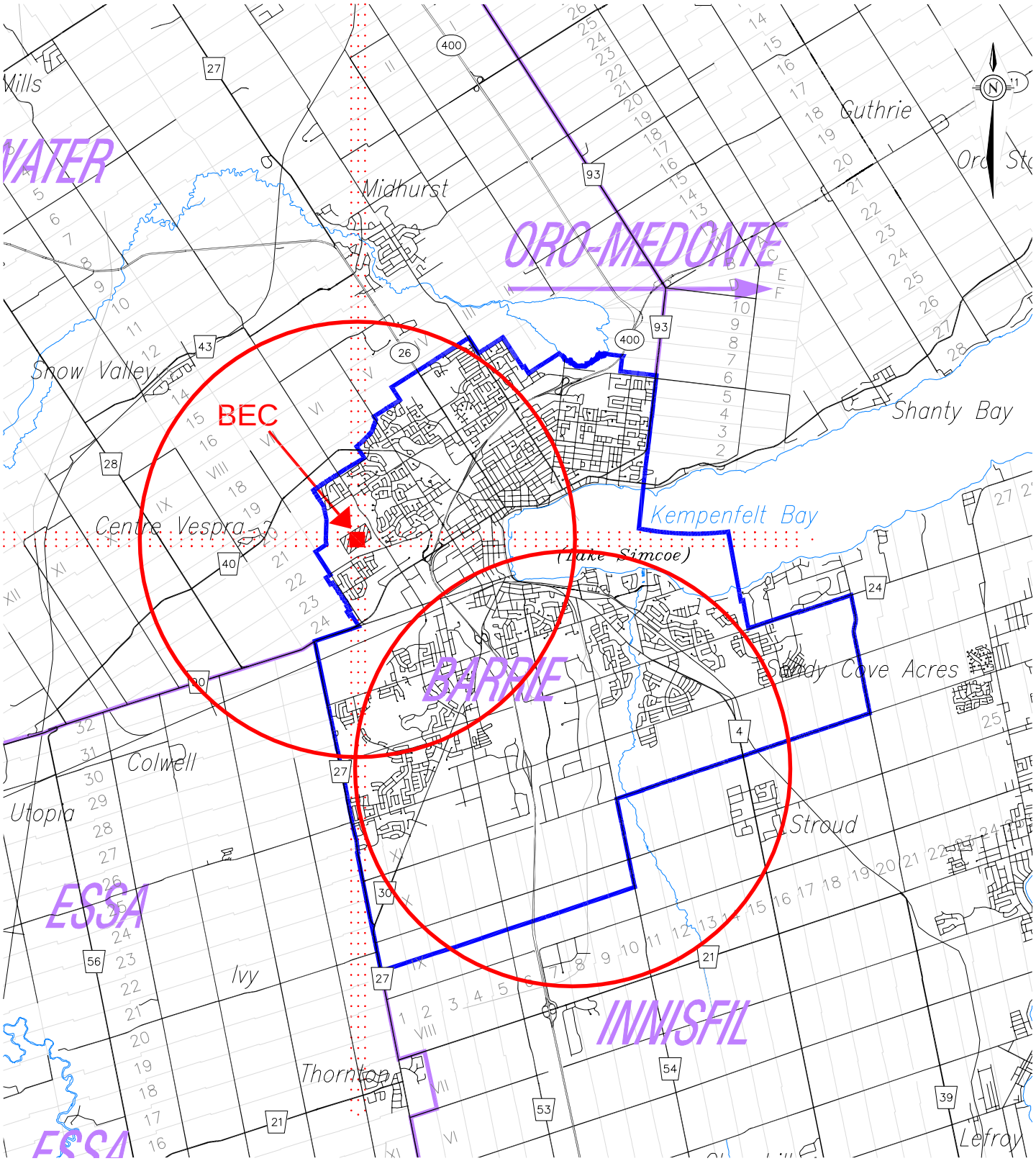
It is desirable that Eco-stations be located near the centre of the population to be served. In order to provide easy access to the greatest number of people, it may be preferred to locate Eco-stations in areas of high population densities, if possible. It is recognized however, that it is also more challenging to site and obtain approval for any waste facility in an area of high population density.

An inverse relationship exists between travel time/distance and convenience for those within the service area. Although a literature search did not find any studies that recommended a maximum travel distance to a facility, a travel distance of 5 km or less generally provides a convenient opportunity for residents to deliver their recoverable materials to an Eco-station site.

As shown in Figure 26, the diversion depot at the BEC is not located in the ideal location to service the residents of Barrie. A 5 km radius from the site excludes residents in the south and north east sections of Barrie. It is recommended that Barrie consider locations in the south end of the City to develop an Eco-station to service the south-end residents, particularly those in the newly annexed lands that are slated for new development growth. The development of the new Eco-station will not only provide better service to these residents, it will also relieve traffic congestion at the existing diversion depot at the BEC.

The selected site should conform to local zoning by-laws relative to land use, and building heights and setbacks. Sites should be sufficiently sized to provide for existing capacity needs and buffers, but also for potential future expansion. Furthermore, consideration should be given to the availability of utilities, including water, sewer, and electricity.

With respect to ease of development, it is preferred to establish Eco-stations on lands that are currently licensed as waste management facilities, if at all possible. Where an existing regulatory approval is in place to allow for the receipt and management of waste, an amendment may be needed; however, the process of amending licenses is often much simpler with more assurances than obtaining a new license on a greenfield site.



2.5 0 2.5
SCALE 1:125000 KM

LEGEND

- 5 km RADIUS
- CITY LIMITS

Golder Associates
Barrie, Ontario, Canada

SCALE	AS SHOWN	TITLE	**POTENTIAL ECO STATION LOCATION**
DATE	Dec. 2011		
DESIGN			
CAD	J REGIER/PJV		
FILE No.	1011880055CA01.dwg : F1	CHECK	CITY OF BARRIE LANDFILL SUSTAINABLE WASTE STRATEGY
PROJECT No.	10-1188-0055 REV. AA	REVIEW	PMR
FIGURE	**26**		

PLOT DATE: June 12, 2012
FILENAME: T:\Projects\2010\10-1188-0055\-CA-\1011880055CA01.dwg : F1

14.5.2.2 Eco-station Layout

- The following factors should be considered in developing the layout of an Eco-station site:
- A vegetated or landscaped buffer zone of at least 15 metres should be provided around the perimeter of the active collection area, in order to minimize any potential nuisance associated with noise, dust, or odours, or any objections based on visual aesthetics.
- Site access and on-site roadways should be designed to provide all season, all weather access. The minimum road width should be 8 metres. Designs must be in accordance with standard practice for the anticipated traffic volume and speeds. Sufficient space should be provided for queuing, such that vehicles need not stop on a public road or highway when entering the site. Traffic flow through the site should be considered.
- Provision should be made to prevent stormwater and runoff from contacting waste.
- Weigh scales should be available for measuring the quantity or materials received and sent for processing; and to calculate tipping fees, if necessary.
- Security fencing should be provided around the perimeter of the site, with a lockable gate at any entrance point.
- Eco-stations should be provided with a sign (or signs) posted prominently at the entrance that contains the following information:
  - facility name;
  - owner / operator with phone number and address;
  - emergency phone numbers for fire, police and medical assistance;
  - hours of operation;
  - prohibited materials;
  - materials accepted for recycling; and
  - tipping fee schedule (if applicable).

Eco-station design typically incorporates elevated ramps, with roll-off bins sitting at a lower level so that materials can be dropped down into the bin, and hinged counterweighted lids that are easy to move. It is important that safety features such as guard rails be incorporated to prevent people from falling into a bin, and stop logs or bars to prevent vehicle accidents. Full containers are picked up by a roll-off truck, and transported singly or in pairs by a truck/pup arrangement, to a secondary processor. An empty container is deposited by the same truck that picks up the full one. Roll-off bins often achieve their legal load limit without compaction. For example, the legal payload for a 38 m^3 (50 cu yd) bin is about 8 tonnes, which is equivalent to a density of about 210 kg/m^3. This system is fairly economical in terms of capital cost, is capable of accepting several different types of materials, is uncomplicated, is flexible because more containers can be added when volumes increase, and is generally well accepted by the public.

14.5.2.3 Eco-station Operations

Providing adequate staffing of the Eco-stations is of utmost importance and offers multiple benefits. Ideally staff can do all of the following:

- Maintain good housekeeping at the site;
- Collect tipping fees (if applicable);
- Operate loaders to clean up around the bin and move materials within the site;
- Track participation data;
- Educate residents on what can be brought to the site; and
- Prevent scavenging and contamination.

Research completed by the Ohio Environmental Protection Agency (Ohio EPA, 2004) found that one of the biggest factors for a successful drop-off recycling facility was that the site be open full-time (40 hours a week or more) instead of part-time. The explanation provided for the finding that is that residents have more opportunity to drive by a site that operates full-time, and are more likely to load their recyclables and bring them to a site if they are certain it will be open.

The establishment of a second Diversion Depot would offer an opportunity for Barrie to increase overall waste diversion. It is recommended to establish a depot on lands that are currently owned by Barrie; which have access to utilities (three phase power, water, sewer) and are preferably licensed as a waste management facility. Incorporating a reuse building on the site similar to the Cities of Hamilton, London, and Regions of Peel and York; offers room for shared services of WEEE, MHSW, textile drop-off points, as well as, reusable items for residents to purchase second hand furnishings, building components, etc.

It may be prudent to work with a non-profit group such as Goodwill Industries to set up an attended donation centre to receive large/bulk items such as furniture; but also other durable goods and clothing. Similarly it may be sensible to work with a non-profit group such as Habitat for Humanity to collect salvageable building materials. This reduces the capital infrastructure costs associated with a building to house perishable divertibles. Alternatively, Barrie may choose to establish the building and issue a RFP to local service providers to staff the reuse component. This practice has been successful with the City of Hamilton for several years.

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

Capital cost estimates have been established based on building and site preparation costs. It is anticipated that a new diversion depot equipped with drop-off areas and a building to house a reuse component and MSHW and WEEE would be $1.5-$2.5 million. The anticipated material diverted is expected to be 100kg per household provided that organics is included at the depot. Operational costs should be offset with tipping fees and revenue from sale of material.

Included in the 2012-2016 initiatives is the expansion of the current outdoor waste segregation area at the BEC. It is estimated that the cost for design and approval of this expansion will be $200,000, and the construction of the expanded bunker area is estimated to be $300,000.

14.6 Regional Partnership Initiatives

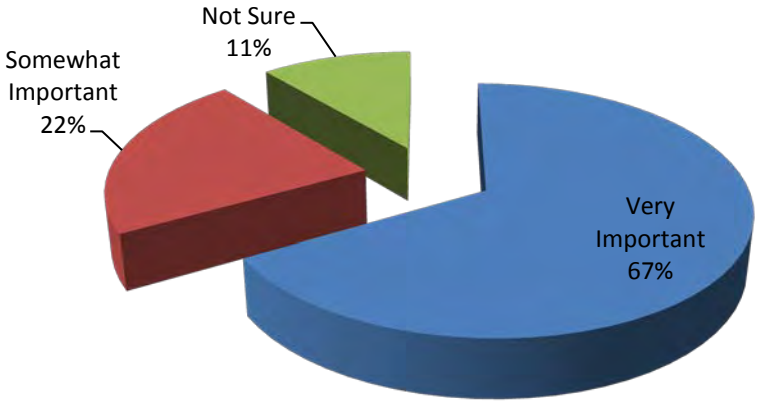
Utilizing a multi-municipal planning approach to the collection and processing of recyclables is identified as a fundamental Best Practice in the *Blue Box Enhancement and Best Practices Assessment Project* (KPMG, 2007). As outlined in this document, co-operative planning can lead to improved performance across virtually all recycling program components, enhancing effectiveness and efficiency in the following areas:

- Economies of scale;
- Increased resident participation/satisfaction;
- Optimized program funding;
- Shared staff/time/cost/skills/equipment;
- Improved supplier/contractor relations;
- Reduced need for management supervision;
- Reduced need for council time and attention;
- Increase capacity to adopt new technologies and methods;
- Material markets and pricing advantages, yielding higher revenues;
- Increased innovation in strategies, services and products;
- Shared risk management; and
- Shared capital requirements.

City staff met with staff from their neighbouring municipalities on two occasions throughout the development of the SWMS. At these meetings it was found that each municipality had similar challenges and were looking to develop waste management infrastructure that would benefit the larger group of municipalities.

There was ongoing support throughout the community consultation process for Barrie to maintain responsibility for its own waste, although the most efficient and cost effective methods for managing recyclables and residual waste should be selected.

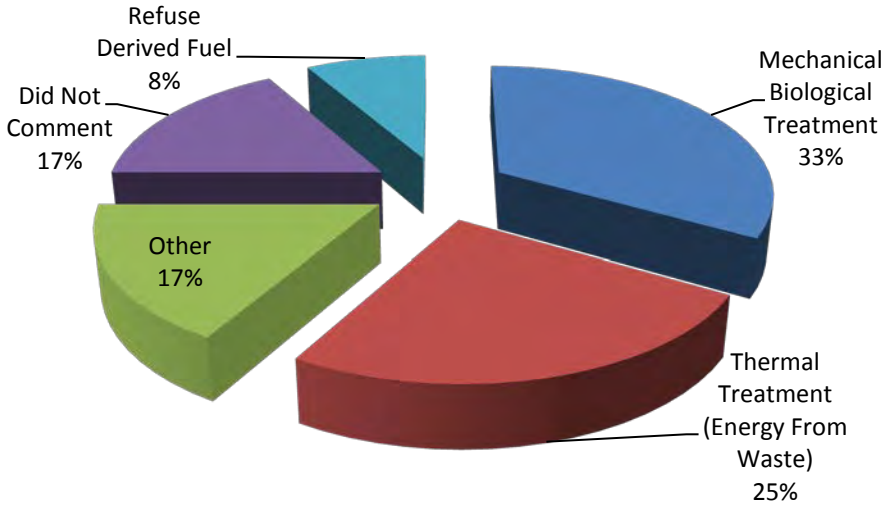
In November 2011, Barrie conducted a workshop specific to consideration of future waste disposal options for the City. At this workshop, 67% of the attendees indicated that it was very important that Barrie take a leadership role in exploring regional waste facilities. It was noted that these facilities could serve other communities and may or may not be located in Barrie.



Is it important to you that the City take a leadership role in exploring and planning regional waste facilities? These waste facilities could serve other communities, and may or may not be located in Barrie.

Figure 27: Public Response to Question Regarding Regional Waste Facilities

At this workshop, the majority of participants felt that Barrie should consider MBT or Thermal Treatment for a long term waste disposal option. Notably, no one chose landfill as an option.



What options should the City consider for long term waste disposal?

Figure 28: Public Response to Question Regarding Long Term Waste Disposal

It is recognized that Barrie would need to partner with neighbouring municipalities in order to have the economy of scale necessary to justify the capital and operating costs for this type of facility.

It is recommended that Barrie form a Regional Partnership Committee with a mandate to align programs and consider joint collection, processing and disposal opportunities. As this Committee should commence further studies and public consultation on alternative waste management opportunities, it is recommended that a budget of $50,000 a year be established for this initiative, commencing in 2013.

14.7 Cost Saving Measures

14.7.1 Provide Blue/Grey Boxes and Green Bins at Subsidy

Barrie currently funds 100% of the cost of new and replacement blue/grey boxes and green bins for residents and businesses in Barrie. These containers can either be picked up at the BEC or are dropped off by the collection contractor. The budget for these containers totalled $187,800 in 2012. It is recommended that Barrie provide a 50% subsidy for replacement containers instead of funding all of the cost. If this is implemented starting in the second half of 2013, it is estimated that Barrie will reduce the 2013 budget by $30,000, which may provide some funds for increased P&E for diversion programs.

14.7.2 Eliminate 100 Kg Free Load

With the exception of the Satellite MHSW area, all vehicles entering the BEC are required to pass through the Scale House facilities. Separate in and out scales are provided and are supervised by two attendants during the hours of operation of the facility. The scales are connected to a computerized system that records weights, calculates fees, processes receipts and keeps records of all users of the landfill. The system consists of Geoware™ Waste Management Tracking software that automatically produces waste volume reports and invoices.

Current tipping fees and other rates are summarized in Table 67.

Table 67: Barrie Environmental Centre Tipping Fees

Description	Tipping Fees / Other Rates
Solid Waste - Basic Rate	**$125.00/tonne** (loads > 100kg) $10.00 minimum charge for loads < 100 kg Maximum 1 free load up to 100 kg/residence/year
Residential Yard Waste	First 100kg of each load not charged **$58.00/tonne** for remainder of weight over 100kg
Commercial Garbage Rate	**$125.00/tonne** (loads > 100kg) $10.00 minimum charge for loads < 100 kg
Commercial Brush and Yard Waste	**$58.00/tonne** (loads > 100kg) $6.00 minimum charge for loads < 100 kg
Hard to Handle Solid Waste and Mixed Loads *(i.e. asbestos, spill cleanup materials)*	**$240.00/tonne**
Tires **off** the rim	No charge
Tires < 17” **on** the rim	**$8.00**
Tires 17” < 19” **on** the rim	**$12.00**
Tires >19” **on** the rim	**$34.00**
Blue/Grey Box Materials	No charge
Cardboard	No charge

Each household is allowed to bring in one free load of garbage each year up to a maximum weight of 100 kg. The Geoware Subsidy Report showed that the total number of subsidized loads in 2010 was 27,091 and the value of the subsidy in 2010 was $208,544. At that time the tipping fee was $118.50/tonne which represents 1,760 tonnes of subsidized garbage.

In an effort to promote waste reduction and conserve the remaining capacity at the Barrie Landfill Site, it is recommended that the allowance for 100kg of free disposal each year be eliminated in 2013.

It is anticipated that eliminating the allowance for disposal of 100kg of waste per household in 2013 will save Barrie $208,500 per year.

14.8 Additional Staff Resources

In order to implement the waste management initiatives being considered by the City, additional staff will need to be hired to plan, implement, administer, and monitor the new waste diversion programs.

It is anticipated that a full time staff person would be required to plan, coordinate and launch the multi-residential green bin program in Barrie. Assistance would be required periodically from part-time staff and students to deliver bins and carts and meet with building superintendents and residents. Promotion may include superintendent handbooks, resident flyers, magnets, a free sample of compostable liners, stickers for the carts, posters and presentations.

After the multi-residential green bin program fully operational, it is anticipated that this staff person would reduce their efforts to 50% on the green bin program with remaining capacity to improve multi-residential recycling program performance, initiate plans for the C&D recycling program and other waste diversion efforts.

Depending on the ease of implementation of these programs, another staff may need to be added in 2016 to oversee the planning and implementation of new waste diversion programs.

14.9 Cost Estimates for First Priority Initiatives (2012-2016)

As outlined in the previous sections, some of the 2012-2016 initiatives for improving Barrie's waste management system will increase the cost of waste management, whereas some of the initiatives result in cost savings.

Table 68 summarizes the incremental cost estimates for the 2012-2016 initiatives and the overall budget effects. These costs represent the estimated net difference the implementation of the various initiatives will have with respect to the current waste management costs.

Table 68: Incremental Cost Estimates for 2012-2016 Initiatives

Initiative	2012	2013	2014	2015	2016
Provide blue/grey boxes and green bins at 50% subsidy	-	-	-$62,500	-$62,500	-$62,500
Enhanced Promotion and Education	-	-	$95,880	$97,800	$99,750
Bi-weekly garbage collection	-	-$100,000	-$325,000	-$325,000	-$325,000
Reduce free bag limit to IC&I	-	-$10,000	-$25,000	-$25,000	-$25,000
Multi-residential green bin program	-	$100,000	$400,000	$400,000	$400,000
Recycle paint cans, aerosol containers and plastic film	-	$100,000	$270,000	$270,000	$270,000
Mattress Recycling		$80,000	$150,000	$150,000	$150,000
Enhance diversion depots	-	-	$200,000	$300,000	-
Implement C&D recycling program	-	-	-	$250,000	$250,000
Regional Partnership to investigate joint initiatives	-	$5,000	$5,000	$5,000	$5,000
Eliminate 100 kg free load	-	-$200,000	-$200,000	-$200,000	-$200,000
Additional staff resources to administer new diversion programs	-	$25,000	$84,000	$85,680	$174,800
SWMS Monitoring and Continued Planning	-	-	-	-	$50,000
TOTAL	-	-	$592,380	$945,980	$787,050

As indicated, the estimated annual increase to the current waste management costs for the proposed changes range from a net savings in 2013 to an increase of $945,980 in 2015.

15.0 BUSINESS CASE

Barrie's municipal waste management system cost approximately $9.4 million to deliver in 2011. These costs are incurred for the delivery of a number of programs, including:

- Environmental investigation;
- Environmental operations;
- Waste collection;
- Blue Box recycling;
- SSO composting;
- Leaf and yard waste processing;
- MHSW collection and disposal; and
- Waste disposal.

Barrie receives revenue from a number of sources for the delivery of these programs, including:

- Bag tag sales;
- Product stewardship fees; and
- Tipping fees charged at the landfill.

As outlined in Table 69, when these revenues are taken into account, the net cost to deliver Barrie's waste management programs was approximately $6.8 million in 2011.

Table 69: City of Barrie Waste Management Expenditures and Revenue

Service Type	2011 Cost	2011 Revenue	2011 Net Cost
Garbage			
Curbside Collection (SF, MF, IC&I)	$1,370,060	$306,386[1]	$1,063,674
Collection – CBD	$75,380		$75,380
Public Spaces	$123,320		$123,320
Blue Box Recycling			
Curbside Collection – SF	$1,325,105	$532,770[2]	$792,335
Curbside Collection – MF	$96,370		$96,370
Public Space Bins	$2,000		$2,000
Public Space Collection	$116,121		$116,121
Special Events Collection	$25,600		$25,600
Cost of blue/grey boxes and carts	$80,802		$80,802
SSO			
Curbside Collection – SF	$358,370		$358,370
SSO Processing and Marketing	$383,910		$383,910
Cost of Green Bins	$0		$0
Leaf and Yard Waste			
Curbside Collection (SF, MF, IC&I)	$266,630		$266,630
Leaf and Yd Grinding and Screening	$115,000	$13,970[3]	$101,030
Cost of backyard composters	$46,407		$46,407
Other Materials			
MHSW Depot Collection and Disposal	$314,100	$148,800[4]	$165,300
BEC			
Scale House	$66,150		$66,150
Landfill Operations	$1,435,600	$932,706[3]	$502,894
Landfill Debenture Costs	$710,560		$710,560
Landfill Reserve Fund	$234,310		$234,310
Miscellaneous			
Administration	$1,293,030		$1,293,030
Environmental Investigation and Response	$800,000	$652,560[5]	$147,440
Promotion and Education	$126,825		$126,825
Total	**$9,365,650**	**$2,587,192**	**$6,778,458**

[1] Garbage Bag Tags

[2] EPR Blue Box Funding

[3] Tipping Fees

[4] EPR funding (MHSW and OES programs)

[5] Transfer to other departments

Figure 29 highlights the sources of revenue currently being used to fund waste management services in Barrie (based on 2011 actuals).

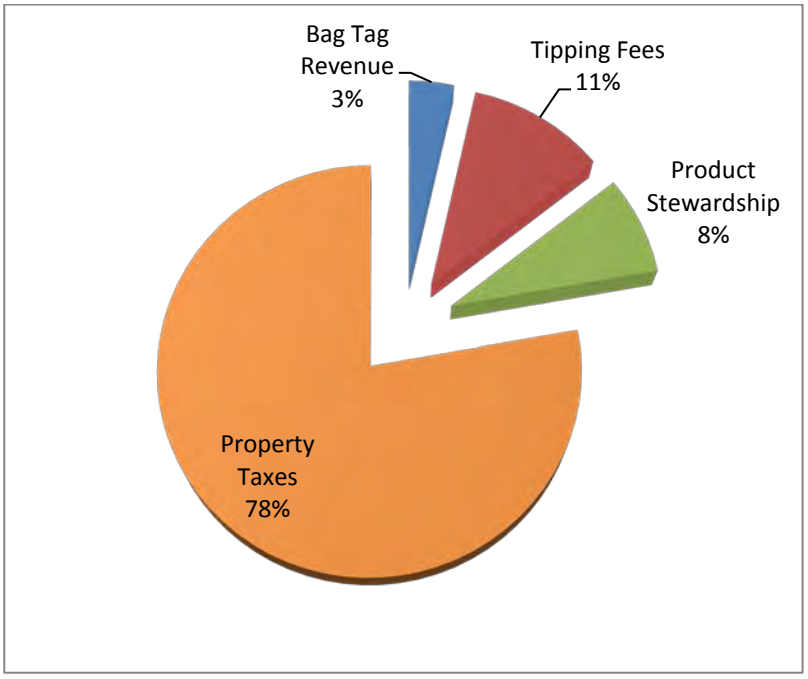


Figure 29: Sources of Revenue to Fund Current Waste System

Figure 30 shows the gross costs ($175.39 per household total) and net costs ($126.94 per household total) for delivering each of the waste management programs within Barrie.

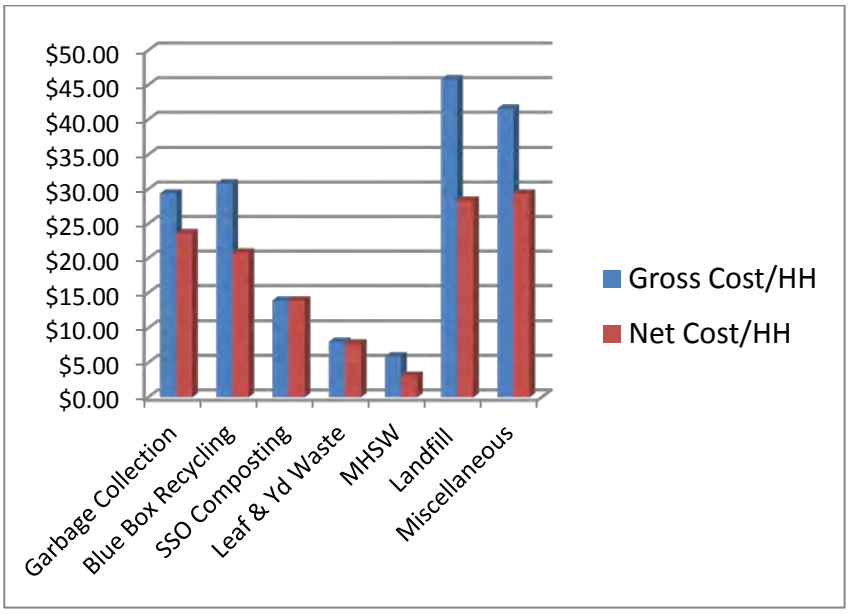


Figure 30: Cost per Household for Waste Services

Barrie receives 22% of the funds required to provide waste management services through tipping fees, product stewardship payments, and bag tag fees. The remaining cost of providing waste management programs is funded through property taxes. This represents an average of $127 per household per year.

As indicated in the previous section, the implementation of the first priority initiatives for improving the City's waste management system will result in a net increase in the cost of providing waste management services. The implementation of these initiatives will however allow the City to conserve valuable landfill capacity and defer the need to develop new waste disposal capacity. New waste disposal facilities are expensive, controversial and risky to achieve approval.

As outlined in Section 5.3, the estimated value of landfill capacity in Barrie is $143 per tonne if an annual provision for post closure cost is included. For each 5% of increased waste diversion that is achieved, the City will preserve the equivalent of $300,000 in landfill capacity annually. It is important to note that this will not result in an operating revenue, but represents the conservation of a valuable City asset.

15.1 Waste Management Funding Options

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

- Property taxes;
- Tipping Fees charged on waste and other materials brought to waste management facilities;
- Variable rate user fees (i.e. bag tags);
- Flat rate fees per household; and
- Product Stewardship fees (EPR).

Barrie, like most municipalities, currently utilizes a combination of these revenue sources to finance their waste management system. As shown in Figure 29, the majority of the revenue received for waste management is from property taxes.

Although the public has strong support for producers taking on more of the financial responsibility for waste management through EPR programs, the authority for the implementation of these programs rests with the province. Although the current provincial government states that they support the concept of EPR, any further implementation of EPR programs appear to be stalled.

In the interim, many municipalities are moving towards a more direct fee system for funding waste management programs. This can be accomplished through user fees (i.e. bag tags, tipping fees) that are quantity based, or through a flat rate per household.

As described in Section 9.3, the City of Toronto implemented a cart based collection system for garbage. Residents who generate more waste and therefore utilize the largest size cart, pay the highest fees. The capital cost for Barrie to purchase and distribute carts to their residents is estimated to be $3 million, therefore it is not recommended that the City utilize the Toronto model at this time.

The relative advantages and disadvantages of tax-based funding systems and direct fee funding is outlined in Table 70.

Table 70: Advantages and Disadvantages of Funding Mechanisms

	Tax-Based System	Direct Fee System
Advantages	• Can easily subsidize desirable behaviours (recycling, composting) • Ease of implementation	• Residents see the cost of waste services provided • Provides a steady revenue source • Removes political interference and competition with other municipal services for funds • Fees can be altered to reflect external influences (material revenues) • Residents have some "control" over what they pay for waste management by adjusting behaviour (buying habits, recycling)
Disadvantages	• Residents have no incentive to reduce waste • Costs for waste management compete with other municipal services (roads, social services) • Difficult to adjust services for different sectors (industry, large multi-family units)	• Administration of user fees

Barrie may wish to consider moving the funding for waste management services away from a tax-based system to a more direct fee system for services that are provided to only certain sectors of the City (i.e. single family or multi-family households). This will help to address a major concern that was expressed throughout the public consultation events that the residents in multi-family residential units and the IC&I sector are paying for services that they do not receive (i.e. collection of waste and/or green bin organics).

There are many issues that arise when a municipality includes the collection of residual waste from multi-family units in the municipal waste collection contract, including:

- Different collection vehicles are needed to service front end bins typically used to contain waste from apartment units; and
- Access to private driveways at multi-residential units can be problematic.

In addition, although municipalities attempt to shift the liability for damage done to private property onto the contractor, the reality is that if the municipality directs the contractor onto the private property through the terms of the collection contract, they retain a share of the liability.

If the City implements a more direct fee funding strategy for waste management services, they can alleviate the criticism that some sectors are paying for services that they are not receiving but charging the fee to only the sector that receives or benefits from the service.

15.2 Proposed Waste Management Funding Scenario

The funding scenario proposed in this section allocates the cost of waste services to the sector that has access to and benefits from the service. This proposed funding scenario is based on the actual revenues and expenditures for 2011, and should be updated following the award of the new contract for waste management services.

The costs for services that benefit Barrie as a whole (i.e. public space bins, administration) should continue to be paid for through tax revenue. In addition, the remediation of the legacy environmental impact at the landfill (landfill debenture and reserve fund) should be kept on the municipal tax base because it is necessary to remediate a site that was used historically, and continues to be a benefit to all sectors within the City.

Conversely, the cost for providing recycling services to the residential sector would be better passed on as a flat fee per household to only the sector that is provided with the service (single family and multi-family residents). This would include the cost of blue box recycling, the green bin program, yard waste collection and processing, and the net cost of the MHSW program.

As outlined in Section 9.3, it is well documented that when individuals and businesses pay a variable rate for the amount of waste they generate, they participate more in recycling programs and reduce the amount of waste going for disposal. It is therefore recommended that the cost for the collection and/or disposal of waste (over the one bag/week limit for residents) is best funded through a variable rates (tipping fees, bag tags) in order to provide an incentive to residents and businesses to reduce waste generation.

As previously discussed, the cost for replacement blue boxes, green bins and backyard composters can be passed on to residents on a cost recovery basis.

Table 71: Proposed Funding Sources for Waste Management Services

Tax Base	Flat Fee Per Household	User Fees
Programs and services that are utilized by/benefit all sectors	Cost of municipal waste management programs available to all dwellings	Disposal of residual waste over 1 bag limit
Public Space Bins ($241,441) Landfill Debenture Costs ($710,560) Landfill Reserve Fund ($234,310) Administration ($1,293,030) Env. Investigation and Response ($147,440) Promotion and Education ($126,825)	Collection and processing of recyclables ($888,705) Collection and processing of SSO (1,142,280[1]) Collection and processing of yard waste ($367,660) Net MHSW costs ($165,300) Collection of 1 bag/week of garbage ($929,453)	Curbside collection of waste over 1 bag limit ($209,601) Landfill operations ($569,044) Special event recycling ($25,600) Replacement blue/grey boxes and carts ($80,802) Backyard composters ($46,407)
Total program cost $2,753,606	Total program cost $3,493,398	Total program cost $931,454
Decreases from $5.9M to $2.8M	$48/unit/year for diversion programs (SF and MF)[1] $21/unit/year for garbage collection (SF only) Costs for garbage collection from MF units to be determined by tender	$125/tonne $3.00 bag tags

[1] Includes $400,000 for multi-residential green bin program

Based on this funding scenario, the only waste management costs that would be funded through tax base would be costs for programs and services that were used by and of benefit to all sectors of Barrie's residents and businesses. This would reduce the amount of tax required for waste management services from $5.9 million to $2.8 million.

The cost of recycling programs would be funded through a flat fee per household. Based on current costs for these programs and the estimated cost for implementing a green bin program for multi-residential units, the flat fees would be:

- $48 per unit per year for diversion programs that would be available to all single family and multi-family units, and
- $21 per unit per year for collection of the standard service for garbage collection (1 bag per week).

It is recommended that the flat fee charges be reviewed and revised once new pricing has been received through the procurement process for the Waste Service Contract. It is also recommended that the landfill reserve contributions be reassessed based on the revised landfill closure date of 2035.

User fees would be charged for the collection and disposal of residual waste through bag tags or tipping fees, thus providing an incentive to residents to reduce the amount of waste generated through waste reduction or recycling programs.

The sources of revenue that would be used to fund the waste management services offered in Barrie under this scenario is shown in Figure 31.

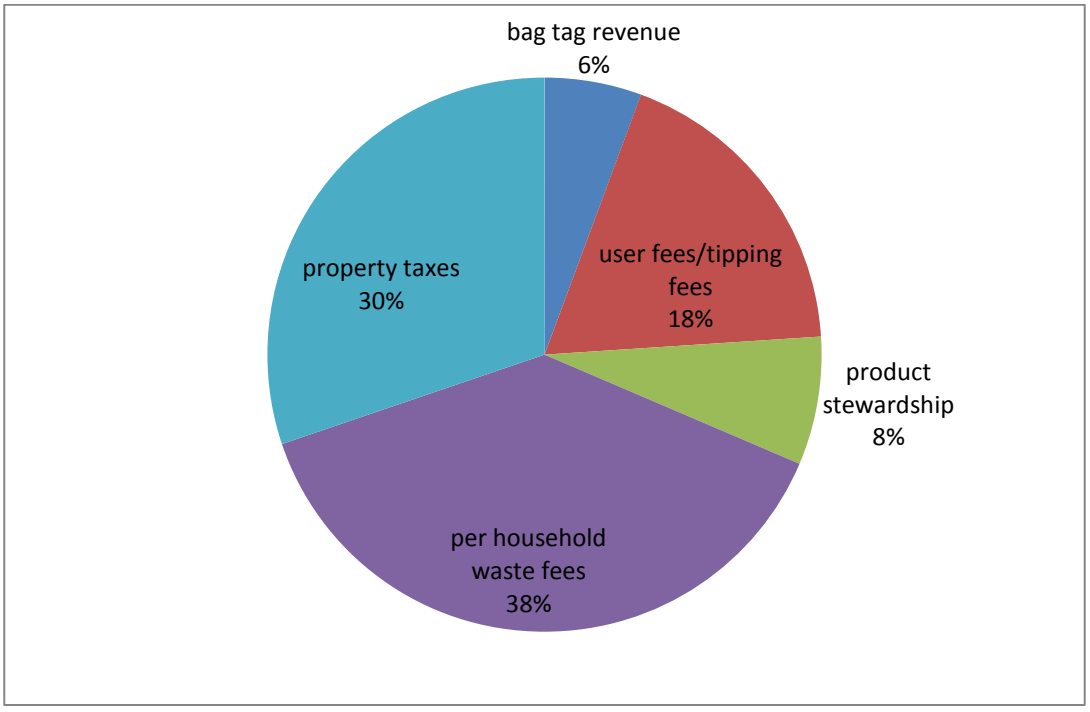


Figure 31: Sources of Revenue for Proposed Waste System Funding Strategy

16.0 PUBLIC AWARENESS AND COMMUNICATION PLAN

An important part of the implementation of the SWMS includes ongoing education and awareness. An Awareness and Communication Plan provides a framework for ongoing communications to facilitate the implementation of the SWMS, including:

- Establishing clear communication objectives and a method of measuring whether objectives and goals are met;
- Identifying communications tasks that accompany each initiative identified in the SWMS;
- Providing a mixed media toolkit of communication tools that can be used by Barrie staff to achieve these tasks; and
- Identifying a target audience and recommended communication approach for each proposed SWMS initiative.

An Awareness and Communication Plan has been developed for the SWMS and is included in **Appendix F**. This Plan has been created in line with the overall SWMS mission and guiding principles. The purpose of this Plan is to outline how to effectively implement the SWMS and assess its value to the community as the community grows and changes over time. The Plan will allow Barrie to keep the community up-to-date with its activities and assess and respond to any changes in public attitude during the implementation phase of the SWMS.

The specific objectives of the Awareness and Communication Plan are to:

- Communicate changes in waste management services;
- Increase education and awareness of existing services, with the goal of increasing waste diversion;
- Facilitate ongoing dialogue between stakeholders and Barrie staff; and
- Provide a flexible framework to allow Barrie to easily adapt communications activities to the changing needs of the community.

The Awareness and Communication Plan outlines general communication tasks for each proposed SWMS initiative, relating to each five-year implementation phase. Successful communication and awareness typically employs a mix of media to reach as many residents as possible. Therefore, the Plan also outlines different methods that can be used for communication and awareness (i.e. print, broadcast, electronic, face-to-face and incentives).

The Awareness and Communication Plan is meant to be a flexible document, and should be re-visited and updated in response to changes in the community and communication methods. Public feedback should be sought on communication methods on a regular basis to ensure that messaging and methods are being effectively implemented. Feedback may be collected through evaluation surveys or feedback questionnaires, either using verbal or written formats as appropriate.

While evaluation should be ongoing, it would be useful to have a scheduled evaluation at the end of each five-year implementation phase of the SWMS. The results of these evaluations could then be used to inform the development of the detailed Communications Plan for the next implementation phase

17.0 ONGOING MONITORING AND REPORTING

It is Barrie's intent to implement the Priority Initiatives listed in Section 13.0, commencing in 2012. As such, the milestones for monitoring progress relative to Barrie's set targets will be:

- 50% diversion by 2016;
- 54% diversion by 2021;
- 57% diversion by 2026: and
- 60% diversion by 2031.

To track and measure the effectiveness of the Priority Initiatives and to meet the requirements as set out in the SWMS, Barrie will need to implement an ongoing performance measurement plan.

The recommended approach for ongoing performance monitoring includes the following steps:

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

Barrie currently tracks its outgoing recyclable waste quantities through both weigh bills for material brought to the landfill site and through materials processing records provided by their service providers. It is recommended that spreadsheet data (both tonnes collected and kilograms per household) be charted for comparison with the previous two years of similar data.

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

- Introduction of additional initiatives;
- Revision of Barrie's waste management policies and by-laws;
- Addition of new residences (single or multi-residential), or commercial or institutional buildings; and,
- Changes to the collection or processing systems (i.e. including new materials in the Blue Box, bi-weekly garbage collection).

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

18.0 SUMMARY

This SWMS is a master planning document that recommends opportunities to promote effective, efficient, and sustainable change in how Barrie manages the community's solid waste over the next 20 years. It is a community-based plan, with goals and a vision focusing on issues related to Barrie as a whole and stemming from community feedback.

A vital component of the SWMS development was consultation with community stakeholders, including residents, neighbouring municipalities, local interest groups, local school boards, and local service providers. At the outset of the process, the CLC was engaged to initiate project planning and identify guiding principles for the SWMS. Consultation Series # 1 events focused on identifying issues with the current system and scoping preliminary options for the future, including partnerships with neighbouring municipalities and school boards. Consultation Series # 2 events were aimed at evaluating options for future services, and the identification of priorities for waste initiatives.

The SWMS establishes a planning framework and strategic direction for waste management in Barrie over the next 20 years, with recommended solutions to be implemented in five-year increments. Each five-year planning period, or implementation phase of the SWMS, has specific diversion targets to bring Barrie to a final waste diversion target of 60% by 2031 (Figure 32)

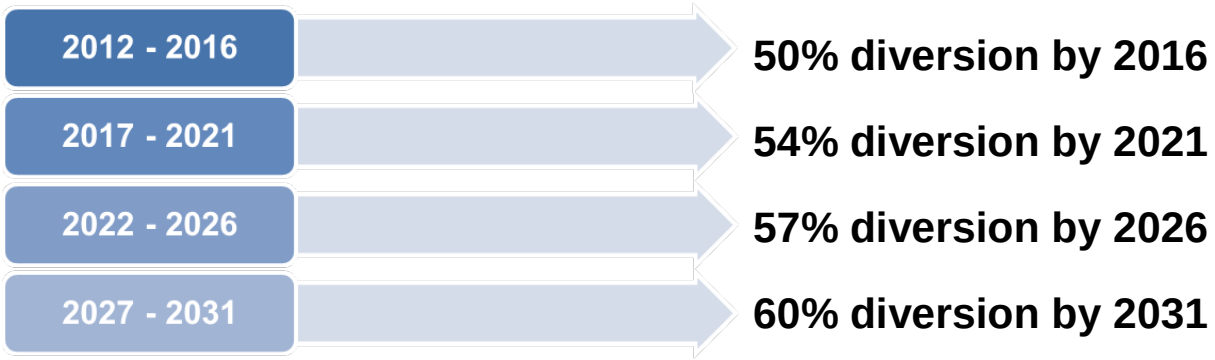


Figure 32 Diversion targets for each implementation phase of Barrie's SWMS

Each implementation phase contains specific implementation initiatives and associated action components (refer to Table 62 to Table 65).

Successful implementation of these initiatives will depend on effective communication with the community, appropriate funding and allocation of resources, timely actions and ongoing SWMS monitoring. External factors such as provincial waste policy and public and private partnerships will also affect the implementation of these initiatives.

Although the SWMS outlines specific implementation initiatives to be carried out over the next 20 years, an action plan and cost estimates were developed for the first implementation phase of the SWMS only (i.e. 2012 to 2016). Beyond the first five years, it is difficult to make accurate predictions about action planning and costs. Incremental cost estimates for the 2012-2016 initiatives are shown in Figure 33. These costs represent the estimated net difference that the implementation of the various initiatives will have on the current waste management costs.

2012 Initiatives	2013 Initiatives	2014 Initiatives	2015 Initiatives	2016 Initiatives
• Budget already completed for 2012	• $0	• $592,380	• $945,980	• $787,050

Figure 33 Incremental cost estimates for first implementation phase of the SWMS (2012-2016)

A proposed waste management funding scenario was developed as part of the SWMS. According to this funding scenario, the following proportions of revenue sources would be used to fund Barrie's waste management services:

1) per household waste fees (38%);

2) bag tag revenue (6%);

3) user/tipping fees (18%);

4) product stewardship (8%); and

5) property taxes (30%).

An important part of the SWMS implementation will be consideration of the changing needs of the community and the waste management system over time. As such, the SWMS is meant to be a flexible document, and should be re-visited and updated in response to these changes.

While evaluation and performance monitoring should be ongoing, it is recommended that a scheduled evaluation be conducted at the end of each five-year implementation phase. The evaluations will monitor progress with waste diversion targets and re-assess the proposed initiatives up until the end of the 20 year planning period. For example, at the end of the 2012 - 2016 implementation phase, all proposed initiatives should be evaluated up to year 2031. The results of these evaluations could be used to inform the development of up-to-date initiatives and a detailed communications plan for the next implementation phase.

In addition, it is recommended that during the scheduled evaluation, an additional five year segment be added to the end of the planning period to maintain a current 20 year SWMS. For example, at the end of the first five year implementation phase, the long-term SWMS should be extended to 2036. Ongoing upkeep of a 20 year plan limits the potential for a narrow planning perspective and maintains a SWMS with an outward, long-term focus. A long-term focus is the foundation for a successful and sustainable SWMS.

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Report Signature Page

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APPENDIX A

Estimated Disposal Cost

TABLE A-1
ESTIMATED LANDFILL CLOSURE COSTS
Landfill Closure Component
Barrie Landfill Site

Landfill Final Cover Construction Cost[1]

Description	Quantity	Unit	Unit Cost	Total Cost
Regrading	220,900	m²	$ 3.00	$ 662,701
600 mm Sand Cover Layer	132,540	m³	$ 6.00	$ 795,241
150 mm Imported Topsoil	33,135	m³	$ 35.00	$ 1,159,727
Hydro Seeding	220,900	m²	$ 0.70	$ 154,630
Trees	20	per ha	$ 60.00	$ 26,508
Total Final Cover Construction Cost:			**Subtotal:**	**$ 2,798,808**

General Allowances

Description	Quantity	Unit	Unit Cost	Total Cost
Site Facilities - Decommisioning	1	Lump Sum	$ 50,000.00	$ 50,000
Fencing and Signage	1	Lump Sum	$ 15,000.00	$ 15,000
Stormwater Control System Upgrades	1	Lump Sum	$ 150,000.00	$ 150,000
Upgrade / Modify LFG Collection System[2]	1	Lump Sum	$ 50,000.00	$ 50,000
			Subtotal:	**$ 265,000**

Engineering / Testing / QA & QC Costs

Description	Quantity	Unit	Unit Cost	Total Cost
Allowance for Engineering / Testing / QA & QC	-	%	15%	$ 459,571
Legal Fees	-	%	5%	$ 153,190
			Subtotal:	**$ 612,762**

Estimated Total Landfill Closure Cost:	**$ 3,676,569**

Notes:
[1] Assumption that closure capping area includes Cell1, Cell 2 and Cell 3
[2] Assumes the LFG System for the Barrie Landfill will be completed before closure, with upgrades and/or modifications to the system required at closure due to final cover placement (i.e., well head and valve chamber adjustments)

TABLE A-2
ESTIMATED ANNUAL POST CLOSURE COSTS
Barrie Landfill Site

Site Inspection/Groundwater and Surface Water Monitoring/Reporting [1]

Description		Total Cost (per year)
Project Management		$ 6,300
Groundwater & Surface Water Sampling	3 Rounds per Year	$ 40,000
Analytical Costs		$ 10,000
Data Management & Compliance Reports		$ 7,900
Annual Report		$ 17,500
Annual Survey		$ 5,000
	Subtotal :	**$ 86,700**

Site Maintenance Costs

Description	Quantity	Unit	Unit Cost	Total Cost (per year)
Maintenance Equipment - Mobilization, Rental, etc.	1	Lump Sum	$ 5,000.00	$ 5,000
Road Maintenance & Snow Removal	1	Lump Sum	$ 5,000.00	$ 5,000
Stormwater Maintenace	1	Lump Sum	$ 15,000.00	$ 15,000
Landfill Cover Maintenace	1	Lump Sum	$ 15,000.00	$ 15,000
Fence Maintenance	1	Lump Sum	$ 5,000.00	$ 5,000
Facility Maintenace	1	Lump Sum	$ -	$ -
			Subtotal:	**$ 45,000**

Monitoring Well, Gallery and Leachate System Maintenance Costs

Description	Quantity	Unit	Unit Cost	Total Cost (per year)
Monitoring Well Replacement	1	well/year	$ 15,000.00	$ 15,000
Gallery Cleaning and Video Inspection	-	per event	$ 12,000.00	$ -
Leachate / Purge Well Sewer / LCS Cleaning	1	per event	$ 12,000.00	$ 12,000
			Subtotal:	**$ 27,000**

Landfill Gas System Maintenance Costs

Description	Quantity	Unit	Unit Cost	Total Cost (per year)
Gas Well Replacement or Additions	1	every 2 yrs	$ 25,000.00	$ 12,500
Gas System & Plant Operation	1	per year	$ 20,000.00	$ 20,000
Gas System & Plant Maintenace & Repair	1	per year	$ 30,000.00	$ 30,000
Gas System Decommisioning	1	Lump Sum	$ 100,000.00	$ 100,000
			Subtotal:	**$ 162,500**

Purge Well Maintenance & Repair Costs[2]

Description	Quantity	Unit	Unit Cost	Total Cost (per year)
Purge Well Replacement	3	every 10 yrs	$ 70,000.00	$ 21,000
Purge Well Rehabilitation	3	every 2 yrs	$ 12,000.00	$ 18,000
Purge Well Decommisioning	3	No.	$ 15,000.00	$ 45,000
			Subtotal:	**$ 84,000**

Disposal Costs[3]

Description	Quantity	Unit	Unit Cost	Total Cost (per year)
Leachate Disposal	35,770	m^3 / year	$ 0.60	$ 21,462
Purge Well Disposal	231,860	m^3 / year	$ -	$ -
Groundwater Collection Gallery Disposal	453,400	m^3 / year	$ -	$ -
			Subtotal:	**$ 21,462**

General Costs

Description	Quantity	Unit	Unit Cost	Total Cost (per year)
Insurance	1	per year	$ 20,000.00	$ 20,000
General Engineering	1	per year	$ 5,000.00	$ 5,000
			Subtotal:	**$ 25,000**

Estimated Annual Post Closure Cost:	**$ 451,662**

Notes:
[1] Cost based on Golder Monitoring Costs for 2010
[2] Purge Well operation based on 25 years from date of landfill re-engineering completion (i.e., 2015), as per the 2005 Revised D&O Plan
[3] Leachate disposal volume based on the estimated average discharge rate following closure, as provided in the 2005 Revised D&O plan, Purge Well and Gallery based on 2010 recorded volumes.

TABLE B-1

Calculation of the Inflation Rate Used

2011 Quarter	Average Non-residential Building Construction Price Index for Toronto, Ontario part [1]
First	144.4
Second	146.2
Third	147.4
Fourth	148.3
Annual Average	146.6
2002 Base Value	100
Number of Years	9
Inflation Rate (Equation B-1)	**4.66%**
City of Barrie Inflation Rate[2]	**2.50%**

Equation B-1 Calculation of Inflation Rate

$$i_{\inf} = \frac{\dfrac{Year\ 2011\ Index - Year\ 2002\ Index}{Year\ 2002\ Index}}{\#\ years + 1}$$

Notes:

[1] Statistics Canada - Table 327-0043

[2] See City of Barrie Rationale Below

Rationale for discount and inflation/esclation rates used in the 2011 Landfill Liability Calculation
City of Barrie
Dec 31, 2011

Discount rate:
The discount rate used is the longer term estimation of the City's borrowing rate, which was also used for the Employee Future Benefits calculation of 4%.

It is close to the 20 year Infrastructure Ontario Loan Rate of 3.5% as of Dec 31, 2011, but we feel that rates in the long term will likely be higher, and therefore, believe that 4% is a better estimate of the rates for 2012-2074. As an indicator of support for this, the average of the Bank of Canada long term bond yields for 2002-2011 was 4.3%.

In addition, by using a longer-term estimate (rather than a spot-rate as at Dec 31, 2011), it is hoped that the outcome will be less susceptible to large fluctuations, and be a better indicator of the long-term liability.

Inflation/Escalation rate:
The inflation rate used is a modification of the annualized increase in the non-residential building construction index for the past 30 years (i.e. from 1981 to 2011) for the seven census areas (table 327.0043 from Statistics Canada). The raw result from that calculation is a 2.98% annualized increase.

However, due to the very long-term nature of the costs involved, e.g. 50 years into the future, we feel that using a rate of 2.5% is reasonable. This rate will continue to be evaluated to ensure that it is adequate.

Therefore, the discount rate of 4% and inflation/escalation rate of 2.5% have been used for the purposes of calculating the 2011 landfill liability for the City of Barrie.

TABLE C-1
CALCULATION OF FUND REQUIREMENTS

A	B	C	D	E1	E2	E3	E3	E3		E4	E4	E5	E6	E7	E7	F	G	K	L	M	
Year	Number of Years	Activity	Closure	Post-Closure												Closure & Post-Closure Expenditures				Total Annual Reserve Required To Be In Place	Calc. for Annual Provision for Post Closure over Operating Period
			Final Capping (Table A-1)	Insp./Mon./Rpt (Table A-2)	Site Maint. (Table A-2)	Well & Leachate Maint. (Table A-2)	LFG Well Addition or Replacement (Table A-2)	LFG Oper. & Maint. (Table A-2)	LFG Decom. (Table A-2)	Leachate & Gallery Disposal (Table A-2)	Purge Well Disposal (Table A-2)	Eng. & Insur. (Table A-2)	Purge Well Maint. (Table A-2)	Purge Well Replacement (Table A-2)	Purge Well Decom. (Table A-2)	Closure Cost (Column D + E1)	Post Closure Cost	Contingency			
			Current $	Current $	Current $	Current $	Current $	Current $	Current $	Current $	Current $	Current $	Current $	Current $	Current $	Current $	Current $	Current $		Current $	
2012		Reclamation Period	$ 3,676,569	$ 86,700	$ 45,000	$ 27,000	$ 12,500	$ 50,000	$ 100,000	$ 21,462	$ -	$ 25,000	$ 18,000	$ 21,000	$ 45,000						
2013			$ 3,768,483	$ 88,868	$ 46,125	$ 27,675	$ 12,813	$ 51,250	$ 102,500	$ 21,999	$ -	$ 25,625	$ 18,450	$ 21,525	$ 46,125						
2014			$ 3,862,696	$ 91,089	$ 47,278	$ 28,367	$ 13,133	$ 52,531	$ 105,063	$ 22,549	$ -	$ 26,266	$ 18,911	$ 22,063	$ 47,278						
2015			$ 3,959,263	$ 93,366	$ 48,460	$ 29,076	$ 13,461	$ 53,845	$ 107,689	$ 23,112	$ -	$ 26,922	$ 19,384	$ 22,615	$ 48,460						
2016		Pre-Closure Period	$ 4,058,245	$ 95,701	$ 49,672	$ 29,803	$ 13,798	$ 55,191	$ 110,381	$ 23,690	$ -	$ 27,595	$ 19,869	$ 23,180	$ 49,672						
2017			$ 4,159,701	$ 98,093	$ 50,913	$ 30,548	$ 14,143	$ 56,570	$ 113,141	$ 24,282	$ -	$ 28,285	$ 20,365	$ 23,760	$ 50,913						
2018			$ 4,263,693	$ 100,545	$ 52,186	$ 31,312	$ 14,496	$ 57,985	$ 115,969	$ 24,889	$ -	$ 28,992	$ 20,874	$ 24,354	$ 52,186						
2019			$ 4,370,285	$ 103,059	$ 53,491	$ 32,095	$ 14,859	$ 59,434	$ 118,869	$ 25,512	$ -	$ 29,717	$ 21,396	$ 24,962	$ 53,491						
2020			$ 4,479,543	$ 105,636	$ 54,828	$ 32,897	$ 15,230	$ 60,920	$ 121,840	$ 26,149	$ -	$ 30,460	$ 21,931	$ 25,586	$ 54,828						
2021			$ 4,591,531	$ 108,276	$ 56,199	$ 33,719	$ 15,611	$ 62,443	$ 124,886	$ 26,803	$ -	$ 31,222	$ 22,480	$ 26,226	$ 56,199						
2022			$ 4,706,319	$ 110,983	$ 57,604	$ 34,562	$ 16,001	$ 64,004	$ 128,008	$ 27,473	$ -	$ 32,002	$ 23,042	$ 26,882	$ 57,604						
2023			$ 4,823,977	$ 113,758	$ 59,044	$ 35,426	$ 16,401	$ 65,604	$ 131,209	$ 28,160	$ -	$ 32,802	$ 23,618	$ 27,554	$ 59,044						
2024			$ 4,944,577	$ 116,602	$ 60,520	$ 36,312	$ 16,811	$ 67,244	$ 134,489	$ 28,864	$ -	$ 33,622	$ 24,208	$ 28,243	$ 60,520						
2025			$ 5,068,191	$ 119,517	$ 62,033	$ 37,220	$ 17,231	$ 68,926	$ 137,851	$ 29,586	$ -	$ 34,463	$ 24,813	$ 28,949	$ 62,033						
2026			$ 5,194,896	$ 122,505	$ 63,584	$ 38,150	$ 17,662	$ 70,649	$ 141,297	$ 30,325	$ -	$ 35,324	$ 25,434	$ 29,672	$ 63,584						
2027			$ 5,324,768	$ 125,567	$ 65,173	$ 39,104	$ 18,104	$ 72,415	$ 144,830	$ 31,083	$ -	$ 36,207	$ 26,069	$ 30,414	$ 65,173						
2028			$ 5,457,888	$ 128,707	$ 66,803	$ 40,082	$ 18,556	$ 74,225	$ 148,451	$ 31,860	$ -	$ 37,113	$ 26,721	$ 31,175	$ 66,803						
2029			$ 5,594,335	$ 131,924	$ 68,473	$ 41,084	$ 19,020	$ 76,081	$ 152,162	$ 32,657	$ -	$ 38,040	$ 27,389	$ 31,954	$ 68,473						
2030			$ 5,734,193	$ 135,222	$ 70,185	$ 42,111	$ 19,496	$ 77,983	$ 155,966	$ 33,473	$ -	$ 38,991	$ 28,074	$ 32,753	$ 70,185						
2031			$ 5,877,548	$ 138,603	$ 71,939	$ 43,164	$ 19,983	$ 79,933	$ 159,865	$ 34,310	$ -	$ 39,966	$ 28,776	$ 33,572	$ 71,939						
2032			$ 6,024,487	$ 142,068	$ 73,738	$ 44,243	$ 20,483	$ 81,931	$ 163,862	$ 35,168	$ -	$ 40,965	$ 29,495	$ 34,411	$ 73,738						
2033			$ 6,175,099	$ 145,620	$ 75,581	$ 45,349	$ 20,995	$ 83,979	$ 167,958	$ 36,047	$ -	$ 41,990	$ 30,232	$ 35,271	$ 75,581						
2034			$ 6,329,476	$ 149,260	$ 77,471	$ 46,482	$ 21,520	$ 86,079	$ 172,157	$ 36,948	$ -	$ 43,039	$ 30,988	$ 36,153	$ 77,471						
2035	0	CLOSURE	$ 6,487,713	$ 152,992	$ 79,407	$ 47,644	$ 22,058	$ 88,231	$ 176,461	$ 37,872	$ -	$ 44,115	$ 31,763	$ 37,057	$ 79,407	$ 6,640,705		$ -		$ 6,640,705	
2036	1	50 Year Post Closure Period		$ 156,817	$ 81,393	$ 48,836	$ 22,609	$ 90,436	$ 180,873	$ 38,819	$ -	$ 45,218	$ 32,557	$ 37,983	$ 81,393	$ -	$ 570,505	$ -	$ -	$ 570,505	$ 548,562
2037	2			$ 160,737	$ 83,427	$ 50,056	$ 23,174	$ 92,697	$ 185,394	$ 39,789	$ -	$ 46,349	$ 33,371	$ 38,933	$ 83,427	$ -	$ 473,056	$ -	$ -	$ 473,056	$ 454,862
2038	3			$ 164,755	$ 85,513	$ 51,308	$ 23,754	$ 95,015	$ 190,029	$ 40,784	$ -	$ 47,507	$ 34,205	$ 39,906	$ 85,513	$ -	$ 599,387	$ -	$ -	$ 599,387	$ 554,167
2039	4			$ 168,874	$ 87,651	$ 52,591	$ 24,348	$ 97,390	$ 194,780	$ 41,804	$ -	$ 48,695	$ 35,060	$ 40,904	$ 87,651	$ -	$ 497,005	$ -	$ -	$ 497,005	$ 441,835
2040	5			$ 173,096	$ 89,842	$ 53,905	$ 24,956	$ 99,825	$ 199,650	$ 42,849	$ -	$ 49,912	$ 35,937	$ 41,926	$ 89,842	$ -	$ 648,576	$ -	$ -	$ 648,576	$ 554,405
2041	6			$ 177,424	$ 64,462	$ 55,253	$ 25,580	$ 102,320	$ 204,641	$ 43,920		$ 35,812				$ -	$ 479,191	$ -	$ -	$ 479,191	$ 393,860
2042	7			$ 181,859	$ 66,073	$ 56,634	$ 26,220	$ 104,878	$ 209,757	$ 45,018		$ 36,707				$ -	$ 542,970	$ -	$ -	$ 542,970	$ 429,117
2043	8			$ 186,406	$ 67,725	$ 58,050	$ 26,875	$ 107,500	$ 215,001	$ 46,143		$ 37,625				$ -	$ 503,450	$ -	$ -	$ 503,450	$ 382,581
2044	9			$ 191,066	$ 69,418	$ 59,501	$ 27,547	$ 110,188	$ 220,376	$ 47,297		$ 38,566				$ -	$ 570,458	$ -	$ -	$ 570,458	$ 416,828
2045	10			$ 195,842	$ 71,154	$ 60,989	$ 28,236	$ 112,943	$ 225,885	$ 48,479		$ 39,530				$ -	$ 528,937	$ -	$ -	$ 528,937	$ 371,624
2046	11			$ 150,554	$ 41,676	$ 46,885	$ 28,942	$ 115,766	$ 231,532	$ 49,691		$ -				$ -	$ 461,750	$ -	$ -	$ 461,750	$ 311,941
2047	12			$ 154,318	$ 42,718	$ 48,057	$ 29,665	$ 118,660	$ 237,321	$ 50,934		$ -				$ -	$ 414,687	$ -	$ -	$ 414,687	$ 269,373
2048	13			$ 158,176	$ 43,786	$ 49,259	$ 30,407	$ 121,627	$ 243,254	$ 52,207		$ -				$ -	$ 485,126	$ -	$ -	$ 485,126	$ 303,008
2049	14			$ 162,130	$ 44,880	$ 50,490	$ 31,167	$ 124,667	$ 249,335	$ 53,512		$ -				$ -	$ 435,680	$ -	$ -	$ 435,680	$ 261,658
2050	15			$ 166,183	$ 46,002	$ 51,753	$ 31,946	$ 127,784	$ 255,568	$ 54,850		$ -				$ -	$ 509,685	$ -	$ -	$ 509,685	$ 294,330
2051	16			$ 113,559	$ -	$ 35,364	$ 32,745	$ 130,979	$ 261,957	$ 56,221		$ -				$ -	$ 336,123	$ -	$ -	$ 336,123	$ 186,637
2052	17			$ 116,398	$ -	$ 36,248	$ 33,563	$ 134,253	$ 268,506	$ 57,627		$ -				$ -	$ 410,834	$ -	$ -	$ 410,834	$ 219,348
2053	18			$ 119,307	$ -	$ 37,155	$ 34,402	$ 137,610	$ 275,219	$ 59,068		$ -				$ -	$ 353,139	$ -	$ -	$ 353,139	$ 181,292
2054	19			$ 122,290	$ -	$ 38,083	$ 35,262	$ 141,050	$ 282,100	$ 60,544		$ -				$ -	$ 431,632	$ -	$ -	$ 431,632	$ 213,066
2055	20			$ 125,347	$ -	$ 39,036	$ 36,144	$ 144,576	$ 289,152	$ 62,058		$ -				$ -	$ 371,017	$ -	$ -	$ 371,017	$ 176,100
2056	21			$ 128,481	$ -	$ 40,011	$ 37,048	$ 148,190	$ 296,381	$ 63,609		$ -				$ -	$ 453,484	$ -	$ -	$ 453,484	$ 206,964
2057	22			$ 131,693	$ -	$ 41,012	$ 37,974	$ 151,895	$ 303,790	$ 65,199		$ -				$ -	$ 389,799	$ -	$ -	$ 389,799	$ 171,057
2058	23			$ 134,985	$ -	$ 42,037	$ 38,923	$ 155,693	$ 311,385	$ 66,829		$ -				$ -	$ 476,441	$ -	$ -	$ 476,441	$ 201,037
2059	24			$ 138,360	$ -	$ 43,088	$ 39,896	$ 159,585	$ 319,170	$ 68,500		$ -				$ -	$ 409,533	$ -	$ -	$ 409,533	$ 166,158
2060	25			$ 141,819	$ -	$ 44,165	LFG System Decommisioned	LFG System Decommisioned	$ 327,149	$ 70,213	Purge Wells Decommisioned	$ -	Purge Wells Decommisioned	Purge Wells Decommisioned	Purge Wells Decommisioned	$ -	$ 583,346	$ -	$ -	$ 583,346	$ 227,576
2061	26			$ 145,365	$ -	$ 22,635			LFG System Decommisioned	$ 71,968		$ -				$ -	$ 94,603	$ -	$ -	$ 94,603	$ 35,487
2062	27			$ 148,999	$ -	$ 23,200				$ 73,767		$ -				$ -	$ 245,966	$ -	$ -	$ 245,966	$ 88,717
2063	28			$ 152,724	$ -	$ 23,780				$ 75,611		$ -				$ -	$ 99,392	$ -	$ -	$ 99,392	$ 34,471
2064	29			$ 156,542	$ -	$ 24,375				$ 77,502		$ -				$ -	$ 258,418	$ -	$ -	$ 258,418	$ 86,177
2065	30			$ 160,455	$ -	$ 24,984				$ 79,439		$ -				$ -	$ 104,424	$ -	$ -	$ 104,424	$ 33,484
2066	31			$ 164,467	$ -	$ 25,609				$ 81,425		$ -				$ -	$ 271,501	$ -	$ -	$ 271,501	$ 83,709
2067	32			$ 168,578	$ -	$ 26,249				$ 83,461		$ -				$ -	$ 109,710	$ -	$ -	$ 109,710	$ 32,525
2068	33			$ 172,793	$ -	$ 26,905				$ 85,547		$ -				$ -	$ 285,246	$ -	$ -	$ 285,246	$ 81,312
2069	34			$ 177,113	$ -	$ 27,578				$ 87,686		$ -				$ -	$ 115,264	$ -	$ -	$ 115,264	$ 31,593
2070	35			$ 181,540	$ -	$ 28,268				$ 89,878		$ -				$ -	$ 299,686	$ -	$ -	$ 299,686	$ 78,983
2071	36			$ 186,079	$ -	$ 28,974				$ 92,125		$ -				$ -	$ 121,099	$ -	$ -	$ 121,099	$ 30,688
2072	37			$ 190,731	$ -	$ 29,699				$ 94,428		$ -				$ -	$ 314,858	$ -	$ -	$ 314,858	$ 76,721
2073	38			$ 195,499	$ -	$ 30,441				$ 96,789		$ -				$ -	$ 127,230	$ -	$ -	$ 127,230	$ 29,810
2074	39			$ 200,387	$ -	$ 31,202				$ 99,209		$ -				$ -	$ 330,797	$ -	$ -	$ 330,797	$ 74,524
2075	40			$ 205,396	$ -	$ 31,982				$ 101,689		$ -				$ -	$ 133,671	$ -	$ -	$ 133,671	$ 28,956
2076	41			$ 210,531	$ -	$ 32,782				$ 104,231		$ -				$ -	$ 347,544	$ -	$ -	$ 347,544	$ 72,390
2077	42			$ 215,794	$ -	$ 33,601				$ 106,837		$ -				$ -	$ 140,438	$ -	$ -	$ 140,438	$ 28,127
2078	43			$ 221,189	$ -	$ 34,441				$ 109,508		$ -				$ -	$ 365,138	$ -	$ -	$ 365,138	$ 70,317
2079	44			$ 226,719	$ -	$ 35,302				$ 112,246		$ -				$ -	$ 147,548	$ -	$ -	$ 147,548	$ 27,321
2080	45			$ 232,387	$ -	$ 36,185				$ 115,052		$ -				$ -	$ 383,624	$ -	$ -	$ 383,624	$ 68,303
2081	46			$ 238,197	$ -	$ 37,089				$ 117,928		$ -				$ -	$ 155,017	$ -	$ -	$ 155,017	$ 26,539
2082	47			$ 244,152	$ -	$ 38,017				$ 120,876		$ -				$ -	$ 403,045	$ -	$ -	$ 403,045	$ 66,347
2083	48			$ 250,255	$ -	$ 38,967				$ 123,898		$ -				$ -	$ 162,865	$ -	$ -	$ 162,865	$ 25,779
2084	49			$ 256,512	$ -	$ 39,941				$ 126,996		$ -				$ -	$ 423,449	$ -	$ -	$ 423,449	$ 64,447
2085	50			$ 262,925	$ -	$ 40,940				$ 130,170		$ -				$ -	$ 171,110	$ -	$ -	$ 171,110	$ 25,040

Funds Required for Post-Closure by 2035 = $ 9,239,151

Assumptions:

Inflation Rate: City of Barrie Finance Department Inflation Rate	2.50%
Bank of Canada Longterm Bond Yield Rate (March 2012)	4.00%
Contingency Percentage	0%

Notes:
- Please see Table B-1 for source of Inflation
- Current $ refers to dollars relative to date shown in column A

Project No: 08-1170-0519
Date: Feb. 2, 2010
Rev: A
By: F.Ciuffreda
Chkd: C.Visser

Notes:

1. Phase 0, Cell 1 surface area based on existing ground surface topo survey by Strada dated Dec. 2009.
2. Phase 1 to 3, Cells 2A to 3C, surface areas based on proposed top of final waste surface, using 4:1 exterior waste slopes, from Design & Operations Plan, Project 021.1365, dated Aug. 2005, by Golder Associates.

Landfill Final Grade Surface Areas

Item	Phase	Surface Area (m^2)	Cell	Surface Area (m^2)	Rounded Surface Area (m^2)
1	0	88,900	1	88,900	88,900
2	1	43,808	2A	16,138	16,100
3			3A	27,670	27,700
4	2	53,053	2B	21,593	21,600
5			3B	31,460	31,500
6	3	35,127	2C	14,981	15,000
7			3C	20,146	20,100
8	Total:	220,888	Total:	220,888	220,900

City of Barrie
Estimated Disposal Cost per Tonne

Year	Description	Annual Projected Tonnages	[3] Annual Projected Volume	Estimated Remaining Volume	Landfill Operational Cost				Reclamation & Re-Engineering Amortization Cost (Principal & Interest)				Annual Provision for Landfill Closure	Estimated Total Annual Expenditure (Excl. Post Closure Prov.)	[1] Estimated Cost per m³	[1] Estimated Cost per Tonne	Annual Provision for Post Closure	Estimated Total Annual Expenditure (Incl. Post Closure Prov.)	[2] Estimated Cost per Tonne	[2] Estimated Cost per Tonne
					Landfilling Operations	OPEX	Reserve Fund	Debenture Environmental Centre	Cell 3A	Phase 1	Phase 2	Phase 3								
2012	Reclamation & Re-Engineering	41,440	55,254		Reclamation Contractor	$ 2,654,715	$ 257,775	$ 710,000	$ 395,784	$ 409,120	$ -		$ 276,696	$ 4,704,089	$ 85	$ 114	$ 384,965	$ 5,089,054	$ 92	$ 123
2013		42,186	56,248			$ 2,707,809	$ 283,552	$ 710,000	$ 395,784	$ 409,120	$ 1,321,772		$ 276,696	$ 6,104,733	$ 109	$ 145	$ 384,965	$ 6,489,697	$ 115	$ 154
2014		42,946	57,261			$ 2,761,965	$ 311,907	$ 710,000	$ 395,784	$ 409,120	$ 1,321,772		$ 276,696	$ 6,187,244	$ 108	$ 144	$ 384,965	$ 6,572,209	$ 115	$ 153
2015		43,719	58,291	1,553,901		$ 2,817,205	$ 343,098		$ 395,784	$ 409,120	$ 1,321,772	$ -	$ 276,696	$ 5,563,674	$ 95	$ 127	$ 384,965	$ 5,948,639	$ 102	$ 136
2016	Landfill Operations by City of Barrie	44,506	59,341	1,494,560	129,032	$ 2,873,549	$ 377,408		$ 395,784	$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,105,132	$ 120	$ 160	$ 384,965	$ 7,490,096	$ 126	$ 168
2017		45,307	60,409	1,434,151	134,638	$ 2,931,020	$ 415,148		$ 386,886	$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,197,051	$ 119	$ 159	$ 384,965	$ 7,582,016	$ 126	$ 167
2018		46,122	61,496	1,372,655	140,488	$ 2,989,640	$ 456,663			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 6,916,151	$ 112	$ 150	$ 384,965	$ 7,301,116	$ 119	$ 158
2019		46,952	62,603	1,310,052	146,593	$ 3,049,433	$ 502,330			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,027,714	$ 112	$ 150	$ 384,965	$ 7,412,679	$ 118	$ 158
2020		47,797	63,730	1,246,322	152,962	$ 3,110,422	$ 552,563			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,145,306	$ 112	$ 149	$ 384,965	$ 7,530,270	$ 118	$ 158
2021		48,658	64,877	1,181,445	159,608	$ 3,172,630	$ 607,819			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,269,416	$ 112	$ 149	$ 384,965	$ 7,654,381	$ 118	$ 157
2022		49,534	66,045	1,115,400	166,543	$ 3,236,083	$ 668,601			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,400,586	$ 112	$ 149	$ 384,965	$ 7,785,551	$ 118	$ 157
2023		50,425	67,234	1,048,166	173,780	$ 3,300,804	$ 735,461			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,539,404	$ 112	$ 150	$ 384,965	$ 7,924,369	$ 118	$ 157
2024		51,333	68,444	979,722	181,330	$ 3,366,820	$ 809,007			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,686,517	$ 112	$ 150	$ 384,965	$ 8,071,481	$ 118	$ 157
2025		52,257	69,676	910,046	189,209	$ 3,434,157	$ 889,908			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,842,633	$ 113	$ 150	$ 384,965	$ 8,227,597	$ 118	$ 157
2026		53,198	70,930	839,116	197,430	$ 3,502,840	$ 978,898			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 8,008,528	$ 113	$ 151	$ 384,965	$ 8,393,492	$ 118	$ 158
2027		54,155	72,207	766,909	206,009	$ 3,572,897	$ -			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,108,265	$ 98	$ 131	$ 384,965	$ 7,493,229	$ 104	$ 138
2028		55,130	73,507	693,403	214,960	$ 3,644,355	$ -			$ 409,120	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,188,674	$ 98	$ 130	$ 384,965	$ 7,573,638	$ 103	$ 137
2029		56,122	74,830	618,573	224,300	$ 3,717,242	$ -			$ 399,922	$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,261,702	$ 97	$ 129	$ 384,965	$ 7,646,667	$ 102	$ 136
2030		57,132	76,177	542,397	234,045	$ 3,791,586	$ -				$ 1,321,772	$ 1,321,772	$ 276,696	$ 6,945,871	$ 91	$ 122	$ 384,965	$ 7,330,836	$ 96	$ 128
2031		58,161	77,548	464,849	244,215	$ 3,867,418	$ -				$ 1,321,772	$ 1,321,772	$ 276,696	$ 7,031,872	$ 91	$ 121	$ 384,965	$ 7,416,837	$ 96	$ 128
2032		59,208	78,944	385,905	254,826	$ 3,944,767	$ -				$ 1,292,054	$ 1,321,772	$ 276,696	$ 7,090,115	$ 90	$ 120	$ 384,965	$ 7,475,079	$ 95	$ 126
2033		60,273	80,365	305,541	265,898	$ 4,023,662	$ -					$ 1,321,772	$ 276,696	$ 5,888,028	$ 73	$ 98	$ 384,965	$ 6,272,992	$ 78	$ 104
2034		61,358	81,811	223,729	277,451	$ 4,104,135	$ -					$ 1,321,772	$ 276,696	$ 5,980,054	$ 73	$ 97	$ 384,965	$ 6,365,019	$ 78	$ 104
2035	Landfill Closure	62,463	83,284	140,446	289,507	$ 4,186,218	$ -					$ 1,292,054	$ 276,696	$ 6,044,475	$ 73	$ 97	$ 384,965	$ 6,429,440	$ 77	$ 103
													Average Cost per m³ or Tonne =		$ 101	$ 135	Average Cost per m³ or Tonne =		$ 107	$ 143

Note: [1] Cost per tonne or m³ with provision for Closure Costs

[2] Cost per tonne or m³ with provision for Closure Cost and Post Closure Cost

[3] Based on an Aparent Waste Density for inplace waste and daily cover of 750 kg/m³

APPENDIX B

Intercommunity Collaboration Initiatives Workshop

Sustainable Waste Management Strategy
Intercommunity Collaboration Initiatives Workshop
May 3, 2011 Meeting Minutes

Workshop Overview:

On May 3, 2011, the City of Barrie hosted the Intercommunity Collaboration Initiatives Workshop as part of their Sustainable Waste Management Strategy development. The goal of the workshop was to identify potential areas for partnership, collaboration and cooperation on waste management with neighbouring municipalities and First Nations communities.

Attendees:

Name	Organization	Email
Sandy Coulter	City of Barrie	scoulter@barrie.ca
Tracy Quann Strasser	City of Barrie	tqstrasser@barrie.ca
Katherine Siren	City of Barrie	ksiren@barrie.ca
Pam Russell	Golder Associates Ltd.	prussell@golder.com
Amy Burke	Golder Associates Ltd.	amy_burke@golder.com
Caitlin Burley	Golder Associates Ltd.	cburley@golder.com
Agni Papageorgiou	Golder Associates Ltd.	agni_papageorgiou@golder.com
Janice Taylor	Chippewas of Georgina Island	jtaylor@georginaisland.com
Melissa Kovacs Reid	County of Dufferin	mkovacs@dufferincounty.on.ca
Rob McCollough	County of Simcoe	rob.mccollough@simcoe.ca
Nicole Meek	Halton Region	nicole.meek@halton.ca
Erwin Pascual	Region of Peel	erwin.pascual@peelregion.ca
Anne Winning	City of Hamilton	anne.winning@hamilton.ca
Greg Preston	City of Orillia	gpreston@orillia.ca
Bonnie Anderson	Region of York	bonnie.anderson@york.ca
Geoff Rathborne	City of Toronto	grathbo@toronto.ca
Ron Douglass	Rama First Nation Council	rondouglas@ramafirstnation.ca
Fred Jahn	Rama First Nation	fredj@ramafirstnation.ca
Brenda Ingersoll	Rama First Nation Council	brendai@ramafirstnation.ca
Heather Connell	City of Guelph	Heather.connell@guelph.ca

Summary of Minutes:

1. **Introductions**
2. **Overview of the City of Barrie's Sustainable Waste Management Strategy**
3. **Municipal Updates – Blue Box recycling, Source Separated Organics, and Residual Waste**

For each category, each municipality/First Nation provided a summary of their current practices, including challenges, and potential areas for collaboration. A complete summary of these updates is provided in tables 1-3.

4. **Potential areas of collaboration, cooperation, and partnership**

Building on the morning's discussions, an informal round table discussion identified potential areas for cooperation moving forward. A summary of potential opportunities identified for each of the three categories discussed is outlined below:

Blue Box Recycling

- Joint-marketing of materials for revenue
- Integrating collection and processing
- Sharing ideas for markets, tenders, multi-residential delivery, Industrial , Commercial and Institutional (IC&I) delivery
- Regional standardization of materials/number of streams

Source Separated Organics

- Long-term processing capacity identified as a challenge for many communities, joint facilities may provide a solution
- Rural areas may be able to provide curing for digestate/compost produced from anaerobic digestion and composting facilities in the urban areas
- Municipalities that have anaerobic digestion facilities may be able to process diapers, feminine hygiene products and pet waste from other municipalities
- Lobbying for use of compostable bags in Source Separated Organics (SSO) collection (re: MOE decision in Guelph Certificate of Approval)

Residual Waste Management

- Lobbying for Extended Producer Responsibility (EPA) programs on materials
- Alternatives to landfills needed in many communities, potential partnerships for joint facilities (e.g., Energy From Waste)

5. Next Steps

The City of Barrie will produce minutes and a summary of the workshop, and with approval from each of the attendees this document will become part of the public record.

All attendees agreed to allow their emails to be circulated. Moving forward, attendees are encouraged to continue discussions promoting intercommunity collaboration by contacting potential partners directly.

Table 1: Municipal Updates: Blue Box Recycling

Community and Population	Contact and email	Annual Quantities Generated (Residential)	Processor	Current Practices	Challenges	Opportunities
City of Barrie 140,000	Sandy Coulter scoulter@barrie.ca	12,400 tonnes	BFI	- Weekly collection - 2 streams (blue/grey box) - High participation rate	- Provincial direction - Control of marketing materials - No revenue sharing - New residents want single stream - Processing (sorting) blue box materials	Exploring options for collection and processing
Chippewas of Georgina Island First Nation 2,619	Janice Taylor jtaylor@georginaisland.com			- Only blue box diversion (No grey box materials) - Weekly collection		
County of Dufferin	Melissa Kovacs-Reid mkovacs@dufferincounty.on.ca	5,231 tonnes (marketed)	Guelph (majority), Waste Management	- Weekly/biweekly collection (depends on the community)	- Multiple municipalities with different systems - Developing one system - Majority of processing occurs in Guelph, one municipality sends materials to Mt. Forest for processing	January 1st, 2013 – new collection contract tender
County of Simcoe 322,120	Rob McCullough rob.mccullough@simcoe.ca	23,600 tonnes	various	- 1 bag garbage limit - 2 stream blue box - 1 organics stream - Capture rate of 82% of blue box materials (based on recent waste audit) - 4 collection areas: 1 area – to County's transfer station (former MRF), 3 areas – private contractor determines market - 50% revenue share (County and contractor) over market level of contract date	- 16 municipalities(working to have similar systems) - No plastics 3 & 6's or film (public pressure) - Taking over marketing directly (need to find Canadian market for recyclables) - Urban collection category (WDO) - funding implications - IC&I limited to residential quantities	County is taking over the marketing of blue box and is looking for a collaboration partners
Regional Municipality of Halton 475,414	Nicole Meek nicole.meek@halton.ca	42,996 tonnes	Emterra (Halton Recycling Ltd) - Miller is the collection contractor	- Single stream weekly - 25% revenue share with processor	- Plastics - only accept plastic bottles 1&2, tubs & lids (5) Acceptable materials not consistent across Province, confusing for residents - Residue level as expected for single stream - High participation rate (92%) in blue box, 13%of garbage is Blue Box recyclables - Draft Solid Waste Management Strategy approved by Council May 11: includes 11 initiatives to reach 70% diversion which include: 1. Partial user pay initiative to lower bag limit 2. Increase blue box size and add materials, for example mixed plastics	Contracts expire 2014 (with options to extend) Long-term processing options
Regional Municipality of Peel 1,323,000	Erwin Pascual erwin.pascual@peelregion.ca	104,000 (92,000 sf, 12,000 MR)	Peel Integrated Waste Management Facility 3 collection contracts (3 municipalities) - Collection contracts with Miller and Turtle Island - Processing contract with Canada Fibers	- Single stream, weekly collection	-Capture rate for SF: 83%; MR: 36% - All communications in English, many new residents do not speak English as a first language – need to move to multi-lingual communications - We don't take thermoform or mixed plastics - Litter from blue box (wind blows waste onto streets and sidewalks)	

Community and Population	Contact and email	Annual Quantities Generated (Residential)	Processor	Current Practices	Challenges	Opportunities
City of Orillia 31,420	Greg Preston gpreston@orillia.ca	3,431 tonnes	Mid Ontario Disposal	- Private collection (all streams) by Mid Ontario Disposal – 100% revenue goes to contractor - Paper - Toronto - Containers - Oshawa	- New materials promotion - Collection (cardboard & styrofoam)	
City of Guelph 120,000	Heather Connell heather.connell@guelph.ca	18,600 tonnes	City of Guelph	- 3 bags (garbage, recycling, SSO) - Single stream blue bag - No plastic film and we will no longer be taking Styrofoam and coffee cups - Transfer to carts in 2012 -2014 - We do our own collection, processing, marketing (not outsourced to the contractor)	- Large transient population (mainly students), hard to get students to commit to the program - Challenge: multi-residential capture rate at townhomes is good, but high rises is not - Styrofoam - Plastic film - Education - Competition	Capacity at MRF – we are interested in receiving material from other municipalities
Chippewas of Rama First Nation 846	Fred Jahn fredj@ramafirstnation.ca	50 tonnes	Mid Ontario Disposal	Collect with own staff weekly (Mid Ontario Disposal – 2 stream) - Moving to twice per week - Participation rate: 60% - Diversion rate 20%	- Diversion rate 20% - Promotion and education - No bag limit - Landfill capacity	
City of Toronto 2,516,352	G. Rathbone grathbo@toronto.ca	185,666 tonnes	* Canada Fibers * Metro Municipal	- Blue bin system – up to 95 gallons, 7,000 recycling bins - Recycling/garbage bi weekly - Organics weekly - RFID tags in bins (tags for extra garbage) - Self funding through rates charged – this incentivizes recycling - Waste audit: 93% participation rate for single family homes, 80-81% capture on blue box materials - 60% of residents are small or medium bins - Yellow bin programs - $3.10 per bag garbage; free recycling - Two MRFs: 1) One city MRF; 2) Metro waste MRF	- Contamination (25%) - thermofoam (pilot project) - Changing composition - thermofoams, film, packaging, different fibre - Multi residential is managed by owner, will go private if pressure too high o Free unlimited garbage until 2 years ago o 'All or nothing' rule: need to opt into recycling, waste, organics or have waste collected under a private contract o Usage fee to building operators (e.g. condo operators) o Blue box provided to each suite - IC&I 500 metres squared floor space "yellow bag" - Public space recycling – lots of residue/contamination, but it's not malicious	RFP out for a new MRF
Regional Municipality of York 1,032,606	Bonnie Anderson bonnie.anderson@york.ca	88,395 Tonnes (2010 Actual Inbound)	Miller Waste Systems operates York Region's MRF under contract	- 2 tier system: collection by local municipalities, processing by the region - 5 collection contracts	- No IC&I (except some lower tier municipalities) - Multi residential varies between municipalities o Multiple contract structure - High growth rate - Changing streams - Consistency across municipalities	Developing master plan in 2011 and 2012
City of Hamilton 525,697	Anne Winning anne.winning@hamilton.ca	44,216 tonnes	Canada Fibres	- Weekly collection – National contract until 2013 - City MRF – Canada Fibres processor - SWMP review - 2 stream collection - Gold box promotion for master recyclers - One bag garbage limit for single curbside residential	- No IC&I (except small businesses) - Multi residential green cart refusal/program maintenance - Contamination - Contracts are up in 2013 - Problematic materials - Unsure about what the Blue Box Program will look like in 5-10 years	Contracts for collection and MRF are up in 2013

Table 2: Municipal Updates: Source Separated Organics

Community	Contact and email	Annual Quantities Generated (Residential)	Processor	Current Practices	Challenges	Opportunities
City of Barrie 140,000	**Sandy Coulter** **scoulter@barrie.ca**	**SSO: 2,730**	**BFI (All Treat)**	**- Weekly, collected with garbage** **- Yard waste collection is free at curbside, processed by the City, and sold** **- Compostable bags now accepted**	**- No plastic bags** **- New program, not well received (odour, bugs)** **- Low participation** **- Processing** **- Multi residential (no service) - pilot to start in 2011** **- Policy development**	Exploring options for collection and processing
Chippewas of Georgina Island First Nation 2,619	**Janice Taylor** **jtaylor@georginaisland.com**			**- No SSO collection program** **- Provide residents with backyard composters**	**No program**	Development of program (processing)
County of Dufferin	**Melissa Kovacs-Reid** **mkovacs@dufferincounty.on.ca**	**2,386 tonnes**	**Region of Peel Caledon Composting Facility**	**- County wide single-family service starting in 2007 (pilot program prior to this date), no multi-residential program** **-$60/tonne to $120/tonne**	**- Future processing cost** **- Development of potential facility** **- Multi residential (No system)** **- Participation rate is 40-50% (lower in rural areas)**	- Long term SSO processing capacity - York Region – partnership for RFP of SSO facility (50,000 tonne/year capacity)
County of Simcoe 322,120	**Rob McCullough** **rob.mccullough@simcoe.ca**	**11,500 tonnes**	**AIM (Hamilton)**	**- Leaf and yard waste processed by the county (owns grinder at 4 sites) – markets compost** **- Service is free all year round** **- Curbside collection of SSO, brought to AIM in Hamilton (75% participation)** **- Multi residential curbside collection if there is "ownership of waste" e.g. townhouses (reduces contamination)** **- Education: have standardized program in elementary schools with program offered at home – also have a mobile education unit**	**- Capture rate (only 50% of material)** **- No diapers or pet waste (public demand)** **- New targeted institutional program** **- Processing (potential partnerships)** **- Multi residential**	Looking for partnerships on SSO – need for 25,000 tonnes per year capacity
Regional Municipality of Halton 475,414	**Nicole Meek** **nicole.meek@halton.ca**	**Green Cart: 26,773 tonnes Leaf and Yard Waste: 27,039 tonnes**	**GreenCart: AIM (City of Hamilton) Leaf and Yard Waste: Halton Waste Management Site**	**- Yard waste – bi weekly April to November, no grass collection, no plastic bags** **- GreenCart: Curbside weekly collection (single-family and most townhouses), piloting multi residential program** **- GreenCart implemented – April 2008** **- GreenCart implemented in 70% of public schools, continuing to implement in remaining schools** **- Accept paper and BPI certified compostable bags in GreenCart**	**- GreenCart in Multi residential sector due to common collection areas and building design** **- Special events collection: capacity and resources due to increasing demand and compliance with acceptable materials for event attendees and vendors (vendors often purchase containers that are not acceptable with expectation that will be able to compost or recycle them)** **- Long term processing capacity**	Long term processing Expanding GreenCart program in other sectors to increase diversion
Regional Municipality of Peel 1,323,000	**Erwin Pascual** **erwin.pascual@peelregion.ca**	**36,000 tonnes**	**Caledon Peel Integrated**	**- Leaf and Yard waste: biweekly collection** **- SSO collection for single family**	**- Dropping participation (45-40%)** **- Processing capacity (study underway)** **- No multi residential (accessibility for residents)** **- Don't accept diapers or pet waste** **- Organics capture rate: 33%**	Long term processing

Community	Contact and email	Annual Quantities Generated (Residential)	Processor	Current Practices	Challenges	Opportunities
City of Orillia 31,420	**Greg Preston** **gpreston@orillia.ca**	**3,783 tonnes (includes yard waste) Of this, 2,211 tonnes collected at curb (SSO & yard waste).**	**City of Orillia**	**- 1993: Leaf and yard waste collection** **- 1996: Limited SSO (fruit and vegetables only)** **- 2001: SSO (except meat and dairy)** **- 2009: Green bin program for single-family and small multi-residential (up to 6 units)** **o Green bins help increase participation (50% capture rate)** **o Allow paper (bags or newspaper) or certified compostable bags as liner**	**- No meat and dairy (Simcoe does)** **- Relocate compost pad** **- Co-collection truck perception** **- Larger multi-residential buildings (need a champion in building management)**	Long-term processing capacity – study ongoing
City of Guelph 120,000	**Heather Connell** **heather.connell@guelph.ca**	**10,200 tonnes (includes SSO and Yard Waste)**	**City Compost Facility opening 2011**	**- 1994: SSO collection program began** **- Mandatory green bag system** **- New facility to be run by AIM**	**- No odour permitted from facility (CofA limit 1OU)** **- No certified compostable bags or plastic bags (Ministry of Environment Certificate of Approval)**	
Chippewas of Rama First Nation 846	**Fred Jahn** **fredj@ramafirstnation.ca**			**- No curbside pickup** **- Interested in developing program** **- Community survey: 73% supported curbside SSO**	**- Population growth (population doubled in last 10 years, landfill near capacity (5 years)**	Development of program (processing)
City of Toronto 2,516,352	**G. Rathbone** **grathbo@toronto.ca**	**109,077 tonnes**	*** Orgaworld in London * Universal Resource Recovery in Welland * Lafleche Environmental in Moose Creek *Courtice in Oshawa * Dufferin MRF-CCI**	**- Leaf and yard waste (grass ban) collection March-December** **- Weekly SSO collection** **o Allow diapers, sanitary product, animal waste, contaminated paper** **o Encourage use of plastic bags as liners** **o 87% participation rate** **o Garberators not allowed** **- Free compost give away** **- 17-20% residue (wet)**	**- Shift to excess capacity** **- Replacing old bins – size and raccoon latch with automated pickup**	City will have 80% of SSO processing capacity needed by 2013 - existing Dufferin facility, -Disco transfer station to open in 2012 -Third potential plant -80,000 tonnes per year processing capacity available Potential opportunity to accept diaper and pet waste in exchange for curing organics
Regional Municipality of York 1,032,606	**Bonnie Anderson** **bonnie.anderson@york.ca**	**91,680 Tonnes (2010 Actual Inbound)**	**We Care Organics-Massachusetts; Orgaworld-London; Universal-Welland**	**- Accept diapers, sanitary products, pet waste** **- Yard waste collected in separate program**	**- May 1st - mandatory compostable bags** **- Partnership on new facility with Dufferin** **- Processing (especially in the summer)**	Developing master plan in 2011-2012
City of Hamilton 525,697	**Anne Winning** **anne.winning@hamilton.ca**	**37,696 tonnes**	**Maple Reinders**	**- City leaf and yard waste processed in windrows at Glanbrook landfill site** **- SSO processed at Central Composting Facility** **- 2006: launched green cart program City wide to single family homes** **- Fall 2007: launched green carts to multi residential buildings City wide**	**- No diapers & pet waste permitted in green cart** **- Optimize the processing capacity of both the Glanbrook Landfill windrow facility and Central Composting Facility** **- 120 litre cart, people top up with yard waste** **- Grass clippings cause tipping issues** **- Budget considerations**	Currently reviewing 2001 Solid Waste Management Master Plan – recommendations through to 2035

Table 3: Municipal Updates: Residual Waste Management

Community	Contact and email	Annual Quantities Generated (Residential)	Disposal Site	Current Practices	Challenges	Opportunities
City of Barrie 140,000	Sandy Coulter scoulter@barrie.ca	17,900 tonnes	Barrie Landfill	- One bag limit, weekly collection - ICI community has larger limit - DIA – 2 times weekly, 5 bag limit - One time free disposal up to 100 kg per resident per year	- Landfill closure approximately 2024 - Collection contract up in 2012 - Public spaces contamination - Multi residential tipping fee exemption, manage own collection (onerous tracking system), bin placement for safe collection - Tracking free resident disposal (100 kg) - Not capturing IC&I (private disposal)	Partnering for future disposal options (capacity and site limitations) Collection contract up in 2012
Chippewas of Georgina Island First Nation 2,619	Janice Taylor jtaylor@georginaisland.com					
County of Dufferin	Melissa Kovacs-Reid mkovacs@dufferincounty.on.ca	11,157 tonnes	Exported (4 municipalities), local landfills (4)	ICI services if within bag limit	- Moving to one system for collection in 2013 (now 8)	Business proposal phase of Energy-from-Waste gasification facility with Alter NRG and Navitus (75000 tonne capacity).
County of Simcoe 322,120	Rob McCullough rob.mccullough@simcoe.ca	44,515 tonnes (up to 60,000 with drop off)	Sites 10, 11, &13	- One bag limit on garbage - 77 litre capacity limit - 4 landfills - 4 transfer stations - Fees: $155 per tonne at transfer station; $115 per tonne at landfill; to $155 in 3 years - 57% diversion - 4 HSW depots full time - Preferred rate drywall, wood, shingles, grinding shingles and mixing - Double tipping fee for mixed waste – considerable revenue (6000 tonnes per year)	- Resident complaints with volume collected - Bulky item collection - Less than 8 years disposal capacity - 70% diversion is goal by 2020 - Political involvement identifying options for collection and disposal - Weather cancellation of collection (if they move to every 2 weeks) - Need incentives for reducing residual (less than one bag) - Taxation structure (upper tier)	Less than 8 years disposal capacity
Regional Municipality of Halton 475,414	Nicole Meek nicole.meek@halton.ca	62,734 tonnes collected from single family residential 74,327 tonnes landfilled at Halton Waste Management Site	Halton Waste Management Site	- Bi weekly garbage collection - 6 bag limit - $143 per tonne tipping fee at landfill	- Some residents (rural area of Halton Hills) on private garbage collection (receive Blue Box and GreenCart from the region) - Multi residential waste collection is inconsistent across Region, type of collection and on-site management depends on building design, requires much more effort to maintain data records and provide communication - Landfill capacity 2032	
Regional Municipality of Peel 1,323,000	Erwin Pascual erwin.pascual@peelregion.ca	230,000 (175,000 sf, 55,000 MR)	Algonquin Power Twin Peaks Landfill	- 4 day collection system	- 2 bags per week, considering bi weekly collection – cart based systems - Collection contract up in 2015 AP – waste supply agreement ends 2012	AP – waste supply agreement ends 2012 Considering options for waste disposal – landfilling all waste is not an option
City of Orillia 31,420	Greg Preston gpreston@orillia.ca	6,684 tonnes	Orillia Waste Diversion Site (landfill)	- 30 garbage tags per year - $1.65 per tag for additional tags – looking to increase - MF – get garbage pick up if they have blue box program in place - Landfill is $120 per tone - Double tipping for mixed waste	- No bins for IC&I - Future options to increase diversion of organics - Multi-residential: no bulky items accepted (contamination) -70% diversion rate target	
City of Guelph	Heather Connell heather.connell@guelph.ca	17,400 tonnes	Greenlane Landfill (St. Thomas)	- Biweekly with clear bags - If waste is not sorted it does not get picked up	- Diversion targets 55% 2011, 65% 2016, 70% 2021	2013 contract for disposal up

Community	Contact and email	Annual Quantities Generated (Residential)	Disposal Site	Current Practices	Challenges	Opportunities
120,000						
Chippewas of Rama First Nation 846	Fred Jahn fredj@ramafirstnation.ca	280 tonnes (residential and institutional only)	Local landfill		- Moving to weekly collection (from 2 times weekly) - Landfill full this year, extending berms +5years - Political limitations, but implementing 4 bag limit - No tipping fees (construction waste)	Identifying future options (EFW?)
City of Toronto 2,516,352	G. Rathbone grathbo@toronto.ca	373987	Green Lane	- 4 bin sizes – 1 - 4 ½ (95 gallon) bags - $200 per year à $400 per year - Four free tags per year per household - On average, 1.1 tags being used - Sent out with water meter bill - 2/3 volume got limits on MF - $70 per tonne - Charge $100 per tonne at transfer stations - "tip and load" service à transfer to U.S. - $209 credit on water bill per household	- 2026 capacity on landfill (2034 with increased diversion) - Curbside collection of durable goods to extend landfill	Exploring mechanical biological treatment
Regional Municipality of York 1,032,606	Bonnie Anderson bonnie.anderson@york.ca	115,420 tonnes (2010 Inbound Actual)	Dongara Pelletization Plant, Green Lane Landfill and Niagara Waste Systems Landfill	- Bag limits 1-4 bags - Alternating week collection by lower tier	- Greenlane up 2012, other 2013 - Durham York EFW to begin operating in 2013 - Continue to educate residents on importance of proper disposal of WEEE and MHSW	
City of Hamilton 525,697	Anne Winning anne.winning@hamilton.ca	110,666 tonnes	Glanbrook Landfill	- Weekly, three times a week for multi residential, down town daily - 3 Community Recycling Centres available to residents 6 days a week for drop off waste, leaf and yard and recyclables - Gas to Energy facility at Glanbrook landfill supplies the needs of 2100 homes - Landfill 37 years capacity	-2010 diversion rate of 49% with an aggressive goal of 65% by the end of 2011– should it be changed? Is it attainable? - With the current landfill capacity of 37 years, there is not the same sense of urgency to change or expand diversion programs - One container limit, special considerations for large families - Solution for diapers and pet waste - Budget constraints	Reviewing EFW (but no push with capacity)

APPENDIX C

Community Engagement Plan

March 2011

INTERIM REPORT 3

Barrie Sustainable Waste Management Strategy COMMUNITY ENGAGEMENT PLAN

Submitted to:
Sandy Coulter, Manager, Environmental Operations
City of Barrie
70 Collier Street
Barrie, ON L4M 4T5

REPORT

Report Number: 10-1188-0055

Distribution:

1 Copy - City of Barrie

1 Copy - Golder Associates Ltd.

Golder Associates

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Preliminary Issues List

1.0 BACKGROUND

The City of Barrie (Barrie) is undertaking the development and implementation of a Sustainable Waste Management (SWM) Strategy. Barrie has experienced a substantial growth rate since the early 1990's which continues, as is evidenced by a 19.2% increase in population between 2001 and 2006, and a 22.9% increase in employment. A growth rate of greater than 50% is anticipated over the next 20 years, which is being accommodated, at least in part, by adjusted municipal boundaries and increased land for residential and business development. Fiscally responsible, socially acceptable and environmentally sound waste management planning is an integral part in the long term sustainability of Barrie's growth.

Historically, the City has managed its residual waste within its boundaries and it is expected to be able to do so until at least 2024. Recognizing that this is before the end of the 2030 planning period, the City is proactively assessing its future plans. An important part of this planning process involves effectively engaging with the community to incorporate their ideas during the development of this SWM Strategy. As such, Golder Associates Ltd (Golder) has developed this Community Engagement Plan in consultation with the City to outline a recommended process for effective community engagement.

Our community engagement approach integrates community interests through the planning process by:

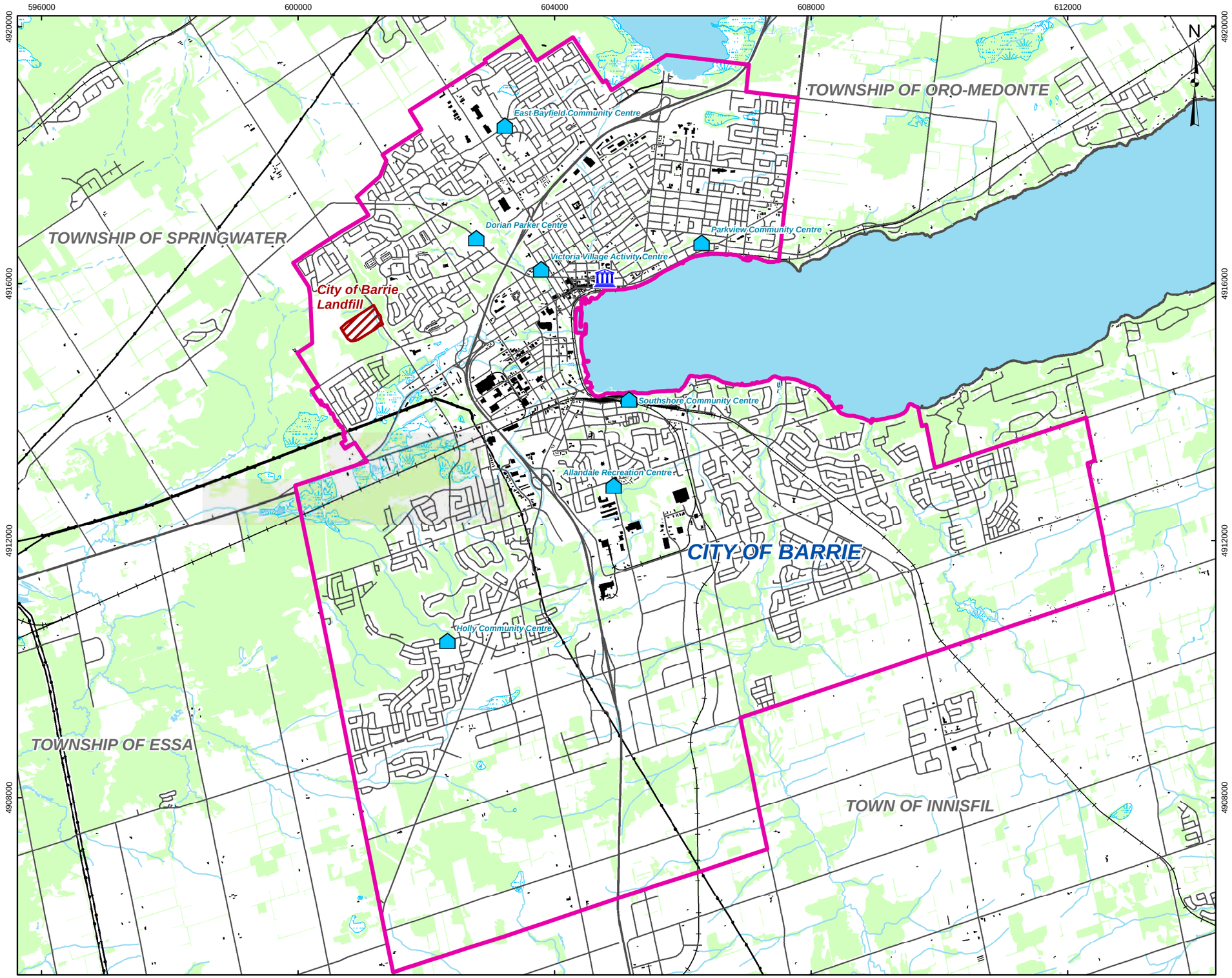
- Identifying stakeholders at the outset of the process;
- Carrying out several community engagement activities at varying levels of public participation;
- Documenting suggestions, issues and concerns; and
- Adjusting SWM Strategy development and project design to respond to community input.

In addition to developing the SWM strategy, the City has recently been approached by the Barrie Windcatchers, a private organization that is proposing the development of a 2 megawatt (MW) wind turbine on the Barrie Landfill Site. The City is completing an evaluation of the potential impacts of the construction and operation of the wind turbine on current and potential future landfill operations. This impact assessment will be presented and discussed with community members at all of the community engagement activities identified in this Plan.

2.0 OUTREACH AREA AND STAKEHOLDER IDENTIFICATION

2.1 Outreach Area

The Outreach Area is the geographic area within which community engagement activities and notifications are focused. The proposed Outreach Area for this Plan, shown in Figure 1, is bounded by the municipal borders of Barrie. Depending on the level of community interest, the Outreach Area may extend or retract as the SWM Strategy is developed. Community engagement activities are not limited to this area. Relevant agencies or interest groups located outside of the area may be consulted if they are determined to have an interest in the City's SWM Strategy or the City of Barrie itself. Additionally, the City of Barrie is considering potential municipal partners for SWM Strategy initiatives. As discussions with these municipalities progress, the Outreach Area may be extended to include stakeholders from these communities.



LEGEND

- City Hall
- Community Centre (capacity over 100)
- City of Barrie Landfill
- Roads
- Railways
- Utility Line
- Watercourse, Permanent
- Watercourse, Intermittent
- Building
- Water Area, Permanent
- Wetland, Permanent
- Wooded Areas
- Municipal Boundary
- Outreach Area

REFERENCE

Base Data - MNR NRVIS, obtained 2004, CANMAP v2006.4
Produced by Golder Associates Ltd under licence from
Ontario Ministry of Natural Resources, © Queens Printer 2008
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17

500250 0 500 1,000 1,500
SCALE 1:60,000 METRES

PROJECT
City of Barrie Waste Management Strategy

TITLE
Outreach Area

Golder Associates
Mississauga, Ontario

PROJECT NO. 10-1188-0055			SCALE AS SHOWN	REV. 0.0
DESIGN	PB	14 Nov. 2008	**FIGURE: 1**	
GIS	PB	25 Jan. 2011		
CHECK	AP	25 Jan. 2011		
REVIEW	PB	25 Jan. 2011		

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2.2 Stakeholder Identification

A stakeholder list will be developed in consultation with the City of Barrie and appended to this Plan. To ensure all stakeholders are given the opportunity to participate in the engagement process, stakeholder identification will include the following key stakeholder groups:

- Neighbouring residents and businesses (identified by the City);
- Residents of the City of Barrie (targeted through postal code mail drops);
- Self-identified stakeholders (e.g., participants at community engagement activities);
- Mayor, council and staff from the City of Barrie (identified by the City);
- Potential municipal partners;
- Relevant regulatory agencies;
- Non-governmental organizations (NGOs) and other community groups and associations; and
- Print, broadcast and new media outlets.

To ensure all pertinent stakeholder contact information is recorded and updated, a stakeholder list with appropriate contact information (e.g., name, address, phone, fax, email and affiliation) will be developed and maintained throughout the development of the SWM Strategy. A preliminary stakeholder list can be found in Appendix A. This stakeholder list will be part of the Issues Tracking and Management database describe in section 4.1 of this Plan. Golder will develop and monitor the stakeholder list with input and approval from the City. The City will be responsible for identifying neighbouring residents, businesses and City Staff and will provide this information to Golder. Self-identified stakeholders will be determined through the course of the Project. It is expected that the stakeholder list will be dynamic and will be modified and expanded throughout the Project.

3.0 COMMUNITY ENGAGEMENT ACTIVITIES

A series of community engagement activities of varying participation levels will be implemented as part of this engagement plan. Participation levels range from information dissemination through mail cards and newsletters to more interactive methods such as open houses and workshops. This section identifies each of the activities and describes their value, timeline and target audience.

3.1 Community Liaison Committee

As a first step in the engagement process, the City and Golder will develop a Community Liaison Committee (CLC). The purpose of this committee is to discuss public comments and their influence on the options for the SWM Strategy. Based on public comments, the CLC will make recommendations that the Steering Committee will use to guide their decisions on City's SWM Strategy. The City will hold four CLC meetings, each with the following mandate:

1) Initiate planning (discuss community engagement plan and corresponding activities);

2) Assess outcomes of Public Consultation Session #1 and discuss wind turbine assessment;

3) Engage the CLC in the identification of options to improve the effectiveness and efficiency of the City's waste management system; and

4) Assess outcomes of Public Consultation Session #2.

The CLC will include City and Golder staff from the Project team and representatives from the community groups, business groups, and NGOs. The following groups are recommended for inclusion in the CLC:

- Environmental Action Barrie/ Living Green;
- Greater Barrie Chamber of Commerce: Barrie Alliance for Sustainability in Economy, Environment and Energy Task Force;
- City of Barrie Environmental Advisory Committee;
- Barrie Construction Association;
- Canadian Home Builders Association – Simcoe County
- Transition Barrie;
- Innisdale Secondary School Student;
- Georgian College Student; and
- Residential representatives (multi-residential and single family unit representatives).

The organizations identified above will be invited to participate in the CLC by mail. Resident representatives will be solicited via an advertisement placed in the Barrie Examiner; interested applicants will be asked to submit a letter detailing their interest in waste management issues, and their effectiveness to be a community representative.

Golder will facilitate the formation of the CLC including the identification of possible participants. The City will be responsible for determining the final composition of the CLC. Golder will also facilitate the meetings, however it is expected that the City will be responsible for communications with participants, including sending invitations, meeting invites, and providing the venue and refreshments.

3.2 Public Consultation Sessions

The City will hold two series of Public Consultation Sessions. Golder will organize, facilitate and participate in all sessions (7 sessions in total). Figure 1 shows the location of community centres in the Outreach Area which are scheduled as venues for Series 1 activities, or may be considered as venues for future consultation activities. The table below identifies the activities to be held in each series, including a schedule and locations for Series 1 activities, and an approximate timeframe for Series 2 activities.

Table 1: Public Consultation Series

Session	Activity	Date and Time	Location
Planning	CLC Meeting	March 31, 2011, 6-8pm	Huronia Room A, City Hall
Series 1	Newsletter	April 6, 2011	N/A
	Open Houses 1	May 4, 2011, 4-8pm	Main Lobby, Holly Community Centre
	Open House 2	May 5, 2011, 4-8pm	Community Room 1, East Bayfield Community Centre
	Workshop 1	May 2, 2011, 10-3pm	Sir Robert Barry Room, City Hall
	Workshop 2	May 3, 2011, 5-9pm	Georgian International Room, Barrie Public Library
	CLC Meeting	May 26, 2011, 6-8pm	Main Hall, Allandale Recreation Centre
	CLC Meeting	June 23, 2011, 6-8pm	Main Hall, Allandale Recreation Centre
Series 2	Newsletter	August 22, 2011	N/A
	Workshops (3)	September 12 – 16, 2011	TBD
	CLC Meeting	October 13, 201, 6-8pm	TBD

After each series of consultation activities, the Steering Committee will meet to discuss how comments collected during these activities can be used to inform the development of the strategy. Steering Committee members involved in these meeting are identified in the table below.

Table 2: Proposed Steering Committee members for the development of the SWM Strategy

Name	Affiliation	Role
Caitlin Burley/Peter Brown	Golder	Public Participation Coordinator
Paul Dewaele	Golder	Senior Technical Advisor
Michael Cant	Golder	Project Director
Pam Russell	Golder	Project Manager
Amy Burke	Golder	Project Coordinator
Paul van der Werf	2cg	Diversion Alternatives Lead
Sandy Coulter	City of Barrie	Manager of Environmental Operations
Kelly Walker-Prince	City of Barrie	Environmental Investigation and Response Supervisor
Cheri Harris	City of Barrie	Communication Advisor
Eric Hodgins	City of Barrie	Growth Management Coordinator
Tracy Quann-Strasser	City of Barrie	Waste Reduction Coordinator
Katherine Sirens	City of Barrie	Waste Reduction Coordinator
Barry Thompson	City of Barrie	Energy and Environment Coordinator

City staff will ensure that the municipal council is aware of all public consultation materials, including workshop topics, open house materials and newsletters, prior to public distribution. Ensuring that council members remain informed and have an understanding of the materials will allow public questions to be answered accurately, minimize confusion, and facilitate the incorporation of public comments into the development of SWM Strategy.

3.2.1 Newsletters

Newsletters are an effective method of disseminating information to the general public. Prior to each Public Consultation Series, the City will distribute a newsletter using a Canada Post unaddressed mail drop for residents and businesses within the City of Barrie boundaries (approximately 54,500) as well as email blasts. These newsletters will highlight the various options that the City is considering for its SWM Strategy and any progress that the City has made on the development of this Strategy. The Newsletters will also be used to alert community members to upcoming community engagement activities such as open houses or opportunities to comment electronically (e.g. email or the SWM Strategy web page). Distribution of the newsletters will occur three weeks prior to the first and second series of Public Consultations series. This provides 15 business days advanced notice for the Open Houses, which meets best practice standards.

3.2.2 Newspaper Advertisements

The City currently has an agreement with the Barrie Examiner for a weekly two page spread called “This Week in Barrie” (TWIB) that runs on Thursdays. The size of the ads can vary from ¼ page to ½ page, full colour and need to be booked 9 days in advance of publication. There is also an opportunity to book editorial space in TWIB for up to a 450 word advertorial. The City will use this space to keep the community updated on the City’s progress with the development of the strategy. The space may be utilized differently throughout the course of the project to communicate new information to the public, seek participants for workshops and announce upcoming events such as Open Houses. As the project continues, an ongoing library of information about the project will be established so that City communications staff can publish information in “This Week in Barrie” if space arises. Golder and the City will be responsible for building this library.

3.2.3 Open Houses

An Open House is an interactive method of disseminating information to the general public and obtaining their feedback on the SWM Strategy. The City will host the Open Houses in a drop-in format designed to allow participants to access information on their own time. These Open Houses will focus on providing information about the preliminary development of the SWM Strategy. Materials at the Open Houses will include poster boards and information sheets.

In order to facilitate meaningful discussions during the Open Houses, discussion tables will be set up near panels on a specific theme (e.g. waste diversion strategies, waste disposal strategies, wind turbine assessment) with the purpose of initiating discussion about that specific theme. These discussion tables will have Public Participation facilitators to facilitate discussions and solicit feedback about the information presented. Feedback will be collected through a combination of comment forms and hand written notes by the facilitators. All feedback obtained will be documented and included in the Consultation Series Report. Through the use of the Survey Monkey program already owned by the City, on-line comment forms will also be provided on the City’s website

Two Open Houses will be held in May 2011; one near the current landfill site, at East Bayfield Community Centre and the other at Holly Community Centre. The Open Houses will be held on a Wednesday and Thursday from 4 p.m. to 8 p.m., allowing for ample time for attendance before, around and after the dinner hour.

As identified above, newsletters will be used to announce the Open Houses. These will be distributed via Canada Post mail drop and email blast. Additionally, a notice will be placed on the City's website and advertisements will be placed in the City's two newspapers: the Barrie Examiner and the Barrie Advance. The table below identifies the running time and distribution of the following those newspapers.

Table 3: Newspaper Information

Newspaper	Running Days	Distribution
Barrie Examiner	Daily	10,000
	Thursdays	50,000
Barrie Advance	Tuesday	50,000
	Thursday	50,000

3.2.4 Workshops

Workshops provide an opportunity for more focused discussions with targeted groups of stakeholders and allow for 'problem-solving' discussions. These workshops will engage groups of approximately 12 to 15 key stakeholders from service-user groups. These groups could include:

- Residents;
- Municipal service and infrastructure providers;
- Adjacent municipalities; and
- Community groups and non-governmental organizations.

The workshops will be held in two series, summarized in Table 4. The first series will include 2 workshops. These workshops will target the County of Simcoe, adjacent municipalities, and NGOs and community groups. The purpose of the first-series-workshops is to explore opportunities for intercommunity collaboration initiatives, and to explain and discuss the preliminary SWM Strategy development.

The second series will include three sessions. Participants will include interested parities identified during the first series of workshops and representatives from other service-user groups (identified through advertising). Each workshop in the second series will focus on a specific task (e.g. waste collection, waste diversion and waste disposal).

Table 4: Target participants and topics of discussion for workshops

Session	Date	Target	Topic
Series 1-1	May 2, 2011	The County of Simcoe and adjacent municipalities, including the City of Orillia, Towns of Innisfil and Collingwood, and the Townships of Springwater, Essa, and Oro-Medonte	Intercommunity collaboration initiatives (e.g. waste collection contracts, and waste processing facilities)
Series 1-2	May 3, 2011	NGOs and community groups (Downtown Barrie, Multi-residential Building Manager, School Boards,	Explain and discuss preliminary SWM Strategy Development and the wind turbine assessment

Session	Date	Target	Topic
		Georgian College, City of Barrie Planning and Development, City of Barrie Parks Planning, Barrie Wind Catchers and Zero Waste Simcoe)	
Series 2-1	September 12 – 16, 2011	Interested parties from first round of workshops, and additional community participants	Waste Collection
Series 2-2	September 12 – 16, 2011		Waste Diversion
Series 2-3	September 12 – 16, 2011		Waste Disposal

4.0 ISSUES IDENTIFICATION AND DOCUMENTATION

Issue identification and documentation is an essential component of the Barrie's SWM Strategy Community Engagement Process. Barrie is focused on ensuring that the SWM Strategy is developed collaboratively with community members as key stakeholders. There will be opportunities for the community to provide feedback with each community engagement session and outside of those sessions as well. Therefore all feedback obtained throughout the engagement process will be documented and considered. The methods of collecting, organizing and documenting feedback are identified below.

4.1 Staketracker

Golder will be responsible for issues identification and documentation database. Golder uses a stakeholder and issue tracking management solution called 'Staketracker'. Staketracker is a product developed by SustaiNet Software Solutions Inc and has been used by Golder to efficiently and confidently track stakeholders' contact information, questions, comments and issues. Staketracker is an industry-leading stakeholder and issue tracking database that allows our clients to minimize risk involved with stakeholder relations. Staketracker's web-based design enables information to be easily accessed. Enhanced security, data privacy and data integrity control are maintained by Golder through permission-based access roles via unique username and password combinations. Golder would be responsible for maintaining the database and tracking all questions, comments and issues raised by stakeholders. A preliminary list of issues that will be used in the database set-up can be found in Appendix B.

4.2 City of Barrie Website and New Media

The City is increasing the functionality of the municipal website. The focus of the redesign is to make the site more user-friendly, accessible, and increase functionality while continuing to provide helpful and useful information regarding the City of Barrie.

The City will develop a page devoted to the SWM Strategy. The page will allow the public to engage in the development of the strategy electronically outside of formal consultation activities. It will be used to provide updates and information on the development of the SWM Strategy, including consistent contact information

(email and telephone contact) and upcoming engagement activities. Additionally, all public materials relating to the project including reports and relevant and interesting photos will also be posted on the web page.

A comment space on the web page will provide users with the opportunity to easily make comments or ask questions. These comments will be directed to a dedicated email and entered into the issues tracking and management database. The City may also wish to consider running weekly surveys on this web page to capture community attitudes on certain waste management options.

Where possible, and upon request, the City will provide notifications, newsletters and reports to community members using email. The purpose of this initiative is to promote a paper-free eco-friendly solution to information distribution.

5.0 REPORTING

5.1 Public Consultation Session Reports

Following each series of public consultation sessions, feedback from the public will be summarized into a report, including responses to any questions, and how public suggestions will be incorporated into the SWM Strategy. These reports can be made available on the City website, and at Barrie City Hall, the Environmental Centre and the municipal library for public viewing.

5.2 Public Awareness and Communication Plan

Public awareness and communication is also critical to the overall success of implementation of the initiatives stemming from the SWM Strategy. In carrying out this Community Engagement Plan, the City and Golder will have gained valuable insight into the community's values as they pertain to Waste Management and the ways in which they prefer to receive communications. This insight will be used to develop a Public Awareness and Communications Plan to accompany the implementation of the SWM Strategy over the course of the 20 year planning period. This plan will be developed in consultation with the City and the Steering Committee, and will recommend the use of various media, including:

- Online – development of a comprehensive web page detailing strategy components, providing community access to important documents, dates and frequently-asked-questions;
- Print – newsletters explaining the new strategy, progress reports, and collection calendars;
- Radio and local television – promotional materials to inform public of the new strategy;
- Presentations – public meetings to provide additional information on the new solid waste management; and
- New Media – leverage the City's Facebook pages to promote open houses, and when new information is posted to the website

The purpose of this Public Awareness and Communications Plan will not only be to more effectively implement he SWM Strategy, but to assess its value to the community as the community grows and changes over time.

This plan will allow the City to keep the community up-to-date with its activities and assess and respond to any changes in public attitude during the implementation phase.

6.0 SUMMARY OF RESPONSIBILITIES

Table 5 provides a summary of the tasks identified in the Community Engagement Plan, the parties responsible for their implementation, and deadlines for task completion. Golder will be responsible for:

- Drafting content and layout of materials; and
- Facilitating open houses, meetings and workshops.

The City of Barrie will be responsible for:

- Review and approval of materials;
- Printing and distribution of materials; and
- Booking venues and organizing refreshments.

The City is aware that Golder is able to assist with printing and distributions of materials on a time and materials basis. Timelines in the following table allow for two iterations of review (1 draft and 1 final) and assume nine calendar days for placement of advertisements, as requested by the City.

Table 5. Summary of roles and responsibilities for each task in the community engagement plan

Task	Responsibility	Timeline
Stakeholder Identification and Database		
Provide stakeholder list	Golder (informed by Barrie)	Complete
Update and manage list and database	Golder	Ongoing
Planning (CLC Meeting #1)		
Notification: Draft content and layout	Golder	Complete
Notification: Review and approve	Barrie	Complete
Notification: Mail letters	Barrie	Complete
Notification: Place advertisement	Barrie	Complete
Facilitate CLC Meeting #1	Golder	Thursday, March 31
Series 1: Newsletter		
Draft content and layout	Golder	Complete
Review and approve	Barrie	Friday, March 25
Mailing	Barrie	Wednesday, April 6
Post on website	Barrie	Wednesday, April 6
Series 1: Open Houses		
Notification: Draft content and layout	Golder	Wednesday, March 30
Notification: Review and approve	Barrie	Friday, April 8
Notification: Place advertisement	Barrie	Thursday, April 14

Task	Responsibility	Timeline
Display posters: Draft content and layout	Golder	Wednesday, April 13
Display posters: Review and approve	Barrie	Thursday, April 21
Display posters: Print and mount	Barrie	April 26 – 29
Handouts: Draft content and layout	Golder	Wednesday, April 6
Handouts: Review and approve	Barrie	Thursday, April 21
Handouts: Print and mount	Barrie	April 26 – 29
Facilitate Open Houses	Golder	May 4 – 5
Series 1: Workshops		
Notification: Draft content and layout	Golder	Friday, March 25
Notification: Review and approve	Barrie	Friday, April 1
Notification: Mail letters	Barrie	Wednesday, April 6
Workbook: Draft content and layout	Golder	Friday, April 8
Workbook: Review and approve	Barrie	Thursday, April 21
Workbook: Print	Barrie	April 26 – 29
Facilitate Workshops	Golder	May 2 – 3
Series 1: CLC Meetings		
Notification (telephone reminders)	Barrie	Thursday, May 12
Summarize results of the Open Houses and Workshops	Golder	Thursday, May 19
Facilitate meeting	Golder	Thursday, May 26 and Thursday, June 23
Series 2: Newsletter		
Draft content and layout	Golder	Friday, July 29
Review and approve	Barrie	Friday, August 12
Mailing	Barrie	Wednesday, August 17
Post on website	Barrie	Wednesday, August 17
Series 2: Workshops		
Notification: Draft content and layout	Golder	Friday, August 12
Notification: Review and approve	Barrie	Wednesday, August 17
Notification: Mail letters	Barrie	Friday, August 19
Workbook: Draft content and layout	Golder	Wednesday, September 24
Workbook: Review and approve	Barrie	Wednesday, September 7
Workbook: Print	Barrie	Friday, September 9
Facilitate Workshops	Golder	September 13 - 14
Series 2: CLC Meeting		
Notification (telephone reminders)	Barrie	Thursday, September 29
Summarize results of Workshops	Golder	Thursday, October 6
Facilitate meeting	Golder	Thursday, October 13
Public Awareness and Communications Plan		

Task	Responsibility	Timeline
Develop plan	Golder	October 13 – November 11
Review and approve	Barrie	Friday, November 25

Report Signature Page

GOLDER ASSOCIATES LTD.

Caitlin Burley
Public Participation Specialist

Pamela Russell
Associate, Senior Waste Engineer

CB/PR/ch

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APPENDIX A

Preliminary Stakeholder List

Local Stakeholders										
First Name	**Last Name**	**Title**	**Affiliation**	**Address 1**	**Address 2**	**City**	**Postal Code**	**Province**	**Phone**	**Email**
Gail	Bazely	Treasurer	Environmental Action Barrie/Living Green (EAB)	P.O. Box 1283 Station Main		Barrie	L4M5R4	ON	(705)734-2877	
Sybil	Goruk	Executive Director	Greater Barrie Chamber of Commerce	97 Toronto Street		Barrie	L4N1V1	Ontario	(705)721-5000 x223	chexec@barriechamber.com
Craig	Stevens	Managing Director	Downtown Barrie Business Association	4 Simcoe St. E.		Barrie	L4M1A1	Ontario	(705)734-1414	info@downtownbarrie.ca
Brian	Jackson	Councillor	City of Barrie Environmental Advisory Committee						705) 739-4256	bjackson@barrie.ca
Jennifer	Robinson	Councillor	City of Barrie Environmental Advisory Committee						(705) 739-4274	jrobinson@barrie.ca
Anita	Stacey	President	Barrie Construction Association	156 Victoria Street		Barrie	L4N2J4	Ontario	(705)726-5864	bcaadmin@barrieca.com
Barry	Green	Spokesperson	The Barrie Windcatchers						(705)737-1512	info@barriewindcatchers.com
			Zero Waste Simcoe							info@zerowastesimcoe.org
			Transition Barrie							info@transitionbarrie.org
Bob	Emptage	Environmental Sustainability Committee	Georgian College	One Georgian Drive		Barrie	L4M3X9	Ontario	705-728-1968	info@transitionbarrie.org
Jo	Davies	Coordinator	Barrie Transportation Coalition	68 Parkside Dr.		Barrie	L4N1X1	Ontario	(705) 733-2736	
Brian	Gibbon		Brereton Field Naturalists Club of Barrie	P.O. Box 1804		Barrie	L4M5E1	Ontario	(705) 726-8969	
Peter	Bursztyn		Citizens For Renewable Energy	11 Kenny Crescent		Barrie	L4N6C7	Ontario	(705) 734-1577	
Lars	Verholt	Manager	reBOOT Peterborough	139 Douro Street		Peterborough	K9H1H5	Ontario	(705) 749-6814	
Janet	Skot	President and Chief Executive Officer	Royal Victoria Hospital	201 Georgian Drive		Barrie	L4M6M2	Ontario	(705) 728-9802	
Kathi	Wallace	Director of Education	Simcoe County District School Board	1170 Highway 26		Midhurst	L0L1X0	Ontario		
Michael	O'Keefe	Director of Education	Simcoe Muskoka Catholic District School Board	46 Alliance Blvd.		Barrie	L4M5K3	Ontario		
Ward	Barry	Board Member (Councillor, City of Barrie)	Lake Simcoe Region Conservation Authority	120 Bayview Parkway	Box 282	Newmarket	L3Y4X1	Ontario		
Eric	Bull	Board Member (Citizen Representative, City	Lake Simcoe Region Conservation Authority	120 Bayview Parkway	Box 282	Newmarket	L3Y4X1	Ontario		
Walter	Benotto	Chair	Nottawasaga Valley Conservation Authority	8195 8th Line		Utopia	L0M1T0	Ontario		
Brian	Jackson	Board Member	Nottawasaga Valley Conservation Authority	8195 8th Line		Utopia	L0M1T0	Ontario		
Brian	Bentz	President and Chief Executive Officer	PowerStream	161 Cityview Boulevard		Vaughan	L4H0A9	Ontario	705-722-7222	
Heljar	Hansen	President	Canadian Home Builders Association: Simcoe County	Box 305		Barrie	L4M 4T5	Ontario	(705)728-5030	office@chbasc.com
Mariane	Cancilla	Barrie municipal contact	AWARE Simcoe						(705) 737-1597	mbcancilla@hotmail.com
		Student Representative	Georgian College	One Georgian Drive		Barrie	L4M3X10	Ontario		
		Student Representative	Innisdale Secondary School	95 Little Avenue		Barrie	L4N 2Z4		(705)726-2552	

Federal Stakeholders

First Name	Last Name	Title	Affiliation	Address 1	Address 2	City	Postal Code	Province	Phone	Email
Louise	Knox	Director (Ontario Regional Office)	Canadian Environmental Assessment Agency	55 St. Clair Avenue East	Room 907	Toronto	M4T1M2	Ontario	(416) 952-1575	Louise.Knox@ceaa-acee.gc.ca
Rob	Dobos	Manager	Environment Canada	867 Lakeshore Rd.		Burlington	L7R4A6	Ontario	T (905) 336-4953	rob.dobos@ec.gc.ca
Kitty	Ma	Regional Environmental Assessment Coordinators	Health Canada	180 Queen Street West		Toronto	M5V3L7	Ontario	416- 954-2206	kitty_ma@hc-sc-gc.ca
Melanie	Lalani	Regional Environmental Assessment Coordinators	Health Canada	180 Queen Street West		Toronto	M5V3L7	Ontario	416-954-5013	Melanie_lalani@hc-sc.gc.ca
Monique	Mousseau	Regional Manager	Transport Canada	4900 Yonge Street		Toronto	M2N6A5	Ontario	(416) 952-0485	moussem@tc.gc.ca
Sara	Eddy	Fish Habitat Biologist	Fisheries and Oceans Canada	867 Lakeshore Rd.		Burlington	L7R4A6	Ontario	(905) 336-4535	Sara.Eddy@dfo-mpo.gc.ca
Don	Boswell	Senior Claims Analyst (Specific Claims Branch)	Indian & Northern Affairs Canada	10 Wellington St.		Gatineau	K1A0H4	Quebec	(819)953-1940	Boswelld@inac.gc.ca
Nicole	Cheechoo	Policy Analysis (Comprehensive Claims Branch)	Indian & Northern Affairs Canada	10 Wellington St.	8th Floor	Gatineau	K1A0H4	Quebec	(819) 956-0356	nicole.cheechoo@inac.gc.ca
Franklin	Roy	Director (Litigation Management and Resolution Branch)	Indian & Northern Affairs Canada	10 Wellington St.		Gatineau	K1A0H4	Quebec	(819) 997-3582	royf@inac.gc.ca
Gaétan	Caron	Chair/CEO	National Energy Board	444 Seventh Avenue Southwest		Calgary	T2P0X8	Alberta	403-299-2724	gaetan.caron@neb-one.gc.ca

Adjacent Municipality Stakeholders								
First Name	**Last Name**	**Title**	**Affiliation**	**Address 1**	**Address 2**	**City**	**Postal Code**	**Province**
Cal	Patterson	Mayor, Town of Wasaga Beach (Warden)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Barb	Baguley	Mayor, Town of Innisfil (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Mike	Burkett	Mayor, Township of Severn (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Basil	Clarke	Deputy Mayor, Township of Ramara (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Linda	Collins	Mayor, Township of Springwater (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Sandra	Cooper	Mayor, Town of Collingwood (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Judith	Cox	Deputy Mayor, Township of Severn (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Dan	Davidson	Deputy Mayor, Town of Innisfil (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Terry	Dowdall	Mayor, Township of Essa (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Bill	Duffy	Mayor, Township of Ramara (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Ken	Ferguson	Mayor, Township of Clearview (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
David	Foster	Deputy Mayor, Town of Wasaga Beach (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Ralph	Hough	Deputy Mayor, Township of Oro-Medonte (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Harry	Hughes	Mayor, Township of Oro-Medonte (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Rob	Keffer	Deputy Mayor, Town of Bradford West Gwillimbury (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Stephan	Kramp	Deputy Mayor, Town of Midland (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
George	Lawrence	Deputy Mayor, Township of Tiny (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Rick	Lloyd	Deputy Mayor, Town of Collingwood (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Sandie	Macdonald	Deputy Mayor, Township of Essa (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Mike	MacEachern	Mayor, Town of New Tecumseth (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Patrick	Marion	Deputy Mayor, Town of Penetanguishene (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Gerry	Marshall	Mayor, Town of Penetanguishene (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Gord	McKay	Mayor, Town of Midland (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Dan	McLean	Deputy Mayor, Township of Springwater (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Ray	Millar	Mayor, Township of Tiny (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Rick	Milne	Deputy Mayor, Town of New Tecumseth (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Bill	Rawson	Deputy Mayor, Township of Tay (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Alicia	Savage	Deputy Mayor, Township of Clearview (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Mary Small	Brett	Deputy Mayor, Township of Adjala-Tosorontio (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Tom	Walsh	Mayor, Township of Adjala-Tosorontio (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Scott	Warnock	Mayor, Township of Tay (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Doug	White	Mayor, Town of Bradford West Gwillimbury (County Council Member)	County of Simoe	1110 Highway 26 (Administration Centre)		Midhurst	L0L1X0	Ontario
Angelo	Orsi	Mayor	City of Orillia	50 Andrew Street South	Suite 300	Orillia	L3V7T5	Ontario
Barb	Baguley	Mayor	Town of Innisfil	2101 Innisfil Beach Road		Innisfil	L9S1A1	Ontario
Sandra	Cooper	Mayor	Town of Collingwood	P.O. Box 157	97 Hurontario Street	Collingwood	L9Y3Z5	Ontario
Linda	Collins	Mayor	Township of Springwater	2231 Nursery Road		Minesing	L0L1Y2	Ontario
Terry	Dowdall	Mayor	Township of Essa	5786 County Road 21		Utopia	L0M1T0	Ontario
Harry	Hughes	Mayor	Township of Oro-Medonte	148 Line 7 South		Oro	L0L 2X0	Ontario

Provincial Stakeholders

First Name	Last Name	Title	Affiliation	Address 1	Address 2	City	Postal Code	Province
Cindy	Hood	District Manager - Barrie District Office	Ministry of Environment	54 Cedar Pointe Dr	Unit 1203	Barrie	L4N5R7	Ontario
Chris	Hyde	Area Supervisor - Barrie District Office	Ministry of Environment	54 Cedar Pointe Dr	Unit 1203	Barrie	L4N5R7	Ontario
Michael	Gottheil	Executive Chair	Ontario Municipal Board	655 Bay Street	Suite 1500	Toronto	M5G1E5	Ontario
S. Wilson	Lee	Associate Chair	Ontario Municipal Board	655 Bay Street	Suite 1500	Toronto	M5G1E5	Ontario
Michael	Chan	Minister of Tourism and Culture	Ministry of Tourism and Culture	Hearst Block, 9th Floor	900 Bay Street	Toronto	M7A2E1	Ontario
Karla	Barboza	Heritage Adviser	Ministry of Tourism and Culture	401 Bay St.	Suite 1700	Toronto	M7A0A7	Ontario
Brad	Duguid	Minister of Energy	Ministry of Energy	900 Bay Street, 4th Floor	Hearst Block	Toronto	M7A2E1	Ontario
Clarence	Cheng	Sr. Policy Advisor	Ministry of Energy (Renewables Energy Unit)	77 Grenville St.	9th Floor	Toronto	M5S1B3	Ontario
Carol	Mitchell	Minister of Agriculture, Food and Rural Affairs	Ministry of Agriculture, Food and Rural Affairs	1 Stone Road West		Guelph	N1G4Y2	Ontario
Ray	Valaitis	Rural Planner (Central and North Region)	Ministry of Agriculture, Food and Rural Affairs	RR #3	95 Dundas Street	Brighton	K0K1H0	Ontario
Rick	Bartolucci	Minister of Municipal Affairs and Housing	Ministry of Municipal Affairs and Housing	777 Bay Street	17th Floor	Toronto	M5G2E5	Ontario
Victor	Doyle	Manager	Ministry of Municipal Affairs and Housing	777 Bay Street	14th Floor	Toronto	M5G2E5	Ontario
Mark	Christie	Manager	Ministry of Municipal Affairs and Housing (Central Municipal Services Office)	777 Bay Street	2nd Floor	Toronto	M5G2E5	Ontario
Linda	Jeffrey	Minister of Natural Resources	Ministry of Natural Resources	99 Wellesley St. W., Whitney Block	6th Floor, Room 6630	Toronto	M7A1W3	Ontario
Mark	Shoreman	District Manager -Midhurst District	Ministry of Natural Resources	2284 Nursery Road		Midhurst	L0L1X0	Ontario
Michael	Gravelle	Minsiter of Northern Development, Mines and Forestry	Ministry of Northern Development, Mines and Forestry	Whitney Block, 5th Floor	Room 5630- 99 Welleslet St. W.	Toronto	M7A1W3	Ontario
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Sylvia	Shedden	Director	Ministry of Health and Long-Term Care	393 University Ave.	Suite 2100	Toronto	M7A2S1	Ontario
Cynthia	Chaplin	Chair	Ontario Energy Board	2300 Yonge Street	P.O. Box 2319	Toronto	M4P1E4	Ontario
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Mark	Frawley	Director	Niagara Escarpment Commission	232 Guelph Street		Georgetown	L7G4B1	Ontario

APPENDIX B

Preliminary Issues List

Issue Category	Issue Subcategory	Issue Subject
Collection	Collection Practices	Residential Grey box Collection
		Residential Blue Box Collection
		Residential Organic Collection
		Residential Garbage Collection
		Residential Yard Waste Collection
		Multi-Residential Fibre/Paper Cart Collection
		Mulit-Residential Containers Cart Collection
		Multi-Residential Organic Collection
		Multi-Residential Garbage Collection
		Multi-Residential Yard Waste Collection
		ICI Grey Box Collection
		ICI Blue Box Collection
		ICI Organics Collection
		ICI Garbage Collection
		ICI Yard Waste Collection
		Waste Transporation (collection)
		Curbside Collection Usage
		Service Delivery (collection)
		Public Space Bins
		Special Events
		Customer Service
	Collection Impacts	Noise (collection)
		Traffic (collection)
		Environment/Sustainibility (collection)
		Odour (collection)
		Storage (collection)
		Materials Access (collection)
		Health and Safety (collection)
		Cost (collection)
Diversion	Diversion Practices	Hazardous Waste Depot
		Recycling Depot
		Electronics Depot
		Tire Depot
		Recycling Facilities
		Organics Facilities
		End Markets
		Reduction/Re-use
		Construction/Demolition Materials (diversion)
		Depot Usage
	Diversion Impacts	Health (diversion)
		Environment/Sustainibility (diversion)
		Cost (diversion)
		Odour (diversion)
Disposal	Disposal Practices	Landfill Tipping Fees
		ICI Disposal
		Waste Disposal Standards/Guidelines
		Alternative Waste Treatment technologies
		Transfer (recyclables and organics)
	Disposal Impacts	Health (disposal)
		Environment/Sustainibility (disposal)
		Odour (disposal)
		Cost (Disposal)
Overall Project	Overall Strategy	Cost (overall Strategy)
		Opposition to Strategy
		Support for Strategy
		Community Involvement in Strategy Development
		Policy and By-Laws
		Education and Awareness
		Partnership Opportunities

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.

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APPENDIX D

Consultation Series #1 Summary

July 2011

BARRIE'S SUSTAINABLE WASTE MANAGEMENT STRATEGY

Consultation Series 1 Summary

Submitted to:
Sandy Coulter, Manager, Environmental Operations
City of Barrie
70 Collier Street
Barrie, ON
L4M 4T5

REPORT

Report Number: 10-1188-0055

Distribution:

2 Copies - City of Barrie

2 Copies - Golder Associates Ltd.

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1.0 BACKGROUND

The City of Barrie (the City) is undertaking the development and implementation of a Sustainable Waste Management Strategy (the Strategy). Barrie has experienced substantial growth since the early 1990's, which is continuing according to Statistics Canada. Barrie's population increased by 19.2% between 2001 and 2006, and employment increased by 22.9%. A growth rate of greater than 50% is anticipated over the next 20 years, which is being accommodated by high density re-development, and by adjusted municipal boundaries and increased land for residential and business development. Fiscally responsible, socially acceptable and environmentally sound waste management planning is an integral part in the long term sustainability of Barrie's growth.

Historically, the City has managed residual waste within its boundaries and is estimated to be able to do so until approximately 2024. Recognizing that this is before the end of the 2030 planning period, the City is proactively assessing its future plans. An important part of this planning process involves effectively engaging with the community to incorporate their ideas and suggestions during the development of this Strategy. As such, Golder Associates Ltd (Golder) developed a Community Engagement Plan in consultation with the City which outlines a process for effective community engagement. Our community engagement approach integrates community interests through the planning process by:

Identifying stakeholders at the outset of the process;

Carrying out several community engagement activities at varying levels of public participation;

Documenting suggestions, issues and concerns; and

Adjusting the Strategy development to respond to community input.

The Community Engagement Plan includes two series of consultation activities. Consultation Series #1 was held in May 2011 and was aimed at identifying issues with the current system that should be considered in the development of the Strategy. The second series of consultation activities is scheduled for fall 2011 and will be aimed at assessing future waste management options. This Report provides a summary of the results of the Consultation Series #1 and explains how this feedback will be incorporated into the development of the Strategy.

2.0 COMMUNITY ENGAGEMENT ACTIVITIES

2.1 Community Liaison Committee

As a first step in the engagement process, the City and Golder developed a Community Liaison Committee (CLC). The purpose of this committee is to discuss public comments and their influence on the options for the Strategy. Based on public comments, the CLC makes recommendations that the Steering Committee will use to guide their decisions on the Strategy. The Steering Committee comprises of City and Golder representatives that are responsible finalizing the Strategy. The CLC includes City and Golder staff from the Project team and representatives from the community groups, business groups, and non-governmental organizations (NGOs). The following groups are represented on the CLC:

- Greater Barrie Chamber of Commerce: Barrie Alliance for Sustainability in Economy, Environment and Energy Task Force;
- Barrie Construction Association;

- Innisdale Secondary School Student;
- Georgian College Faculty and Student; and
- Residential representatives (multi-residential and single family unit representatives).

2.2 Consultation Series #1

The first series of community engagement activities was held from May 3 – 5th 2011. The table below identifies the activities held, including a schedule, locations and attendance/distribution. The City will hold another series of consultation activities in fall 2011.

Table 1: Public Consultation Series 1

Session	Activity	Date and Time	Location	Attendance/Distribution
Planning	CLC Meeting	March 31, 2011, 6-8pm	Huronia Room A, City Hall	11
Series 1	Newsletter	April 6, 2011	N/A	55,000
	Open Houses 1	May 4, 2011, 4-8pm	Main Lobby, Holly Community Centre	29
	Open House 2	May 5, 2011, 4-8pm	Community Room 1, East Bayfield Community Centre	35
	Workshop 1	May 3, 2011, 10-3pm	Sir Robert Barry Room, City Hall	14
	Workshop 2	May 3, 2011, 5-9pm	Georgian International Room, Barrie Public Library	21

2.2.1 Open Houses

Open Houses are an interactive method of disseminating information to the general public and obtaining their feedback on the Strategy. The City hosted the Open Houses in a drop-in format designed to allow participants to access information on their own time. These Open Houses focused on providing information about the preliminary development of the Strategy and obtaining feedback about current waste management practices. Materials at the Open Houses included display boards and information sheets. Copies of these materials are included in Appendix A

In order to facilitate meaningful discussions during the Open Houses, discussion tables were set up near display boards on a specific topic (e.g. waste diversion strategies, waste disposal strategies, wind turbine assessment) with the purpose of initiating discussion about that specific topic. Public participation facilitators were present to initiate discussions and solicit feedback about the information presented. Feedback was collected through a combination of comment forms and hand written notes by the facilitators. All feedback obtained has been

documented and included in Section 4.0. On-line comment forms and electronic versions of the display boards were also made available on the City's website after the Open Houses.

Two Open Houses were held on Wednesday, May 4 and Thursday, May 5 from 4 p.m. to 8 p.m., allowing for ample time for attendance before, around and after the dinner hour. They were held at a different location on each day to give attendees the option of choosing a more convenient day or location. One Open House was held near the current landfill site, at East Bayfield Community Centre and the other at Holly Community Centre.

Newsletters were used to announce the Open Houses. These were distributed via Canada Post unaddressed mail drop. Additionally, a notice was placed on the City's website and advertisements were placed in the City's two newspapers: the Barrie Examiner and the Barrie Advance.

Open House attendees were asked how they had heard about the Open Houses; the responses are shown in Figure 1. Of those that completed the comment form, 3% had seen the notice on the City of Barrie website, 14% had received a personal letter or email, 14% had seen the newspaper advertisements, 21% had received the newsletter, and 17% had learned of the open house via word of mouth. Thirty-one percent had received notice through other means of communication. Of those that selected 'other', many indicated that they participated because they were at the community centre for an athletic class.

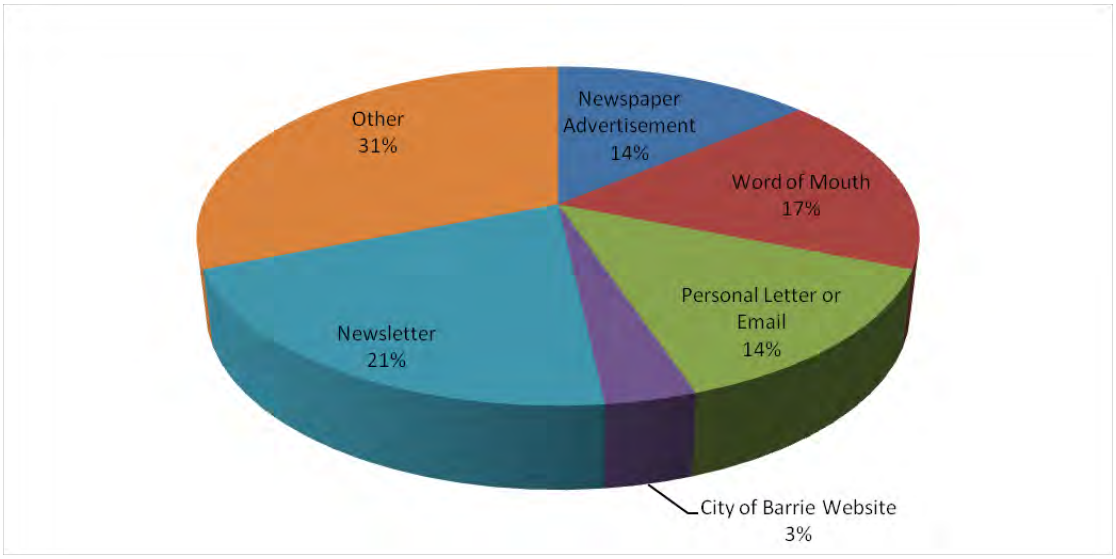

Figure 1: Responses to "How did you learn about this Open House?"

Open House attendees were asked whether the Open House satisfied their information needs; the responses are shown in Figure 2. Fifty-nine percent indicated that the Open House met their information needs, and 30% indicated their information needs were somewhat met. Seven percent of those who completed the comment form did not comment (DNC) on this question. Four percent of the respondents indicated that the Open House did not meet their information needs.

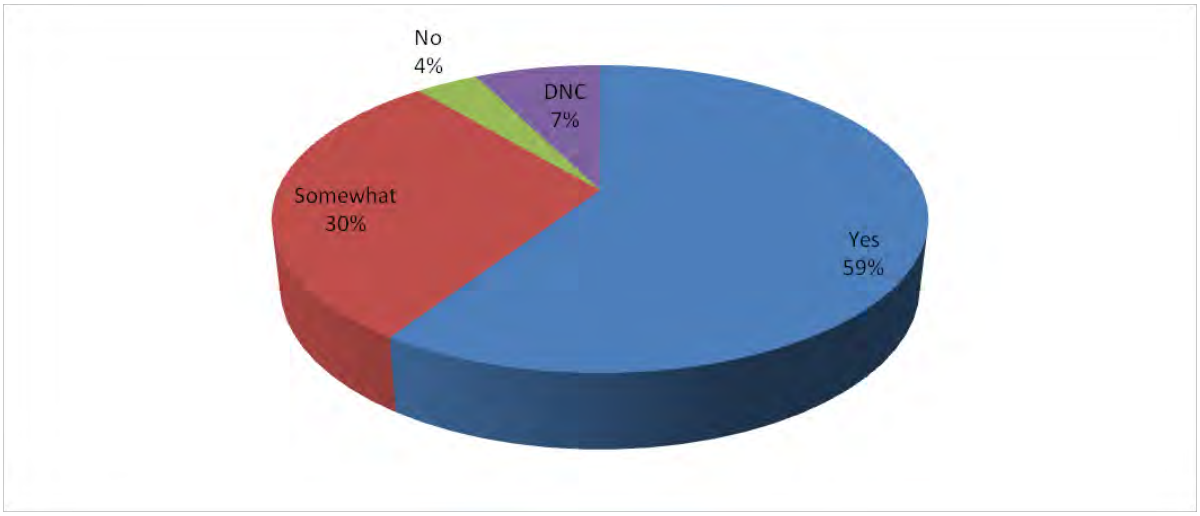

Figure 2: Responses to "Did this Open House meet your information needs?"

Open House participants were asked if their questions were answered sufficiently; the responses are shown in Figure 3. Fifty-nine percent indicated that their questions were answered, stating that staff were very helpful and approachable. Eighteen percent indicated their answers were somewhat met. Seven percent of the respondents indicated that their questions were not answered; one respondent commented that staff could not provide dates on which previous changes to the waste management system had been implemented. Another respondent stated “they seem to have their minds made up” with respect to decisions about the Strategy. Nineteen percent of those who completed comment forms did not comment on this question.

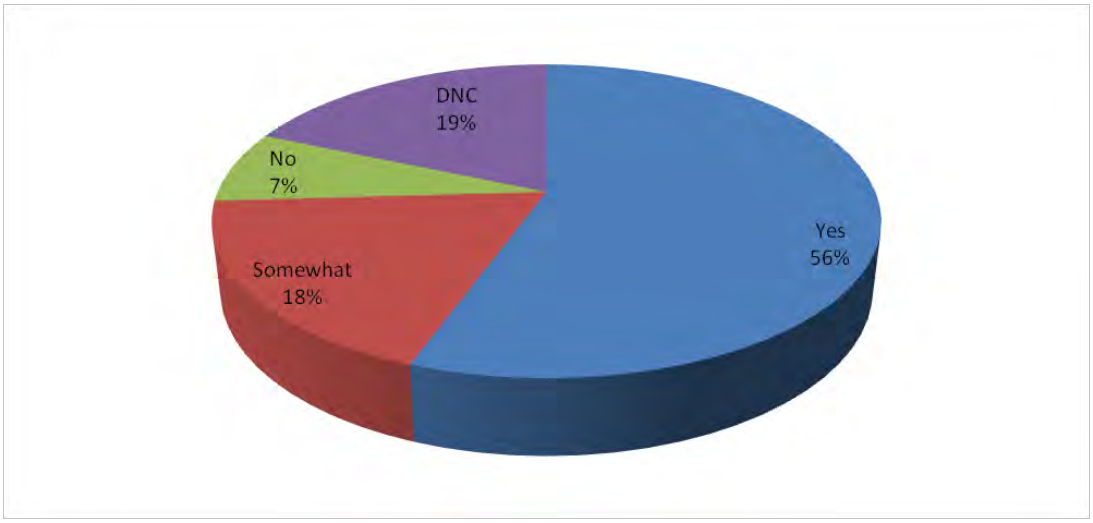

Figure 3: Responses to "If you asked a question, did the representative from the City of Barrie, or Golder Associates answer your questions sufficiently?"

2.2.2 Workshops

Workshops provide an opportunity for more focused discussions with targeted groups of stakeholders and allow for 'problem-solving' discussions.

The first series included two workshops. The purpose of the first-series-workshops was to explore opportunities for intercommunity collaboration initiatives, and to explain and discuss the preliminary Strategy development. These workshops targeted the following groups:

- Adjacent municipalities and First Nations communities; and
- NGOs and community groups.

The presentation and materials from the workshops are included as Appendix B. The second series will involve three workshops. Participants will include interested parities identified during the first series of workshops and representatives from other service-user groups (identified through advertising). Each workshop in the second series will focus on a specific task (e.g. waste collection, waste diversion and waste disposal).

3.0 METHODS FOR ISSUES IDENTIFICATION

Issues identification and documentation is an essential component of the Strategy and the Community Engagement Process. The City is focused on ensuring that the Strategy is developed collaboratively with community members as key stakeholders. There were opportunities for the community to provide feedback with each community engagement session and outside of the sessions as well. All feedback obtained throughout the engagement process will be documented and considered. The methods of collecting, documenting and organizing feedback gathered during Consultation Series #1 are outlined in the following sections.

3.1 Feedback methods

During Consultation Series #1, public comments were collected through the following methods:

- Open House comment forms;
- Open House display boards;
- Workshop Workbooks;
- Online surveys;
- Email;
- Grade 11 case study;
- Display boards at community events.

A summary of the number of comments received for each of these methods is provided in the table below.

Table 2: Number of public submissions for each communication methods.

Communication method	Comment Period	Number
Email	April 20, 2011 – May 9, 2011	14
Mailed Open House Comment Booklet	May 16, 2011 – May 17, 2011	3
Open House 1 Comment Booklet	May 4, 2011	14
Open House 2 Comment Booklet	May 5, 2011	13
Online Survey	May 3, 2011 – May 16, 2011	9
Community Workshop Workbook	May 3, 2011	15
Feedback at Community Events		
Grade 11 Case Study	June 28, 2011	22

3.2 StakeTracker®

Golder is responsible for issues identification and documentation. Golder uses a stakeholder and issue tracking management solution called StakeTracker®. StakeTracker® is a product developed by SustaiNet Software Solutions Inc and has been used by Golder to efficiently and confidently track stakeholders' contact information, questions, comments and issues. Golder is responsible for maintaining the database and tracking all questions, comments and issues raised by stakeholders.

4.0 ISSUES IDENTIFICATION

The feedback received during Consultation Series #1 is an important part of a baseline review of the City's current waste management system. The waste management system can be broken down into three principal elements:

- Collection;
- Diversion; and
- Disposal.

During consultation activities the community was asked for their feedback on each of these elements. Comments were then organized by issues identified within collection, diversion, and disposal, or issues relating to the overall Strategy. Comments were thoroughly reviewed by the CLC, and key issues and recommendations made by the pubic were summarized. The following section includes a summary of comments, and the key issues as identified by the CLC. A complete record of public comments received for each issue can also be found in Appendix C. Please note that many comments addressed more than one issue, and therefore the same comment may appear in multiple issue tables.

4.1 Collection

The following figure provides a summary of issues raised by the public which related to collection practices. The most common issue was residential organics collection, followed by residential garbage collection, and other recyclables collection.

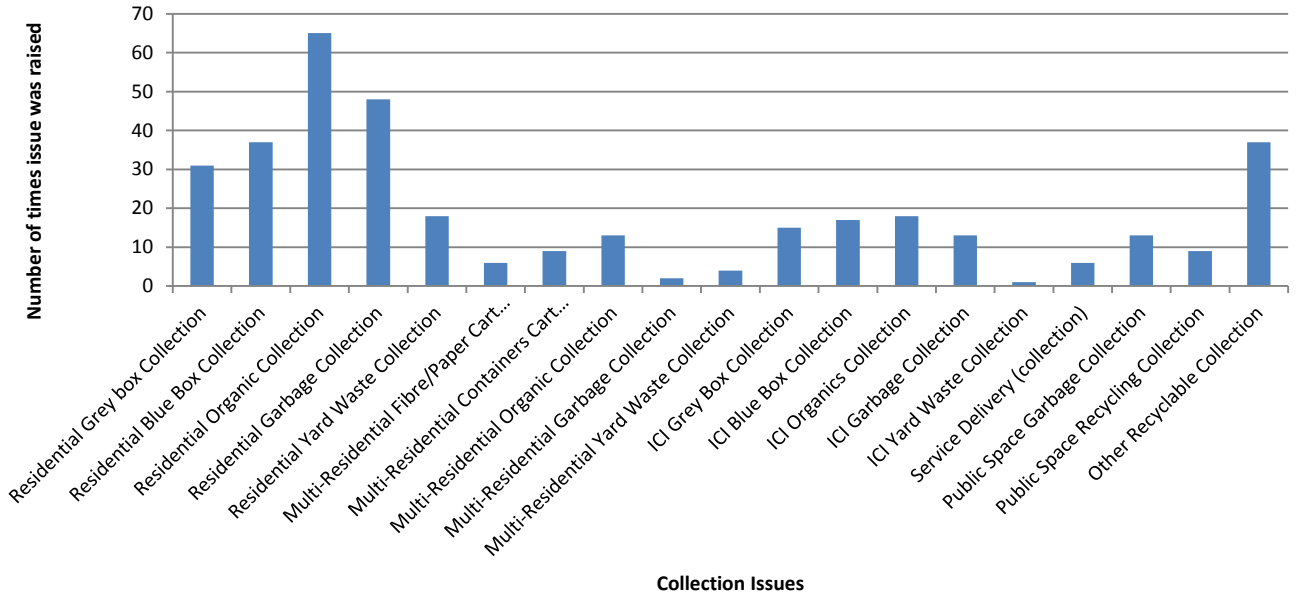

Figure 4: Issues identified for collection practices.

The majority of respondents (59%) were satisfied with garbage collection services currently offered by the City (Figure 5). Following review of the public's comments the CLC identified that it would be acceptable to reduce the frequency of garbage collection to biweekly, if organics and Blue Box materials were collected on a weekly basis, and frequency was increased at certain seasons (i.e. Christmas). It was also recommended that the City consider moving to a 4-day collection cycle to prevent collection day moving to Saturday when there is a holiday.

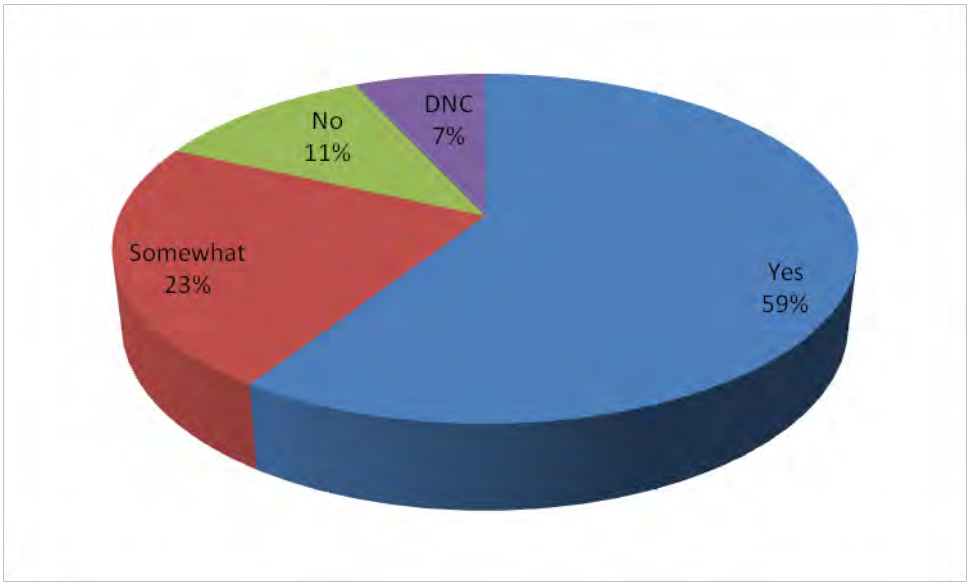

Figure 5: Responses to "Are you satisfied with current garbage collection services? (Note:DNC=Did not comment)

Nearly all respondents participate in the curbside recycling program offered in Barrie (96%). Sixty percent of respondents were satisfied with the recycling collection services offered. The CLC identified that a key issue with the recycling program was public confusion surrounding the existing programs, and recommended that a re-launch of recycling collection programs with increased educational materials. Recommendations for future recycling collection include standardization of recycling systems both locally (including home, school and businesses), and regionally (with County of Simcoe and other neighbouring municipalities) to avoid confusion. The CLC also identified the importance of consistent branding of recycling bins throughout the City to allow for visual recognition (i.e. colouring of bins), so that program is easy for people to use. Another key issue identified by the community is the need for enforcement of the curbside recycling program. The CLC recommended that a "Rewards and Recognition" program be established to encourage those residents who do recycle.

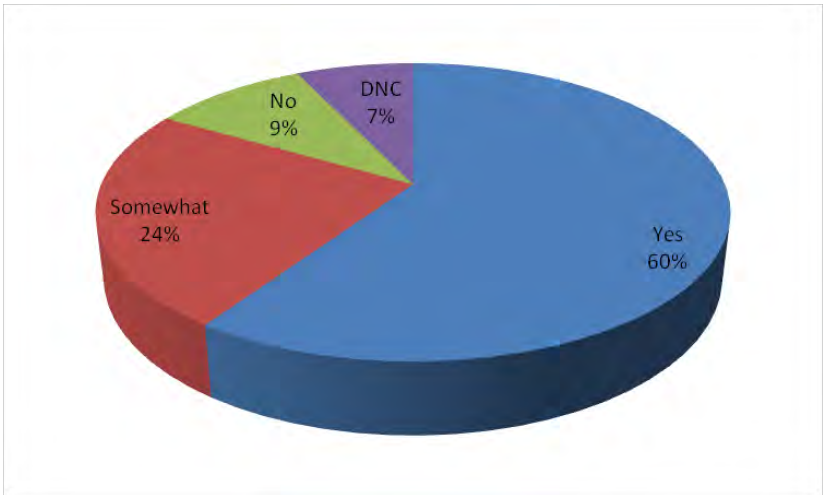

Figure 6: Responses to "Are you satisfied with current recycling collection services offered"

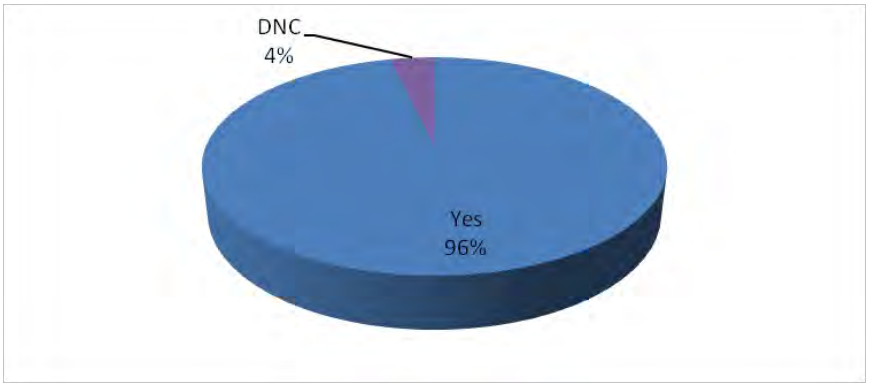

Figure 7: Open House responses to "Do you currently separate recyclables from your garbage"

Fifty-two percent of respondents are satisfied with the Green Bin program (Figure 8). The community was asked to clarify what obstacles prevented them from using their Green Bin at home.

Key Issues

- Potential odours and pests identified as main reasons for not using Green Bin;
- Enforcement of Green Bin program needed.

Recommendations

- Standardize organics system both locally (including home, school and businesses), and regionally (with County of Simcoe and other neighbouring municipalities);
- Re-launch Green Bin program, including distribution of sample liners (i.e. certified compostable bags) and factsheets on how to prevent odours and pests; and

Develop Green Bin program for multi-residential buildings or partner with Toronto for Mechanical Biological Treatment facility.

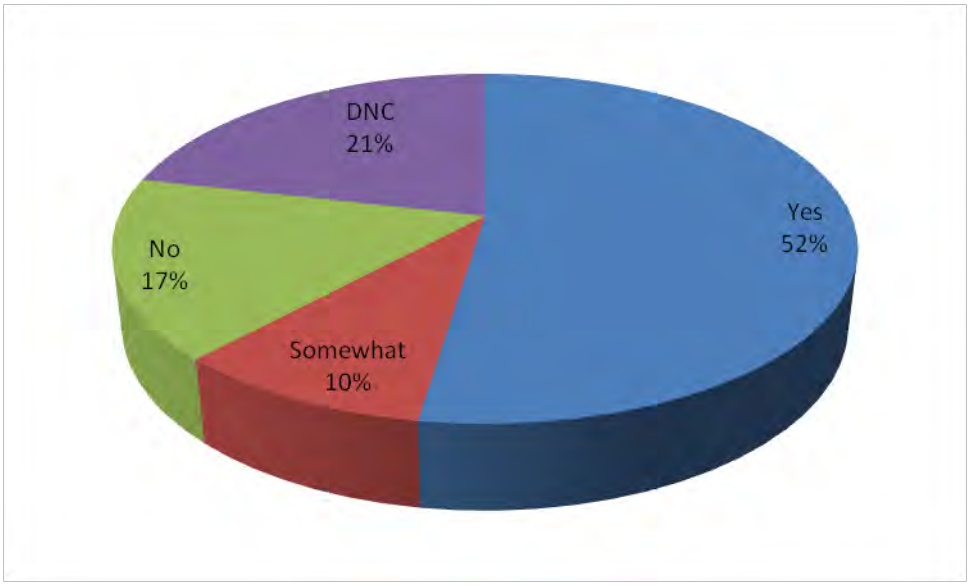

Figure 8: Responses to "Are you satisfied with Green Bin collection services currently offered?"

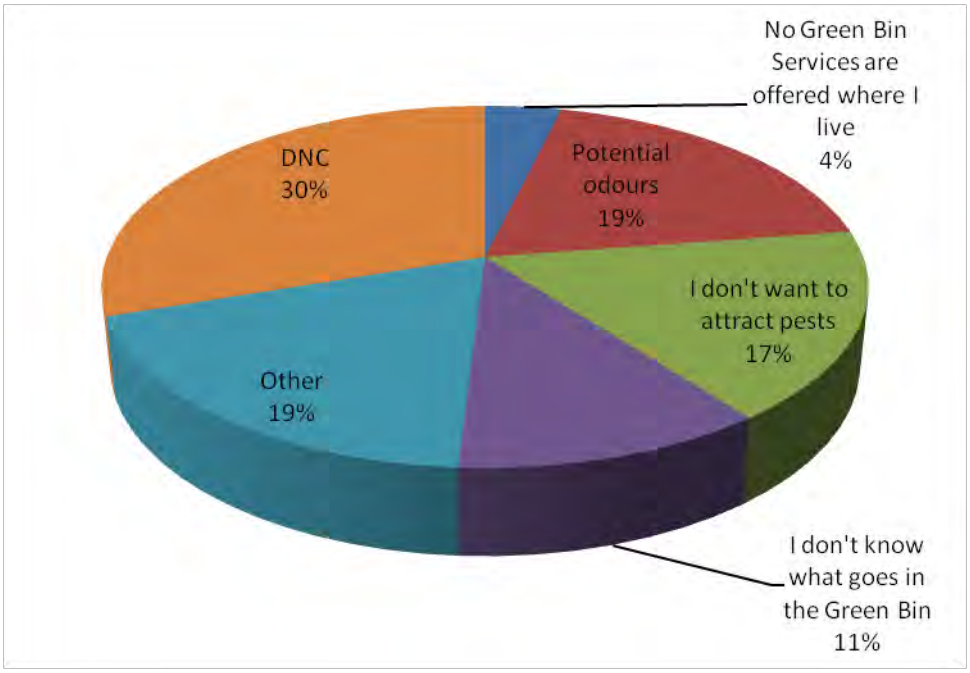

Figure 9: Responses to "What are some obstacles that prevent you from using the Green Bin?"

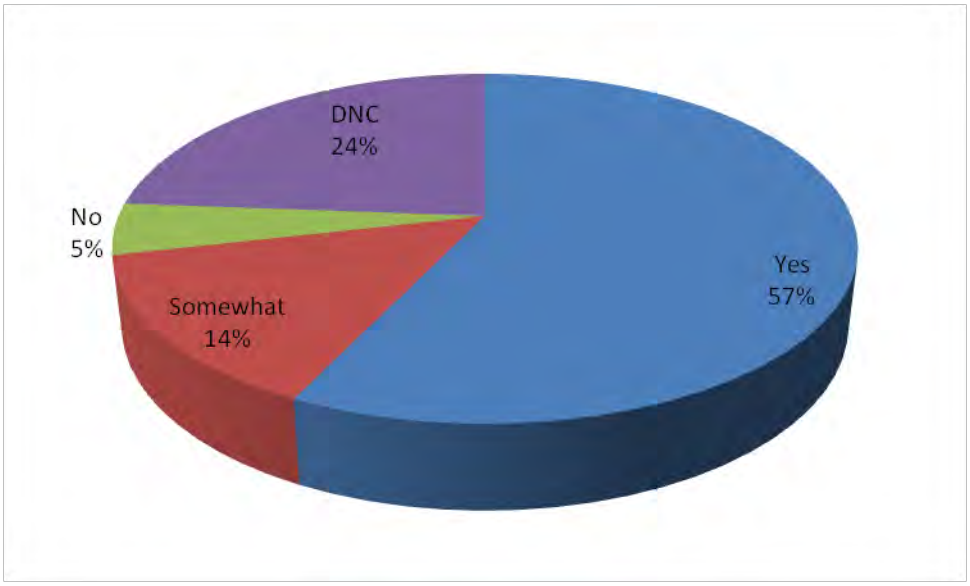

Figure 10: Responses to "Are you satisfied with the Yard Waste collection services currently offered?"

4.2 Diversion

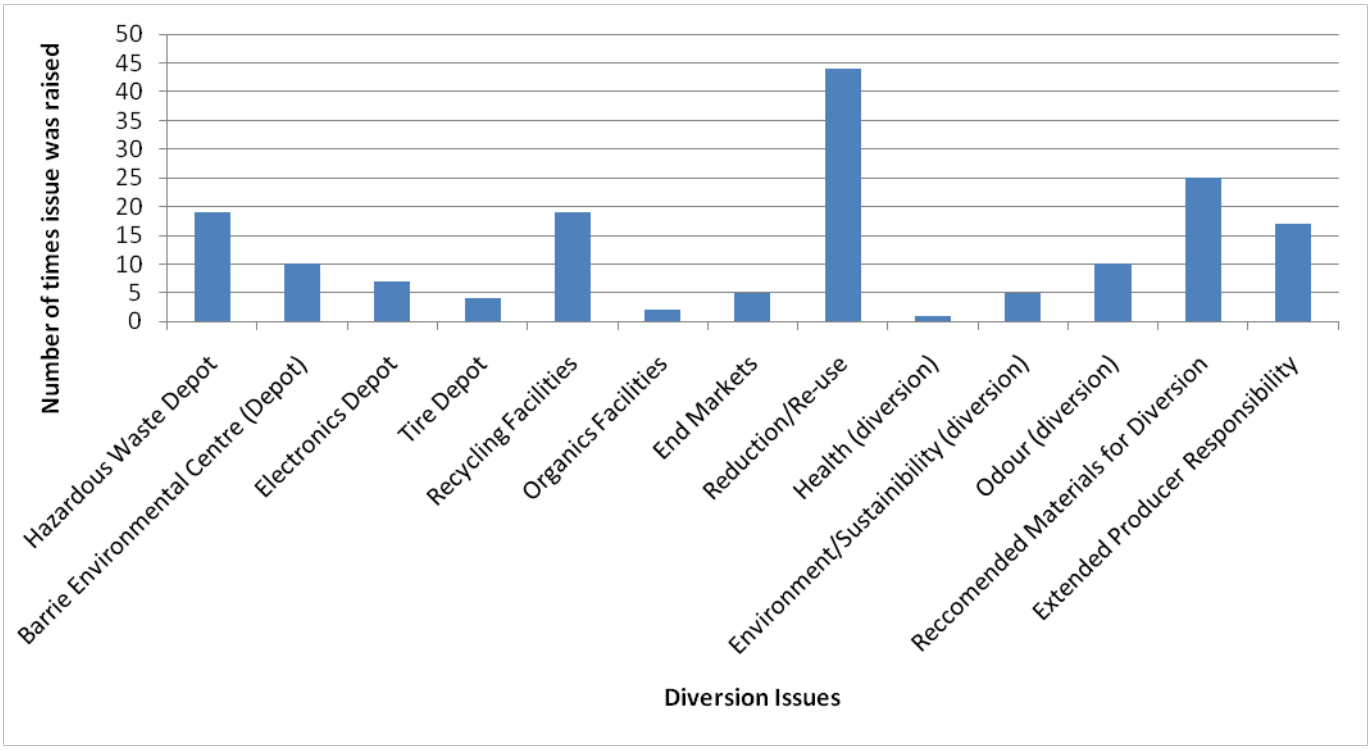

Figure 11: Overview of diversion issues raised during consultation series 1

4.2.1 Current Practices for the Other Materials (tires, metal, electronics, old corrugated cardboard, household hazardous waste)

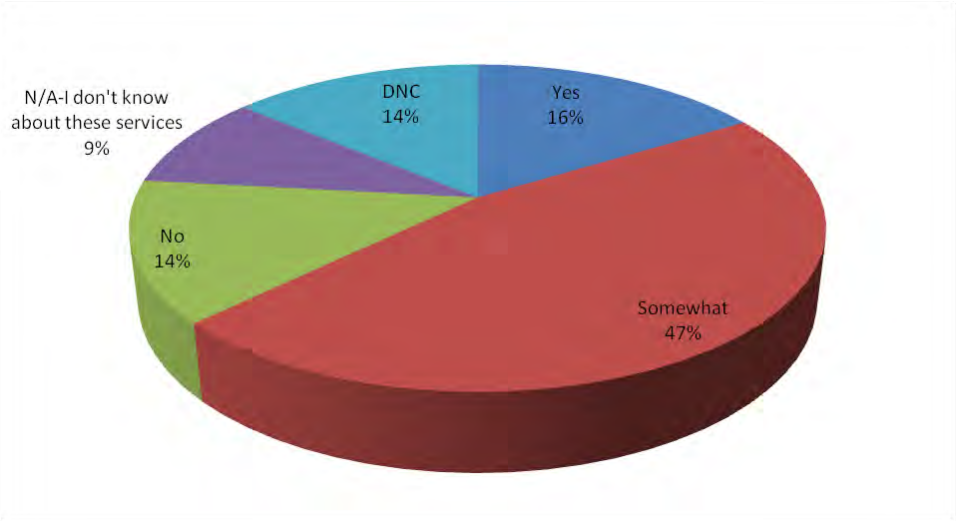

Figure 12: Responses to "Are you satisfied with the services being offered for the collection of the other recyclable materials (hazardous waste, electronics, scrap tires, scrap metal, OCC)?

4.2.2 Reduction/Re-use

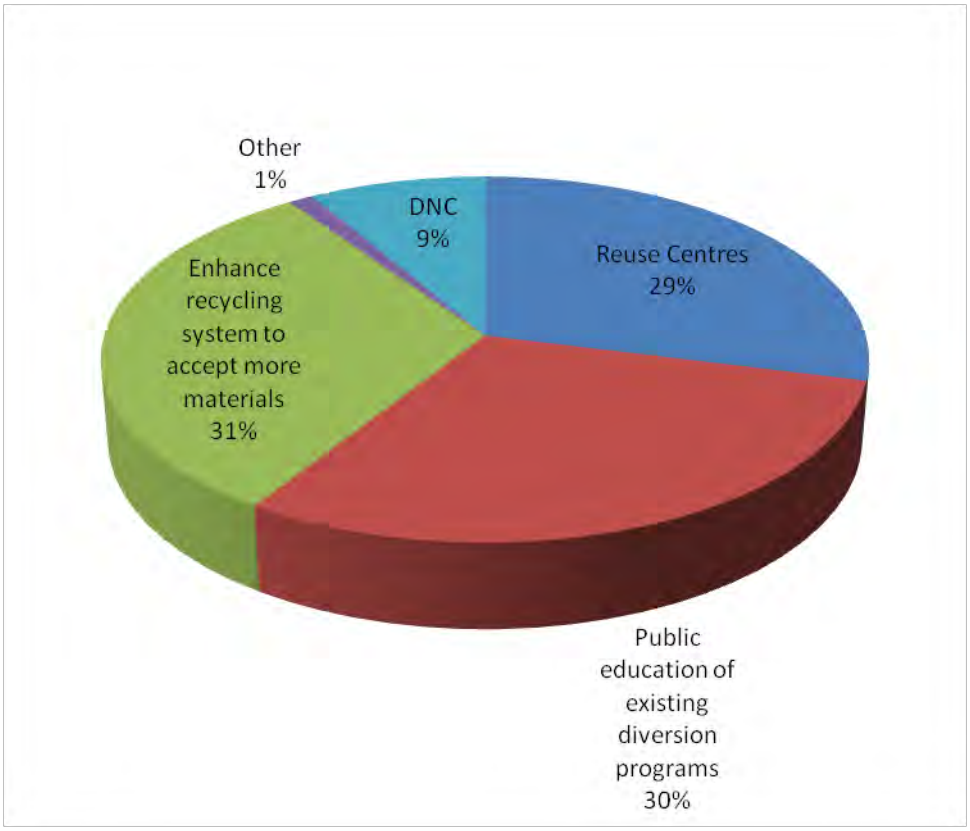

Figure 13: Responses to "Please check any initiatives you think would encourage waste reuse and waste reduction in the future"

4.3 Disposal

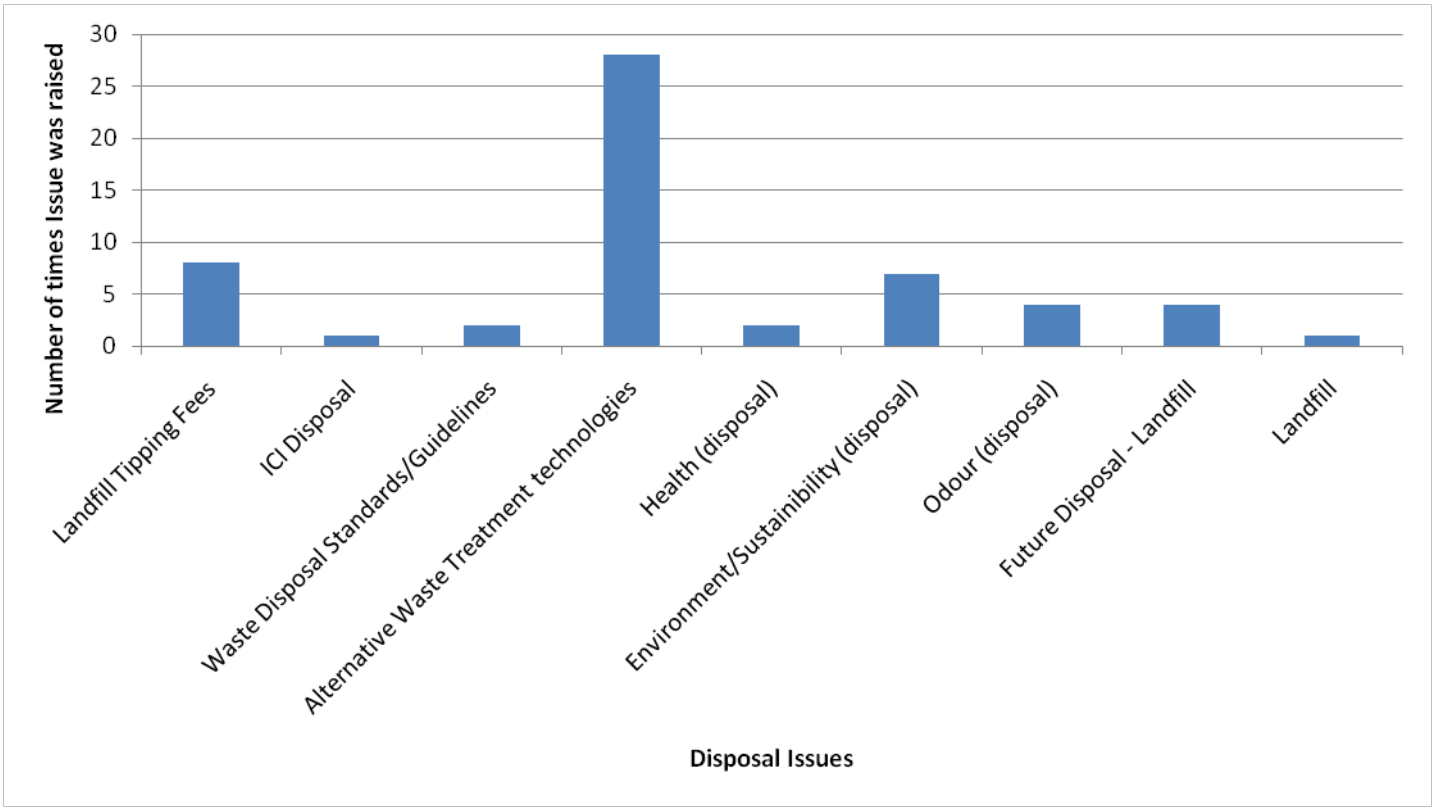

Figure 14:Overview of issues relating to disposal

4.3.1 Future Waste Disposal

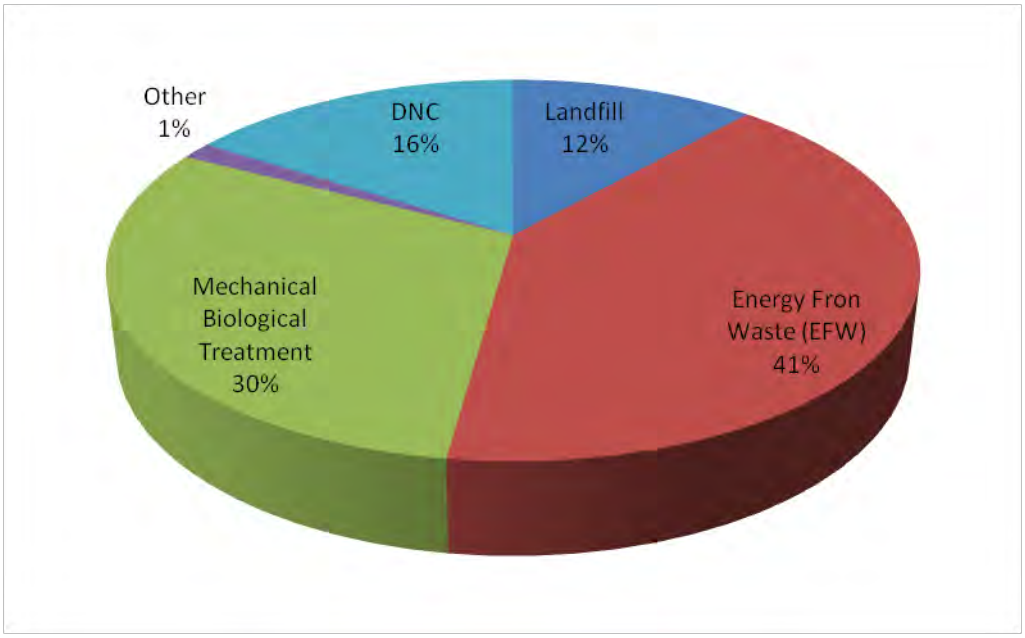

Figure 15: Responses to "In the future, there will be the need to dispose of wastes that are not recyclable or compostable. Which options should be considered (Please check all that apply)?

4.4 Overall Strategy

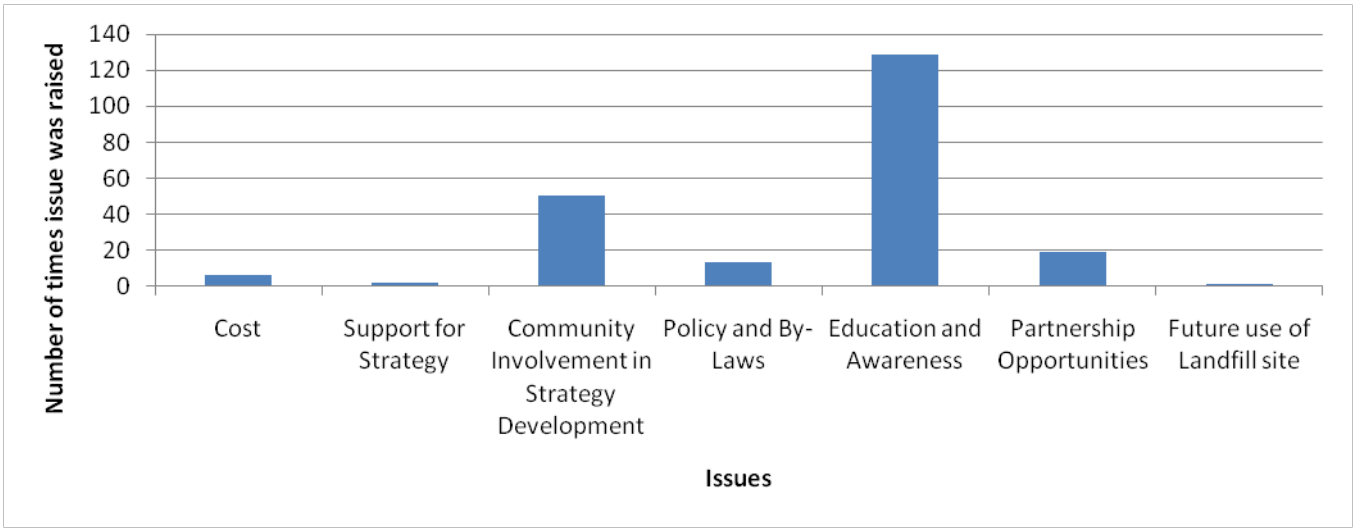

Figure 16: Overview of issues relating to the Strategy overall

Report Signature Page

GOLDER ASSOCIATES LTD.

Pamela Russell, P. Eng.
Senior Waste Engineer

Michael Cant
Principal, Canadian Waste Sector Leader

PM/MC/td

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APPENDIX A

Open House Materials

Barrie's sustainable waste management strategy

Welcome

Thank you very much for attending our Open House for the development of Barrie's Sustainable Waste Management Strategy

Wednesday May 4, 2011
4pm - 8pm
Holly Community Centre

Today We Will

1. Provide you with information about the Strategy
2. Get your feedback on current waste management practices
3. Take your suggestions for future practices
4. Provide you with information about the wind turbine feasibility study

The City of BARRIE

Barrie's sustainable waste management strategy

Welcome

Thank you very much for attending our Open House for the development of Barrie's Sustainable Waste Management Strategy

Thursday May 5, 2011
4pm - 8pm
East Bayfield Community Centre

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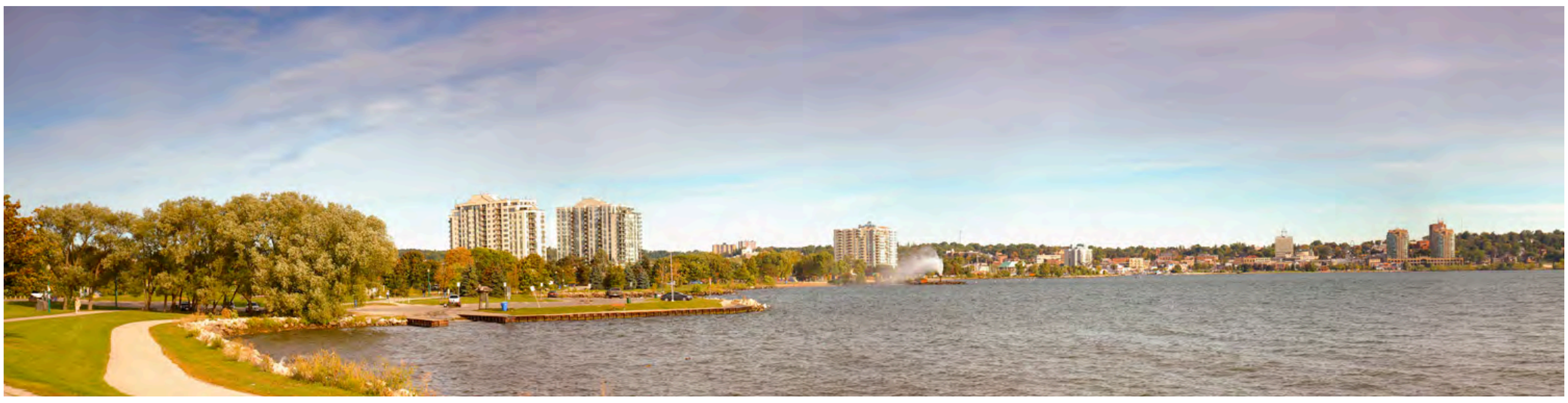
The City of BARRIE

Barrie's sustainable waste management strategy

The Strategy



Barrie is one of the fastest growing cities in Canada

- the population doubled from 1991-2006
- additional 50% growth is expected over the next 20 years

Ongoing growth means challenges for existing infrastructure

- the Landfill is expected to reach capacity in 2024

In response to this ongoing population increase, there is a need for sustainable long-term waste management planning

As a solution, Barrie is undertaking the development of a Sustainable Waste Management Strategy "the Strategy", which will guide waste management practices for the next 20 years

The Strategy will provide planning for each of the three areas of waste management provided by the City of Barrie (**Collection, Disposal** and **Diversion**)

The City of BARRIE

Barrie's sustainable waste management strategy

Vision and Priorities

Strategy Mission Statement

"To develop a community strategy for sustainable waste management that supports current and future service expectations in a manner that is fiscally responsible, socially acceptable and environmentally sound"

The Strategy will be a community-based plan, with goals, policies and a vision focusing on issues related to Barrie as a whole

Priorities for the development of the Strategy include:

- Community engagement
- Review of Barrie's collection, diversion, and disposal systems
- Integration of current and future waste policies, plans and directions
- Exploring opportunities for sustainable change, including:
    - Collection, diversion and disposal system improvements
    - Program funding opportunities
    - Partnerships with neighboring municipalities
    - Development of an action plan

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Barrie's sustainable waste management strategy

Planning Process

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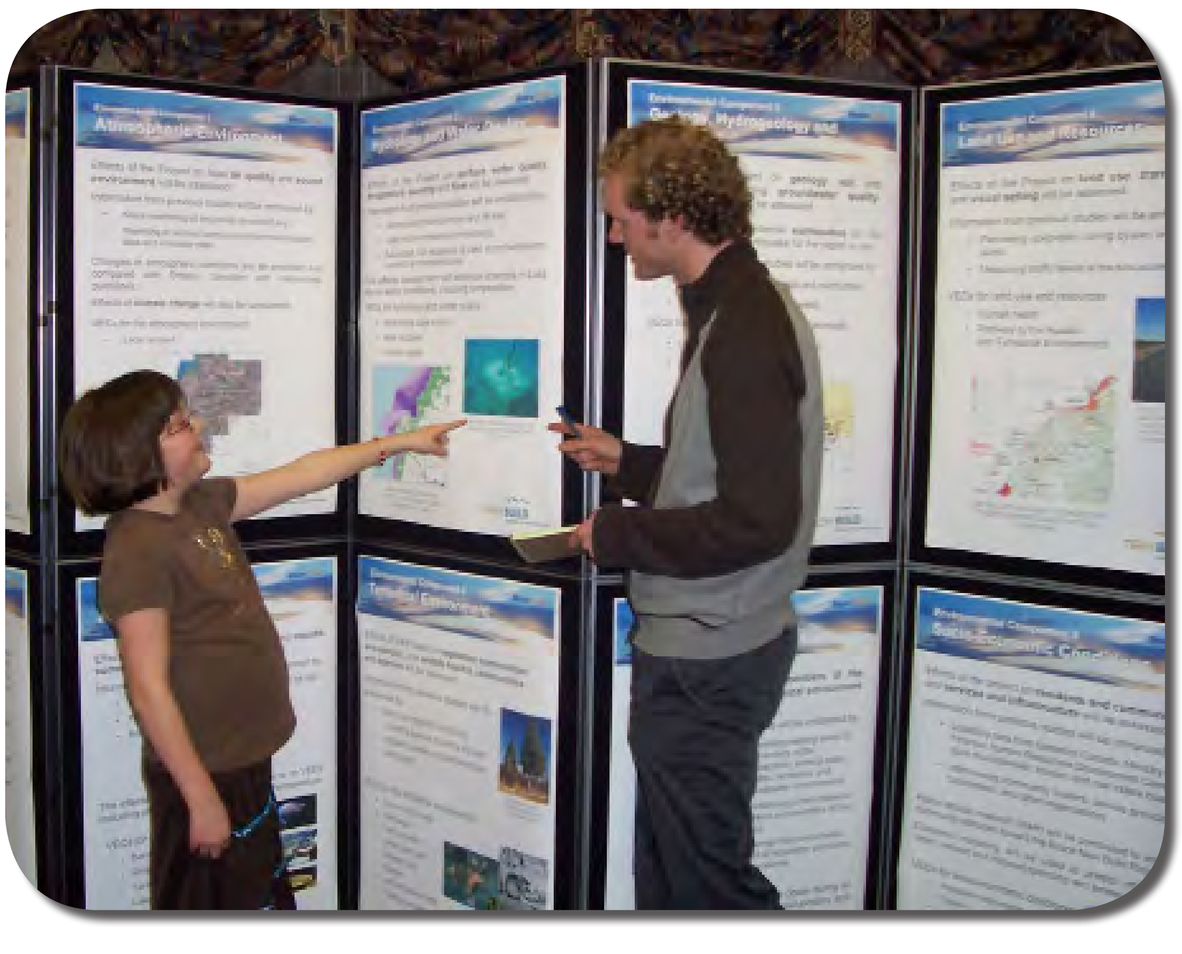
Barrie's sustainable waste management strategy

Engaging the Community



Barrie is committed to working collaboratively with the community to develop the Strategy

To ensure waste management is sustainable, community input is needed to:

- Identify issues
- Assess options
- Develop an action plan

We are planning to engage with the community throughout the Strategy planning process using:

- Open Houses
- Workshops
- Community Liaison Committee
- Website
- Social Media

Please share your ideas today!

- Talk to a City or Golder representative
- Participate at a discussion table
- Post your ideas on the interactive posters
- Fill out a comment form

The City of BARRIE

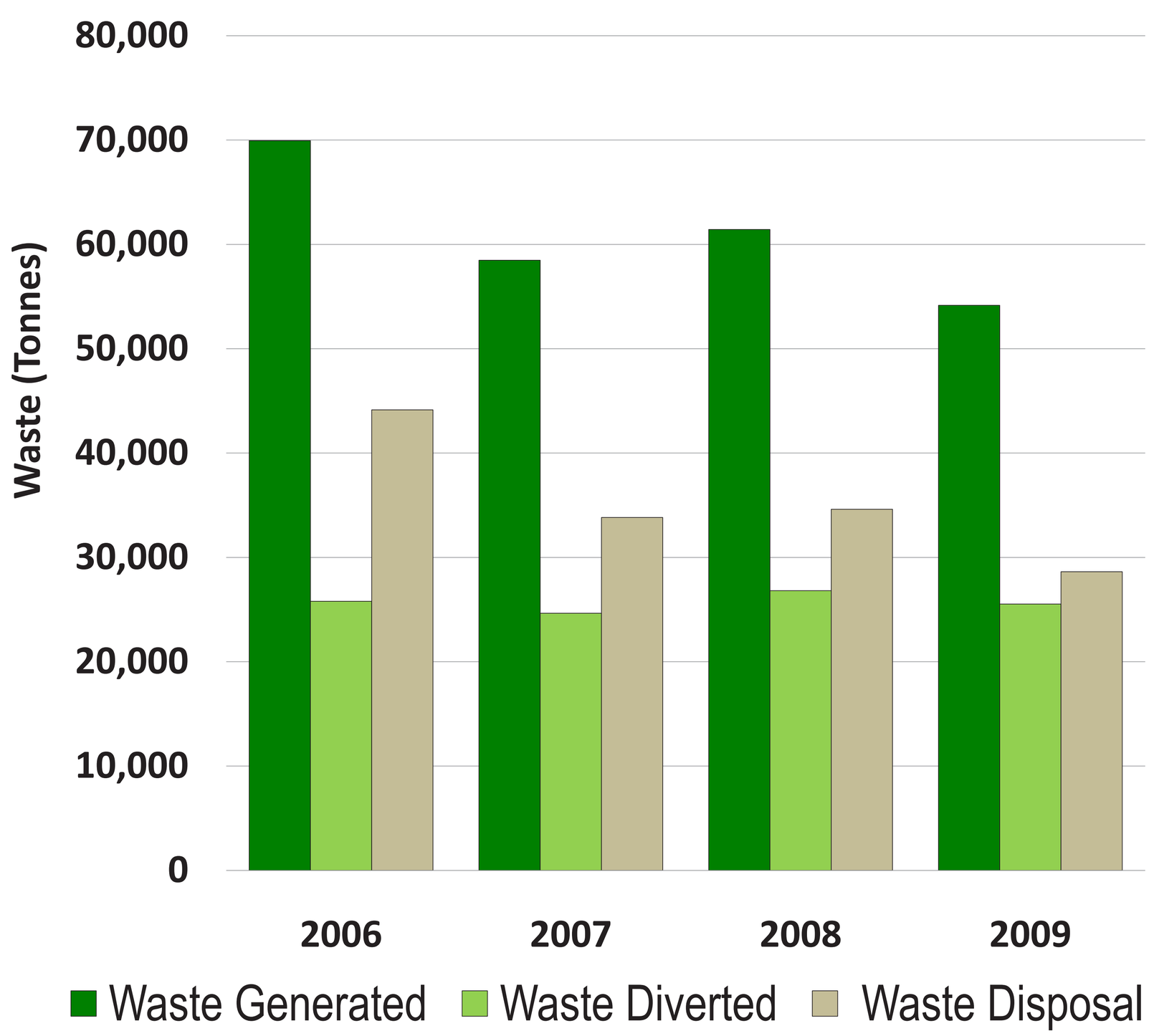
Barrie's sustainable waste management strategy

Current Waste Services

Barrie has full responsibility for providing waste management services to its residents, including:

- Collection
- Diversion
- Disposal

Graph shows the waste generated from 2006 to 2009, and the amounts disposed and diverted from the Barrie Landfill each year



Services and facilities are located at the Barrie Environmental Centre (BEC) include:

- The Landfill
- A leaf and yard waste composting facility
- A Municipal Hazardous and Special Waste (MHSW) depot
- A public drop off area for diversion and disposal

Some waste services are also contracted to private companies, including:

- Garbage and organics (green bin and yard waste) collection
- Green bin transfer and composting
- Recycling pick-up and transfer

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Barrie's sustainable waste management strategy

Future Waste System

Future Considerations and Challenges

- Barrie's current and future population growth rate

  Develop waste system that is flexible to accommodate changes in quantities and types of waste and recyclables

- Housing intensification and higher density development

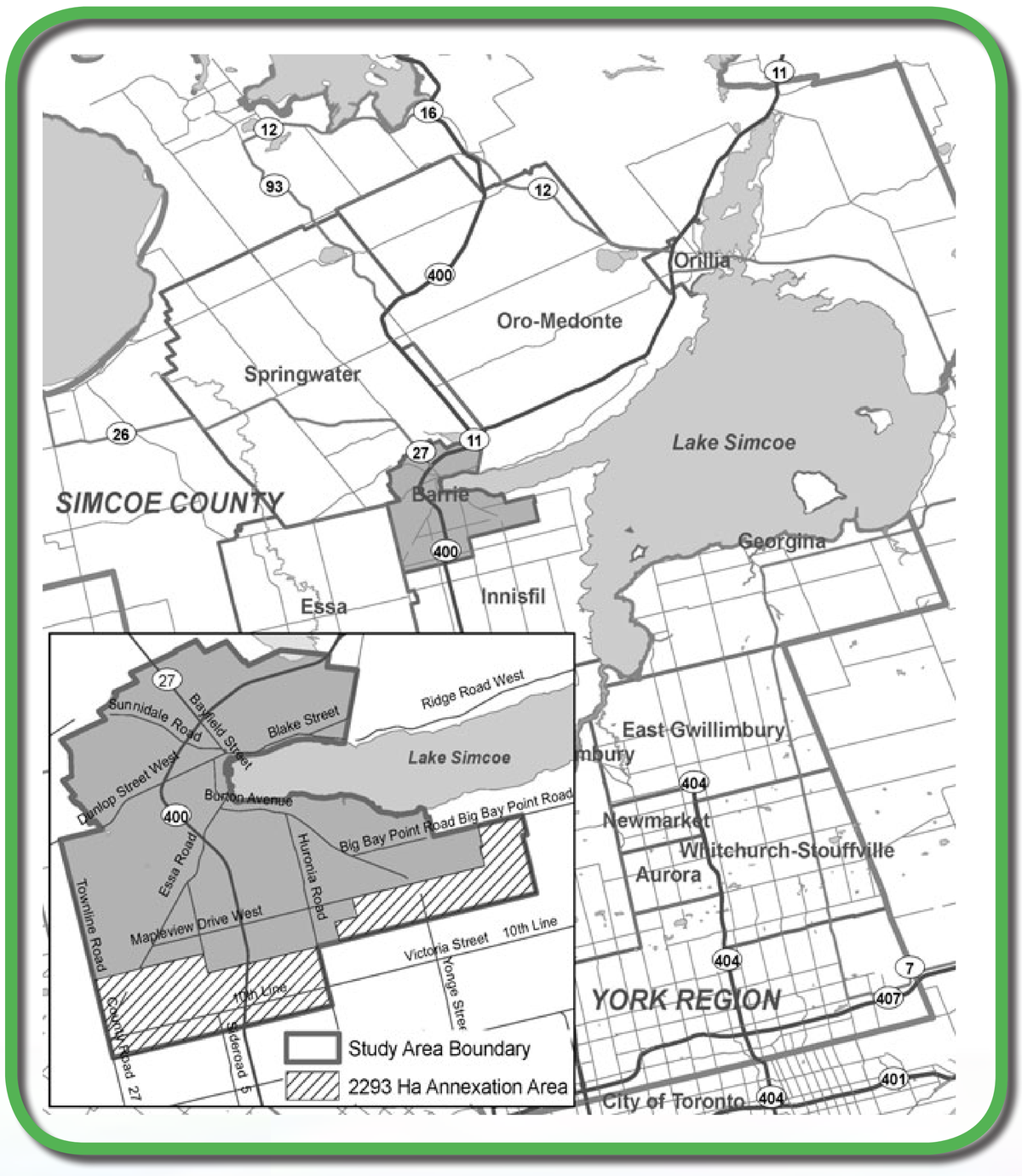
  Challenge to develop infrastructure and encourage diversion practices in multi-residential buildings

- Expected high level of economic growth, including major office and institutional development

  Challenge to manage waste and recyclables from the Industrial, Commercial and Institutional (IC&I) sector

- The Barrie boundary has been expanded to include 2,293 hectares of land that was part of the Town of Innisfil

  Incorporate this area into waste management planning, ensuring waste management service is inclusive and accessible for all residents



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Barrie's sustainable waste management strategy

Current Collection Practices

Single-family households

44,306 households with curbside collection

- 1 container garbage/week
- Weekly green bin organics
- Weekly blue and grey box recyclables
- Unlimited leaf and yard waste
    - Weekly: Jan, April-June, Sept-Nov
    - Biweekly: July-Aug, Dec
    - No collection: Feb-March

Multi-residential apartments

9,720 units with curbside collection

- 2 containers garbage/week/unit
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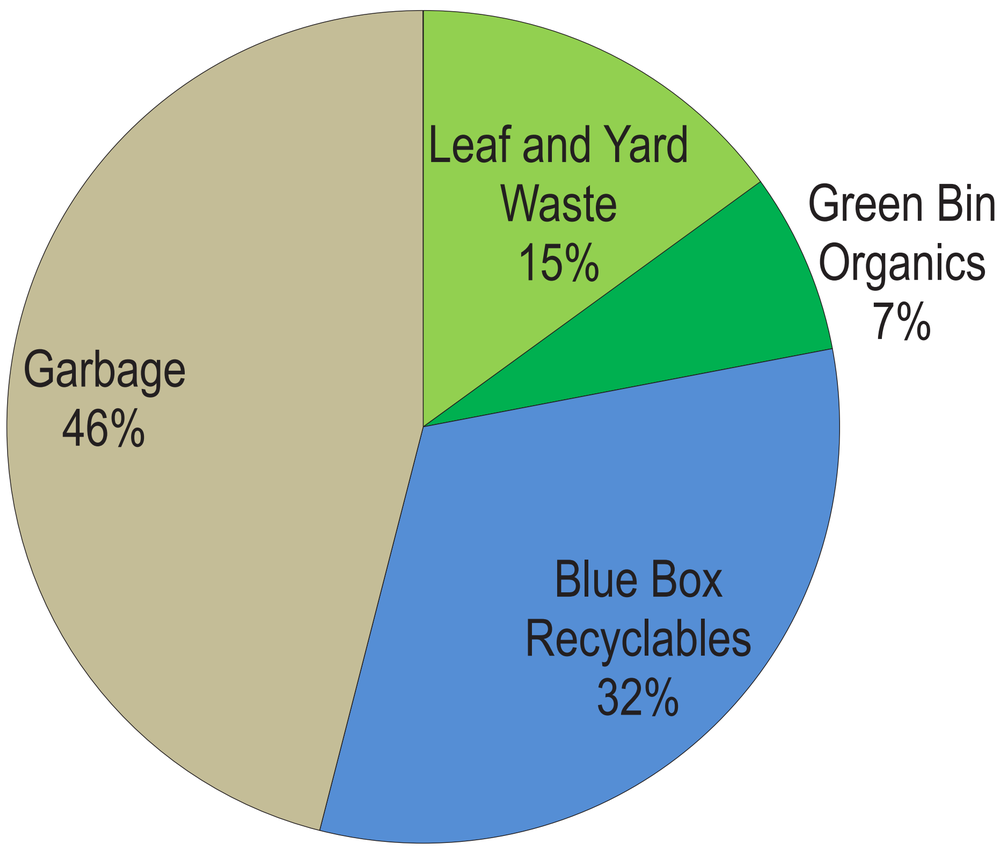

Residential waste collected curbside in 2009, including single and multi family households.

Industrial Commercial and Institutional (IC&I)

- 10 containers garbage/week, plus tagged containers
- Weekly yard waste and recycling
- No green bin service
- Downtown Business Improvement Area (BIA)
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Public spaces

212 permanent bins, 36 seasonal bins

- Weekly pick-up of recycling and garbage

Special events

377 carts available for special events

- Privately managed recycling collection within 24 hours
- City managed garbage collection within 24 hours

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Barrie's sustainable waste management strategy

Residential Collection Practices

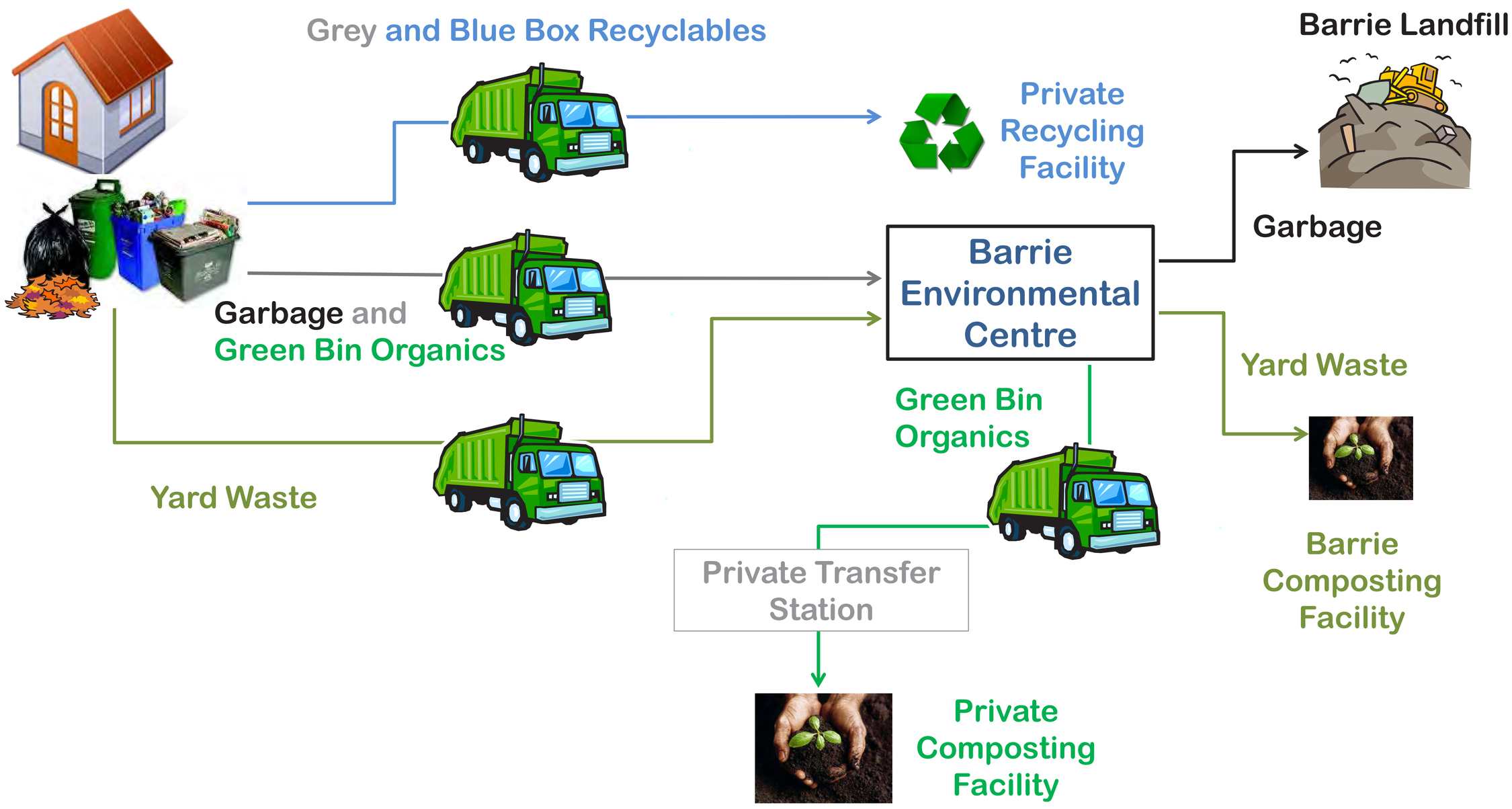

Diagram shows the collection of **Recyclables**, **Organics**, and **Garbage** from homes in Barrie.

- Collection services are provided by a private contractor
- **Blue Box Recyclables** and **Green Bin Organics** processing is done by private contractors
- **Yard Waste** and **Garbage** are processed by the City at the Barrie Environmental Centre

The Strategy will consider partnerships with neighbouring municipalities, to allow the following possible benefits:

- Opportunity for joint waste and recycling collection
- Potential for cost savings and higher efficiency of collection services

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Barrie's sustainable waste management strategy

Collection

Your Comments and Suggestions

We want to know what you think about our current collection practices
Please post your comments and suggestions here

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Barrie's sustainable waste management strategy

Current Disposal Practices

Garbage Disposal

Garbage is disposed of at the Barrie Environmental Centre

In 2024, Barrie's Landfill is expected to reach capacity - this is only 13 years away

- Dependant on diversion rate and population growth

The Strategy will incorporate, evaluate and recommend sustainable options for the future disposal of Barrie's waste

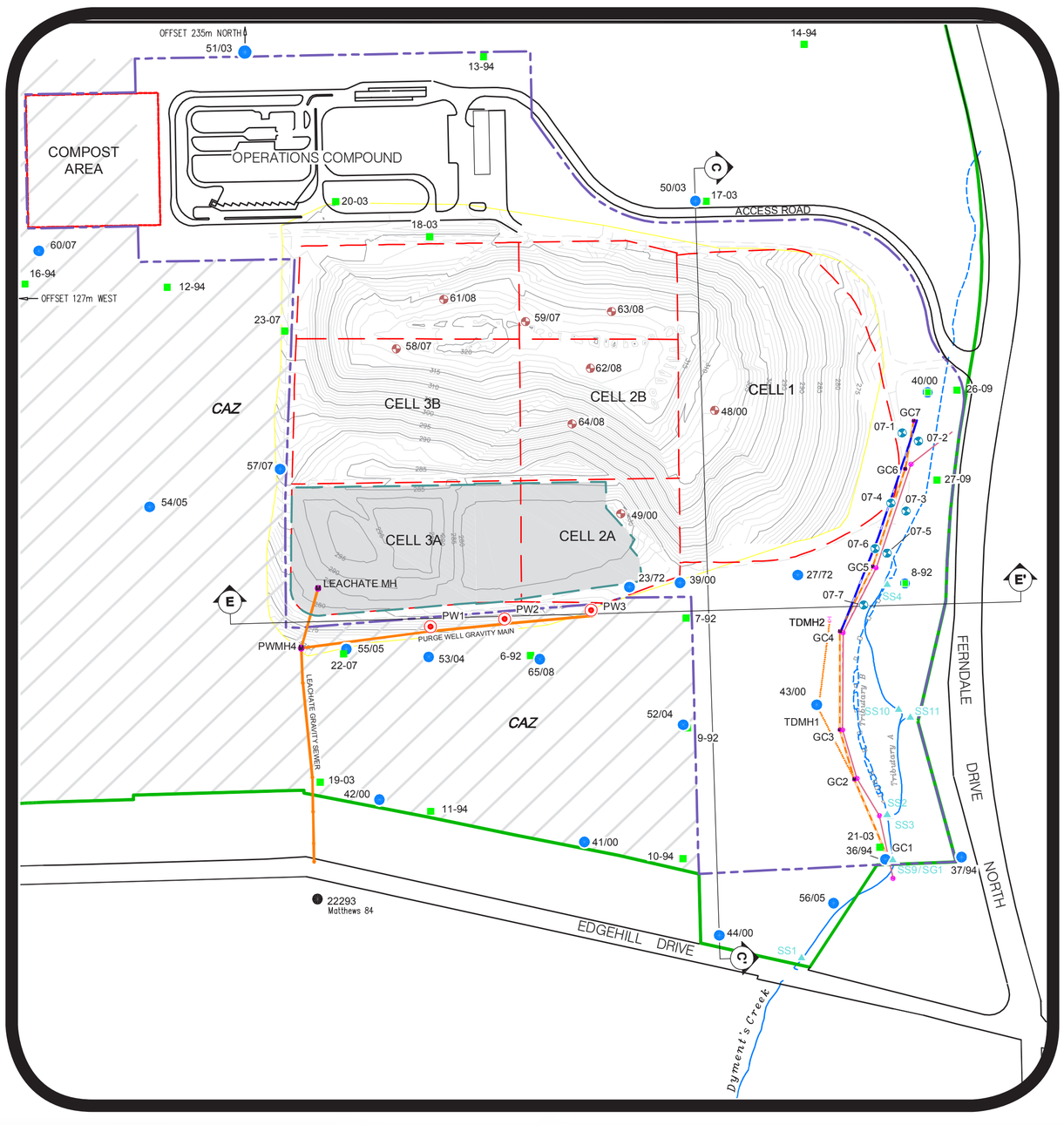
The Barrie Environmental Centre

Located at 272 Ferndale Drive North

- Owned and operated by the City
- Operations began in mid 1960's
- 37.2 Hectares

The Barrie Environmental Centre includes:

- Three waste cells
- The Composting Facility
- Scale house
- Waste segregation area
- Environmental Centre
- MHSW Depot
- Leachate disposal station
- Storm Water Management Facility



Map of the Barrie Environmental Centre

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Barrie's sustainable waste management strategy

Current Disposal Practices

The Barrie Landfill Re-engineering

The Barrie Landfill is currently undergoing re-engineering to protect groundwater and the environment

The Landfill Re-engineering Project includes:

- Excavation and screening of existing waste
- Recompacting the waste in the landfill to increase capacity
- Installing a new liner underneath the landfill cells
- Installing a gas collection system to reduce greenhouse gas emissions

Excavation and screening of waste

Liner installation in one of the landfill cells

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Barrie's sustainable waste management strategy

Current Disposal Practices

Disposal Rates at the Barrie Landfill for Solid Waste, Recyclables, and Organics
Effective May 2011

Description	Tipping Fees / Other Rates
Solid Waste	
Garbage - Basic Rate	1 free residential load under 100 kg per household $10 minimum charge for additional loads under 100 kg $122 per tonne
Garbage Tags	$2 each
Commercial Garbage Rate	$10 minimum charge for loads under 100 kg Loads 100 kg and over $122/tonne
Hard to Handle (e.g. asbestos)	$240/tonne
Recycling	
Tires off the rim	No charge
Tires < 17" on the rim	$8
Tires 17" < 19" on the rim	$12
Tires >19" on the rim	$34
Blue/Grey Box Materials	No charge
Pick up of recycling boxes	No charge
Cardboard	No charge
Organics	
Residential Yard Waste	Loads under 100 kg no charge, loads 100 kg and over $55.70/tonne
Commercial Brush and Yard Waste	$6 minimum charge, loads 100 kg and over $55.70/tonne
Request delivery of organics bins	No charge
Static Backyard Composters	$30
Rotating Backyard Composters	$50
Finished Compost - Large load up to 1.5 cubic metres	$8
Finished Compost - Small load up to 0.3 cubic metres	$5
Finished Compost - Commercial and Non resident	$15/tonne, $10 minimum

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Barrie's sustainable waste management strategy

Potential Future Disposal Options

For the foreseeable future, there will be the need to dispose of wastes that are not recyclable or compostable. The Strategy will assess options, and develop an action plan for future disposal.

Here are some examples of the options that may be considered :

Landfill

Mechanical Biological Treatment facility

Landfill

Waste is buried between layers of earth

Energy From Waste (EFW)

EFW is the recovery of energy from waste to generate electricity

Examples of EFW include:

- Gasification
- Fermentation
- Incineration

Possible Benefits:

- Green, renewable energy source
- Cost effective
- Reduce quantity of waste landfilled

Mechanical Biological Treatment (MBT)

MBT uses a combination of mechanical and biological processes to recover recyclables and organics

Possible Benefits:

- Reduce quantity of waste landfilled
- Reduce environmental impacts of waste landfilled
- Produce raw material for industry (biogas, methanol)

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Barrie's sustainable waste management strategy

Disposal

Your Comments and Suggestions

How should we manage residual waste in the future?
Please post your comments and suggestions here

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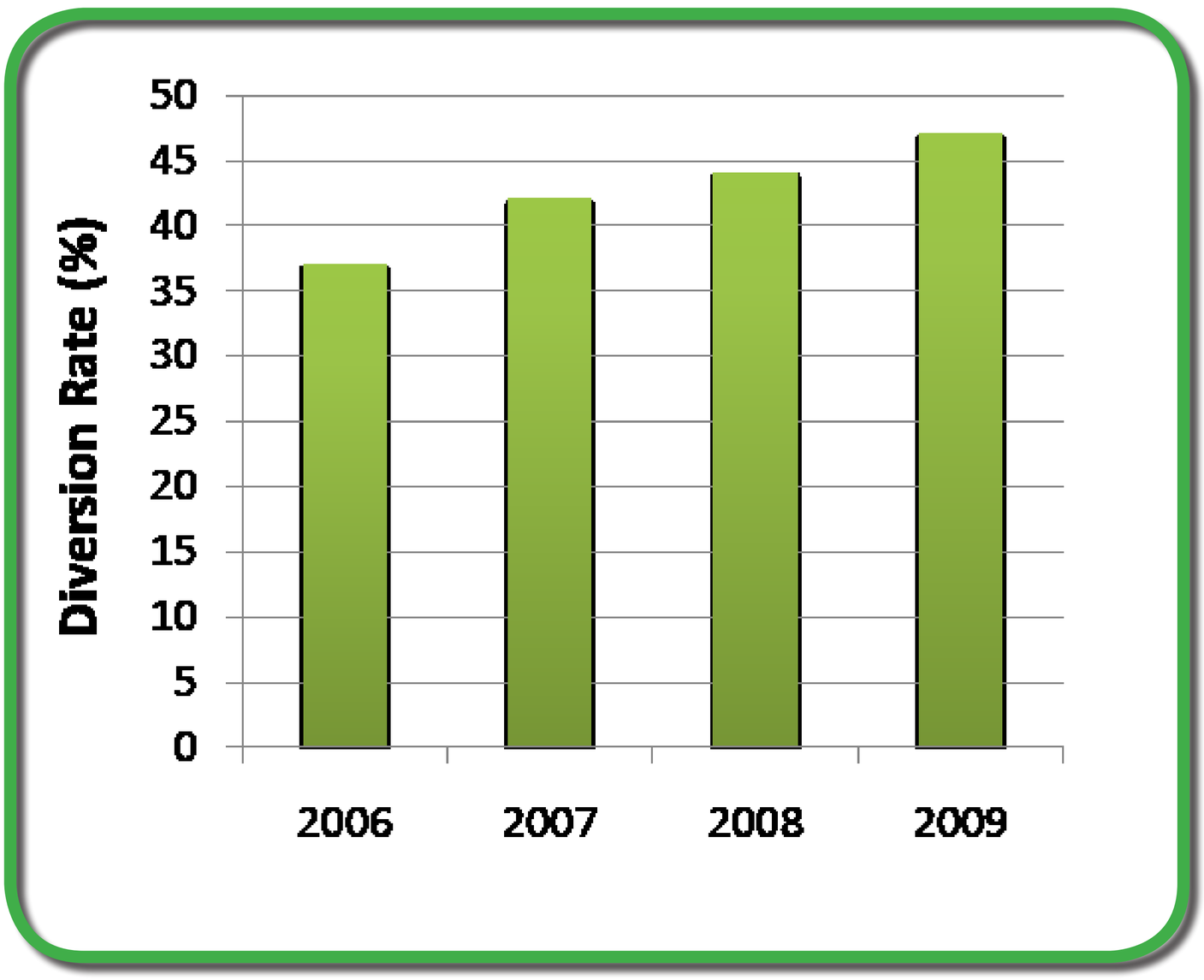
Barrie's sustainable waste management strategy

Current Diversion Practices



Diversion is the removal of organics and recyclables from waste

In 2010, Barrie's waste diversion rate was 48%

This means that of all the waste collected, just over half ended up in the landfill

An important part of the Strategy will be finding ways to divert more waste from the landfill

Grey Box Accepted Materials

- Telephone books, paperback books, and magazines
- All household paper
- Boxboard and egg cartons
- Cardboard boxes
- Newspaper

Blue Box Accepted Materials

- Rigid plastic containers and packaging #1-7 (including styrene trays and lids, and excluding film plastic)
- Packing Styrofoam (no "peanuts")
- Glass bottles and jars
- Food and beverage cans
- Aluminum trays, pie plates and foil
- Tetra Pak boxes, juice and milk cartons
- Spiral cardboard cans

Residential Recycling

- Curbside collection of Blue and Grey box materials
- Collected, processed and marketed by private contractor
- Managed by the City
- Curbside recycling was 12,819 tonnes in 2009
- Public drop-off of recyclables at the Barrie Environmental Centre was 23 tonnes in 2009

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Barrie's sustainable waste management strategy

Current Diversion Practices

Residential Organics Diversion

Includes green bin contents, yard waste, and backyard composting

Green bin organics are co-collected with garbage

- Transferred to a private transfer station
- Processed at a private composting facility in Arthur
- 2,731 tonnes collected in 2009

Yard waste is processed by City of Barrie

- Compost used in City landscaping, and sold to residents
- 7,331 tonnes collected in 2009

Backyard composting

- Diversion at home (approx. 2,700 tonnes in 2009)
- Composters subsidized by the City (547 in 2009)

Yard Waste Composting Facility

- Located at the Barrie Environmental Centre
- First yard waste is ground by a private contractor
- Next yard waste is processed by the City and placed into rows for composting
- Open windrow composting system kills most harmful bacteria and nuisance seeds
- Finished compost is tested for quality

Residents collect yard waste for composting

Yard waste at the beginning of the composting process

Finished compost

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Barrie's sustainable waste management strategy

Current Diversion Practices

Public Spaces and Special Events

- Recycling collection in parks, downtown curbside and in other public spaces
- In 2009, approximately 0.48 tonnes of waste were diverted
- No green bin organics collection

Industrial Commercial and Institutional (IC&I)

- Up to 5 recycling boxes/week
- No green bin organics collection
- Downtown Business Improvement Area
  - One bundle cardboard/week
  - Maximum one recycling box of paper/ week
  - Maximium four recycling boxes of containers/week
  - Yard waste

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Barrie's sustainable waste management strategy

Current Diversion Practices

Barrie hosts several recycling programs for different materials including:

- Waste Electronic Electrical Equipment (WEEE)
- Old Corrugated Cardboard (OCC)
- Scrap Metal
- Tires
- Municipal Hazardous and Special Waste (MHSW)
- Blue Box drop-off
- Grey Box drop-off

Materials for recycling in these programs can be dropped off at the Barrie Environmental Centre

In 2009 Barrie recycled:

- 119 tonnes of WEEE
- 189 tonnes of OCC
- 229 tonnes of scrap metal
- 59 tonnes of scrap tires
- 203 tonnes of MHSW
- 42 tonnes of Blue Box materials
- 27 tonnes of Grey Box materials

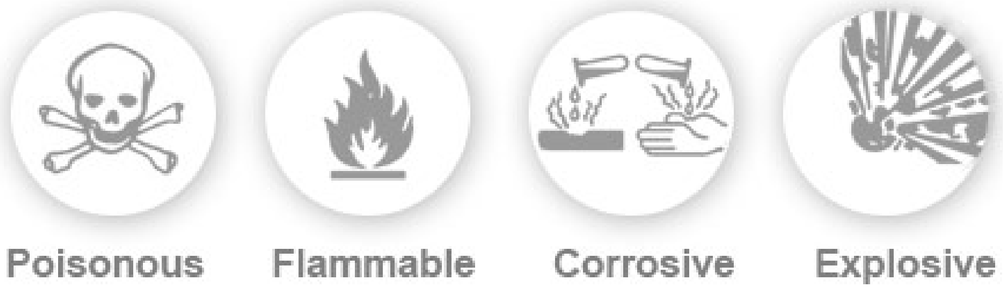
We have identified the following issues with our diversion practices:

Organics

- Overall organics diversion rate is low compared to other municipalities
- No green bin organics pick up for multi-residential buildings

Recycling

- No recycling options for construction or demolition materials
- Long wait times at the public drop-off depot



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Barrie's sustainable waste management strategy

Diversion

Your Comments and Suggestions

How can we encourage people to recycle and compost more?
Please post your comments and suggestions here

The City of BARRIE

Barrie's sustainable waste management strategy

Thank You

Thank you for attending today's Open House and contributing to the development of Barrie's Sustainable Waste Management Strategy

Comment Forms

Please fill out a comment form so your ideas and suggestions will be recorded

Comment forms will also be available on our website - let your friends and neighbours know!

The more feedback we receive the better we will be able to make decisions that represent our community

Get more involved!

We will be hosting a series of workshops to discuss future waste management options

Interested residents are encouraged to add their name to our mailing list, and will be contacted with more information

Contact Us

The City of Barrie encourages any questions or comments you have about the Sustainable Waste Management Strategy

Please visit our website to provide feedback:

www.barrie.ca

Or if you would like to arrange a tour of the landfill site, or a one-on-one meeting with landfill staff please contact:

Sandy Coulter
Manager of Environment Operations
The City of Barrie
(705) 739-4220 ext. 5826
wastestrategy@barrie.ca

The City of BARRIE

APPENDIX B

Community Workshop Materials

Barrie's sustainable waste management strategy

Community Workshop

May 3, 2011

5pm to 9pm

Barrie Public Library

Workbook

The City of BARRIE

Barrie's sustainable
waste management strategy

Agenda

1. Introductions

2. Overview of the City of Barrie's Sustainable Waste Management Strategy
    - Background
    - Vision and Priorities
    - Planning Process

3. Community Engagement

4. Current Waste Management Practices
    - Collection, Disposal and Diversion
    - Issues Identification and Opportunities for Improvement

5. Wind Turbine Feasibility Assessment

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Barrie's sustainable waste management strategy

Introduction

Thank you for participating in this workshop. Throughout the workshop we will invite you to record your questions, comments and suggestions in this workbook. Your input will be considered in the development of Barrie's Sustainable Waste Management Strategy (the Strategy).

Organization Name:_____

Workshop Participant

Name:_____

Title:_____

What levels of collection services are relevant to your organization?

- ☐ Residential
- ☐ Multi-residential
- ☐ Industrial Commercial and Institutional (IC&I)
- ☐ Public Spaces or Special Events

Please explain: _____

_____

_____

_____

_____

_____

The City of BARRIE

Barrie's sustainable waste management strategy

Background

Barrie is one of the fastest growing cities in Canada

- population doubled from 1991-2006
- additional 50% growth is expected over the next 20 years

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The City of BARRIE

Barrie's sustainable waste management strategy

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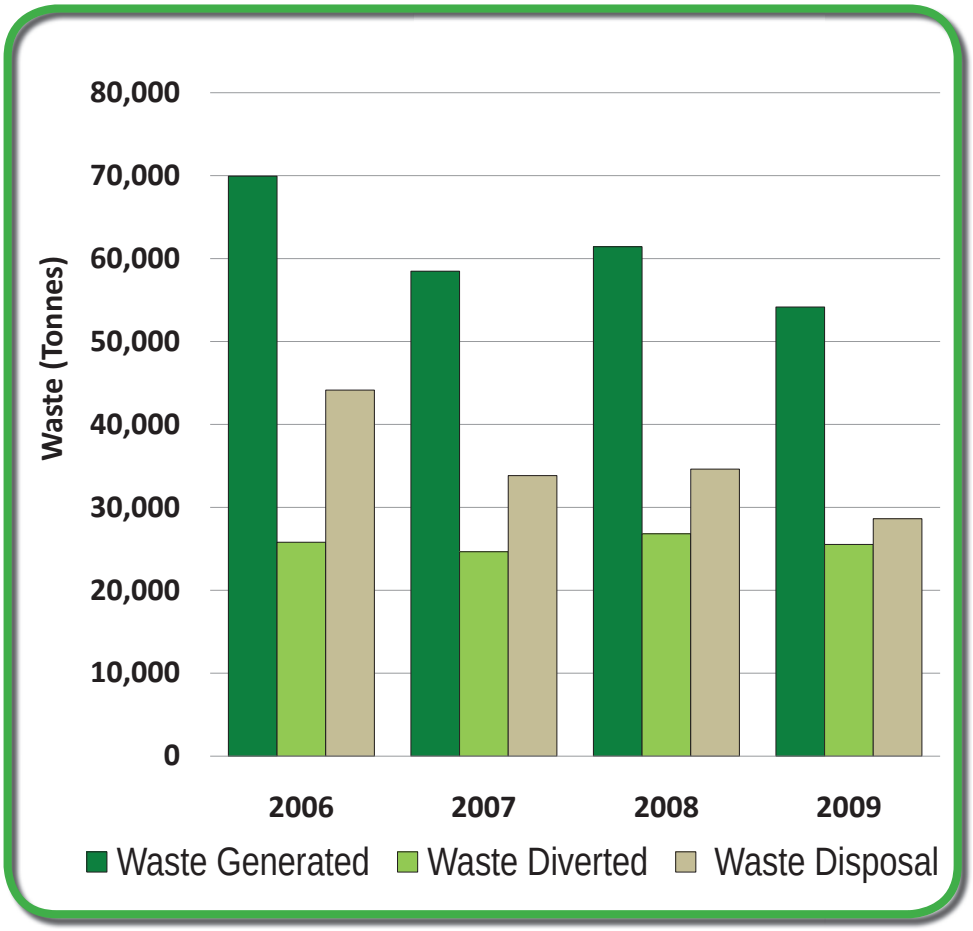

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The City of BARRIE

Barrie's sustainable waste management strategy

Background

Future Considerations and Challenges

- Barrie's current and future population growth rate

  Develop waste system that is flexible to accommodate changes in quantities and types of waste and recyclables

- Housing intensification and higher density development

  Challenge to develop infrastructure and encourage diversion practices in multi-residential buildings

- Expected high level of economic growth, including major office and institutional development

  Challenge to manage waste and recyclables from the Industrial, Commercial and Institutional (IC&I) sector

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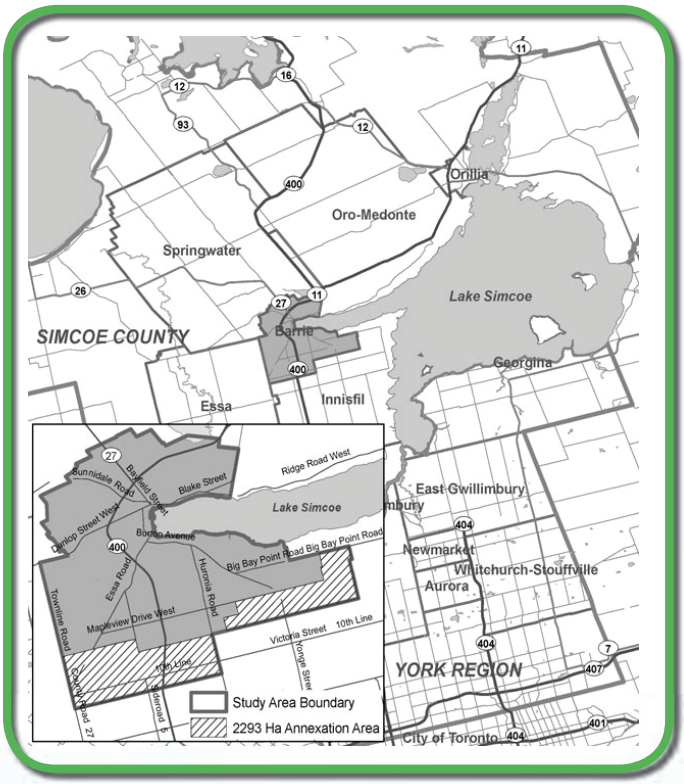
  Incorporate this area into waste management planning, ensuring waste management service is inclusive and accessible for all residents



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Barrie's sustainable waste management strategy

Vision and Priorities

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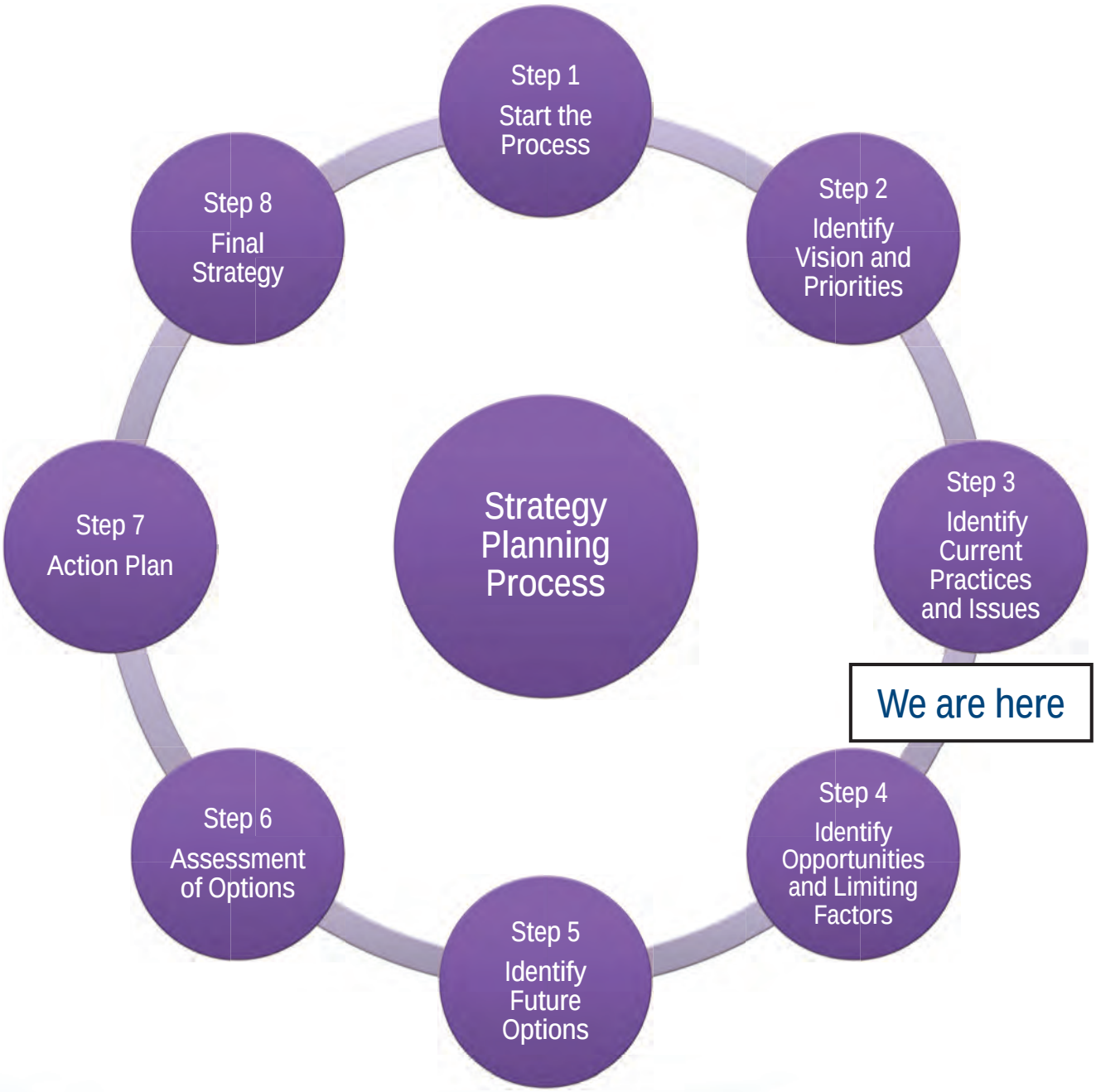
Barrie's sustainable waste management strategy

Planning Process



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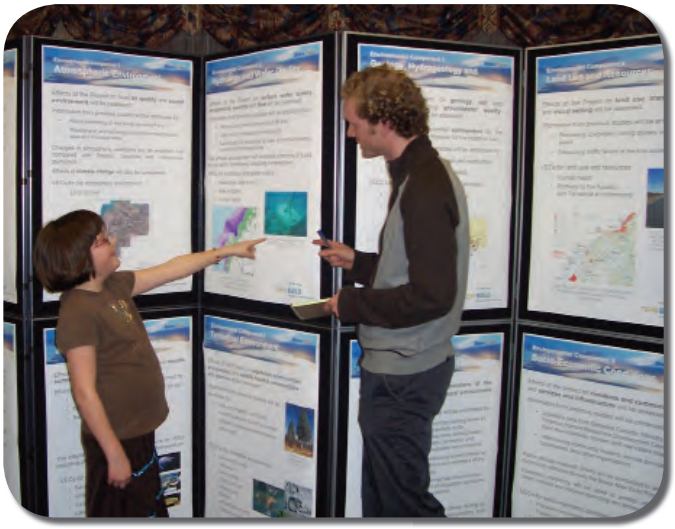
Barrie's sustainable waste management strategy

Community Engagement

Barrie is committed to working collaboratively with the community to develop the Strategy

To ensure waste management is sustainable, community input is needed to:

- Identify issues
- Develop options
- Determine an action plan



We are planning to engage with the community throughout the Strategy planning process using:

- Open Houses
- Workshops
- Community Liaison Committee
- Website
- Social Media

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Barrie's sustainable waste management strategy

Community Engagement

Would your organization be willing to place a link to the Strategy on your website?

- ☐ Yes
- ☐ Maybe
- ☐ No

Please explain:_____

_____

_____

_____

_____

_____

Please provide any other suggestions as to how we can involve Barrie's community organizations in the development of the Sustainable Waste Management Strategy

_____

_____

_____

_____

_____

_____

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Barrie's sustainable waste management strategy

Current Collection Practices

Single-family households

44,306 households with curbside collection

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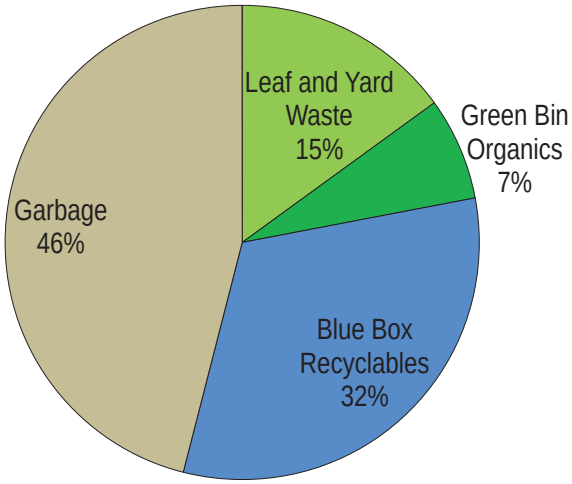

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Barrie's sustainable waste management strategy

Residential Collection Practices

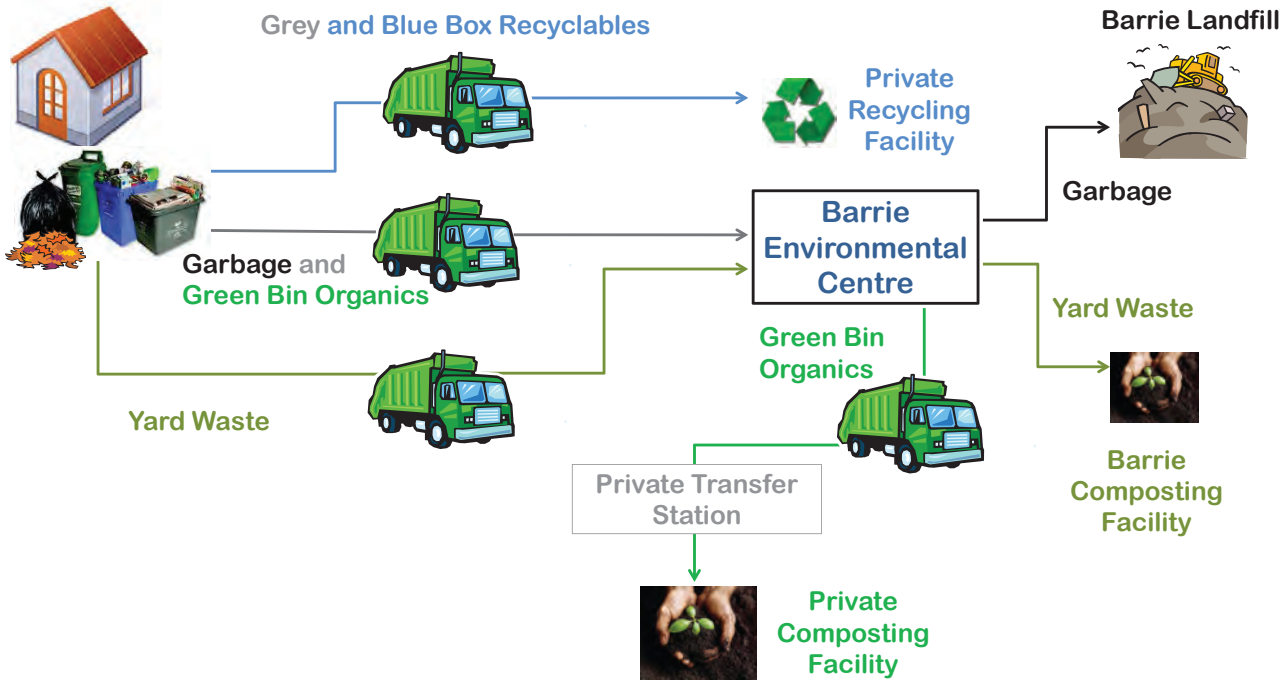

Diagram shows the collection of Recyclables, Organics, and Garbage from homes in Barrie.

- Collection services are provided by a private contractor
- Blue Box Recyclables and Green Bin Organics processing is done by private contractors
- Yard Waste and Garbage are processed by the City at the Barrie Environmental Centre

The Strategy will consider partnerships with neighbouring municipalities, to allow the following possible benefits:

- Opportunity for joint waste and recycling collection
- Potential for cost savings and higher efficiency of collection services

The City of BARRIE

Barrie's sustainable waste management strategy

Collection Practices

Issues Identification and Opportunities for Improvement

Garbage

Is your organization satisfied with current garbage collection services?

- ☐ Yes
- ☐ Somewhat
- ☐ No

Please explain: _____

_____

_____

_____

Please describe any changes to garbage collection you think could increase the level of service or increase diversion of waste from the landfill:

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Barrie's sustainable waste management strategy

Collection Practices

Recycling Collection (Blue and Grey Bins, Fibre/Paper and Container Carts)

Is your organization satisfied with the current recycling collection services offered?

- ☐ Yes
- ☐ Somewhat
- ☐ No

Please explain:_____

_____

_____

_____

Organics (Green Bin and Yard Waste)

Is your organization satisfied with the Green Bin collection services currently offered?

- ☐ Yes
- ☐ Somewhat
- ☐ No

Please explain:_____

_____

_____

_____

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Barrie's sustainable waste management strategy

Collection Practices

Is your organization satisfied with the Yard Waste collection services currently offered?

- ☐ Yes
- ☐ Somewhat
- ☐ No

Please explain:_____

_____

_____

_____

Please describe any other issues relating to current collection practices:

_____

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Barrie's sustainable waste management strategy

Current Disposal Practices

Garbage Disposal

Garbage is disposed of at the Barrie Environmental Centre

In 2024, Barrie's Landfill is expected to reach capacity - this is only 13 years away

- Dependant on diversion rate and population growth

The Strategy will incorporate, evaluate and recommend sustainable options for the future disposal of Barrie's waste

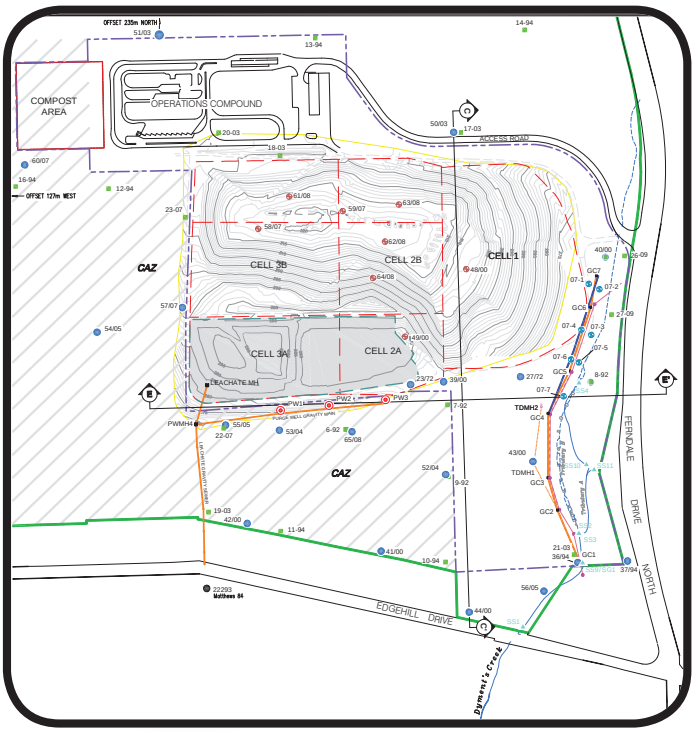
The Barrie Environmental Centre

Located at 272 Ferndale Drive North

- Owned and operated by the City
- Operations began in mid 1960's
- 37.2 Hectares

The Barrie Environmental Centre includes:

- Three waste cells
- The Composting Facility
- Scale house
- Waste segregation area
- Environmental Centre
- MHSW Depot
- Leachate disposal station
- Storm Water Management Facility



Map of the Barrie Environmental Centre

The City of BARRIE

Current Disposal Practices

The Barrie Landfill Re-engineering

The Barrie Landfill is currently undergoing re-engineering to protect groundwater and the environment

The Landfill Re-engineering Project includes:

- Excavation and screening of existing waste
- Recompacting the waste in the landfill to increase capacity
- Installing a new liner underneath the landfill cells
- Installing a gas collection system to reduce greenhouse gas emissions

Excavation and screening of waste

Liner installation in one of the landfill cells

Barrie's sustainable waste management strategy

Current Disposal Practices

Disposal Rates at the Barrie Landfill for Solid Waste, Recyclables, and Organics
Effective May 2011

Description	Tipping Fees / Other Rates
Solid Waste	
Garbage - Basic Rate	1 free residential load under 100 kg per household $10 minimum charge for additional loads under 100 kg $122 per tonne
Garbage Tags	$2 each
Commercial Garbage Rate	$10 minimum charge for loads under 100 kg Loads 100 kg and over $122/tonne
Hard to Handle (e.g. asbestos)	$240/tonne
Recycling	
Tires off the rim	No charge
Tires < 17" on the rim	$8
Tires 17" < 19" on the rim	$12
Tires >19" on the rim	$34
Blue/Grey Box Materials	No charge
Pick up of recycling boxes	No charge
Cardboard	No charge
Organics	
Residential Yard Waste	Loads under 100 kg no charge, loads 100 kg and over $55.70/tonne
Commercial Brush and Yard Waste	$6 minimum charge, loads 100 kg and over $55.70/tonne
Request delivery of organics bins	No charge
Static Backyard Composters	$30
Rotating Backyard Composters	$50
Finished Compost - Large load up to 1.5 cubic metres	$8
Finished Compost - Small load up to 0.3 cubic metres	$5
Finished Compost - Commercial and Non resident	$15/tonne, $10 minimum

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Barrie's sustainable waste management strategy

Potential Future Disposal Options

For the foreseeable future, there will be the need to dispose of wastes that are not recyclable or compostable. The Strategy will assess options, and develop an action plan for future disposal.

Here are some examples of the options that may be considered:

Landfill

Landfill

Waste is buried between layers of earth

Energy From Waste (EFW)

EFW is the recovery of energy from waste to generate electricity

Examples of EFW include:

- Gasification
- Fermentation
- Incineration

Possible Benefits:

- Green, renewable energy source
- Cost effective
- Reduce quantity of waste landfilled

Mechanical Biological Treatment facility

Mechanical Biological Treatment (MBT)

MBT uses a combination of mechanical and biological processes to recover recyclables and organics

Possible Benefits:

- Reduce quantity of waste landfilled
- Reduce environmental impacts of waste landfilled
- Produce raw material for industry (biogas, methanol)

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Barrie's sustainable waste management strategy

Disposal Practices

Issues Identification and Opportunities for Improvement: Disposal Practices

Is your organization satisfied with the current disposal services offered at the Landfill?

- ☐ Yes
- ☐ Somewhat
- ☐ No

Please explain:_____

_____

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_____

In the future, there will be the need to dispose of wastes that are not recyclable or compostable. What options should be considered (Please check all that apply)?

- ☐ Landfill
- ☐ Energy From Waste (EFW)
- ☐ Mechanical Biological Treatment
- ☐ Other:_____

Please explain:_____

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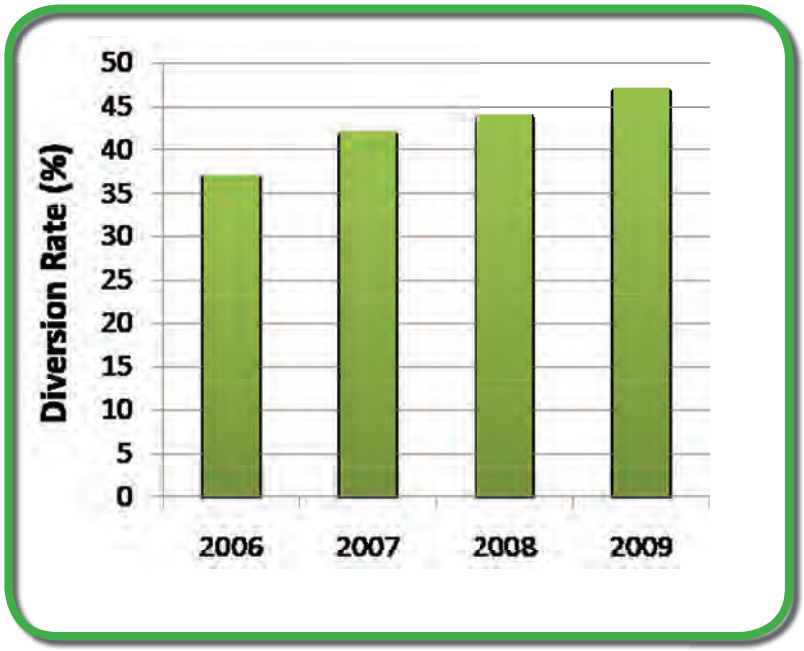
Barrie's sustainable waste management strategy

Current Diversion Practices



Diversion is the removal of organics and recyclables from waste

In 2010, Barrie's waste diversion rate was 48%

This means that of all the waste collected, just over half ended up in the landfill

An important part of the Strategy will be finding ways to divert more waste from the landfill

Grey Box Accepted Materials

- Telephone books, paperback books, and magazines
- All household paper
- Boxboard and egg cartons
- Cardboard boxes
- Newspaper

Blue Box Accepted Materials

- Rigid plastic containers and packaging #1-7 (including styrene trays and lids, and excluding film plastic)
- Packing Styrofoam (no "peanuts")
- Glass bottles and jars
- Food and beverage cans
- Aluminum trays, pie plates and foil
- Tetra Pak boxes, juice and milk cartons
- Spiral cardboard cans

Residential Recycling

- Curbside collection of Blue and Grey box materials
- Collected, processed and marketed by private contractor
- Managed by the City
- Curbside recycling was 12,819 tonnes in 2009
- Public drop-off of recyclables at the Barrie Environmental Centre was 23 tonnes in 2009

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Barrie's sustainable waste management strategy

Diversion Practices

Issues Identification and Opportunities for Improvement: Diversion Practices

Please check any possible changes that your organization would support in order to reduce the amount of waste generated:

- ☐ Lower garbage bag limits (no free bags)
- ☐ Increased cost for additional bags
- ☐ Reduced frequency of garbage collection
- ☐ Other - please describe any other changes to collection you think could help reduce the amount of garbage the residents of Barrie generate:

_____

_____

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Please describe any changes to the Residential Recycling programs you think could help increase the amount of waste diverted from the landfill:

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The City of BARRIE

Barrie's sustainable waste management strategy

Current Diversion Practices

Residential Organics Diversion

Includes green bin contents, yard waste, and backyard composting

Green bin organics are co-collected with garbage

- Transferred to a private transfer station
- Processed at a private composting facility in Arthur
- 2,731 tonnes collected in 2009

Yard waste is processed by City of Barrie

- Compost used in City landscaping, and sold to residents
- 7,331 tonnes collected in 2009

Backyard composting

- Diversion at home (approx. 2,700 tonnes in 2009)
- Composters subsidized by the City (547 in 2009)

Residents collect yard waste for composting

Yard waste at the beginning of the composting process

Finished compost

Yard Waste Composting Facility

- Located at the Barrie Environmental Centre
- First yard waste is ground by a private contractor
- Next yard waste is processed by the City and placed into rows for composting
- Open windrow composting system kills most harmful bacteria and nuisance seeeds
- Finished compost is tested for quality

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Barrie's sustainable waste management strategy

Diversion Practices

Please describe any changes to Green Bin and Yard Waste programs you think could help increase the amounts of waste diverted from the landfill?

_____

_____

_____

_____

What are some of the obstacles that may be preventing Green Bin use (Please check all that apply?)

- ☐ Limited Green Bin service
- ☐ Potential odours
- ☐ Potential pests
- ☐ Awareness of Green Bin service (promotion and education)

Please explain:_____

_____

_____

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_____

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Barrie's sustainable
waste management strategy

Current Diversion Practices

Public Spaces and Special Events

- Recycling collection in parks, downtown curbside and in other public spaces
- In 2009, approximately 0.48 tonnes of waste were diverted
- No green bin organics collection

Industrial Commercial and Institutional (IC&I)

- Up to 5 recycling boxes/week
- No green bin organics collection
- Downtown Business Improvement Area
  - One bundle cardboard/week
  - Maximum one recycling box of paper/ week
  - Maximium four recycling boxes of containers/week
  - Yard waste

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Barrie's sustainable waste management strategy

Diversion Practices

Please describe any changes to Public Space and Special Events diversion practices that could increase the amount of waste diverted from the landfill?

Please describe any changes to IC&I diversion practices that could increase the amount of waste diverted from the landfill:

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Barrie's sustainable waste management strategy

Current Diversion Practices

Barrie hosts several recycling programs for different materials including:

- Waste Electronic Electrical Equipment (WEEE)
- Old Corrugated Cardboard (OCC)
- Scrap Metal
- Tires
- Municipal Hazardous and Special Waste (MHSW)
- Blue Box drop-off
- Grey Box drop-off

Materials for recycling in these programs can be dropped off at the Barrie Environmental Centre

In 2009 Barrie recycled:

- 119 tonnes of WEEE
- 189 tonnes of OCC
- 229 tonnes of scrap metal
- 59 tonnes of scrap tires
- 203 tonnes of MHSW
- 42 tonnes of Blue Box materials
- 27 tonnes of Grey Box materials

We have identified the following issues with our diversion practices:

Organics

- Overall organics diversion rate is low compared to other municipalities
- No green bin organics pick up for multi-residential buildings

Recycling

- No recycling options for construction or demolition materials
- Long wait times at the public drop-off depot

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Barrie's sustainable waste management strategy

Diversion Practices

Other Recyclables (household hazardous waste, electronics, scrap tires, scrap metal and old corrugated cardboard (OCC))

Is your organization satisfied with the services being offered for the recycling of other materials?

- ☐ Yes
- ☐ Somewhat
- ☐ No

Please explain:_____

_____

_____

Is your organization aware of what materials are recycled and how to recycle them?

- ☐ Yes
- ☐ Somewhat
- ☐ No

Please explain:_____

_____

_____

Please describe any changes to diversion of hazardous waste, electronics, scrap tires, scrap metal, and OCC you think could help increase usage of these programs:

_____

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The City of BARRIE

Barrie's sustainable waste management strategy

Diversion Practices

Please identify any other issues with our current diversion programs you think could help increase the amount of waste diverted from the landfill:

_____

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Please check any possible initiatives you think would encourage waste reuse and waste reduction:

- ☐ Reuse Centres
- ☐ Additional promotion and education of diversion programs
- ☐ Enhance recycling system to accept more materials
- ☐ Other:_____

Please explain:_____

_____

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The City of BARRIE

Wind Turbine Feasibility Assessment

Background

Barrie Windcatchers are proposing the development of one wind turbine on the Barrie Landfill Site

Barrie Windcatchers are a private organization aimed at bringing wind power to the community as a solution to climate change.

Project Details

Proposed Wind Turbine:

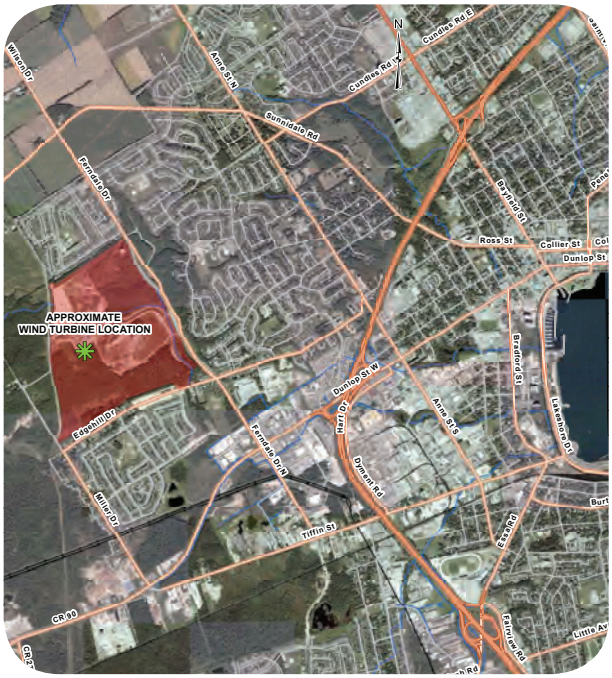
- Energy capacity of 2 megawatt (MW)

Proposed Site:

- Approximately 50 metres south of the public drop-off area at the Landfill

Potential Benefits:

- Promote Barrie as a green city
- Provide energy for 350-400 homes
- Academic and research opportunities for Georgian College
- Position Barrie as a preferred site for green industry



Feasibility Assessment

Before agreeing to further consider, the City of Barrie is evaluating the possible effects the turbine could have on current and potential waste management activities at the Barrie Environmental Centre. This assessment is currently underway.

Today we will present results from the Visual Assessment, and ask for your comments. The results of the entire assessment will be provided for public review once completed.

Regulatory Approvals

If the City agrees to further consider the wind turbine, it would be developed in accordance with the Ontario's Renewable Energy Approvals (REA) Regulation (Ontario Regulation 359/05) under the Environmental Protection Act. This REA process would be completed by the Barrie Windcatchers prior to construction.

The City of BARRIE

Wind Turbine Feasibility Assessment

Steps in the Assessment

Current Land Uses

- Document current layout of all waste management operations

Noise Impacts

- Identify receptors within the Environmental Centre property
- Determine maximum noise based on turbine height and blade length
- Model potential noise impacts

Winter Hazards

- Evaluate possible risk of ice being thrown from rotating turbine blades or falling from stationary blades
- Determine setbacks required to reduce risk to people, infrastructure and vehicles

Visual Impacts

- Develop model showing line of sight from surrounding neighborhoods

Impacts on Future Waste Management Operations

- Include results from the Sustainable Waste Management Strategy related to the proposed turbine site
- Determine if turbine will restrict potential future operations
- Assess options of re-locating proposed infrastructure

The City of BARRIE

Barrie's sustainable waste management strategy

Wind Turbine

What topics would you like to learn more about with respect to the wind turbine? (check all that apply)

- ☐ Effect of Wind Turbine on Waste Management Operations
- ☐ Potential Noise Impacts
- ☐ Potential Human Health Impacts
- ☐ Potential Visual Impacts
- ☐ Wind Turbine Details
- ☐ Other:_____

Please explain:_____

_____

_____

Please provide your comments or questions about the wind turbine in the space provided below:

_____

_____

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The City of BARRIE

Barrie's sustainable
waste management strategy

Please provide any other comments or suggestions related to Barrie's Sustainable Waste Management Strategy:

For more information and opportunities for input, please visit our website:

www.barrie.ca

Just look for the Strategy logo for a link to the page

The City of BARRIE

APPENDIX C

Complete record of public comments

Table 3: Public comments linked to residential garbage collection.

Single Family Residential Garbage Collection
I have heard of other towns / cities that have had similar set ups to ours in Barrie (Garbage, recycling, green bin), but have chosen to collect everything & then sort to ensure that everything is sent to the correct place. The problem with the way we currently sort is residents put items in the wrong place sometimes or hide things in the garbage bag that should be sent somewhere else. Example: batteries, paint, motor oil, or things that should be recycled instead of land filled. Cost of implementing & running obviously is an issue but the benefit vs cost needs to be investigated. Or the effectiveness vs current programs.
Please take this seriously. I recycle 100% whereas less than 50% of Barrie residents do. I have heard a rumour that there will be a container charge at the curb. This morning as I put my green bin (organics) at the curb I noticed only 2 other green boxes on the entire street. Some don't care while others do. MY SOLUTION Every household has organic waste and regular garbage. If a person puts out a green bin and one container of regular garbage, NO CHARGE. If the resident does not want to participate in recycling then a bag tag (at a cost) must be placed on the garbage container in order to have the container picked up. I will bet the recycling program will be much better and the people will have the choice to recycle or not and the city will pick up the extra revenue. Thank You for your time.
-People who recycling and use organics should be rewarded in some manner and those who don't should be penalized -Would like to see the use of clear plastic bags so driver's can leave behind bags that have recyclable material in them -People should put green bins curbside every week, regardless of the amounts in them -Change the by-law so people must use the green bins

I am not an expert on waste management but thought I would take this opportunity to comment on a couple of items.
I have lived in Barrie for 40 years, and the service for garbage collection has declined significantly over these years particularly the following:
•Large item, stoves, fridges, furniture used to be taken away, no longer. You may want to consider one or two days a year where households can get rid of these items, instead of having to pay to have someone take them away.
•There was no limit on regular household garbage bags, now I think the limit is one, and you have to pay extra for the rest. There are only two people in my household and we are usually able to meet this requirement but for larger families this must be a challenge. You may consider a no limit on certain festive days in the year, such as Christmas, which always generates additional garbage.
•Leaf collection and yard waste was always done by the City, now you have to buy specific bags. I have twenty trees on my property and I put out roughly 40 to 50 bags each fall.
So, I appreciate that each year council asks your department to look for ways to trim the budget, but in doing so, it has consistently been the tax payer who is left paying the bill. Garbage collection is a priority within the taxes we pay, and any further downloading would not be acceptable. When I drive out in the rural areas surrounding Barrie, I often see these restrictive items in the ditch, so it is a reminder that some concessions should be made.
Landfill:
With the expected growth of Barrie, it would seem to me that a new Landfill location will be required. This is major problem as we have seen in other municipalities. No one wants to live next to a landfill site, and it appear to me that new locations are suggested much too late in the planning process, when development or prime farm land is already existing. So it would make sense to start the process now. As a suggestion, you have just annexed land from Innisfil, most of which is not developed other than farm land. I would make sense to me to research this area before development starts. The other option would be Tiffin Street, which is mainly scrap yards. Possibly the land is too low in this area, or possibly not enough land, but I doubt you would get much opposition from this type of industry. I don't know if you can build in another municipality but the land West of Barrie in Essa, (say the sand pit area) has no major development, not good agriculture land, and not too far away.
It is also not close enough to the Nottawasaga River to cause concern.
So, these are my comments and thank you for the opportunity to voice them.

As a citizen I'm satisfied with the collection.
With the Board - It would be nice to take advantage of shared services and also the educational opportunities with the students.

Bi-weekly collection of garbage. Green bins - available for ICI/multi residential.

Biweekly collection would help reduce waste.

I would suggest charging ICI for blue box pick up - of course, refusing any garbage containing recyclables.

Lower bag limits.
Reduced frequency of collection.
Other - Opportunities for partnership with the local school boards and college to help with education and awareness.

More education to inform people what is recyclable and what is not.
School based programs.

Perhaps issue tags (i.e. 30) with tax bill. More HHW depots travelling around. Reducing garbage to every other week with weekly collection of others would be good.

Reduced frequency of garbage collection with the provision that organics were still picked-up weekly.
Resident of Midland. Need to move to "user pay" with attendant reduction or bag allocation. Move to every second week collection.
Should consider moving to a user pay system per bag with a reduction to an itemized tax bill.
1 bag limit too small at Christmas. 0 bag limit will not be acceptable (with regard to satisfaction with current garbage collection services).
But I do this privately so am responsible for my satisfaction rate (with regard to satisfaction of current garbage collection services).
Charge household for more than 1 bag or 1 can. Lots of households don't care about recycling, this would enforce it. More communication is needed, especially for independent collection programs (with regard to change to garbage collection services to increase diversion).
Definitely NOT (with regard to biweekly garbage collection as a change to support reduction of residual waste and encourage diversion).
Definitely NOT (with regard to lowering garbage bag limits as a possible change to reduce the amount of residential waste by encouraging diversion).
Diapers for a family with 2 kids in them fill the one can limit. Additional bags are needed for families with the least disposable incomes! (with regard to satisfaction with current garbage collection services).
Having suffered a couple of concussions in the last 2 years, it has become too confusing to divide every category of waste each week. If I get all the newspapers and cardboard separated and to the curb that is sometimes all I can manage. I gladly pay for garbage tags because I am aware it is my fault that I can not do more (with regard to obstacles to using the Green Bin).
I think the current system is diverse and well-structured. However, there is a tragic lack of participation in organics collection and in some cases recycling. Making compliance of the system mandatory through by-laws (such as they have done in the City of Guelph) could achieve this.
If you don't have to pay for the additional bags people wouldn't dump their garbage anywhere they can (with regard to support for potential changes to reduce residential waste and encourage diversion).
Mandatory compliance with the three levels of collection (with regard to potential changes to increase diversion).
MANDATORY COMPLIANCE!! (with regard to support of changes to reduce residential waste and encourage diversion).
Not sure these would work - the problem comes sometimes from all the packaging (with regard to lower garbage bag limits and increased cost for additional bags as a potential change to help reduce residential waste and increase diversion), No! We accumulate SO much per week - would hate to store it! Plus run out of room in our blue/grey bins (with regard to bi weekly garbage collection as a potential change). Is there a way to connect more with second hand stores? We regularly do a Canadian Diabetes pick up for old/unused items...
On the current waste services graph, when did Barrie go from 2 to 1 bag per household? Did it have an impact?
Taxes paid should support some free garbage collection, particularly when not everything can be recycled. Cost increase etc. might encourage diversion to recycling/composting but should be applied where those options are available (e.g. apartments don't have Green Bin) (with regard to possible changes to reduce residual waste and encourage diversion).

4 day week collection (with regard to changes to garbage collection to increase diversion).
Alternate week garbage collection/every week green bin and blue box.
Do not stop weekly garbage pick up. Go to 4 day pick up cycle to prevent weekend issue for residents with Friday pick up. Provide clarification increase awareness regarding what public should do with waste. Ensure public knows about other options for recycling – Diabetes association, community living, cerebral palsy pick up at homes (with regard to changes to garbage collection services to increase diversion).
Generally - sometimes sloppy in the winter (with regard to satisfaction of garbage collection services).
If residents are recycling properly, every other week collection would be adequate (with regard to changes to reduce residential waste and encourage diversion).
If you lower my taxes, how ludicrous!! (with regard to lower garbage bag limits to increase diversion), Absolutely NOT (with regard to bi weekly garbage collection).
Moved here in 2008 from Whitby. The Whitby model used when the plan was put in place is excellent. Any incorrect use of bins - the collectors left materials. It was a good way to educate residents (with regard to suggestions to increase awareness of diversion programs).
Offer put out a bag once every two weeks - how can this be recognized? Each residence could have 52 tags per year, purchase more if needed, reduce available number of tags over the years.
Picking up the bags when you say so that the bottoms don't fall out when raining!
Problem in summer (with regard to biweekly garbage collection as an option to reduce waste and increase diversion).
Receive pick up on Fridays - problem to even go away on a long weekend. Result: we end up PAYING for an extra bag the following week. Suggestions: go to a 4 day cycle!
Reduce garbage bag frequency pick up to force proper use by residents (with regard to changes to garbage collection services to increase diversion).
Very prompt (with regard to satisfaction with garbage collection services).
We take advantage of current waste collection programs - we have a full green bin each week and recycling bins and a quarter bag of garbage. We especially love the addition of the green bin program - we have reduced our garbage by four times! Room for expansion/improvement: host yearly/biyearly electronic waste pick-up service like Toronto does to improve electronic recycling in the city (with regard to satisfaction with garbage collection services).
This would be a tax on larger families who can't afford their current increases in taxes. Unless we stop producing garbage you are going to have to keep collecting it (with regard to changes to reduce residential waste and encourage diversion).
One bag is good for weekly collection....additional cost should be increased for more than one bag (with regard to changes to decrease residential waste and encourage diversion).

There needs to be more pressure put on people who do not use the green bin and for people who let their garbage fly all over the place which creates litter (with regard to satisfaction with garbage collection services).
Family lives in a city that offers garbage pick-up on alternating weeks; this is not a solution. Green bin use will drop in the summer months if people have to live with foul, rotting food in their garages. As a result, garbage will increase. Please do not proceed with this option (with regard to changes to reduce residential waste and encourage diversion).
It would be nice if the "once a year 'big pick up' day" was re-introduced. Limitations would need to be developed, but doing so would help minimize illegal dumping (with regard to changes to garbage collection to increase diversion).
Increase the cost of wastefulness. People will grumble, but they will adapt. Landfills are expensive and we don't want another Site 41.
Somewhat satisfied with garbage collection - Please put a cost on garbage. I like the proposed tag system. When you put a cost on garbage, people will change their bad habits.

Table 4: Public comments linked to residential recycling collection

Multi-Residential Recycling Cart Collection
It's my understanding that I can make my suggestion here, since I may not be able to make it to either open house. I suggest that it become law (a bylaw?) that apartment buildings with 6 units or more, be required to have those large bins to facilitate recycling. I believe this (14-unit building + townhouses) complex alone, would recycle far more if it were made easier; and that this is likely the case for all buildings that are currently without recycling bins. Also, if this is already law, I'd appreciate if someone let me know. Thank you.
Always sorted properly but satisfactorily. Good signage helps. Colour coded signage: grey sign - grey bin.
- Building should accommodate for recycling and green bin use. - Different colour bins would help reduce contamination between plastics and fibre by elderly residents. - Education needed for elderly as they move into multi-residential buildings. - 95 gallon bins are difficult to move (the wheels don't work properly).
Collect from condos and ICI.
There might be an issue in the recycle room with space. Architects must provide adequate area for recycling.
Need to collect all plastics and foil (with regard to satisfaction with current recycling collection services).
No Green Bin collection because I live in a condo complex with independent collection program. Plus City of Barrie does not collect plastic bags - BIG problem, adding to landfill! Other major cities recycle plastic. I moved from Mississauga which recycled everything. Big disappointment living in Barrie. (with regard to satisfaction with current garbage collection services)
Styrofoam needs to be better communicated that it is recyclable (with regard to awareness of what materials go in each of the recycling bins).

Residential Recycling Collection
Could there be an option for local remote drop-off facilities (both residential and ICI).
Perhaps the larger, co-mingled bins to keep it simple for folks. Don't leave it to the home-owners to sort recyclables.
Somewhat aware of what materials go into each recycling bin - plastics are still a bit confusing.
Fully itemized residential tax bill itemizing waste costs.
I would suggest charging ICI for blue box pick up - of course refusing any garbage containing recyclables.
Midland - too many exceptions - need a more inclusive "blue box." - need to have manufacturers "pay" for full system. - multi-residential not addressed.
Perhaps issue tags (i.e. 30) with tax bill. More HHW depots travelling around. Reducing garbage to everything other week with weekly collection of others would be good.
Somewhat - Need to provide constant feedback to the residents through the curbside program (e.g. sticker and leave behind - if have issues multiple times receive a visit from City staff).
Suggest large stickers attached to blue/grey boxes outlining acceptable and not acceptable materials. How about a weekly or monthly prize for a box well sorted to reward homeowners that do a good job of sorting.
Bigger recycle bins offered (with regard to changes to recycling collection to increase diversion)
Collection is ample for a 2 adult household. Homes with 4 or more would likely need additional bins.
Having suffered a couple of concussions in the last 2 years, it has become too confusing to divide every category of waste each week. If I get all the newspapers and cardboard separated and to the curb that is sometimes all I can manage. I gladly pay for garbage tags because I am aware it is my fault that I can not do more (with regard to obstacles to using the Green Bin).
I just use two blue bins and they take it anyhow. Cardboard/paper is separated from container.
I think the current system is diverse and well-structured. However, there is a tragic lack of participation in organics collection and in some cases recycling. Making compliance of the system mandatory through by-laws (such as they have done in the City of Guelph) could achieve this.
- I would like to be able to recycle plastic bags. - Is there any other recyclable material that the city is looking into accepting at the curb? - What about having a once monthly bulk item collection truck to collect bulky waste from the curb?
It's what not goes in that seems to change: some days they'll pick something up but not another day (with regard to awareness of what materials go into each of the recycling bins).
Mandatory compliance with the three levels of collection (with regard to potential changes to increase diversion).
MANDATORY COMPLIANCE!! (with regard to support of changes to reduce residential waste and encourage diversion).
Not sure these would work - the problem comes sometimes from all the packaging (with regard to lower garbage bag limits and increased cost for additional bags as a potential change to help reduce residential waste and increase diversion), Not we accumulate SO much per week - would hate to store it! Plus run out of room in our blue/grey bins (with regard to bi weekly garbage collection as a potential change). Is there a way to connect more with second hand stores? We regularly do a Canadian Diabetes pick up for

Table 5: Public comments linked to Green Bin Organics collection.

Residential Green Bin Collection
I'm not sure if this is where to pose ideas for reducing the waste level but here is my idea. Let me know if I should pose it to someone else. House owners would be more inclined to compost if a compost was provided to households for free. It will allow for people to more easily reduce their garbage level. I know apartments won't be able to compost but maybe if they have a decent amount of land, a compost could be provided to apartments and excess that does not fit into their compost can be placed in a designated area for the city. In a few years, when the compost is turned to soil, it can be offered to Barrie individuals to use for their gardens.
Please take this serious. I recycle 100% where as less than 50% of Barrie residents do. I have heard a rumour that there will be a container charge at the curb. This morning as I put my green bin (organics) at the curb I noticed only 2 other green boxes on the entire street. Some don't care while others do. MY SOLUTION Every household has organic waste and regular garbage. If a person puts out a green bin and one container of regular garbage, NO CHARGE. If the resident does not want to participate in recycling then a bag tag (At a cost) must be placed on the garbage container in order to have the container picked up. I will bet the recycling program will be much better and the people will have the choice to recycle or not and the city will pick up the extra revenue. Thank You for your time.
-People who recycling and use organics should be rewarded in some manner and those who don't should be penalized. -Would like to see the use of clear plastic bags so driver's can leave behind bags that have recyclable material in them. -People should put green bins curbside every week, regardless of the amounts in them. -Change the by-law so people must use the green bins.
"Yuck" factor is a deterrent in the summer. Frozen waste that will not come out when the bin is tipped in the winter.
Awareness of Green Bin service (promotion and education) – Primarily. You also need to develop a pet waste program.
Backyard composters competing with green bin.
Education and ease of use.
Mandatory placement on organics in green bin. Consistency in all areas - homes, schools, apartment buildings, etc.
No - Environmentally irresponsible to ship organics outside of city. Work with Dianne Corrigan at Environmental School at Georgian College to develop a suitable Waste to Energy (WTE) process.
Perhaps issue tags (i.e. 30) with tax bill. More HHW depots travelling around. Reducing garbage to every other week with weekly collection of others would be good.
Plant a row grow a row.
Potential odours. Potential pests. Awareness of service. Speaking with many residents they are weary of having pests due to organics. Continue to offer suggestions and education.

Collect Green Bin waste from institutions at a minimum and ICI.
Provide users with tips/options for avoiding flies/maggots.
Reduced frequency of garbage collection with the provision that organics were still picked-up weekly.
Reward successful households/business's that are successful at using the green/organics bin.
Some homeowners have their own compost bins.
Somewhat - Educate and promote need to further identify markets for recycled product and educate the public to new uses. Plan consistent systems at schools and home.
Winter is a problem - organics freeze into container. Wrapping with lots of newspaper helps .
Would more frequent pick up be an option in the summer?
Would the limited supply of green bin liners be an option?
Yes- Great program - Benefits need to be publicized especially length of landfill life. In addition to the truck compartments. When looking at it, my neighbourhood participation is low - time for another push. SCDSB - It would be great on many levels to collect organics at schools for diversion - as well as educational components.
Can we put dog poo or cat litter in the green bin?
Diapers to Green Bin (with regard to changes to recycling collection to increase diversion).
Don't have much (with regard to obstacles preventing usage of Green Bin).
Don't use it (with regard to satisfaction with current Green Bin collection services).
Having suffered a couple of concussions in the last 2 years, it has become too confusing to divide every category of waste each week. If I get all the newspapers and cardboard seperated and to the curb that is sometimes all I can manage. I gladly pay for garbage tags because I am aware it is my fault that I can not do more (with regard to obstacles to using the Green Bin).
Making usage mandatory (with regard to changes to Green Bin/Yard Waste collection to increase usage).
Mandatory compliance with the three levels of collection (with regard to potential changes to increase diversion).
MANDATORY COMPLIANCE!! (with regard to support of changes to reduce residential waste and encourage diversion).
None - I use it regularly and find it very useful (with regard to obstacles to usage of Green Bin).
None - we use it but always buy the compostable bags to put in it (with regard to obstacles in using the Green bin).
None - we use ours always (with regard to obstacles to usage of Green Bin).
Offer bags for easier collection (organic bags) (with regard to changes to Green Bin/Yard Waste to increase usage).
Toronto does alternate weeks however organics should be weekly (with regard to support of possible changes to reduce residential waste and encourage diversion).
What to do with dog poo (green bin/ it's compostable) (with regard to suggested changes to green bin and yard waste collection to increase usage).
Alternate week garbage collection/every week green bin and blue box.
Any programs that encourage more people to use the green/grey/blue bins. On our street less then half of the houses have green bins out on collection day (with regard to changes to garbage collection to increase diversion).
Better green bins - how to prevent maggots and smell (with regard to changes to garbage collection that could help increase diversion)
Can't put out small bin. Cost of the paper bag liners (with regard to obstacles to usage of Green Bin).

Don't use it - Barrie's fault because they wouldn't listen when people suggested liners for the bins right at the beginning. You lost the momentum (with regard to satisfaction with Green Bin collection services).
Green bins - always blowing around, much too light (with regard to satisfaction with yard waste collection services).
Green bins are awesome! No problems (with regard to obstacles to usage of Green Bin).
I do not know what would make it more appealing. It is already so easy and reduces so much garbage! We constantly promote it to our neighbours but very few use their green bins :(
It's great to have unlimited weekly pick up during peak times of year and biweekly during less busy warm months! A great way to provide the service at an effective cost for the city (with regard to satisfaction with yard waste collection services).
Moved here in 2008 from Whitby. The Whitby model used when the plan was put in place is excellent. Any incorrect use of bins - the collectors left materials. It was a good way to educate residents (with regard to suggestions to increase awareness of diversion programs).
Need standardization for garbage size. Friday pick up gets bumped to weekend when there is a stat holiday. If a way to pay for extra bag the next week (with regard to satisfaction with current garbage collection services).
None - learned in Whitby how to overcome obstacles (with regard to obstalces to usage of the Green Bin).
None for now that I can think of (with regard to changes to Green Bin/Yard waste collection to increase usage).
Nothing - we love our green bin! (with regard to obstacles to usage of Green Bin)
Shipping our organics and recyclables long distances is not acceptable. We should focus on decreasing packaging, composting at home and not shipping out when possible.
Should allow biodegradable plastic bag to contain waste (with regard to satisfaction with current Green Bin collection services and obstacles preventing usage of the Green Bin).
Stopped doing this - not very easy process (with regard to satisfaction with Green Bin collection services).
Stopped recycling. Food waste - poor system (with regard to satisfaction with current recycling collection services).
Very much so. I am so glad Barrie implemented this program. We reduced our garbage by 4 times by using our green bin. I fill the green bin each week and sometimes fill 1 and a half in the summer (with regard to satisfaction with Green bin collection services).
We don't find any of the above issues to be significant deterrents for us (with regard to obstacles to usage of Green Bin).
We take advantage of current waste collection programs - we have a full green bin each week and recycling bins and a quarter bag of garbage. We especially love the addition of the green bin program - we have reduced our garbage by four times! Room for expansion/improvement: host yearly/biyearly electronic waste pick-up service like Toronto does to improve electronic recycling in the city (with regard to satisfaction with garbage collection services).
Would like to see collection of biodegradable items more emphasized (with regard to changes to garbage collection services to increase diversion).
Everyone should have a composter or have to use the green bin....garbage bags should be smaller so as to allow less to be thrown out (with regard to changes to Green Bin/Yard waste collection services).
It appears as though many people in my area do not participate in the green bin. Perhaps more education or incentives around that (with regard to changes to garbage collection to increase diversion).
There needs to be more pressure put on people who do not use the green bin and for people who let their garbage fly all over the place which creates litter (with regard to satisfaction with garbage collection services).
Doesn't fit easily under sink. Messy. Don't want to buy "liner" bags for bin. A metal container (round) would make it easier to clean and "dump" (with regard to obstacles to usage of Green Bin).
Family lives in a city that offers garbage pick-up on alternating weeks; this is not a solution. Green bin use will drop in the summer months if people have to live with foul, rotting food in their garages. As a result, garbage will increase. Please do not proceed with this option (with regard to changes to reduce residential waste and encourage diversion).
I use it, but my spouse really dislikes the grungy bins (with regard to obstacles preventing green bin usage).

We need a smarter system of collecting this stuff under the kitchen sink. Like a pedal-operated bin that has a small bio-degradable bag (too small to last long enough to get maggots).
Multi-Residential Organic Collection
Bi-weekly collection of garbage. Green bins - available for ICI/multi residential.
-Building should accommodate for recycling and green bin use. -Different colour bins would help reduce contamination between plastics and fibre by elderly residents. - Education needed for elderly as they move into multi-residential buildings. -95 gallon bins are difficult to move (the wheels don't work properly).
Include condo units.
n/a - Not in effect in condos.
Need very small green bins in order to have a receptive condo population. Have to fit in small residential space.
We don't have in condo. Perhaps we could explore this?
I don't have it because I live in a condo townhouse (with regard to satisfaction with current Green Bin collection services).
Include private collection programs townhouses and condos and apartments! Big start!! (with regard to changes to increase usage of Green Bin/Yard waste services and obstacles to usage of Green Bin).
No Green Bin collection because I live in a condo complex with independent collection program. Plus City of Barrie does not collect plastic bags - BIG problem, adding to landfill! Other major cities recycle plastic. I moved from Mississauga which recycled everything. Big disappointment living in Barrie. (with regard to satisfaction with current garbage collection services)
You must include the high rises. We want to compost too.
Condo owners are not treated fairly. We pay twice! We have no compost (with regard to satisfaction with garbage collection services).
Not in my condo (with regard to satisfaction with Green Bin collection services).
Want to compost in my condo (with regard to satisfaction with recycling collection services).

Table 6: Public comments relating to Leaf and Yard Waste collection.

Residential Yard Waste Collection
I am not an expert on waste management but thought I would take this opportunity to comment on a couple of items. I have lived in Barrie for 40 years, and the service for garbage collection has declined significantly over these years particularly the following: •Large item, stoves, fridges, furniture used to be taken away, no longer. You may want to consider one or two days a year where households can get rid of these items, instead of having to pay to have someone take them away. •There was no limit on regular household garbage bags, now I think the limit is one, and you have to pay extra for the rest. There are only two people in my household and we are usually able to meet this requirement but for larger families this must be a challenge. You may consider a no limit on certain festive days in the year, such as Christmas, which always generates additional garbage. •Leaf Collection and yard waste was always done by the City, now you have to buy specific bags. I have twenty trees on my property and I put out roughly 40 to 50 bags each fall. So, I appreciate that each year council asks your department to look for ways to trim the budget, but in doing so, it has consistently been the tax payer who is left paying the bill. Garbage collection is a priority within the taxes we pay, and any further downloading would not be acceptable. When I drive out in the rural areas surrounding Barrie, I often see these restrictive items in the ditch, so it is a reminder that some concessions should be made. Landfill:

With the expected growth of Barrie, it would seem to me that a new Landfill location will be required. This is major problem as we have seen in other municipalities. No one wants to live next to a landfill site, and it appear to me that new locations are suggested much too late in the planning process, when development or prime farm land is already existing. So it would make sense to start the process now. As a suggestion, you have just annexed land from Innisfil, most of which is not developed other than farm land. I would make sense to me to research this area before development starts. The other option would be Tiffin Street, which is mainly scrap yards. Possibly the land is too low in this area, or possibly not enough land, but I doubt you would get much opposition from this type of industry. I don't know if you can build in another municipality but the land West of Barrie in Essa, (say the sand pit area) has no major development, not good agriculture land, and not too far away. It is also not close enough to the Nottawasaga River to cause concern. So, these are my comments and thank you for the opportunity to voice them.
Better organization/education of when yard waste collection is.
It's great that there is no limit.
Midland - Satisfies the residents, turned into compost.
No - I think limiting the amount of bags - residentially has some residual effects on other sectors; ie garbage ending up in school dumpsters, side of the road ets.
Somewhat - Never quite sure when the collection of leaf and yard waste happens.
Somewhat - Promote home composting.
Would more frequent pick up be an option in the summer?
Yes- Keeping track of when service is available is difficult.
Don't use it (with regard to satisfaction of current Yard Waste collection services).
Making usage mandatory (with regard to changes to Green Bin/Yard Waste collection to increase usage).
Offer bags for easier collection (organic bags) (with regard to changes to Green Bin/Yard Waste to increase usage).
When do they pick up yard waste? Some sits out for weeks, some gone right away. What are size quantity restrictions on yard waste? Green Bin - can't be left out at night due to animals. Once a week pick-up cannot address the odour. Can be hard to not have any meat juices contact with other organics.
Green bins - always blowing around, much too light (with regard to satisfaction with yard waste collection services).
None for now that I can think of (with regard to changes to Green Bin/Yard waste collection to increase usage).
Yard waste - uncompostable (i.e. rock, clay, brick). Need fill location with free tipping (NOT commercial).
Allow different kinds of containers to be put out at curb for yard waste (not only bags or boxes). Things owner has like a pail or bucket or yes even a blue box (with regard to changes to Green Bin/Yard Waste collection to increase program usage).
It is tedious to try and find out when these pick-ups occur. The schedule needs to be more easily accessible (i.e. a quick link on the city site; have the dates on the back of the 'garbage tags.') (with regard to satisfaction with Yard Waste collection services).
Multi-Residential Yard Waste Collection
Needs to include condos and private collection programs (with regard to satisfaction with yard waste collection services currently offered).
Apartment dweller - do not know how or what is done re yard waste for apt buildings (with regard to satisfaction with yard waste collection services).

4.4.1 IC&I

Table 7: Public comments relating to IC&I garbage collection

IC&I Garbage Collection
2x weekly is great.
As a citizen I'm satisfied with the collection. With the Board - It would be nice to take advantage of shared services and also the educational opportunities with the students.
Centralized bin collected to improve "aesthetics" of collection process.
Charge more for bag tags. Don't pick up any ICI waste.
For example: If the schools ran the same program as the city collection - more consistency, possible greater diversion ratios.
No - I think (from a Board Specific) the City of Barrie is missing opportunities in partnering with School Boards including Georgian College.
Partnering with school boards - educational opportunities, monetary advantages.
Provide opportunities for ICI to partner with municipality for collection. ICI would still pay a fee for collection, but much less than private fees because of economies of scale. This will again further encourage education and awareness as the students and employees have identical programs at home and work/school.
We are currently tendered out - going out for a new RFP, joint with Public Board, 2-French Boards.... is there opportunity to have City participate?
Increase ICI participation with carrot (free collection) and stick (fee for waste).
Surely Simcoe County is receiving sufficient funds from the government of Ontario and/or the Federal Government turns enough money over to the Province's need for waste disposal without hitting up the consumers, as always, with more money and/or inconvenience! Reduce 'waste' in the offices, the street workers, keep vehicles in good repair, reduce staff that are redundant, non-productive or earning wages that are far too high for the functions that are performed! 1st, clean up your own house, then develop a sound strategy to keep consumers on board w/yourselves (with regard to possible changes to reduce residential waste and encourage diversion).
Increase fee for extra garbage bags. Focus on business and institution's waste. Assist them with diversion program. Medical buildings. School programs to educate the next generation (with regard to changes to garbage collection to increase diversion).
Initiate program in schools. Provide collection for medical buildings, make it user friendly (with regard to initiatives to encourage waste reuse and reduction).

Table 8: Public comments relating to IC&I recycling collection

IC&I Recycling Collection
Again consistency with programs in schools, exploring joint opportunities - currently have joint agreement with Public Board.
Collect from condos and ICI.
Could there be an option for local remote drop-off facilities (both residential and ICI).
For example: If the schools ran the same program as the city collection - more consistency, possible greater diversion ratios.
Limited space for variety of recyclables.
Lots of opportunity to participate (diversion).
No - from a school perspective; it seems to be somewhat confusing as to what the school based vs the home based programs are, there are differences.
Promotion and Education: - Need to create an incentive program - Need to highlight ROI benefits of zero waste products - Need to be seen to be working with governments to influence ERF thought - Corporate citizen promotion i.e. Honda - zero waste
Provide information on "take back programs" on educational materials, websites. New resident information package provided at city facilities welcome wagon to Condo management companies. At city facilities organics is not collected and blue/grey recycle is not readily available. Need to walk the talk.
Provide opportunities for ICI to partner with municipality for collection. ICI would still pay a fee for collection, but much less than private fees because of economies of scale. This will again further encourage education and awareness as the students and employees have identical programs at home and work/school.
Recycle C and D waste. Audit ICI waste - reject loads that are not sorted.
Somewhat - Educate and promote need to further identify markets for recycled product and educate the public to new uses. Plan consistent systems at schools and home.
Catch kids/students, get schools involved more (if possible) so they bring their habits home. Limited recycling in schools i.e. fine paper and cardboard, juice boxes, water bottles (no coffee cups or other plastics).

Good Morning,
My name is Debra Poss and I own a small business at the south end.
Several years back, when coffee cups were thrown back into our blue box, I phoned the city to find out why.
After I was educated about the brown bag option (only option at the time) I brought a brown bag to work. Staff/customer coffee cups, paper towel, Kleenex and newspapers all go in the bag. When full, I take it home for residential pickup. I keep the food bios for my own compost.
I also emailed Tim Hortons and suggested they market this option to the public. As an international business, they felt it was impossible to educate, as every city has its own rules.
As a result, I see 2 ways of recycling "just" coffee cups!!!!! Obviously reusable is ideal, but not realistic.
1. If employers, fire halls, government businesses etc were educated into purchasing the large green, wheeled containers, and the city would pick them up, 1000's of cups, small brown sandwich bags etc could all be diverted. Obviously they would need to have a blue box nearby for the lids.
2. We've all seen people empty their car garbage into the drive-through refuse. If Tim Hortons was told they must provide a recycling option both indoors and outdoors, within the city of Barrie, their complexity excuse would have no value.
A 3rd issue I've noticed, is the fact that fast food places, seem to be able to decide how hard they want to work with recycling. One "Subway" has a blue box and the next one does not. If someone can come around and enforce "no smoking" stickers, then surely someone could talk to these places and ensure they know what the city has to offer.
A 4th issue is in public bathrooms. Those who provide paper towel hand wipes, should always be using clear and ideally biodegradable garbage bags, with the large green bucket concept in use.
I realize these thoughts need lots of political input, but I wanted to get my thoughts into your current discussions.
Thank you for this opportunity.

I would support ALL measures that encourage reduced residential waste. I would like to see better effort in office buildings for recycling (with regard to changes to reduce waste and encourage diversion).

Increase commercial participation (with regard to changes to recycling collection to increase diversion).

4.4.2 Public Space and Special Events

Table 9: Public comments relating to public space and special events collection

Public Space Garbage Collection
I would very much like to see bottle and can re-cycling at the Bayfield Mall. They have many students who attend Everest College and the Barrie Learning Centre who continually throw a LOT of cans & bottles into the garbage cans as there are no re-cycling containers provided anywhere in the mall. This is deplorable. I have asked the mall management about this over the years at least 3 times and get the same response each time – they are working on it, or some such comment. I did a co-op placement at Grove Park Home on Grove & Cook Street and was impressed at how they separate their food leftovers at source and use a green bin program for left-over food and paper napkins. This saves TONNES of stuff from going into the landfill. If every nursing and retirement home in Barrie adopted a green bin program, not only would they save a lot of money on their tippage costs, but a lot of organics would be captured for composting. There are my 2 great ideas!!!
Are there any policies for permitted containers at City events?
Ban non-recyclable/single use containers.

Have a policy change - any city event must be "green" and reduce its footprint i.e. recycling/green bin. Aim for zero waste generation.
Have Blue and Green Bins with a garbage bin at Special Events. Put out more recycling receptacles throughout community. See a lot of water bottles and pop cans in the garbage at parks.
Our experience is that you need "incentives" in addition to just having the disposal bin. Try having a "Green star" program for events that achieve 100% -no garbage. Educate people in how to organize to avoid garbage "don't bring garbage to the event".
Where permits are required set standards of waste diversion .
Public garbage bins seem to have recycle bins nearby (lots of recyclables in these garbage bins and it is/should be pre-sorted before going to landfill).
Public waste bins should be the same 4 categories as home: blue, grey, green, trash.

Public Space Collection
Are there any policies for permitted containers at City events?
Ban non-recyclable/single use containers.
Downtown aesthetics with material on the curb. Centralized pick up.
Have a policy change - any city event must be "green" and reduce its footprint i.e. recycling/green bin. Aim for zero waste generation.
Have Blue and Green Bins with a garbage bin at Special Events. Put out more recycling receptacles throughout community. See a lot of water bottles and pop cans in the garbage at parks.
Where permits are required set standards of waste diversion.
Public garbage bins seem to have recycle bins nearby (lots of recyclables in these garbage bins and it is/should be pre-sorted before going to landfill).
Public waste bins should be the same 4 categories as home: blue, grey, green, trash.
Residential is good, however garbage receptacles in public areas like streets and parks could use more cans and more frequent emptying (with regard to satisfaction with garbage collection services).
Your works department NEVER puts a garbage can on the Barrie Marina Spit. EVERY year I ask for this (I am a volunteer litter picker in the area). I am tired of asking and am quitting my litter picking (with regard to suggestions related to Barrie's Sustainable Waste Management Strategy).

Table 10: Public comments related to the collection of other recyclables

Other Recyclable Collection
To extend the life of the landfill, the city needs to start a metal recycling program. At present, I put all metal in a box in the garage and take it to the landfill or Barrie metals but this is not done by the majority of taxpayers. The city needs to institute an easier way for taxpayers to dispose of metal waste. I support a curbside pickup but the schedule of such a pick-up should not be weekly but should be less often...even once a month could be feasible. Also, with the new landfill fees, there is now a dis-incentive to dump metal waste in the metal waste area of the landfill. If one is recycling metal waste at the landfill, there should not be a charge for this kind of dump. It discourages participation. There needs to be a program developed to encourage not discourage this kind of sorting of household waste.
I am not an expert on waste management but thought I would take this opportunity to comment on a couple of items. I have lived in Barrie for 40 years, and the service for garbage collection has declined significantly over these years particularly the following: •Large item, stoves, fridges, furniture used to be taken away, no longer. You may want to consider one or two days a year where households can get rid of these items, instead of having to pay to have someone take them away. •There was no limit on regular household garbage bags, now I think the limit is one, and you have to pay extra for the rest. There are only two people in my household and we are usually able to meet this requirement but for larger families this must be a challenge. You may consider a no limit on certain festive days in the year, such as Christmas, which always generates additional garbage. •Leaf Collection and yard waste was always done by the City, now you have to buy specific bags. I have twenty trees on my property and I put out roughly 40 to 50 bags each fall. So, I appreciate that each year council asks your department to look for ways to trim the budget, but in doing so, it has consistently been the tax payer who is left paying the bill. Garbage collection is a priority within the taxes we pay, and any further downloading would not be acceptable. When I drive out in the rural areas surrounding Barrie, I often see these restrictive items in the ditch, so it is a reminder that some concessions should be made. Landfill: With the expected growth of Barrie, it would seem to me that a new Landfill location will be required. This is major problem as we have seen in other municipalities. No one wants to live next to a landfill site, and it appear to me that new locations are suggested much too late in the planning process, when development or prime farm land is already existing. So it would make sense to start the process now. As a suggestion, you have just annexed land from Innisfil, most of which is not developed other than farm land. I would make sense to me to research this area before development starts. The other option would be Tiffin Street, which is mainly scrap yards. Possibly the land is too low in this area, or possibly not enough land, but I doubt you would get much opposition from this type of industry. I don't know if you can build in another municipality but the land West of Barrie in Essa, (say the sand pit area) has no major development, not good agriculture land, and not too far away. It is also not close enough to the Nottawasaga River to cause concern. So, these are my comments and thank you for the opportunity to voice them.
Are their any programs for plastic wrap, bags and packaging recycling?
But we do have newsletters distributed by each tower (east and west) every few months that it could printed in as well as information. We don't have a battery collection in place.

More frequent, more locations.
Somewhat - I think there needs to be more diversion options – i.e., e-waste - explore the monetary benefits.
Source destinations/processors for diverted construction/renovation waste.
We have a company that now will pick up all electronics free to us. Need more information for residents.
Yes - at the college the electronics waste (and batteries) bins are very well used.
Yes - The opportunities are there, it comes down to personal choice and convenience.
I am not too sure what to do with these materials. This also includes plastics. What do I do with that (with regard to satisfaction with collection services for other recyclables)
I work every Saturday which is the only day I could dispose of H/G's (with regard to satisfaction with current collection of other recyclables).
-I would like to be able to recycle plastic bags. -Is there any other recyclable material that the city is looking into accepting at the curb? -What about having a once monthly bulk item collection truck to collect bulky waste from the curb?
Include occasionally in regular runs (with regard to changes to collection of other recyclables).
Like the hazardous waste at the bottom of the driveway so that you don't have to wait in long lines (with regard to changes to collection of other recyclables).
Make it curbside pick up for everyone? (with regard to changes to collection of other recyclables)
Maybe monthly collections could be organized from households (with regard to changes to collection of other recyclables).
Need more HHW collection (with regard to satisfaction with services offered for collection of other recyclable materials).
Need permanent HHW (with regard to any changes to collection of other recyclables).
Pick up service. South end depot (with regard to changes to other recyclable collection services)
Consider heading a yearly or biyearly electronic waste pickup (curbside) to encourage electronics recycling in Barrie (Toronto has recently implemented such a program) (with regard to changes to garbage collection to increase diversion).
Curbside collection would be nice (with regard to changes to collection of other recyclables).
Have a pick up once a month with the regular garbage (with regard to changes to collection of other recyclables)
Increased advertising of recycling programs held at the landfill (not curbside) and implement/increase special collection days for those types of recyclables (e.g. electronics).

It is great these services exist but it seems like few friends/neighbours go to the effort of using these programs. Perhaps a yearly or biyearly special curbside collection would encourage more participation (e.g. electronics) (with regard to satisfaction with other recyclable collection services and changes to other recyclables collection services).
Need more advertising and collection points (convenience) (with regard to satisfaction with other recyclable collection services).
No house to house pick up offered. Could offer once per month in spring and summer (with regard to satisfaction of other recyclable collection and changes to collection services).
Not everyone has a car!! (with regard to satisfaction with other recyclable collection).
Some of these are small and seem like they may not be worth the time required to drop them off to the city, possibly have a pickup day a couple of times a year (with regard to changes to collection of other recyclables).
We take advantage of current waste collection programs - we have a full green bin each week and recycling bins and a quarter bag of garbage. We especially love the addition of the green bin program - we have reduced our garbage by four times! Room for expansion/improvement: host yearly/biyearly electronic waste pick-up service like Toronto does to improve electronic recycling in the city (with regard to satisfaction with garbage collection services).
While I have to attend hazardous waste only twice a year with used oil, it does seem to be in inordinately onerous (with regard to changes to collection of other recyclables).
I'm never sure where to take these items (with regard to satisfaction with other recyclable collection services).
Everything is taken for free....this is terrific...it prevents illegal dumping and proper disposal (with regard to satisfaction with other recyclable collection services).
Plastic bags (bread bags, ziploc bags, etc) can be recycled. In fact, Terra Cycle pays money for some. Having a separate container for these items would drastically reduce the amount of waste headed for the landfill (with regard to initiatives to encourage waste reuse and reduction).
Excellent service! (with regard to satisfaction with other recyclable collection).
It's still confusing and a hassle to dispose of toxic stuff. This system needs to be simpler and more accessible than just one day a week at the dump.
Perhaps some curbside electronics days for the waste calendar? Too much of this stuff is still finding its way into the ground.
Some sort of system for seniors without transport to dispose of hazardous waste (with regard to changes to garbage collection to increase diversion)

4.4.3 Depots

Table 11: Public comments linked to the Household Hazardous Waste depot.

Hazardous Waste Depot
Battery u-recycling program made available. But the "calling" of 95 cent dumpsters.
Have the drop-off for this stuff before the scales at the landfill.
Hazardous waste "clinics" at local malls for convenience.
Household hazardous waste only Saturday morning - hard to access.
Long line at the household hazardous waste drop off winds up with residents putting (hiding) the stuff in the regular garbage.
Much more public eduction by a variety of means - radio, TV, newspaper, etc.
Perhaps issue tags (i.e. 30) with tax bill. More HHW depots travelling around. Reducing garbage to everything other week with weekly collection of others would be good.
Somewhat - Lineups prohibit many from participating. Need to look at alternatives such as temporary transfer stations throughout City.
I am not sure of reliable electronic waste depots. Hazardous waste not convenient (orange program is better) (with regard to satisfaction of current collection services for other recyclables).
It would be helpful to have evening hours on a regular basis (e.g. one day per week or biweekly) for drop-off of hazardous material etc. (with regard to changes to collection practices for other recyclables).
It would be nice to have some places throughout the city for battery drop offs - perhaps certain stores would collect them on the city's behalf (with regard to changes to collection practices of other recyclables).
Not sufficient information on hazardous waste. Handling? Special days? I'm not able to get things to the dump and yet need to. All of the junk companies are too expensive: need a way of grouping with other small or single person households to get things to recycling spots or dump. Sometimes don't know what parts of mechanical things could be re-used so the whole thing goes (with regard to satisfaction with current garbage collection services).
Great staff at the landfill answered all my questions when I arrived with paint cans and batteries. Very helpful! (with regard to changes to other recyclable collection)
More hazardous waste days (with regard to changes to collection of other recyclables).
Should consider increasing hours/days at landfill for hazardous waste (with regard to changes to collection of other recyclables).
While I have to attend hazardous waste only twice a year with used oil, it does seem to be in inordinately onerous (with regard to changes to collection of other recyclables).
Why not a separate place for hazardous waste. Aerosol cans, nail polish - you have to store these for a long time to make it worthwhile for a trip to the dump. Long line ups and waits big deterrent to process (with regard to satisfaction with other recyclable collection services).
It's still confusing and a hassle to dispose of toxic stuff. This system needs to be simpler and more accessible than just one day a week at the dump.

Tire Depot
Have the drop-off for this stuff before the scales at the landfill.
Much more public education by a variety of means - radio, TV, newspaper, etc.
Somewhat - Lineups prohibit many from participating. Need to look at alternatives such as temporary transfer stations throughout City.
Could some of these be wrapped into college programs? Georgian has "biggest car show," why not scrap tire collection.

Barrie Environmental Centre (Depot)
Drop off of materials is not accessible.
Have the drop-off for this stuff before the scales at the landfill.
Somewhat - Expand the hours of the landfill especially during Spring, Summer and Fall to better accommodate people working (e.g. later hours during the week and include Sundays).
Somewhat - Lineups prohibit many from participating. Need to look at alternatives such as temporary transfer stations throughout City.
Somewhat - primarily websites are not search optimized to help people find what and where.
Somewhat - unified targeted messaging digitally and in print to promote and educate.
Yes - The opportunities are there, it comes down to personal choice and convenience.
Yes- Another scale potentially to try to address line-ups on Saturday morning.
The green go recycling depot is excellent and fast (with regard to changes to collection of other recyclables).
The line up to the city dump on a Saturday discourages residents from disposing of these materials properly. Temporary alternate drop-off stations during the summer months would alleviate some of the pressure placed on the dump (with regard to other recyclables collection services).
Organics Facilities
Have green bin diversion at the landfill.
No - Environmentally irresponsible to ship organics outside of city. Work with Dianne Corrigan at Environmental School at Georgian College to develop a suitable Waste to Energy (WTE) process.

4.4.4 End markets

End Markets
Midland - we can collect it but thing is no local advertising. This is a nuisance for the community.
Reuse centres, additional promotion and education, enhance system to accept more materials. Other - ensuring that there is the market for recyclables is needed. Targeting/trying to change habits to more recycle-friendly products.
Yes- More information on what is done with recyclables and how they are utilized.
We need more city gardens to use the organics collected.
Shipping our organics and recyclables long distances is not acceptable. We should focus on decreasing packaging, composting at home and not shipping out when possible.

4.4.5 Recommended Materials for Diversion

Table 12: Public comments linked to recommendations for materials to be diverted in the future.

Recommended Materials for Diversion
I'm not sure if this is where to pose ideas for reducing the waste level but here is my idea. Let me know if I should pose it to someone else. House owners would be more inclined to compost if a compost was provided to households for free. It will allow for people to more easily reduce their garbage level. I know apartments won't be able to compost but maybe if they have a decent amount of land a compost could be provided to apartments and excess that does not fit into their compost can be placed in a designated area for the city. In a few years, when the compost is turned to soil, it can be offered to Barrie individuals to use for their gardens.

To extend the life of the landfill, the city needs to start a metal recycling program. At present, I put all metal in a box in the garage and take it to the landfill or Barrie metals but this is not done by the majority of taxpayers. The city needs to institute an easier way for taxpayers to dispose of metal waste. I support a curbside pickup but the schedule of such a pick-up should not be weekly but should be less often...even once a month could be feasible. Also, with the new landfill fees, there is now a dis-incentive to dump metal waste in the metal waste area of the landfill. If one is recycling metal waste at the landfill, there should not be a charge for this kind of dump. It discourages participation. There needs to be a program developed to encourage not discourage this kind of sorting of household waste.
A battery collection policy and collection procedures. Different colours for paper and plastic containers. Information packages for new residents regarding how to recycle correctly.
Cannot answer on behalf of the organization. As an individual I am satisfied. Need to be able to recycle plastic wraps.
Sort plastics - bags and food shrink wrap.
Wood waste recycling could be implemented. C/D waste recycling singles, dry wall, etc. Bicycle reuse centre/area. Paint reuse. Reuse area run by community group. Textile recycling/reuse.
Also need to cater for fluorescent bulbs - capture mercury!
Add, periodically, the inclusion of hazardous waste removals (quarterly?) and bulky items (monthly?) (with regard to changes to garbage collection to increase diversion).
Could the city implement a diaper service as in other cities? (stated as a change to garbage collection to help increase diversion)
I am not sure what to do with textiles/fabrics. i.e. old and unusable clothes, linens, etc. (with regard to changes to garbage collection to increase diversion)
Include more items to be recycled - PLASTIC! (with regard to initiatives to encourage waste reuse and reduction)
Plastic sheet, film (identified as suggested materials for recycling collection).
Renovation materials (drywall/carpet etc) could be recycled (with regard to changes to garbage collection to increase diversion).
Why does the current collection not collect certain plastics?
Wood, drywall, building materials, concrete, interlock bricks (with regard to initiatives that encourage waste reuse and reduction).
Would like to see an increase in the types of materials that are recyclable, such as plastics used in food packaging (with regard to suggestions to help increase diversion).
Broader range of items that would be collected (with regard to satisfaction with recycling services and changes to recycling collection to increase diversion).
It is great these services exist but it seems like few friends/neighbours go to the effort of using these programs. Perhaps a yearly or biyearly special curbside collection would encourage more participation (e.g. electronics) (with regard to satisfaction with other recyclable collection services and changes to other recyclables collection services).
The large bins at the Ferndale site do no seem to be separated as to better diversion possibilities (with regard to changes to recycling collection to increase diversion).
We are downsizing our home and contents to move to a condo. I searched the City of Barrie website hoping to find information regarding mattress recycling. I also phoned and spoke with someone on staff. Mattress recycling doesn't exist at this time. Sleep Country Canada is doing it but only if you purchase a mattress from them. My suggestion is that the City of Barrie could divert quite a few mattresses annually from the city dump by providing this type of service. I could donate the mattresses to charity, but these mattresses are quite old. If they were newish, I would certainly do that.
Would be great to have more items included (ie plastic bags) (with regard to satisfaction with recycling collection services).
Plastic bags (bread bags, ziploc bags, etc) can be recycled. In fact, Terra Cycle pays money for some. Having a separate container for these items would drastically reduce the amount of waste headed for the landfill (with regard to initiatives to encourage waste reuse and reduction).
Plastic bags need to be easier to recycle, I know of only a few commercial places that take them (with regard to satisfaction with recycling collection services).

4.4.6 Extended Producer Responsibility

Table 13: Public comments linked to extended producer responsibility

Extended Producer Responsibility
Deposit on beverage containers
Education. Involve province to mandate less packaging
Focus is on diversion rate, needs to also include an absolute reduction. Should be funded by the manufacturer. The public system should be simplified to maximize diversion - needs a convention with manufacturers and waste processers.
Landfill and EFW - The emphasis of our efforts should be on Reduction first through Provincial Regulations on companies, education of consumers then on diversion and finally on methods of disposal where the by-products are made use of (e.g. methane gas)
There is a long list of materials that should be moved in EPR programs.
Businesses should be required to recycle what they produce... i.e. Baby/toddler car seats.
Extended Producer responsibility is an essential component of a waste management strategy.
I think the current system is diverse and well-structured. However, there is a tragic lack of participation in organics collection and in some cases recycling. Making compliance of the system mandatory through by-laws (such as they have done in the City of Guelph) could achieve this.
Classroom education programs, encourage youth not to litter, demand responsible packaging by retailers/manufacturers (with regard to suggestions for Barrie's Sustainable Waste Management Strategy).
Mayor should lobby minister to get full EPR (extended producer responsibility) (with regard to initiatives to encourage waste reuse and reduction).
Need a mechanism for easier drop off - bylaw requiring electronic retailers to post notice that they're a drop off point (with regard to satisfaction with other recyclable collection services).
Program to encourage retailers to re-think the packaging they use for their products. It isn't necessary to put a small product in a huge multi-layer package (with regard to changes to collection services to increase diversion).
Again more pressure on the producers of products to cut back on packaging...this is key...make Barrie a waste free city (with regard to future disposal of non-recyclable and non-compostable waste).
As above - watch dog control on what is safe/not safe prior to being placed on store, Government wish lists as this World becomes more and more reliant on technology for all various uses. This planet is in trouble everywhere and that is a given! Now, we must guard against one misplaced footprint, for all of the World's future families, forests, plains, swamps etc. (with regard to future disposal of non-recyclable and non-compostable waste).
We need more creative and innovative ways to reuse products to keep them out of landfill, i.e. Styrofoam....and we need to put huge pressure on the manufacturers of products to reduce packaging (with regard to changes to recycling collection to increase diversion).
A deposit return system should be evaluated (with regard to changes to garbage collection and changes to recycling collection to increase diversion).

Reduction/Re-use
Education is very important
Ban single use cups.
Charge more for bag tags. Don't pick up any ICI waste.
Landfill and EFW - The emphasis of our efforts should be on Reduction first through Provincial Regulations on companies, education of consumers then on diversion and finally on methods of disposal where the by-products are made use of (e.g. methane gas).
Need a provincially led initiative to create a consistent diversion environment. Need to move from diversion to reduce/reuse!
Resident of Midland. Need to move to "user pay" with attendant reduction or bag allocation. Move to every second week collection.

Reuse centres. Addition promotion and education. Enhance system to accept more materials. Other - When in Spain I noticed that they had mobile trucks that travelled to various parts of the city for a finite time period. The trucks accepted various materials such as textiles, batteries, aerosols, etc. - Neat alternative to sending (and expecting) residents to seek out all of the various options for diversion of these waste types.
Reuse centres, additional promotion and education, enhance system to accept more materials. Other - ensuring that there is the market for recyclables is needed. Targeting/trying to change habits to more recycle-friendly products.
Reuse is better than recycling, with densification of suburbs it will be more expensive to collect. Incineration is not viable because there is a need to build up stock to produce enough energy. Gasification could be viable.
Standards for the amount of packaging vendors use for food and other goods. Recyclable product for signage.
There must be a commensurate increase in diversion programs (the garbage must go somewhere).
Wood waste recycling could be implemented. C/D waste recycling singles, dry wall, etc. Bicycle reuse centre/area. Paint reuse. Reuse area run by community group. Textile recycling/reuse.
A system to collect items of used furniture, etc to be made available for re-use would be good - perhaps a twice yearly pickup schedule, then items could be warehoused and used by the city or charities (with regard to incentives to encourage waste reuse and reduction).
Absolutely not, will encourage dumping (with regard to support of lower garbage bag limits to encourage diversion), smell (with regard to biweekly garbage collection to encourage diversion), 1 bag limits (with regard to support of changes to encourage diversion).
For used lumber and plywood (with regard to reuse centres as an initiative to encourage waste reuse and reduction).
I think the current system is diverse and well-structured. However, there is a tragic lack of participation in organics collection and in some cases recycling. Making compliance of the system mandatory through by-laws (such as they have done in the City of Guelph) could achieve this.
I would love if we could shift to zero waste.
Kijiji-style yard sale database to list what want to be rid of or what someone could use. These would be free of charge and related to the city or neighbourhood website: with a central spot to leave it or a weekly pick-up/delivery? It's not always safe to have just anyone come to one's home. So I don't use Kijiji for this. (with regard to potential changes to garbage collection services to increase diversion)
No obstacles. We use this 100% (with regard to obstacles to Green Bin usage).
None - I use it as much as possible, although in summer I put leafy materials (e.g. corn husks) directly on my garden compost heap (with regard to obstacles of using Green Bin).
Not sufficient information on hazardous waste. Handling? Special days? I'm not able to get things to the dump and yet need to. All of the junk companies are too expensive: need a way of grouping with other small or single person households to get things to recycling spots or dump. Sometimes don't know what parts of mechanical things could be re-used so the whole thing goes (with regard to satisfaction with current garbage collection services).
Please investigate incineration for waste disposal and power generation (stated as suggestion to help increase amount of diversion).
Rather than using percentage of diversion as the measure of success, we should use the amount of waste still going to the landfill, with the ultimate goal of zero waste going to landfill.
Tiered cost - one extra bag $2, more than that could be $3. Every other week garbage collection could work some people and not for others. I could divert more if I was physically capable of traipsing all over (with regard to possible changes to reduce residual waste and encourage diversion).
We are very conscious regarding recycling. We use all 3 bin types (with regard to awareness of what materials go in each of the recycling bins).
We have 8 living in our home. 5 children (12-22 years old) and grandma. We easily produce less than one bag of garbage a week. We would like to produce less and will. So should every. If we can you can too!
Absolutely needed (with regard to landfill as future disposal option), needs sufficient waste shed (with regard to Energy from Waste as future disposal option), Never - too many odour issues (with regard to mechanical biological treatment as future disposal option). Convince roads and planning to require minimum percent of glass and crushed EFW bottom ash in parking lots and driveway asphalt (with regard to future disposal options).

Do not stop weekly garbage pick up. Go to 4 day pick up cycle to prevent weekend issue for residents with Friday pick up. Provide clarification increase awareness regarding what public should do with waste. Ensure public knows about other options for recycling -Diabetes association, community living, cerebral palsy pick up at homes (with regard to changes to garbage collection services to increase diversion).

Good Morning,
My name is Debra Poss and I own a small business at the south end.
Several years back, when coffee cups were thrown back into our blue box, I phoned the city to find out why.
After I was educated about the brown bag option (only option at the time) I brought a brown bag to work. Staff/customer coffee cups, paper towel, Kleenex and newspapers all go in the bag. When full, I take it home for residential pickup. I keep the food bios for my own compost.
I also emailed Tim Hortons and suggested they market this option to the public. As an international business, they felt it was impossible to educate, as every city has its own rules.
As a result, I see 2 ways of recycling "just" coffee cups!!!!! Obviously reusable is ideal, but not realistic.
1. If employers, fire halls, government businesses etc were educated into purchasing the large green, wheeled containers, and the city would pick them up, 1000's of cups, small brown sandwich bags etc could all be diverted. Obviously they would need to have a blue box nearby for the lids.
2. We've all seen people empty their car garbage into the drive-through refuse. If Tim Hortons was told they must provide a recycling option both indoors and outdoors, within the city of Barrie, their complexity excuse would have no value.
A 3rd issue I've noticed, is the fact that fast food places, seem to be able to decide how hard they want to work with recycling. One "Subway" has a blue box and the next one does not. If someone can come around and enforce "no smoking" stickers, then surely someone could talk to these places and ensure they know what the city has to offer.
A 4th issue is in public bathrooms. Those who provide paper towel hand wipes, should always be using clear and ideally biodegradable garbage bags, with the large green bucket concept in use.
I realize these thoughts need lots of political input, but I wanted to get my thoughts into your current discussions.
Thank you for this opportunity.

I definitely support higher costs for additional bags with every other week collection. I am on the fence with the no free bags option - I think this service should be included in our taxes until the city can recycle everything or almost everything (95% +) (with regard to changes to reduce waste and increase diversion).

I think they are all great solutions to increase waste reduction and reuse, especially reuse centres and enhancing current systems (with regard to initiatives to encourage waste reuse and reduction).

If residents are recycling properly, every other week collection would be adequate (with regard to changes to reduce residential waste and encourage diversion).

Keep it open to use at max. Initiative to increase local production, reduce packaging (with regard to satisfaction with current recycling collection services).

Let people repurpose articles left at the dump instead of burying it! Stop charging households for taking their own stuff to the dump! (with regard to changes to garbage collection services to increase diversion)

Move depots where people can deposit good things that can be used by others. Many organizations would be happy to put a bin at the dump which they will collect NO cost to the city.

Shipping our organics and recyclables long distances is not acceptable. We should focus on decreasing packaging, composting at home and not shipping out when possible.

We only have so much land to bury garbage a more sustainable long term approach would be ideal (with regard to future disposal of non-recyclable and non-compostable waste).

Community environment days where people can drop off these items and pick up other information (composting, rain barrels, organic lawn care, city parks and trails....) (with regard to satisfaction with other recyclable collection services).

Have more frequent trading days or a place to drop off large items for free for others to use (with regard to changes to garbage collection to increase diversion).

Information at point of purchase (grocery stores for example) about how to choice items with less packaging and what can be reused (with regard to initiatives for waste reuse and reduction).

It has now become more than acceptable to visit "thrift" shops, pawn shops etc in an effort to lower home/family costs. I like the idea of a 'Reuse Centres' very much. Old computers, radios, TV's, home kitchen aids would provide opportunities for employment, help low income families re making home computers a given etc. Yes, advise and educate regarding existing programs, but, be sure to make clear the obvious errors made in the past, how corrected, if possible, what real dangers are etc! Only an honest and open policy will work. Every day new products are put on the market, without it appears, how to dispose of them once they fail or become old. Education is a must as to what, where and how these products can or may affect our Country, before it is admitted and that is up to all Government officials, including municipal to become educated at! (with regard to initiatives to encourage waste reuse and reduction)
The goal must be 100% diversion and responsible population growth within the city (with regard to suggestions related to Barrie's Sustainable Waste Management Strategy).
We need more creative and innovative ways to reuse products to keep them out of landfill, i.e. Styrofoam....and we need to put huge pressure on the manufacturers of products to reduce packaging (with regard to changes to recycling collection to increase diversion).
Increase fee for extra garbage bags . Focus on business and institution's waste. Assist them with diversion program. Medical buildings. School programs to educate the next generation (with regard to changes to garbage collection to increase diversion).

Table 14: Public comments linked to disposal

Environment/Sustainability (disposal)
Additional promotion and education - your messaging has to incorporate a comprehensive, transparent vision putting health, safety and environment ahead of strict business.
EFW - EFW is a sustainable possibility that needs to be further explored.
EFW and MBT – possibly. Enhance MOE standards to compare to European standards and use school technology departments to access fully how "green" a process actually is. Does it use fossil fuel? Does it create a useful product? Is it sustainable?
A sustainability plan for the geographic area of Simcoe County (Including Barrie and Orillia) needs to be developed. The Waste Management Strategy would be a component of the overall sustainability plan.
I would love if we could shift to zero waste.
Perhaps... need to know more (with regard to mechanical biological treatment as a future option for disposal); Perhaps... Environmental impact needs to be considered. Energy for heating??? Electricity?? (with regard to Energy from Waste as a future option for disposal)
Rather than using percentage of diversion as the measure of success, we should use the amount of waste still going to the landfill, with the ultimate goal of zero waste going to landfill.
Health (disposal)
Additional promotion and education - your messaging has to incorporate a comprehensive, transparent vision putting health, safety and environment ahead of strict business.
If technologically tested for toxic residue in air and water and landfill (with regard to Energy from Waste as future disposal of non-recyclable and non-compostable waste).
Waste Disposal Standards/Guidelines

EFW and MBT – possibly. Enhance MOE standards to compare to European standards and use school technology departments to access fully how "green" a process actually is. Does it use fossil fuel? Does it create a useful product? Is it sustainable?
Going from 500 kg to 100 kg was a blow to homeowners.
Landfill Tipping Fees
Going from 500 kg to 100 kg was a blow to homeowners.
Have travel diversion events. Open temporary transfer station for these materials. Stop charging fees for scrap metal.
Tipping fees exemption versus container numbers.
Calendar could include information on fees at landfill site.
Free drop off of scrap metal and e-waste.
Let people repurpose articles left at the dump instead of burying it! Stop charging households for taking their own stuff to the dump! (with regard to changes to garbage collection services to increase diversion)
Should be PAYT (pay as you throw) (with regard to changes to reduce amount of waste and increase diversion).
Yard waste - uncompostable (i.e. rock, clay, brick). Need fill location with free tipping (NOT commercial).
Landfill
Not really - they will be out of business. Anticipate the most difficult questions and transparently answer. Barrie must ask the correct question and not expect the resident to find out #.
ICI Disposal
Provide opportunities for ICI to partner with municipality for collection. ICI would still pay a fee for collection, but much less than private fees because of economies of scale. This will again further encourage education and awareness as the students and employees have identical programs at home and work/school.
Odour (disposal)
No outside tap to clean bins at our location (stated as obstacle to green bin use).
Absolutely needed (with regard to landfill as future disposal option), needs sufficient waste shed (with regard to Energy from Waste as future disposal option), Never - too many odour issues (with regard to mechanical biological treatment as future disposal option). Convince roads and planning to require minimum percent of glass and crushed EFW bottom ash in parking lots and driveway asphalt (with regard to future disposal options).
Would have to see the evidence of need, odour and sufficient supply (with regard to mechanical biological treatment for future disposal of non-recyclable and non-compostable waste).
We live close to the landfill and the odours have been a nuisance since last year. It would be interesting to know the revenue generation from diversion - to what degree is it cost effective? (with regard to suggestions related to Barrie's Sustainable Waste Management Strategy).

Table 15: Public comments relating to future waste disposal

Alternative Waste Treatment technologies
What ever you re-cycle, the landfill will eventually reach capacity if we continue on the present way we dispose of our garbage. Re-cycling adds frustration and hardships to many taxpayers, especially seniors. The best way is to build an incinerator to burn most, if not all, of our waste. Europe has had them for years, and Brampton burns their garbage. In this day and age, we can burn it all with no pollution, and produce electricity and heat. The heating can be supplied to the building itself, and other industrial plants built beside the incinerator. The electricity can be added to the grid, earning the city money. Heating another building can also produce revenue. We get rid of our garbage, and make money for the city at the same time. Now is the time to build this plant. We cannot wait until the landfill is exhausted.
I saw your leaflet about the waste management strategy, looking for input. I am in process of working with RVH to develop a program of organic waste management using worm composting. I don't know if that is anything which would be of interest to you. I have been composting my own food waste and shredded paper at home for years using this method, and thought that it would be ideal for an institution such as the hospital which has a lot of both food and confidential paper - no-one is going to be able to read confidential information after the paper has passed through the digestive system of a worm! And of course, the product of all this digestion is "black gold" - the worm castings which are so good at improving soil. I am working with a farmer friend to develop a pilot project. I also own some land near Hillsdale and would be willing to turn this into a worm farm if this could be developed into a business on a larger scale. If this is of interest to you, perhaps we could have further discussions.
All will eventually apply - reduction in MFR of plastic dyes reduction of use some natural resources.
EFW - EFW is a sustainable possibility that needs to be further explored.
EFW and MBT – possibly. Enhance MOE standards to compare to European standards and use school technology departments to access fully how "green" a process actually is. Does it use fossil fuel? Does it create a useful product? Is it sustainable?
Landfill and EFW - The emphasis of our efforts should be on Reduction first through Provincial Regulations on companies, education of consumers then on diversion and finally on methods of disposal where the by-products are made use of (e.g. methane gas).
Landfill, EFW, MBT - All options should be explored. Partnerships with surrounding communities should be explored as well.
Reuse is better than recycling, with densification of suburbs it will be more expensive to collect. Incineration is not viable because there is a need to build up stock to produce enough energy. Gasification could be viable.
Stop shipping food waste to Arthur. Set up anaerobic digester and transform the methane yield into electricity and heat.
Build an incinerator!!! (with regard to changes to recycling collection services to increase diversion, support for possible changes to reduce residential waste and increase diversion, and future options for disposal of non-compostable and non-recyclable waste).
Minimization of environmental impact and production of usable energy should be key goals (with regard to future options for non-compostable and non-recyclable materials).
Perhaps... need to know more (with regard to mechanical biological treatment as a future option for disposal); Perhaps... Environmental impact needs to be considered. Energy for heating??? electricity?? (with regard to Energy from Waste as a future option for disposal).
Please investigate incineration for waste disposal and power generation (stated as suggestion to help increase amount of diversion).
Read about this in the pamphlet - sound great! (with regard to Energy from Waste and mechanical biological treatment as future disposal options of non-recyclable and non-compostable waste) .
Burn it! (with regard to future disposal of non-recyclable and non-compostable waste).
I hope there are plans being considered for alternative waste management AND a second site suitable for landfill use once existing site is exhausted in 2024. Present landfill is very well managed (with regard to suggestions to Barrie's Sustainable Waste Management Strategy).
I think all options should be considered and the selection (whether it be a single method or combination) should be made based on the most ecological solution and most sustainable solution (with regard to future disposal of non-recyclable and non-compostable waste).
If technologically tested for toxic residue in air and water and landfill (with regard to Energy from Waste as future disposal of non-recyclable and

non-compostable waste).
Incineration (stated as a suggestion for future disposal of waste that is non-recyclable and non-compostable).
INCINERATION (with regard to future disposal options for non-recyclable and non-compostable waste).
Incinerators can reduce waste and produce power.
MBT, fermentation, gasification may show promise.
VERY leery of EFW and incineration: it discourages recycling and re-use.
Would have to see the evidence of need, odour and sufficient supply (with regard to mechanical biological treatment for future disposal of non-recyclable and non-compostable waste).
Not within the City limits (with regard to future disposal of non-recyclable and non-compostable waste).
I am not familiar with two of the three options; at this time I do not feel informed enough to answer this question (with regard to future disposal of non-recyclable and non-compostable waste).
New technologies (with regard to changes to reduce residential waste and encourage diversion).
Future Disposal – Landfill
I am not an expert on waste management but thought I would take this opportunity to comment on a couple of items. I have lived in Barrie for 40 years, and the service for garbage collection has declined significantly over these years particularly the following: •Large item, stoves, fridges, furniture used to be taken away, no longer. You may want to consider one or two days a year where households can get rid of these items, instead of having to pay to have someone take them away. •There was no limit on regular household garbage bags, now I think the limit is one, and you have to pay extra for the rest. There are only two people in my household and we are usually able to meet this requirement but for larger families this must be a challenge. You may consider a no limit on certain festive days in the year, such as Christmas, which always generates additional garbage. •Leaf Collection and yard waste was always done by the City, now you have to buy specific bags. I have twenty trees on my property and I put out roughly 40 to 50 bags each fall. So, I appreciate that each year council asks your department to look for ways to trim the budget, but in doing so, it has consistently been the tax payer who is left paying the bill. Garbage collection is a priority within the taxes we pay, and any further downloading would not be acceptable. When I drive out in the rural areas surrounding Barrie, I often see these restrictive items in the ditch, so it is a reminder that some concessions should be made. Landfill: With the expected growth of Barrie, it would seem to me that a new Landfill location will be required. This is major problem as we have seen in other municipalities. No one wants to live next to a landfill site, and it appear to me that new locations are suggested much too late in the planning process, when development or prime farm land is already existing. So it would make sense to start the process now. As a suggestion, you have just annexed land from Innisfil, most of which is not developed other than farm land. I would make sense to me to research this area before development starts. The other option would be Tiffin Street, which is mainly scrap yards. Possibly the land is too low in this area, or possibly not enough land, but I doubt you would get much opposition from this type of industry. I don't know if you can build in another municipality but the land West of Barrie in Essa, (say the sand pit area) has no major development, not good agriculture land, and not too far away. It is also not close enough to the Nottawasaga River to cause concern. So, these are my comments and thank you for the opportunity to voice them.
Landfill, EFW, MBT - All options should be explored. Partnerships with currounding communities should be explored as well.
Absolutely needed (with regard to landfill as future disposal option), needs sufficient waste shed (with regard to Energy from Waste as future disposal option), Never - too many odour issues (with regard to mechanical biological treatment as future disposal option). Convince roads and planning to require minimum percent of glass and crushed EFW bottom ash in parking lots and driveway asphalt (with regard to future disposal options).
I hope there are plans being considered for alternative waste management AND a second site suitable for landfill use once existing site is exhausted in 2024. Present landfill is very well managed (with regard to suggestions to Barrie's Sustainable Waste Management Strategy).

4.4.7 Education and Awareness

Education and Awareness
- Educational programs through the schools at the school level, involving staff/students/parents. - Hosting specific "themed" workshops aimed at the student level.
Continue to make all touch-points for waste management an educational effort. Trucks should be bio-diesel powered (in part) and we should communicate this. Large posters on the trucks should offer tips and tricks.
Education is very important
A battery collection policy and collection procedures. Different colours for paper and plastic containers. Information packages for new residents regarding how to recycle correctly.
As a citizen I'm satisfied with the collection. With the Board - It would be nice to take advantage of shared services and also the educational opportunities with the students.
Awareness of Green Bin service (promotion and education) – Primarily. You also need to develop a pet waste program.
Better organization/education of when yard waste collection is.
- Building should accommodate for recycling and green bin use. - Different colour bins would help reduce contamination between plastics and fibre by elderly residents. - Education needed for elderly as they move into multi-residential buildings. - 95 gallon bins are difficult to move (the wheels don't work properly).
But some residents are elderly and don't understand plus elderly tend to not be bothered while women don't know how to sort.
But we do have newsletters distributed by each tower (east and west) every few months that it could printed in as well as information. We don't have a battery collection in place.
Current practices and current or upcoming changes should be well advertised.
Individual champions with schools. Partner with post secondary institutions to R and D potential solutions.
Landfill and EFW - The emphasis of our efforts should be on Reduction first through Provincial Regulations on companies, education of consumers then on diversion and finally on methods of disposal where the by-products are made use of (e.g. methane gas).
Lower bag limits. Reduced frequency of collection. Other - Opportunities for partnership with the local school boards and college to help with education and awareness.
Mandatory placement on organics in green bin. Consistency in all areas - homes, schools, apartment buildings, etc.
More education to inform people what is recyclable and what is not. School based programs.
Much more public education by a variety of means - radio, TV, newspaper, etc.
Partnering with school boards - educational opportunities, monetary advantages
Place ads on buses. Invites to open houses, townhall meetings. Councilors town hall meeting - feature the strategy.
Potential odours. Potential pests. Awareness of service. Speaking with many residents they are weary of having pests due to organics. Continue to offer suggestions and education. Collect Green Bin waste from institutions at a minimum and ICI.

Promotion and Education: - Need to create an incentive program. - Need to highlight ROI benefits of zero waste products. - Need to be seen to be working with governments to influence ERF thought. - Corporate citizen promotion i.e. Honda - zero waste.
Provide information on "take back programs" on educational materials, websites. New resident information package provided at city facilities welcome wagon to Condo management companies. At city facilities organics is not collected and blue/grey recycle is not readily available. Need to walk the talk.
Provide opportunities for ICI to partner with municipality for collection. ICI would still pay a fee for collection, but much less than private fees because of economies of scale. This will again further encourage education and awareness as the students and employees have identical programs at home and work/school.
School tours of Barrie Environmental Centre - hire tour person. Insurance coverage necessary.
Small town malls, advocacy.
Somewhat - Educate and promote need to further identify markets for recycled product and educate the public to new uses. Plan consistent systems at schools and home.
Somewhat - primarily websites are not search optimized to help people find what and where.
Somewhat - Promote home composting.
Somewhat - unified targeted messaging digitally and in print to promote and educate.
Sticker on box saying what is acceptable. Bayshore - Have OCC bin because too much volume for bins.
Suggest large stickers attached to blue/grey boxes outlining acceptable and not acceptable materials. How about a weekly or monthly prize for a box well sorted to reward homeowners that do a good job of sorting.
We have a company that now will pick up all electronics free to us. Need more information for residents.
Welcome wagon kit for builders.
Yes- Great program - Benefits need to be publicized especially length of landfill life. In addition to the truck compartments. When looking at my neighbourhood participation is low - time for another push. SCDSB - It would be great on many levels to collect organics at schools for diversion - as well as educational components.
Yes- More information on what is done with recyclables and how they are utilized.
Yes to what is recyclable. No to how to recycle. Signage for automobile pick up might be useful.
As mentioned before, I am not too sure what to do with certain waste i.e. textiles, plastics, metals (with regard to current education materials for diversion).
Bring awareness to schools, clean up programs offered as community service (high school students) (with regard to suggestions on increasing public awareness of diversion programs).
Calendar could include information on fees at landfill site.
Catch kids/students, get schools involved more (if possible) so they bring their habits home. Limited recycling in schools i.e. fine paper and cardboard, juice boxes, water bottles (no coffee cups or other plastics).
Charge household for more than 1 bag or 1 can. Lots of households don't care about recycling, this would enforce it. More communication is needed, especially for independent collection programs (with regard to change to garbage collection services to increase diversion).
Clear information on internet, information on recycling regularly in paper (stated in regard to satisfaction with current education materials, and suggestions for increasing diversion programs).
Communication with repetition e.g. local newspaper, Parks and Rec program Guide, Georgian College Course Calendar, add on flyer distributed with local shopping centre charity drives e.g. firemen boot day, they solicit for contributions at shopping centres annually. Have them give out a flyer on recycling.
Continue to engage and inform the public with events such as this as these are major developments, or as decision points are reached. As sustainable alternatives are made available to people the cost of using non-sustainable alternatives should increase (or the convenience should decrease) (with regard to suggestions related to the Sustainable Waste Management Strategy).

Foresight, foresight, foresight. More education on cradle to grave programs through companies. Long term planning, not election term planning. Reducing developers stranglehold on policy. Gathering and presenting solutions used around the world. Bite the bullet - the political will has to come forward and do something on a selection of a couple options to move forward decisively on not just study to death with no result (with regard to suggestions/comments related to the Sustainable Waste Management Strategy).
Gain local knowledge, make suggestions (stated as main reason for attending open house).
Having suffered a couple of concussions in the last 2 years, it has become too confusing to divide every category of waste each week. If I get all the newspapers and cardboard separated and to the curb that is sometimes all I can manage. I gladly pay for garbage tags because I am aware it is my fault that I can not do more (with regard to obstacles to using the Green Bin).
I'd like to see Barrie City Hall (Rotunda) host films to educate the public about various ways to deal with waste.
If this relates to the annual calendar it is too mish mash, too much information poorly presented (with regard to satisfaction with current education materials for diversion programs).
I'm not aware of collection services but have used the drop-off location (with regard to satisfaction of collection services of other recyclables).
Information (stated as main reason for attending the Open House).
Make comments and learn (stated as main reason for attending Open House).
More media attention, NOT newspapers. Door information drop off. Mailings would be good, I would read!
More public awareness -> "A" channel and City TV (with regard to changes to recycling collection that could increase diversion).
Newspaper adverts, school education, contact local community groups and raise awareness through them and to their members (with regard to suggestions on increasing public awareness of diversion programs).
Not accessible enough (with regard to satisfaction of current education materials available).
Perhaps sending some representatives to other countries like Denmark and Ireland to learn how these countries deal with waste.
Please fire your webmaster. The site is very convoluted, unclear and confusing and could be used to provide much information on this and other subjects (stated as suggestions related to the Sustainable Waste Management Strategy).
Property tax credits for those who do a better job or diverting than others. Disincentives for using plastics (with regard to incentives to encourage waste reuse and reduction).
Publication in Barrie Advance, website updates, social networking, get the information into schools - the kids are often a driving force encouraging families to recycle (with regard to suggestions to increase public awareness of diversion programs)
Small group talks and demonstrations (library?). Awards program? Companies that champion diversion information. Competition between communities like the Communities in Bloom contest (with regard to suggestions on increasing public awareness of waste diversion programs).
Styrofoam needs to be better communicated that it is recyclable (with regard to awareness of what materials go in each of the recycling bins).
The magnet comes in handy. Also like the website. (with regard to satisfaction with current education materials available)
To see what you want us to achieve. To do this, we need to know where we are at now, objectively and relative to similar communities, and what changes do we need to make to meet targets (stated as main reason for attending Open House).
Website and calendar are very informative (with regard to satisfaction with current education materials).
What materials (with regard to satisfaction with current educational materials available for diversion programs).
Would like stickers or a fridge magnet for bins to remind me all the different things that can be (with regard to awareness of what materials go into each of the recycling bins).
Advertise in the Advance (free paper) or send us notices (with regard to suggestions to increase awareness of diversion programs).
Anything that will get people to think more about what they throw away is good. Doing it too quick may lead to more illegal dumping though (with regard to supports for changes to reduce waste and increase diversion).
Barrie is too generous in providing recyclable containers. There should be a charge for additional bins. There is currently no deterrent to residents not recycling properly. I also question whether a third party service provider really cares whether residents get it right or not. Frequently is containers fall out of the bins, the collectors leave them on the road. For newspapers, residents should be required to tie with string to stop papers blowing around neighbourhood. Whitby was an excellent example of how it should be done (with regard to suggestions for Barrie's Sustainable Waste Management Strategy).
Become more informed on wind turbines and future plans for landfill (stated as main reason for attending the Open House).

Bigger bins. More education as to what can go in the bins (with regard to changes to recycling collection to increase diversion).
Civic duty, concern for our unsustainable economic future (stated as main reason for attending the Open House).
Classroom education programs, encourage youth not to litter, demand responsible packaging by retailers/manufacturers (with regard to suggestions for Barrie's Sustainable Waste Management Strategy).
Do not stop weekly garbage pick up. Go to 4 day pick up cycle to prevent weekend issue for residents with Friday pick up. Provide clarification increase awareness regarding what public should do with waste. Ensure public knows about other options for recycling – Diabetes association, community living, cerebral palsy pick up at homes (with regard to changes to garbage collection services to increase diversion).
Do they exist are they posted on your website?? (with regard to satisfaction with current education materials available)
Don't even know information is available, if so where (with regard to suggestions to increase public awareness of diversion programs).
Education and availability of places to put unwanted but still functional household goods (with regard to initiatives to encourage waste reuse and reduction).
Find out more about the long term plans for Barrie's long term waste management program (stated as main reason for attending the Open House).
Get in early, focus on schools and family programs. The more we can adjust the views of youngsters the better off we will be long term (with regard to suggestions to increase awareness of diversion programs).
Good poster boards (with regard to whether the Open House met information needs).
Green bin needs a big push! (with regard to satisfaction with current education materials available)
I don't read the Barrie Examiner. Information should be put in the Advance as well (with regard to satisfaction with current education materials available).
I found the CD Rom a great resource (received 4 years ago) as well as the quick reminder magnet that highlights what can and cannot go in the green bin (with regard to satisfaction with education materials available).
I wanted more information about the progress of the wind turbine (stated as main reason for attending the Open House).
If you look for the information you will find it. It's a little too passive. More aggressive approach (with regard to satisfaction with current education materials available).
Include quality standards data on website indicating quality of yard waste compost. Also obtain data from contracted waste (organic) and post indications on website (with regard to suggestions on how to increase awareness of diversion programs).
Increased advertising of recycling programs held at the landfill (not curbside) and implement/increase special collection days for those types of recyclables (e.g electronics).
Involvement in environmental and related open houses/events around city (e.g. garden centres, library events, home shows, etc). Also an emailed newsletter (2-4 times per year) (with regard to suggestions on increasing awareness of diversion programs).
Learn about plans for landfill, waste collection and wind turbine (stated as main reason for attending the Open House).
More information clarifying what can be recycled. Sometimes people need additional reminders as to what we can recycle (with regard to changes to recycling collection to increase diversion).
More information on current waste disposal program and potential wind turbine project (stated as main reason for attending the Open House).
More P&E (promotion and education) (with regard to suggestions on increasing public awareness of diversion programs).
No - don't even know they exist! (with regard to current education materials available).
Not well known to public - need to post information on website if it's not there (with regard to satisfaction with collection services for other recyclables).
Received excellent training in Whitby (with regard to awareness of what materials go into each of the recycling bins).
Reminders as to which days yard will be collected (even though it is available online some people don't seem to pay attention). If Barrie produces any yard bags they could have the schedule printed on them (with regard to changes to Green Bin/Yard Waste to increase usage).
Television, radio, community centre, bulletin boards (with regard to suggestions to increase awareness of diversion programs).
The information available is excellent but is mostly passive. The more you push the information out the harder it is to ignore (with regard to current education materials available).

The information on the prospective plans was very comprehensive. Introduced questions that I hadn't considered (with regard to whether the Open House met information needs).
To check on what alternatives were being offered (stated as main reason for attending the Open House).
To gather information (stated as main reason for attending the Open House).
Understanding current practices and future planning (stated as main reason for attending the Open House).
Very informative - but still lots of questions about turbines and current practices (with regard to whether the Open House met information needs).
Provide quick reference sheet (with regard to changes to other recyclable collection services).
We need new fridge magnets! I hate having to go online every time I wonder what goes where (with regard to awareness of what materials go in each of the recycling bins).
Have this at all festivals and events... (with regard to suggestions to increase awareness of diversion programs).
Information at point of purchase (grocery stores for example) about how to choice items with less packaging and what can be reused (with regard to initiatives for waste reuse and reduction).
It appears as though many people in my area do not participate in the green bin. Perhaps more education or incentives around that (with regard to changes to garbage collection to increase diversion).
It has now become more than acceptable to visit "thrift" shops, pawn shops etc in an effort to lower home/family costs. I like the idea of a 'Reuse Centres' very much. Old computers, radios, TV's, home kitchen aids would provide opportunities for employment, help low income families re making home computers a given etc. Yes, advise and educate regarding existing programs, but, be sure to make clear the obvious errors made in the past, how corrected, if possible, what real dangers are etc! Only an honest and open policy will work. Every day new products are put on the market, without it appears, how to dispose of them once they fail or become old. Education is a must as to what, where and how these products can or may affect our Country, before it is admitted and that is up to all Government officials, including municipal to become educated at! (with regard to initiatives to encourage waste reuse and reduction).
Once every two years or so someone comes into all apartment buildings and talks about what waste products go here, there or anywhere? Why not ask those who control major air space, Rogers Cable, to donate constant, steady streams of advertisement space to establish education, the necessity of correct waste management etc. Offer incentives for apartment building owners, home owners, factory (if we ever get any again) who try to achieve the highest levels of waste reduction in their area and/or community. Public acknowledgement (MacDonald's Employee of the Month) should help sweeten various endeavors (with regard to satisfaction with education materials available).
Use neighbourhood champions, ratepayer groups, community groups to spread the word. Showcase examples of great practices on the web. Offer contests for waste reduction by street or school (with regard to suggestions to increase awareness of diversion programs).
Hold large recycling depots once every 3 months manned by helpers to direct public to areas to bring waste (opportunity to educate and explain) (with regard to suggestions to increase awareness of diversion programs).
Increase fee for extra garbage bags. Focus on business and institution's waste. Assist them with diversion program. Medical buildings. School programs to educate the next generation (with regard to changes to garbage collection to increase diversion).
Information about wind turbines and see what is being done to improve diversion of waste recycled products away from landfill (stated as main reason for attending the Open House).
Initiate program in schools. Provide collection for medical buildings, make it user friendly (with regard to initiatives to encourage waste reuse and reduction).
Rather than leave "unacceptable" products without any explanation left behind in bins - could a city rep phone us and explain why product was rejected and what we should do. Driver could mark down address and hand in list to city rep. A note doesn't always make sense (with regard to awareness of what materials go into each of the recycling bins).
Where are these? (with regard to satisfaction with education materials available)
Difficult to find info regarding dates of some services. I know the calendar comes out once a year, but publishing this info in a phonebook or in school agendas would make the info more accessible (ironically, most calendars are recycled) (with regard to satisfaction with education materials available).
I am not familiar with two of the three options; at this time I do not feel informed enough to answer this question (with regard to future disposal of non-recyclable and non-compostable waste).

It is tedious to try and find out when these pick-ups occur. The schedule needs to be more easily accessible (i.e. a quick link on the city site; have the dates on the back of the 'garbage tags') (with regard to satisfaction with Yard Waste collection services).

4.4.8 Policy and Bylaws

Policy and ByLaws
-People who recycling and use organics should be rewarded in some manner and those who don't should be penalized. -Would like to see the use of clear plastic bags so driver's can leave behind bags that have recyclable material in them. -People should put green bins curbside every week, regardless of the amounts in them. -Change the by-law so people must use the green bins.
It's my understanding that I can make my suggestion here, since I may not be able to make it to either open house. I suggest that it become law (a bylaw?) that apartment buildings with 6 units or more, be required to have those large bins to facilitate recycling. I believe this (14-unit building + townhouses) complex alone, would recycle far more if it were made easier; and that this is likely the case for all buildings that are currently without recycling bins. Also, if this is already law, I'd appreciate if someone let me know. Thank you.
Are there any policies for permitted containers at City events?
Landfill and EFW - The emphasis of our efforts should be on Reduction first through Provincial Regulations on companies, education of consumers then on diversion and finally on methods of disposal where the by-products are made use of (e.g. methane gas).
Potential by-laws for certain packaging.
Where permits are required set standards of waste diversion.
Impose proper resident usage (with regard to changes to Green Bin/Yard Waste collection services).
Imposing stricter measures on residents (with regard to changes to recycling collection services to increase diversion).
Need a mechanism for easier drop off - bylaw requiring electronic retailers to post notice that they're a drop off point (with regard to satisfaction with other recyclable collection services).
Perhaps better regulation or fees on packaging could be encouraged in provincial or federal regulation (with regard to changes to reduce waste and encourage diversion).
Everyone should have a composter or have to use the green bin....garbage bags should be smaller so as to allow less to be thrown out (with regard to changes to Green Bin/Yard waste collection services).
It has now become more than acceptable to visit "thrift" shops, pawn shops etc in an effort to lower home/family costs. I like the idea of a 'Reuse Centres' very much. Old computers, radios, TV's, home kitchen aids would provide opportunities for employment, help low income families re making home computers a given etc. Yes, advise and educate regarding existing programs, but, be sure to make clear the obvious errors made in the past, how corrected, if possible, what real dangers are etc! Only an honest and open policy will work. Every day new products are put on the market, without it appears, how to dispose of them once they fail or become old. Education is a must as to what, where and how these products can or may affect our Country, before it is admitted and that is up to all Government officials, including municipal to become educated at! (with regard to initiatives to encourage waste reuse and reduction)
Drivers give an "award" to address that excels in recycling. Could be new "purple" bin or gift coupon from city (with regard to changes to recycling collection to increase diversion).

4.4.9 Partnership Opportunities

Partnership Opportunities
1- Develop a Facebook and Twitter presence targeted to different demographics. 2- Create an icon like a "block parent" for residents to qualify" for. 3- Same for business'. 4- Do media relations work to target your demographic audiences using environmentalist oriented writing to distribute your messaging. 5- Campaign Barrie as a would be leader and link to social media. 6- Partner with Ontario universities and publish student papers on topic.

Again consistency with programs in schools, exploring joint opportunities - currently have joint agreement with Public Board.
EFW and MBT – possibly. Enhance MOE standards to compare to European standards and use school technology departments to access fully how "green" a process actually is. Does it use fossil fuel? Does it create a useful product? Is it sustainable?
For example: If the schools ran the same program as the city collection - more consistency, possible greater diversion ratios.
Individual champions with schools. Partner with post secondary institutions to R and D potential solutions.
Is there opportunity to have partnerships with other organizations (ie school, college, etc.)?
Landfill, EFW, MBT - All options should be explored. Partnerships with currounding communities should be explored as well.
Lower bag limits. Reduced frequency of collection. Other - Opportunities for partnership with the local school boards and college to help with education and awareness.
No - Environmentally irresponsible to ship organics outside of city. Work with Dianne Corrigan at Environmental School at Georgian College to develop a suitable Waste to Energy (WTE) process.
No - I think (from a Board Specific) the City of Barrie is missing opportunities in partnering with School Boards including Georgian College.
Partnering with school boards - educational opportunities, monetary advantages.
Provide opportunities for ICI to partner with municipality for collection. ICI would still pay a fee for collection, but much less than private fees because of economies of scale. This will again further encourage education and awareness as the students and employees have identical programs at home and work/school.
We are currently tendered out - going out for a new RFP, joint with Public Board, 2-French Boards.... is there opportunity to have City participate?
-When considering waste, recycling, organics, looking at joint ventures to save on costs re: pick up and disposal. -These types of opportunities need to be explored. -Same services on same route = potential cost saving. -Best bang for taxpayer buck!
Collaboration with surrounding municipalities to find a unified solution to the regions common waste issues (with regard to future disposal of non-recyclable and non-compostable waste).

4.4.10 Cost

Table 16: Public comments relating cost of waste management practices

Cost
Partnering with school boards - educational opportunities, monetary advantages.
Tell households how difficult and costly finding a new garbage dump would be.
-When considering waste, recycling, organics, looking at joint ventures to save on costs re: pick up and disposal. -These types of opportunities need to be explored. -Same services on same route = potential cost saving. -Best bang for taxpayer buck!
When I received the April newsletter regarding Barrie's waster management strategy and the request for comments, I must admit that I did get a little hot under the collar. Although I understand that huge amounts of income are being generated from the recycling of our waste, as a resident I feel that it is a shame for the city to continually try to pack an excessive amount of garbage into a relatively small area, where the only thing that can be done is to pile it higher and higher, so that residents and visitors alike, can have a clear view of our landfill site from miles away. I'm also having difficulty understanding why in Ontario, the 4th largest province in the country, with approximately 1,070,000 sq km of land, with a small population of only 13 million plus, in the second largest country in the world, a disused mine, quarry, subsidence, hole, dried-up-river bed or

similar can not be found to transport this waste to. I also find it difficult to believe that the qualified engineers that we have, were unable to consider the above, so I can only assume the reasons must be either political or mismanagement. Although I understand that we should do our part to reduce household garbage, I do not believe that it is our job to do the waste management departments job of sorting garbage - and paying the waste portion of our municipal taxes but not getting to profit share or receive a tax adjustment from the revenues obtained from the recycling companies. With regard to the proposal to place a wind turbine on the landfill site, I believe that this would only serve to draw even more attention to this location. My suggestion would be to site several turbines somewhere in the centre of Lake Simcoe with underwater cables to the shore.. There should be very few issues with noise or lake pollution. no high visibility structures to spoil the landscape, there would be ample wind to operate the sails and what else could the centre of the Lake be used for? As for the feasibility of such a project I really am not qualified to comment, this is just an idea. I do wish you luck solving this important problem.
We live close to the landfill and the odours have been a nuisance since last year. It would be interesting to know the revenue generation from diversion - to what degree is it cost effective? (with regard to suggestions related to Barrie's Sustainable Waste Management Strategy).

4.4.11 Community Involvement in the Strategy

Table 17: Public comments relating to community involvement in the Strategy development.

Community Involvement in Strategy Development
- Educational programs through the schools at the school level, involving staff/students/parents. -Hosting specific "themed" workshops aimed at the student level.
1- Develop a Facebook and Twitter presence targeted to different demographics. 2- Create an icon like a "block parent" for residents to qualify" for. 3- Same for business'. 4- Do media relations work to target your demographic audiences using environmentalist oriented writing to distribute your messaging. 5- Campaign Barrie as a would be leader and link to social media. 6- Partner with Ontario universities and publish student papers on topic.
Business/commercial, construction and demolition must be included in discussion especially if working towards zero waste.
Group task force .
Hello, I am partly checking to see if you received my previous e-mail, sent on April 25th, about possible worm composting, if you are not already doing this. But in the meantime, I came across a paper which uses oyster mushrooms to degrade disposable diapers. I know these are a problem for landfill, and it might be something to investigate. I have a copy of the paper if you are interested. Regards ---------- Great - sorry, I wasn't trying to be pushy but one never knows if things got through unless there is some sort of a buzz on the other end. And of course, I could be preaching to the converted, but in case that isn't part of your program already, it might become so. I couldn't make it to the open houses (I'm in Toronto both of those days), and I am not sure what is happening with RVH - it was looking promising but seems to be scattering to any farmer who will take their garbage - I understand why they would do this, but it doesn't work very well from the perspective of a concerted program. Anyway, if you are interested in carrying this forward as a pilot project on a limited amount of material, I and a farmer friend would be happy to meet with you. (My interest it partly just because I like to see good things done, but if I can make a reasonable business out of it, I would probably find it more satisfying than being a doctor in the current climate! - realistically, that is unlikely to happen, but if I could get something going for my farmer friend, who does not have a lot of income but is exactly the kind of person one wants to support, then that would be very satisfying.) I am also very intrigued by the option of using my co-remediation for things like disposable nappies, as I know those are a real pain. And mushrooms are - well, interesting! Cellulose in general is difficult to degrade, so getting Nature to help out must be good. I'll try to attach a copy of the paper that was recently released on this subject. I haven't had a chance to read it yet, but if they are doing it in Mexico City, surely we could try here.
I think it is great that the community is being included in this process. I think including more information about best practices of other communities would be useful.

Its primarily a culture change that you are attempting to facilitate.
Not really - they will be out of business. Anticipate the most difficult questions and transparently answer. Barrie must ask the correct question and not expect the resident to find out #.
Post information on the Bayshore Bulletin Board, and publish information in their newsletter.
Recognition of good recyclers and diversion.
Require each organization to provide their plan regarding "sustainable waste management". City to provide a facilitator (perhaps a student or intern). Plan relates to their organization only. A mascot (Joe Garbage) with a Facebook page and 1000's of "friends".
Styrofoam plates and plastic forks were bad choices. Good discussions, a lot of opportunities for change.
Try to get out to as many events as possible - Anything where people are gathering.
Use social media (Facebook, Youtube) to engage students.
Additional stakeholders to consult: Simcoe County Federation of Agriculture, Transition Barrie, Simcoe Muskoka District Health Unit, Food Partners Alliance, Simcoe County Farm Fresh.
Ask the young people (with regard to options to be considered for non-compostable and non-recyclable materials).
Communication with repetition e.g. local newspaper, Parks and Rec program Guide, Georgian College Course Calendar, add on flyer distributed with local shopping centre charity drives e.g. firemen boot day, they solicit for contributions at shopping centres annually. Have them give out a flyer on recycling.
I feel waste management is an important infrastructure issue and I am happy to see the city soliciting input from residents (stated as main reason for attending Open House).
It has to be local and grass-root initiatives (with regard to suggestions related to Barrie's Sustainable Waste Management Strategy).
Knowledgeable person (Katherine Siren) (with respect to whether the Open House met information needs).
Tell people where we are at now, where the goals stand for 5 years, 10 years. What do people have to change to accommodate the desired change? Would like the City to provide smaller compost systems. If you impose a user fee, people will find a way to get rid of it the wrong way. The sustainability plan should not be general, the goals should be written in tangible terms with specific goals for the resident (not just council).
Very friendly and approachable (with regard to whether questions were answered sufficiently).
Very good presentation boards (with regard to whether information needs were met at the Open House).
Which part is done by consultants, what part by city staff? What area of expertise does each have? e.g. mechanical facility vs. incinerator - is something pre-favoured due to limited expertise in other options?
After 5-6 years of work and planning on the wind turbines - need to advertise data to support decisions already made - public citizens buying in, lease of 20 years etc needs to be publicized. MORE TRANSPARENCY (with regard to suggestions for Barrie's Sustainable Waste Management Strategy).
Barrie is too generous in providing recyclable containers. There should be a charge for additional bins. There is currently no deterrent to residents not recycling properly. I also question whether a third party service provider really cares whether residents get it right or not. Frequently is containers fall out of the bins, the collectors leave them on the road. For newspapers, residents should be required to tie with string to stop papers blowing around neighbourhood. Whitby was an excellent example of how it should be done (with regard to suggestions for Barrie's Sustainable Waste Management Strategy).
Broader advertising of open houses like tonight, more frequent open houses (with regard to satisfaction with education materials available).
Encourage more 'Clean up days' Get more of the population involved and they will WANT to learn more, be more involved (with regard to suggestions for increasing awareness of diversion programs).
Get in early, focus on schools and family programs. The more we can adjust the views of youngsters the better off we will be long term (with regard to suggestions to increase awareness of diversion programs).

Great use of information boards and many helpful people present to answer questions (with regard to whether the Open House met information needs).
Hopefully to have someone listen to my ideas and at least consider them (stated as main reason for attending the Open House).
I believe the city is approaching it well by planning for the population growth and its impact on the waste management before the problem starts (with regard to suggestions related to Barrie's Sustainable Waste Management Strategy).
I think it is a done deal but would like to see a vote on (with regard to whether the Open House met information needs).
Involvement in environmental and related open houses/events around city (e.g. garden centres, library events, home shows, etc). Also an emailed newsletter (2-4 times per year) (with regard to suggestions on increasing awareness of diversion programs).
Keep up the great work! It seems like your programs are always expanding. I look forward to seeing what improves in the future while I already enjoy great services. Thank you for holding this event!
Not everyone had all the answers but were able to find someone who could (with regard to whether questions were answered sufficiently).
Please take your time and get it right! Think, listen and think again! (with regard to suggestions for Barrie's Sustainable Waste Management Strategy).
Some of the representatives had NO answers. Lack of knowledge and preparation (with regard to whether Open House met information needs).
They seem to have their minds made up (with regard to whether questions were answered sufficiently).
To gain insight into what the city is doing on the future of the landfill (stated as main reason for attending the Open House).
Very informative - but still lots of questions about turbines and current practices (with regard to whether the Open House met information needs).
Once every two years or so someone comes into all apartment buildings and talks about what waste products go here, there or anywhere? Why not ask those who control major air space, Rogers Cable, to donate constant, steady streams of advertisement space to establish education, the necessity of correct waste management etc. Offer incentives for apartment building owners, home owners, factory (if we ever get any again) who try to achieve the highest levels of waste reduction in their area and/or community. Public acknowledgement (MacDonald's Employee of the Month) should help sweeten various endeavors (with regard to satisfaction with education materials available).
Surely Simcoe County is receiving sufficient funds from the government of Ontario and/or the Federal Government turns enough money over to the Province's need for waste disposal without hitting up the consumers, as always, with more money and/or inconvenience! Reduce 'waste' in the offices, the street workers, keep vehicles in good repair, reduce staff that are redundant, non-productive or earning wages that are far too high for the functions that are performed! 1st, clean up your own house, then develop a sound strategy to keep consumers on board w/yourselves (with regard to possible changes to reduce residential waste and encourage diversion).
Use neighbourhood champions, ratepayer groups, community groups to spread the word. Showcase examples of great practices on the web. Offer contests for waste reduction by street or school (with regard to suggestions to increase awareness of diversion programs).
More city representatives to talk to would have been beneficial (with regard to whether the Open House met information needs).
Feedback on diversion rates relative to a target through local media (a weekly graph in a paper, reports on radio as part of the news. A neighbourhood challenge (with regard to increasing awareness of diversion programs).
I like to keep up to date on local initiatives (stated as main reason for attending the Open House).

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APPENDIX E

Multi-residential Service Level Comparison

Table 1. Multi-residential Service Level Comparison for Municipalities in Southwestern Ontario

Municipality	Multi-Residential Collection?	Service Level Details	Applicable Policies/By-law (paraphrased where applicable)
Brantford, City of	YES Recyclables and garbage ONLY	All condominiums are eligible for free private collection of Blue Box recyclables and garbage through a City rebate program (100% refund). Condominiums are differentiated from apartments by the fact that they contain units owned by residents. Apartments are considered a commercial "for-profit" operation and are therefore not eligible to participate in the rebate program. However, apartments can take part in the City's recycling program and receive free 90 gallon recycling totes. All other multi-residential establishments, smaller in size than a condominium or apartment, are eligible to participate in the same curbside collection program as single family households, so long as it is functional for units to set out waste at the curb. Programs available to these units include Blue Box, garbage, leaf and yard waste and bulky item collection.	**By-law 116-2005.** Multi-Family Waste Containers: • The occupants of buildings in which there are three or more dwelling units and which share common access to a public street shall only leave solid wastes at curbside for collection if the solid wastes are left at a common point as determined by the Commissioner on the curbside and stacked to a height not to exceed one metre. • Where the occupants of a dwelling in which there are three or more dwelling units or the occupants of commercial or institutional establishments (where such establishments are on an existing collection route in the City of Brantford) wish to avail themselves of curbside pickup of solid wastes pursuant to this Chapter, they shall apply to the Commissioner on at least fourteen days notice to be added to the collection route.
Guelph. City of	YES Recyclables, garbage and organics	Multi-residential properties are eligible to receive waste collection services provided by the City, so long as they conform to the current curbside collection method described in By-Law 19199 (i.e., clear bags for garbage, blue tinted bags for recyclables and green-tinted bags or containers for organics). Most apartments and condominiums cannot conform to this system due to the aesthetics of piling numerous bags or garbage at the curb. All properties that do not receive municipal collection must ensure that the waste is collected through a private waste collection service. Currently, approximately 60% of all multi-residential units in the City receive private collection, primarily due the reason previously discussed. Multi-residential properties that receive municipal waste collection must sign a Waste Collection Service Agreement with the City. There is no rebate offered to property owners receiving private waste collection.	**By-law Number (2011) – 19199**. • All multi-residential properties ensure that waste is collected through either a private waste collection service, or by the City through a Waste Collection Service Agreement. • All property owners of a multi-residential property for which City permission to construct the building is granted or site plan approved on or after January 1st, 2010, shall ensure that: a) Adequate provision, to the satisfaction of the General Manger, is made for the management and storage on the property of all waste generated on the property; and b) A Waste Management Plan is provided for the property, which shall include a Source Separation Program (program described in By-Law).
Peterborough, City of	YES Recyclables and garbage ONLY	All multi-residential properties are eligible to receive waste collection services provided by the City. However, in order to be eligible to participate, they must conform to regular curbside collection standards (i.e., two stream collection: containers and fibres). In addition, all properties must purchase a minimum of two 75 gallon totes from the City at $75 each (taxes included). The cost of these totes has been partially subsidized by City. The City also provides signage and labeling for the carts at no additional charge. Currently, the City does not offer green bin organics collection to either single-family households or multi-residential units (except in a small single-family pilot area), and there is no rebate offered to multi-residential property owners who opt for private collection.	The only available By-Law for the City is **By-Law 07-027 as amended by By-Law 09-108**. This By-Law does not contain specific regulations pertaining to the collection of waste from the multi-residential sector. The City is planning to update this By-Law in the near future.
Sarnia, City of	**YES** Recyclables and garbage ONLY	The City provides free weekly collection of recyclables to the multi-residential sector. The 96 gallon recycling carts are not provided free of charge, as this provides additional incentive for them to be taken care of. They can be purchased from the City as part of a bulk order or on their own from the collection contractor. P&E material includes flyers, cart labels and signage. No blue bin or bag is provided to individual units. All multi-residential establishments are required to participate in recycling collection. Garbage collection is also provided under the City's collection tender for a fixed rate. It is the responsibility of the building superintendant/owner to rent a garbage dumpster from the collection contractor, which can range in size between 2 and 8 yards depending on the size of the building (rental rate varies depending on size of bin). Garbage collection frequency is flexible and depends on a building's individual needs. The lift cost per bin is specified in the collection tender. Buildings that have signed a Waste Collection Agreement with the City are eligible for reduced garbage collection rates offered under the collection tender, otherwise they must pay for private collection. The City is not currently looking into organics collection for the multi-residential sector.	**By-law 62 (2006).** • Collection shall be provided to all multi-residential buildings with 7 or more dwellings in the City by the collectors as provided for by the City. The dumpster or bin type container for collection of garbage will also be used for collection of all bulk (large items) or white good. Owners of multi-residential buildings will be charged a rental and lift fee for the container or a collection fee for the bulk (large) items and white goods by the waste collector as provided for by the City. • Container collection (roll cart) shall be provided to all registered multi-residential buildings. Any roll carts required for the current program must be purchased from the Recyclables Collectors as provided for by the City.

Municipality	Multi-Residential Collection?	Service Level Details	Applicable Policies/By-law (paraphrased where applicable)
Sault Ste. Marie, City of	YES Recyclables and garbage ONLY	All multi-residential properties are eligible to receive waste collection services provided by the City, so long as they conform to the current two-stream collection method described in the By-law 2004-68. Individual units are provided with blue and yellow recycling bags (blue for containers and yellow for fibers) and are asked to empty their bags in the waste containers located in or just outside their building. The containers must be placed at the curb at same time as regular collection and it is the responsibility of property owners and/or landlords (not the City) to purchase or rent these containers from the City's collection contractor. According to the By-law, multi-family commercial waste containers for garbage are to be constructed to industry standards and shall not exceed 750 kg. Specific weight limits for garbage containers depend on the number of units on the premises, and are outlined in the By-law (e.g., establishment with more than 57 units are allowed up to a 12yd bin). If these weight limits are exceeded, the contractor will charge for an extra lift(s). Containers for recyclables are to be 295L in size and must have lift handles that are compatible with the collection vehicle and colour coded or identified to match the City's recycling program. The collection contractor labels the containers. The City advertises the program in flyers and also provides information sessions in the common areas of larger multi-residential establishments if asked. Organic waste is currently not collected as part of the City's multi-residential program.	Additional details from **By-law 2004-68** regulating the collection of multi-family waste • Multi-Family Waste Containers: Multi-family commercial waste containers shall be constructed to industry standards and may be used for the storage of garbage provided they are located on a concrete surface or alternate surface. All containers must be capable of being emptied by waste trucks, shall be equipped with a leak-proof cover, and shall be kept closed at all times. This container shall be kept in a clean and sanitary condition at all times, and the gross weight shall not exceed 750 kg. • Multi-Family Garbage Limits: This section of the By-law specifies the maximum cubic metres allowance depending on the number of units on the premises. If garbage is compacted, a commercial waste container no larger than 2.25 cubic metres and weighing no more than 750 kg must be used. In exceptional circumstances, approval may be given by the Commissioner to a multi-family premise of five (5) units or more to place one (1) untagged residential container per unit curbside to a maximum of twenty (20) containers. All containers in excess of the allowable limit must have a municipal identification tag. • Multi-Family Recycling Limits: Recycling limits are subject to approval by the Commissioner.
Thunder Bay, City of	YES Recyclables and garbage ONLY	All multi-residential properties are eligible to receive waste collection services provided by the City. The system is a shed-based collection system. It is the responsibility of the property owners / superintendants to construct a shed (s) on their property where both garbage and recyclables (two-stream) can be collected. A separate shed can be constructed for garbage and recyclables or a combined shed can be constructed for both. All garbage and recyclables are to be stored in bags (rather than carts) within the shed(s). For recyclables, a blue bag is required. There is a maximum limit for each bag of 18 kg (40 lbs), otherwise the bag is tagged and left behind. Garbage is currently collected weekly; recyclables are collected by-weekly. Some property owners/superintendants have residents bring pre-bagged waste to the sheds; whereas others offer plastic recycling baskets to their residents (subsidized by the City), which residents can use to walk their recyclables down to the shed and separate them out there. In this latter scenario, it is common that 65 gallon bins (lined with blue bags) are used in the sheds. In other circumstances, residents are allowed to bring garbage and recyclables to a common sorting area within the building, and building staff periodically transfer this material to a shed. The City also distributes a Property Manager's Kit which contains a recycler's handbook and sample of all P&E material (i.e., door hangers, magnets, pamphlets). The City provides all signage free of charge. They have also partnered with a non-for-profit organization to offer free presentations (typically in common areas) to residents to educate them on how to effectively participate in their building's diversion program. Some buildings choose not to participate in municipal collection, generally due to space constraints with respect to building a shed. These establishments are not offered a rebate for private waste collection. Organic waste is currently not collected.	**By-law 130-90** does not contain specific regulations pertaining to the collection of waste from the multi-residential sector.

Municipality	Multi-Residential Collection?	Service Level Details	Applicable Policies/By-law (paraphrased where applicable)
Durham, Region of	YES Recyclables and garbage ONLY	To be eligible for waste collection services, the apartment building or townhouse complex owner or property manger must apply for waste collection services and meet the Region's Technical and Risk Management Guidelines for Waste Collection Services on Private Property requirements which can be found at: *http://www.durham.ca/departments/works/waste/multires/WasteCollectionGuidelines.pdf* Each serviced apartment building or townhouse complex is supplied with either recycling carts or in some instances yard bins for cardboard. Each residential unit within the building or complex is provided with a reusable recycling bag to help store, transport and deposit recyclable material in the designated recycling carts/bins as well as educational materials to help them understand the recycling program. Both high rise and townhouse properties receive weekly Blue Box and garbage collection. Durham Region was awarded $71,400 through the Continuous Improvement Fund (CIF) to Implement Multi-residential Best Practices including a database update, site visits, performance monitoring, new P&E material, more carts, and in-unit containers for all multi-residential units.	**By-law Number 46-2011.** • Garbage collected from a Multi-residential or Commercial Property using On-Site Waste Collection in excess of the Garbage Bag Limit may be subject to a collection fee to be determined by Council. • The Region may designate a location at which the Waste from any Residential Unit or Multi-residential Property shall be Set Out and may also determine the method of collection. • Every Owner of a Multi-residential Property is required to ensure that any collection program provided by the Region, is as convenient to each resident as the Garbage collection program by: (a) Providing Occupiers with specific instructions for participating in all waste collection programs; (b) Posting clear and understandable sorting instructions and/or signage in prominent locations; (c) Maintaining Occupier-accessible Recycling and/or Household Organics composting material and/or other material collection and/or storage area(s) • No Owner of a Multi-residential Property or IC&I property authorized to receive Regional Waste collection shall adjust the number or type of Receptacles without the prior written approval of the Region. (Typical recycling cart ratio to multi-residential building units is 1 cart for every 7 units.) • Every Owner of a Multi-Residential Property receiving Regional Waste collection services shall prepare a bi-annual waste status report for each Eligible Property in accordance with the Region's waste diversion programs. The By-law also outlines additional requirements relating to collection/storage areas, access routes, and frequency of collection.
York, Region of	YES (in several municipalities) Recyclables, garbage and organics	All waste collection is managed by the Region's constituent municipalities, whereas the processing of waste is managed at the Regional level. Multi-residential collection is provided only by the municipalities of Markham, Newmarket, Richmond Hill, Vaughan, Aurora, Georgina and Whitchurch-Stouffville. Each municipality varies depending on the level of service provided. For example, Markham and Richmond Hill provide both Blue Box and organics collection (in some, but not all buildings), while Vaughan and Georgina only provide Blue Box Collection. The level of service provided for garbage collection also varies depending on the municipality. According to Regional Council Meeting Minutes (June 24, 2010), Markham, Newmarket, Richmond Hill and Vaughan all require new high-rise residential construction to include three-stream (i.e. recyclables, organics and garbage) waste management capabilities. These municipalities have incorporated policies and procedures into their site plan processes to ensure on-site implementation of three-stream waste collection within *new* buildings. All other municipalities (Aurora, East Gwillimbury, Georgina, King, Whitchurch-Stouffville) do not currently require three-stream waste collection as a condition of site plan approval.	Refer to individual municipality By-laws and site plan approval processes.

Municipality	Multi-Residential Collection?	Service Level Details	Applicable Policies/By-law (paraphrased where applicable)
Toronto, City of	YES Recyclables, garbage and organics	Multi-unit dwellings are residences with nine or more units that are serviced by containerized collection (not curbside). Generally multi-unit dwellings include apartments, condos and some types of townhouses. As of July 2008, owners of a multi-unit building (buildings with nine or more units and some types of townhouses) are serviced by municipal containerized collection and are required to pay a fee for garbage collection based on how much garbage the building generates during the billing period and the number of units in the building. This Fee will appear with water fees on the new, combined Toronto Water/Solid Waste Utility Bill. There is no fee for recycling; buildings that reduce garbage and increase recycling will therefore pay less. Recyclables and organics are collected free of charge. Following an organics collection pilot in 30 multi-unit buildings, the City is now bringing the program to all multi-unit buildings across the City. City staff will provide container specifications for buildings to purchase collection container(s) (either bulk bin or cart). The City will also provide each building with a supply of indoor in-unit organics containers (kitchen catchers) for residents to collect their organics (one container per unit), along with resident information packages. Residents will use these new kitchen catchers to take their organics to the centrally located bins. There is a choice of two different recycling container types designed to make it easier and more convenient for residents to recycle: a hard-shell blue bin or a soft-shell blue bag.	The Solid Waste By-laws are compiled into Chapters of the Toronto Municipal Code. Each Chapter is a by-law. Relevant regulations found in Toronto's **Municipal Code Chapter 844 (Residential Collection**) are shown below: 1. Every owner of a multiple household residence shall ensure that specific recycling and organics instructions for residents are posted in locations at the multiple household residences as designated by the General Manager. 2. Chapter 844 of the Code also specified regulations relating to the closure of a garbage chute in multiple household residences.
Peel, Region of	YES Recyclables and garbage ONLY	The Region provides both regional front-end garbage and semi-automated recycling or front-end recycling collection to all multi-residential complexes. Recycling is mandatory within all multi-residential buildings and waste collection services may be revoked by failing to comply. The designated set out point where recycling carts/front end-bins are collected must be approved by the Region's Waste Management Division. In addition, the Region provides the following to all multi-residential propertie, free of charge: recycling carts / front-end bins: dedicated multi-residential Annual Waste Guide (mailed to each unit), blue reusable recycling bags, posters, and recycling cart / bin stickers. Front-end garbage bins are not provided free by the Region, and must be purchased by the property owner. There are currently no restrictions on the allowable limit of garbage collected by the Region; however, future By-law will likely establish an allowable limit by volume based on the number of units per building. It is anticipated that there would be a fee for buildings that exceed this allowable garbage limit. All multi-residential buildings are eligible for collection as long as they are deemed "residential". For buildings that are a cross between residential and commercial, free collection is only provided to the residential units within the building. The Region has also recently established a Waste Collection Design Standards Manual that is provided to all developers of new condos and complexes. All new developers must conform to the requirements of this manual otherwise municipal waste collection services will be denied. According to the Manual and the Region's Waste Collection By-law, the building developer will also be required to ensure that the recycling program is as convenient as the garbage collection program. For example, if residents are required to bring garbage to a chute room, they should also be permitted to take recyclables to the same chute room. The Manual also includes requirements relating to waste collection vehicle turn-around points and internal roadways. All building developers who choose not to conform to these Design Standards must opt for private collection. There is no rebate program in place for those who opt for private collection. Of note, older buildings are not held to the same Design Standards as new buildings. There is currently no organics program in place for the multi-residential sector; however this is a consideration for the future.	**By-law Number 80-96-2007 (to be updated in 2012).** STORAGE AREAS/CONTAINERS • Every Occupier/Owner of an industrial or commercial property, hotel, restaurant, **multi-residential complex**, office building or Institutional Establishment shall provide one or more waste storage areas or waste storage containers, and shall obtain the approval of the Commissioner. • For the purpose of this section, "container" includes but is not limited to any one of the following: roll-off containers, lugger bins, compactor units, rear packer bins, side loading bins and front-end bins. • The Commissioner may take into account, among other things, the structure and number of waste storage areas in considering whether to approve or withhold his or her approval of such areas. • Every waste storage container shall clearly identify the Owner of the container by reference to both the business name and telephone number of the Owner. • No person shall alter the location of a waste storage area or container without the approval of the Commissioner. • No Occupier/Owner providing a waste storage area or waste storage container shall permit it to be in such a condition that: is unsightly; emits a foul or offensive odour; the lids or doors cannot be closed tightly; it harbours or attracts rats or other vermin or insects; waste placed in it falls out or protrudes; or is unsafe.

Municipality	Multi-Residential Collection?	Service Level Details	Applicable Policies/By-law (paraphrased where applicable)
Halton, Region of	YES Recyclables, garbage and organics	All multi-residential properties are eligible to receive waste collection services provided by the Region. Most townhouses, with 6 or more units, receive standard curbside collection (i.e., green cart, Blue Box and garbage collection). However, several townhouses (< 20%) receive blue and green totes (360L in size) and front-end garbage bins provided free of charge by the Region. Whether or not townhouse units receive totes or participate in the curbside collection program depends on factors such as space, if there is a garage, etc. Apartments and condominiums, if there is sufficient space for collection trucks to enter and exit safely, receive blue and green 360 L totes and front-end garbage bins provided free of charge by the Region. The number of totes and front-end bins provided is dependent on the size of the building. The Region is currently piloting an organics collection program in four buildings and hopes to have an implementation plan in place by the spring of 2012 to extend this program to all other buildings in the Region. Both recyclables and organics are collected weekly. Garbage is collected weekly or more frequently, depending on the needs of the building. If owners/superintendents require more frequent collection than what is provided by the Region, they must opt for private collection, for which no rebate is offered. P&E material currently provided to all apartments and condominiums in the Region includes a Blue Box carrying bag and an informational booklet. Where possible, the Region conducts educational workshops. Additional P&E material is provided to the pilot area receiving organics collection.	**By-law Number 30-96.** • "For a multi-household residence, "Recycling Container" means: (1) A plastic container known as a Blue Box; or (2) A three hundred and sixty (360) litre (79 imperial gallons) plastic bin equipped with wheels; or (3) Any other container provided by the Region or determined by the Commissioner to be acceptable for the storing and setting out of recyclable materials. • No multi-household residence shall place out for collection more than 6 garbage containers for each dwelling unit on the day of collection, unless approved by the Commissioner. Garbage Container is defined as a properly covered metal front end container compatible with the Region's / Contractor's collection equipment. • Garbage and materials shall be collected from multi-household residences as often as may be considered necessary by the Commissioner. • Garbage and materials shall be kept on the premises between collections and be set out for collection at the curbside or at other such location(s) as approved for collection by the Commissioner. • No multi-household residence shall set out for collection garbage containers in excess of 22.7 kilograms (50 pounds) for each garbage container. • Unless specified by the Commissioner, garbage containers, recycling containers or clear plastic bags shall be provided by the multi-household residents at their sole cost and expense.
Waterloo, Region of	YES Recyclables, garbage and organics	The Region of Waterloo's cart program is available to apartment buildings and townhouse complexes, having six or more units. Eligible buildings are provided with recycling carts, weekly collection service through contractors, and P&E materials (i.e., posters, brochures, and reusable recycling bags) at no charge. The recyclable materials collected are exactly the same materials collected in the residential curbside Blue Box program. The set out time is also the same. Recycling carts provided by the Region are 360 L in volume and are colour coded to help residents sort their recyclables: blue cart for plastic, metal and glass containers; grey cart for paper products and plastic shopping bags; and a separate grey cart for corrugated cardboard. The Region also provides labels that can be adhered to the carts and Regional staff may also be available to attend tenant meetings or conduct lobby displays. While the Region can provide as many carts as needed for containers and paper products/plastic shopping bags, there is a limit on corrugated cardboard carts. Only one corrugated cardboard cart is allowed per cart location. The Region of Waterloo is currently testing green bin collection in apartment buildings and townhouse complexes. Residents in 300 multi-residential units have been participating in the green bin pilot program since October 2006. For more information on the Region's multi-residential waste collection program, refer to the Region's Recycling Handbook: *http://www.regionofwaterloo.ca/en/aboutTheEnvironment/resources/Multi-reshandbookWEB.pdf.*	**By-law Number 02-011** does not contain specific regulations pertaining to the collection of waste from the multi-residential sector.

Municipality	Multi-Residential Collection?	Service Level Details	Applicable Policies/By-law (paraphrased where applicable)
Hamilton, City of	YES Recyclables, garbage and organics	All multi-residential properties are eligible to receive waste collection services provided by the City for recyclables, garbage and organics. Recyclables are collected in 360 L blue carts (separate blue cart for containers and fibres). However, if multi-residential establishments contain 6 units or less, curbside blue *box* collection is implemented instead of blue *cart* collection. All residents are provided with a blue bag to collect recyclables in their individual units. Blue carts are supplied for free by the City in the quantities required (generally 1 cart supplied for every 10 units). Blue boxes are also provided by the City for use in laundry rooms, mail rooms, recreational and patio areas etc. P&E materials offered to building superintendants include brochures, posters, blue cart labels, etc. Organics are collected in 120 L wheeled green carts, provided free of charge by the City, typically in a 1 cart to 15 unit ratio. The green cart program was rolled-out in three phases beginning in 2007 and ending in 2010. The City met with each building superintendant individually to deliver materials, position carts, and distribute sample bags, biodegradable cart cleaner, cart labels and signage. Where possible, the City would conduct lobby presentation for larger multi-residential buildings (i.e., > 30 units). Residents were supplied with a kitchen mini bin, sample compostable bags and communication material. The Green Cart was simultaneously rolled out with a re-launching of the recycling program (i.e. blue bags, additional P&E). Garbage is collected in garbage bins (generally 4, 6 or 8 yard bins); however, multi-residential establishments with 6 units or less receive curbside garbage bag collection. Garbage bins must be rented or purchased, and are not provided free of charge. The allowable volume for pick-up depends on the size of the building. The City is currently in the process of amending their waste By-Law, which will likely result in a stricter volume limit for garbage collection. Lastly, the City comments on all new construction projects through the site plan approval process and, in doing so, lay out the standards for buildings to receive municipal waste collection services (i.e., accessibility related guidelines).	**By-law Number 09-067.** **Conditions for Recyclable Materials / Garbage Collection for Multiple Dwellings:** • The only permitted Containers for Recyclable Materials are: 1. a rigid, reusable Container provided by the City having a hinged lid, wheels and volume not exceeding 364 litres; 2. a receptacle comparable in structure, weight and dimensions to a Container provided by the City; or 3. a Bin Container not less than 2.293 m^3 and not exceeding 6.12 m^3 in size for Recyclable Fibres only. • Where the property generating the Recyclable Materials is a multiple dwelling, Containers are set out for collection up to three times per week on scheduled Collection Days. • The only permitted Containers for Garbage are: 1. a Bin Container not exceeding 6.12 m^3 in size for loose Garbage; 2. a Bin Container no exceeding 2.293 m^3 for compacted Garbage. • Where the property generating the Garbage is a multiple dwelling, no more than three Bin Containers are set out for collection three times per week on the scheduled Collection Day.

APPENDIX F

Consultation Series #2

NOTIFICATION MATERIALS

this week IN BARRIE

September 15th

Brownfields
Public Open House

September 28, 2011
from 5pm - 8pm in the Huronia Room at City Hall

Brownfields are undeveloped or previously developed properties that may be contaminated. They are usually, but not exclusively, former industrial or commercial properties that may be underutilized, derelict or vacant.

Why should we encourage the redevelopment of Brownfields?

- To protect the general health of the community
- To mitigate potential impacts of Brownfields on environmental features
- To promote intensification and infill in areas that have access to existing municipal infrastructure, social and recreational activities
- To revitalize properties to create pride and enjoyment in core neighbourhoods

To find out more on what the city is proposing and to have your views heard, please visit the public open house. Your input is a valuable part of the planning process and we encourage you to join the discussion. Also feel free to submit comments directly to the Planning Services Department.

Additional information can be found at Barrie.ca > Doing Business > Planning & Development > Brownfields

The New City of Barrie Water Bill
Changes You Need To Know About

As a water customer in Barrie, your water bill over the years has been included as part of your electrical bill. That's about to change. Starting October 1 2011, the City of Barrie will be taking over the water billing process.

For the last two years, all electric/water bills have been issued by PowerStream and any inquiries you had regarding that bill were also directed to PowerStream. As of October 1, 2011, the responsibility for all water billing services will be transferred to the City of Barrie from PowerStream. These services are being transferred in order to provide you, our customers, with improved levels of service in a more cost effective manner.

What Changes Have Taken Place & Why?

Over the last few months the City of Barrie's Water Operations and Finance Departments, and PowerStream have been working diligently to implement the most effective and efficient method of reading and billing water consumption across the City. The installation of the Advanced Metering Infrastructure (AMI) system will be completed by September 30th. This new technology fully automates the City of Barrie's water meter reading network. Your water consumption data is then transferred into the new water billing system, where it will be tabulated and a bill will be issued.

As this transition of the water reading, billing and customer service program is completed, as a City of Barrie customer, you will notice the following improvements: an easy to understand water bill, online access to your water consumption data, future online self serve options, a reduced number of estimated readings, a more streamlined approach of responding to your inquiries and concerns and an overall improvement in customer service levels. These changes are an investment that will benefit our residents and the City of Barrie for years to come.

What to Expect On Your First City of Barrie Water Bill

Despite these changes, the billing routine will remain the same. The City will continue the current practice of billing residential customers on a bi-monthly basis, and businesses on a monthly basis.

However, the first bill after the transition could include an extra month. That's because, during this transition period, the time between your last water bill from PowerStream and your first water bill from the City of Barrie may include one to three months of water consumption as we adjust your meter reading schedule to our new system. Once you receive your first bill from the City of Barrie, you will then consistently receive a water bill approximately every sixty days if you are a resident, or approximately every thirty days if you have a business.

What You Need To Do

As of September 15, 2011 if you are a current customer of PowerStream, there is nothing that you need to do. Your name and account information currently being used by PowerStream will be transferred to the City of Barrie for your new water bill. We recommend that you review the information on your first water bill very carefully and contact the City if any changes are required.

How To Pay Your New Water Bill

As of October 1, 2011, when you receive your City of Barrie water bill, forward your payment to the City of Barrie. Customers can pay their water bills using any of the following options: payments through your bank by phone or online-banking, pre-authorized payment plan, pay in person at City Hall or by mail.

If you currently pay your PowerStream electric/water bill by pre-authorized payment (your financial institution automatically pays your bill on a regular basis for you), your City of Barrie water bill can also be paid in the same way. To simplify this process for you, PowerStream and the City of Barrie have signed confidential legal agreements that permit PowerStream to provide the City of Barrie with your current banking information as of the end of September. Therefore, your City of Barrie water bills will be paid automatically by your financial institution. If you wish to change your banking information or you do not wish to be on a pre-authorized payment plan for your water wastewater bill, please contact the City of Barrie Water Billing Branch or complete the pre-authorized payment plan application form available on the website, marking change or cancel at the top of the form.

Please visit Water Billing, under the Living section, at www.barrie.ca.

Upcoming Events

Every Monday
Yoga with Studio Bliss
Maple Ave. Youth Centre, 59 Maple Ave.
5:15 p.m. - 6:00 p.m.
Phone: 705-792-7903
Email: bypc@barrie.ca
Join us every Monday for yoga with Studio Bliss. No experience necessary. For ages 13-19 yrs.

Every Tuesday
Home Work Help Club is Back
Maple Ave. Youth Centre
59 Maple Ave.
5:00 p.m. - 8:00 p.m.
Phone: 705-792-7903
Email: bypc@barrie.ca
Every Tuesday we'll be there to help you through your nightly homework or help you solve that difficult question. For youth 13-19yrs.

Every Wednesday
MAYC Dance Crew
Maple Ave. Youth Centre , 59 Maple Ave.
6:30 p.m. - 8:00 p.m.
Phone: 705-792-7903
Email: bypc@barrie.ca
Wednesdays starting September 21st, MAYC Dance Crew will be hitting the floor. Try workshops in a variety of dance styles and work together to create your own dances! Come check it out! It is free and no auditions are necessary. For ages 13-19yrs.

September 25 - October 1
Expand Your Experience During Active Aging Week
For more information call the Parkview 55+ Centre at 705-737-0755 or visit Barrie.ca
Active Aging Week Activities are free, fun with no pressure. Activities are suited to everyone so come on out and try something new!

BARRIE PUBLIC LIBRARY
Enriching our Community

60 Worsley Street, Barrie
Phone: 705-728-1010
Website: www.library.barrie.on.ca

September 16
Barrie Reads Evergreen 2011
Barrie Public Library
7:00 p.m. - 9:00 p.m.
Join us for a book-lovers evening of discussion, voting, and refreshments when our local luminaries will champion the 2011 Evergreen Award nominated titles.

All adults are welcome to attend and the grand prize draw for the Adult Summer Reading program will be made.

No registration required. For further information, please contact Alison at 705-728-1010 ext. 7084 or email at abrumwell@barrie.ca.

September 22
Planning for Someone with a Disability
Barrie Public Library, Angus Ross Room
7:00 p.m. - 8:30 p.m.
This session will cover government support programs, trusts, importance of proper financial and estate planning, personal income protection and more. There is no fee for this drop-in session.

September 23
EBooks and AudioBooks
Barrie Public Library, Angus Ross Room
10:30 a.m. - 11:30 a.m.
Thousands of EBooks and Audiobooks are now available from the library website, and you can checkout, download, read and enjoy them from the comfort of your home or car. Come to this session to find out what's available, how to download or transfer, and what ereaders and devices are compatible. No registration required.

Bids & Tenders

PURCHASING BRANCH BID OPPORTUNITIES

DOCUMENTS are available on-line at Biddingo.com/barrie or from the Purchasing Branch, 56 Mulcaster Street, Barrie ON during business hours Monday to Friday, 8:30 am. to 4:30 pm. For further information please visit Barrie.ca or by telephone 705-739-4220 Ext. 5163 or Ext. 4538 or by Email at purchasing@barrie.ca

Electronic copies of these bid opportunities are only available through Biddingo.com/barrie. The City of Barrie document fee does not apply to documents that are downloaded electronically through Bidding com/barrie, however a Biddingo.com fee maybe applicable.

REQUEST FOR PROPOSAL # FIN 2011-091P CONSULTING ENGINEERING DESIGN SERVICES, WHISKEY CREEK IMPROVEMENTS KEMPENFELT BAY TO THE BOULEVARD

The Corporation of the City of Barrie is inviting proposals from Engineering Consultants with experience in municipal road, infrastructure, drainage, and structural design to undertake the detailed design and tender package preparation for drainage improvements to Whiskey Creek from Kempenfelt Bay to The Boulevard.

The Consultant will be responsible for services related to the design of low flow and major storm conveyance channels, culverts/bridges, storm sewer system analysis, stormwater quality treatment, landscaping and the environmental components of working within a watercourse. The Consultant will also complete a detailed hydraulic analysis of the proposed works to Whiskey Creek that reflects the proposed changes to the culvert systems and channel configuration and that meets the objectives of the Whiskey Creek Master Drainage Plan Update Class EA.

A non-refundable Document Fee of $30.00 plus HST applies to each hardcopy of the RFP Document.

Closing: 4:30 p.m. local time, Thursday September 29, 2011

THE CORPORATION RESERVES THE RIGHT TO ACCEPT OR REJECT ANY OR ALL SUBMISSIONS.

Tax Billing and Installment
Due Date Notice

Final installment is due on Wednesday September 28, 2011.

Penalties/interest will commence on the first day of each month for any late payments. Penalty/Interest rates are at the rate of 1.25% per month. Please be advised that all payments received are applied first to **all** penalties owing, then the remainder to the taxes owing.

Failure to receive a tax bill does not excuse the property owner from responsibility for payment, nor relieve him/her from liability of penalty for late payment.

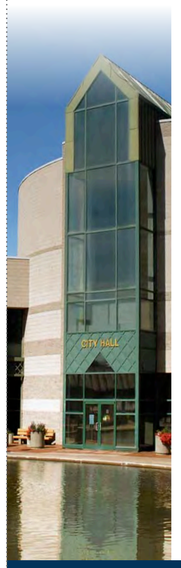
Join the thousands of City property owners already enjoying the benefits of pre-authorized payment plans. The pre-authorized plans available are:

- Due Date Plan – installment amount taken on due date;
- Monthly Plan – equal amounts taken January to May & June to October
- Arrears Plan – agreed upon amount taken every month (interest applies)

PLEASE BE ADVISED THAT IF YOU ARE PAYING BY TELEBANKING OR INTERNET BANKING, YOUR 19 DIGIT ROLL NUMBER, AS FOUND ON YOUR TAX BILL, IS YOUR ACCOUNT NUMBER.

If you would like additional information regarding the various payment options available, or if you have not received your tax bill please call 705-739-4230 between the hours of 8:30 am and 4:30 pm, Monday to Friday.

The City of BARRIE
A great place to Live, Work and Lead



Chief Administative Officer

With its thoughtful and comprehensive 2010 – 2014 Strategic Plan, The City of Barrie has created a vision and a timetable for its continued emergence as a 'complete community'. Through balanced growth, environmental protection, financial health, a vibrant city centre and open dialogue, this is a community that has a compelling blueprint for the future. As the Chief Administrative Officer, you will have the chance to shape this beautiful city as it grows from 142,700 residents to 200,000 over the next decade. Today, the City of Barrie is a wonderful blend of urban living and green space. It offers an exceptional school system, responsive healthcare facilities and some of the best recreational opportunities in the country. It also has the youngest population of all Canadian metropolitan areas and the fifth best educated work force. Working with the Mayor, Council and your team, you'll contribute to the next chapter of Barrie's success story as it welcomes residents and businesses of the future.

As the strategic guide and Chief Administrative Officer of this exciting and complex corporation, you will serve the people of Barrie with strong and open leadership. Overseeing a portfolio that includes Corporate Services, Community Operations, Infrastructure, Development and Culture Divisions as well as the Communications and Inter-governmental Affairs Department and the Strategy and Economic Development Department, you will foster a positive and productive workplace. You will maintain and enhance the City's prudent approach to budgeting and finance. You will continually ensure that the City is forward thinking in legislative compliance, policy formulation, environmental stewardship and labour relations management. As Barrie's population grows, your vision and your involvement in the planning process will contribute to economic development and the growth of the City's reputation as a wonderful place to live, to operate a business and to visit.

In addition to your university degree and post graduate studies in business or public administration, you have significant general management experience in a unionized municipal or corporate environment. Comfortable working with elected officials, you are an exceptional consensus builder who inspires everyone around you with your supportive leadership style and open communication.

The City of Barrie is partnering with Odgers Berndtson, global leaders in executive search and recruitment, on this exciting role. To explore this opportunity further, please contact Jessa Chupik of Odgers Berndtson at 416.366.1990 or jessa.chupik@odgersberndtson.ca.

To be considered for this position, please submit your resume and related information online at http://www.odgersberndtson.ca/en/careers/10306

Submissions WANTED for our annual Christmas Card Contest!

Your vision may be chosen as the City of Barrie's Christmas Card for 2011. Each entry must be accompanied by a signed entry form as supplied by the Mayor's Office. Entries may be a water colour painting, oil painting, pen and ink drawing, photographs, etc.

Minimum size of original artwork – 4" x 6"
Maximum size of original artwork – 8"x10"

A monetary award will be made to the winner. Full contest details and official entry forms are available from the Mayor's Office, the City Clerk's Office or online at Barrie.ca > City Hall > Mayor & Council > Office of the Mayor.

Finished art should be submitted in person to the Mayor's office at City Hall, second floor.

SUBMISSION DEADLINE:
FRIDAY, OCTOBER 14, 2011

Barrie's sustainable waste management strategy

Be Part Of The SOLUTION

The City of Barrie is developing a **Sustainable Waste Management Strategy** that will promote sustainable change to Barrie's waste collection, diversion and disposal over the next 20 years. We want to hear what the community thinks about current waste management practices, including areas where you think we can improve, and suggestions for the future.

Your input matters!

Please visit ww.barrie.ca for more information and to participate in our online survey. You can also email your comments to **wastestrategy@barrie.ca**

Improved Customer Service is on Tap

with The City of Barrie's new water billing system

Soon, your water bill will be issued by The City of Barrie where you will receive improved customer service options like – an easy to read bill, daily consumption information and increased online services.

For more info, visit Barrie.ca

Wards 6 & 7 Town Hall Meeting

Ward 6 Councillor Michael Prowse
and
Ward 7 Councillor John Brassard
invite you to attand a Town Hall Meeting
with
Mayor Jeff Lehman

Tuesday, September 27, 2011
7:00 pm to 9:00 pm

Drop-ins are welcome.

Holly Community Centre
171 Mapleton Avenue in the multi-purpose room.

This is your chance to meet your Ward Councillor, Mayor, and get answers important two you.

Surface Water Treatment Plant OPEN HOUSE

September 29, 2011 from 4 p.m. - 8 p.m.

The NEW SWTP is now providing water to the City of Barrie drinking water system that services south end customers. Come and check out the NEW home of Barrie's Water Operations Branch and tour the Plant Process Area, along with the Administration Building.

Public inquiries with regard to the Open House can contact Water Operations at 705-739-4255. For online information visit Barrie.ca.

Compost For Sale

Tuesday to Saturday
9 a.m. - 4 p.m.

The City of Barrie is selling home-grown compost at its Landfill, 272 Ferndale Drive North.

Compost is available to all interested parties. Please bring your own shovel, containers and appropriate footwear as you are responsible for filling your containers.

Contact us for information on commercial loads. For more information please call 705-739-4219 or visit Barrie.ca.

Sandy Coulter
Manager, Environmental Operations
City of Barrie
70 Collier Street
Barrie, ON L4M 4T5

October 4, 2011

RE: CITY OF BARRIE SUSTAINABLE WASTE MANAGEMENT STRATEGY – WORKSHOP INVITATION

Greetings,

The City of Barrie would like to invite your organization to participate in a workshop to discuss the development of the City of Barrie Sustainable Waste Management Strategy (the Strategy). The City believes that your organization is an integral part of the community, and will contribute valuable input to the planning of the Strategy. This Strategy will guide the City's waste collection, diversion and disposal practices over the next 20 years.

The City of Barrie's population has experienced a substantial growth rate since the early 1990s, and is anticipated to continue at a growth rate of greater than 50% over the next 20 years. Waste management planning is an integral part in the long term sustainability of our City's growth. Effective community engagement is critical in making sure that the views and values of the community are incorporated in the development of this Strategy.

The City is completing a review of current services and is identifying options for future waste management services. As a next step, the City will be holding a workshop focused on discussing **Industrial Commercial and Institutional (IC&I) Waste Service Delivery**. The goal of the workshop will be to identify options for future service delivery to be included in the Strategy.

The workshop will be held on **Thursday, November 3rd, 2011** from 1 to 4 p.m. at City Hall.

If your organization is interested in participating, please contact me by email at wastestrategy@barrie.ca, or phone at (705) 739-4220 ext. 5826, with the name of a participant by Friday, October 14th, 2011. Kindly also name a substitute, if possible, in case the primary representative is unable to participate.

Please do not hesitate to contact me if you have any questions, or require additional information.

Kind Regards,

Sandy Coulter

Manager, Environmental Operations

City of Barrie

Sandy Coulter
Manager, Environmental Operations
City of Barrie
70 Collier Street
Barrie, ON L4M 4T5

OCTOBER 4, 2011

CITY OF BARRIE SUSTAINABLE WASTE MANAGEMENT STRATEGY – WORKSHOP INVITATION

Greetings,

The City of Barrie would like to invite you to participate in a workshop to discuss the development of the City of Barrie Sustainable Waste Management Strategy (the Strategy). As an interested resident, the City believes that your input would be a valuable contribution to the planning of the Strategy. This Strategy will guide the City's waste collection, diversion and disposal practices over the next 20 years.

The City of Barrie's population has experienced a substantial growth rate since the early 1990s, and is anticipated to continue at a growth rate of greater than 50% over the next 20 years. Waste management planning is an integral part in the long term sustainability of our City's growth. Effective community engagement is critical in making sure that the views and values of the community are incorporated in the development of this Strategy.

The City is completing a review of current services and is identifying options for future waste management services. As a next step, the City will be holding a workshop focused at discussing **Multi-Residential Future Service Delivery**. The goal of the workshop will be to identify options to improve service delivery, and diversion programs offered in multi-residential buildings. The second workshop will be to discuss **Barrie's Future Waste Disposal Options,** with the goal of identifying possible options for future waste disposal.

The **Multi-Residential Future Service Delivery** workshop will be held on **Thursday, November 10th, 2011** from 1 to 4 p.m. at City Hall.

The **Barrie's Future Waste Disposal Options** workshop will be held on Thursday, November 10th, 2011 from 5 to 8 p.m. at City Hall.

If you are interested in participating in either of these workshops, please contact me by email at wastestragey@barrie.ca, or phone at (705) 739-4220 ext. 5826, by Friday, October 14th, 2011.

Please do not hesitate to contact me if you have any questions, or require additional information.

Kind Regards,

Sandy Coulter

Sandy Coulter
Manager, Environmental Operations
City of Barrie
70 Collier Street
Barrie, ON L4M 4T5

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The City is completing a review of current services and is identifying options for future waste management services. As a next step, the City will be holding two community planning workshops. The first workshop will be to discuss **Future Residential Waste Collection** with the goal of identifying options to encourage residential waste diversion, and improve collection practices to be included in the Strategy**.** The second workshop will be to discuss **Barrie's Future Waste Disposal Options,** with the goal of identifying possible options for future waste disposal.

The **Future Residential Waste Collection** workshop will be held on Thursday, November 3rd, 2011 from 5 to 8 p.m. at City Hall.

The **Barrie's Future Waste Disposal Options** workshop will be held on Thursday, November 10th, 2011 from 5 to 8 p.m. at City Hall.

If your organization is interested in participating in either of these workshops, please contact me by email at scoulter@barrie.ca, or phone at (705) 739-4220 ext. 5826, with the name of a participant by Friday, October 14th, 2011. Kindly also name a substitute, if possible, in case the primary representative is unable to participate.

Please do not hesitate to contact me if you have any questions, or require additional information.

Kind Regards,

Sandy Coulter

Sandy Coulter
Manager, Environmental Operations
City of Barrie
70 Collier Street
Barrie, ON L4M 4T5

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Please do not hesitate to contact me if you have any questions, or require additional information.

Kind Regards,

Sandy Coulter

Manager, Environmental Operations

City of Barrie

Landfill Re-Engineering Project

October 2011

Phase 2 Update

What is the Project?

The Landfill Re-engineering Project consists of 3 Phases, during which approximately 60% of the existing landfill waste (1,620,000 m^3) will be dug up, screened to separate fine material and recompacted into newly reconstructed lined cells. These reconstructed cells are lined with plastic and clay liners that will prevent contaminated water, or leachate, from entering into groundwater below the landfill. The Project will be completed by 2015, resulting in a modern, more environmentally friendly landfill for the residents of Barrie.

The Landfill Re-engineering Project is partially funded by the federal Gas Tax Fund. The City of Barrie receives over $7.8 million from the Gas Tax Fund on an annual basis, providing a stable, predictable and long-term source of funding for environmentally sustainable municipal infrastructure.

Summer 2011: Installation of the Phase 2 liner

Landfill Gas Collection and Flaring Plant

Project Update

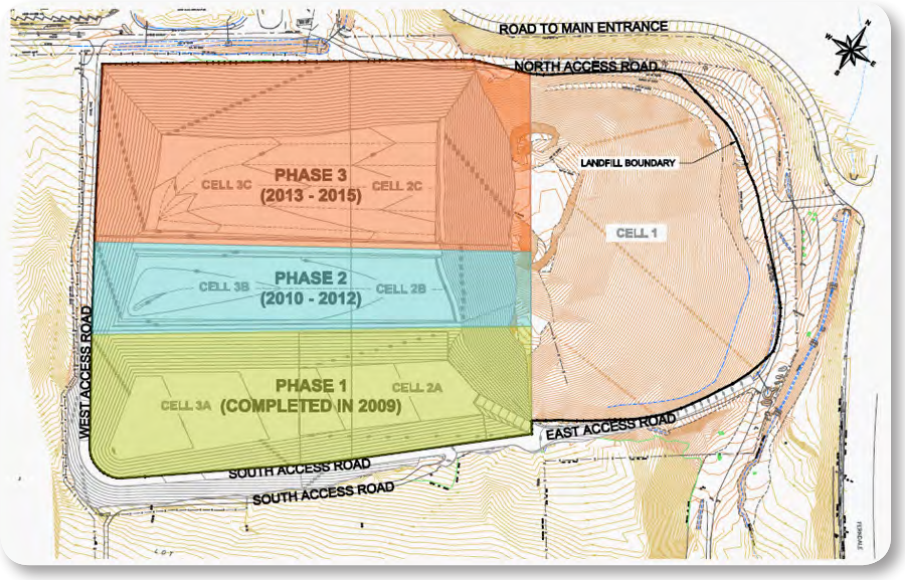
The Landfill Re-engineering Project is moving ahead successfully and is on schedule. The City of Barrie is listening to the concerns of neighbours and addressing these concerns to minimize impacts on the community throughout the Project.

Phase 1: Completed in 2009, and included installing liners and a Leachate Collection System under two sections of the landfill.

Phase 2: Began in early 2010, and is scheduled to be completed in 2012.
In 2011, waste excavation and screening continued through the winter. In July, an additional liner and Leachate Collection System were installed. This area of the landfill can now be used for newly collected waste, and for processed waste from other sections of the landfill.

Landfill Gas Collection and Flaring Plant: Commissioned in July 2011 and now operational, this plant captures gas released from the landfill. Capturing gas reduces greenhouse gas emissions and odours from the landfill. The plant is partially funded by the Ontario Ministry of the Environment (MOE).

This fall we will continue Phase 2 work, including installing additional liners and Leachate Collection Systems, and relocating waste to the completed cells. Where possible, work will also continue through the winter.



The City of BARRIE

We've Heard What You Think

Many of you have expressed support for the purpose of the project, which is environmental protection - thank you! Two of the concerns about the Project have been related to odour, and potential air quality and health effects.

We've heard what you think and want you to know that your input is important to us. We will continue to do everything we can to minimize impacts on the community during this Project.

Last year, we completed an Air Quality and Health Study that determined that the main causes of odour from the landfill are sulphur compounds; these compounds do not pose a health concern to the public.

Bald Eagle at the Barrie Landfill

More Information

We encourage you to provide any questions or comments you have about the Project. If you would like to arrange a tour of the landfill site, or a one-on-one meeting with landfill staff please contact:
Sandy Coulter at (705) 739-4220 ext. 5826, or by email at scoulter@barrie.ca

Up-to-date information is always available at www.Barrie.ca.

Odour Monitoring and Control

Summer Schedule Changes – Proactive Odour Control

Throughout the summer, waste reclamation activities continued on a modified schedule developed by the City and our contractor in order to minimize disruption to residents. Work days were shortened, and no reclamation activities were completed on Saturdays to limit impacts to residents on weekends and after normal daytime working hours. Reclamation activities were planned on a daily basis based on weather and wind conditions to prevent effects to nearby residents.

Ongoing Odour Mitigation

Work is conducted within small areas of exposed waste to minimize odours. Highly odourous materials are directly transferred from the excavation area to the active landfilling area during optimal wind conditions in order to reduce odours. If needed, odour suppressant foam and odour suppressant misters are used to control odours.

Work has now returned to regular hours, which includes activities 6 days a week. Residents are encouraged to report any odours to City staff so that work can be altered appropriately. Please contact call 705-739-4220 ext. 4516 if you have any concerns about odours resulting from the Project.

Waste is placed into a newly lined cell at the landfill

Be Part of the Solution!

In addition to the Landfill Re-engineering Project, the City is developing a Sustainable Waste Management Strategy that will explore changes to Barrie's waste collection, diversion and disposal over the next 20 years. We want to hear what you think about current practices, and suggestions for the future. Visit www.Barrie.ca for more information, to participate in our online survey and to register for an upcoming community planning workshop.

Barrie's sustainable waste management strategy

The City of BARRIE

this week IN BARRIE

November 17th

barrie arts awards

"Building A Creative Future" is the City of Barrie's ten year plan for culture that was approved by City Council in May of 2006. One of the recommendations in the plan was for the City to provide oversight of the arts community. This was to be achieved in a number of ways; namely the development of a Department of Culture that would support the arts, the development of the cultural grants program that provides funding to not for profit organizations and individual artists, and the development of an arts awards program that would raise the profile of the arts community, while celebrating its importance.

The arts awards program was implemented in 2008 when it honoured five talented individuals from Barrie's arts community. The goal of the program is to bring well deserved attention to artists and their contribution in making Barrie a vibrant place to live, work and play.

There are three categories that honour five artists; "Excellence in the Arts," "Emerging Artist," "Youth Artist," "Business Award" and "Contribution to the Community." The Excellence in the Arts category was created so an artist from any medium could be nominated, whether it be film, visual arts or performing arts. Out of these nominations five extremely talented individuals are selected by a jury panel of artists that live outside of the Barrie area. The five successful nominees will be honoured at a gala evening to be held on **Tuesday, November 29th, at 7:30 p.m.** at the new theatre, The Mady Centre for the Performing Arts. All members of the community are welcome to attend and help the Department of Culture to celebrate Barrie's finest. There is no cost and the evening will feature a host of local talent and free refreshments.

For further information on the program please contact Onalee Groves, at ogroves@barrie.ca or 739-4220 Ext. 4794.

Waste Management Is Everyone's Responsibility

The City of Barrie's population has been growing, and over the next 20 years the population is expected to increase to over 200,000 people (or by 50%). Socially acceptable, financially responsible and environmentally sound waste management planning is an important part of Barrie's long term sustainable growth.

In January 2011, Barrie started working towards developing a Sustainable Waste Management Strategy. This Strategy will promote effective, efficient, and responsible change to our waste collection, diversion and disposal systems over the next 20 years. It will be a community-based plan, with goals, policies and a vision focusing on issues related to Barrie as a whole. Planning for the development of the Strategy includes:

1. Community engagement
2. Review of Barrie's collection, diversion, and disposal systems
3. Integration of current and future waste policies, plans and directions
4. Exploring opportunities for sustainable change, including:
   - *Collection, diversion and disposal system improvements;*
   - *Program funding opportunities; and*
   - *Partnerships with neighboring municipalities.*
5. Development of an action plan

Community engagement is a vital part of the Strategy development. Beginning in March, the City of Barrie has been asking residents what they think about their Waste Management Services, and what they would like to see in the future. Using this public input we have developed a list of options for future waste management, with potential recommendations ranging from garbage collection, to education.

We are currently completing our review of Barrie's Waste Management System and finalizing our list of recommendations for future service. As part of this process we have just completed a series of 4 community planning workshops aimed at getting feedback on this list of options and to help us prioritize changes for the future. If you haven't had an opportunity to participate in Barrie's Sustainable Waste Management Strategy activities we still need to hear from you!

Here are some ways you can get involved:

- Visit Barrie.ca and review the proposed options
- Fill out an online survey and let us know what you think
- Email your comments, questions or ideas to wastestrategy@barrie.ca
- Spread the word – let your friends, family, neighbours and co-workers know about the Sustainable Waste Management Strategy – the more feedback we get from the community the better

Barrie's sustainable waste management strategy

Upcoming Events

BARRIE PUBLIC LIBRARY
Enriching our Community

60 Worsley Street, Barrie
Phone: 705-728-1010
Website: www.library.barrie.on.ca

November 17
EBooks and AudioBooks
Barrie Public Library, Angus Ross Room
7:00 p.m. - 8:15 p.m.
Thousands of EBooks and Audiobooks are available from the library website, and you can checkout, download, read and enjoy them from the comfort of your home. Come to this session to find out what's available, how to download or transfer, and what ereaders and devices are compatible. No registration required.

November 23
Social Media for Job Seekers
Barrie Public Library
7:00 p.m. - 8:30 p.m.
Join us for this free, drop-in session that provides strategies for choosing the best social media tools for your career path.

November 24
Life Leases: The Ins and Outs
Barrie Public Library
7:00 p.m. - 8:30 p.m.
Join Barrie lawyer Deborah Wall-Armstrong and learn details on life lease units to develop an understanding of this form of property ownership in contrast to condominium ownership. This is a free, drop-in session.

November 30
Author Reading – Bianca Lakoseljac
Barrie Public Library, Angus Ross Room
2:00 p.m.
The recipient of the Matthew Ahern Memorial Award in Literature, Bianca Lakoseljac is the author of a collection of poetry, Memoirs of a Praying Mantis, which was published in 2009. Her writing has appeared in journals and anthologies such as Canadian Woman Studies and Canadian Voices. **"Bridge in the Rain"** stories are linked by an inscription on a park bench in Toronto's High Park and is her first short story collection. Books will be available for purchase.

December 1
Around the World in 60 Minutes – Manila and the Philippines
Barrie Public Library
7:00 p.m. - 8:30 p.m.
Bill and Monika Sergeant recently visited the Philippines and would like to share their slide show depicting their journey with the culture of this tropical region. Especially noteworthy were their interactions with the people in the rural areas north of Manila on the island of Luzon. Adults are welcome.

Bid Opportunities

Biddingo.com
Get it. Bid it. Win it!

this week's BID Opportunities Board

The City of Barrie competitive bid opportunities can be found at Biddingo.com/barrie. Businesses can also complete the Vendor's Application form to receive free City of Barrie opportunity alerts from this website.

To Obtain Documents

- Download bid document directly from Biddingo.com/barrie.
- Subscribe as a Biddingo member to download unlimited documents from Biddingo.com/barrie. The Biddingo subscription fee is $250/year.
- Non-subscribers can download individual bid documents from Biddingo.com/barrie, a fee may apply to each document.
- Pick up in person from the Purchasing Branch, 56 Mulcaster Street, Barrie ON during business hours Monday to Friday, 8:30 a.m. to 4:30 p.m. A non refundable document fee applies to each hardcopy document.

All respondents MUST be registered as a document taker on Biddingo.com, for your submission to be considered.

All opportunities are governed by our Purchasing By-Law, By-Law Number 2008-121.

For further information please visit www.barrie.ca or www.biddingo.com/barrie, call 705-739-4220 Ext 5163 or Ext 4538 or email purcashing@barrie.ca

 # FIN 2011-017Q
REQUEST FOR QUOTATION SUPPLY & DELIVERY OF ONE (1) NEW SPORT UTILITY VEHICLE (SUV) FOUR (4) DOOR WITH SPECIAL SERVICE PACKAGE (SSV) BARRIE FIRE & EMERGENCY SERVICE
Closing: 4:30 p.m. local time, Thursday November 24, 2011.

 # FIN 2011-122Q
REQUEST FOR QUOTATION FOR STAND BY GENERATOR INSPECTION, TESTING & REPORTING SERVICE THREE (3) YEAR TERM WITH OPTION TO EXTEND FOR ONE (1) ADDITIONAL YEAR
Closing: 4:30 p.m. local time, Thursday November 24, 2011.

 # FIN 2011-147P
REQUEST FOR PROPOSAL FAIRNESS MONITOR SERVICES FOR THE CITY OF BARRIE TRANSIT FACILITY PROJECT
Closing: 4:30 p.m. local time, Thursday November 24, 2011

 # FIN 2011-162Q
REQUEST FOR QUOTATION SNOW CLEARING & RELATED SERVICES FOR PARKING LOTS FOR VARIOUS FACILITIES/SITES WITHIN THE CITY OF BARRIE
Two Year (2) Term with option for Two (2) Annual Extensions.
Closing: 4:30 p.m. local time, Thursday December 1, 2011.

 # FIN 2011-128I
REQUEST FOR INFORMATION (RFI) FOR THE SUPPLY & DELIVERY OF PRE-ENGINEERED IN FACTORY BUILD PRESSURE REGULATING VALVE IN GROUND VAULTS FOR THE CITY OF BARRIE
Three (3) Year Term with the option of One (1) Additional Year.
Closing: 4:30 p.m. local time, Thursday December 15, 2011.

 # FIN 2011-129I
REQUEST FOR INFORMATION (RFI) FOR THE SUPPLY & MAINTENANCE OF POTABLE WATER WELL AND PUMP PARTS FOR THE CITY OF BARRIE
Closing: 4:30 p.m. local time, Thursday December 15, 2011.

Go to biddingo.com/barrie and enter the reference numbers above for more information.

AAA SHOWCASE
ETA OMHA SCTA

Are You the Next One?

The City of Barrie is proud to partner with the Ontario Minor Hockey Association as host of the AAA Showcase event at the Holly Recreation Centre.

December 3-4, 2011
Holly Recreation Centre
171 Mapleton Avenue, Barrie, ON

For more information visit:
Barrie.ca
omha.net
hometownhockey.com
Facebook.com/OMHAHomeTownHockey
Twitter.com/hometownhockey

Apply For Cultural Grants Here's How

The Department of Culture is now accepting applications from local artists or cultural organizations for the 2012 City of Barrie Cultural Grants Program. All forms can be found in the Cultural Grants section of the Barrie website. **The deadline for applications is at the end of the business day at 4:30 p.m. on Thursday, December 1, 2011.**

For more information contact Onalee Groves at 705-739-4220 Ext. 4794 or at ogroves@barrie.ca or visit www.barrie.ca for downloadable applications and cultural grant guidelines.

Christmas Craft Show and Sale

The City of Barrie's Allandale 55+ Centre is pleased to sponsor and exhibit a variety of fabulous crafts for sale.

Everyone is welcome!

Saturday November 19, 2011
9:00 a.m. - 2:00 p.m.
Allandale Recreation Centre, Main Hall
190 Bayview Drive, Barrie

For more information please visit Barrie.ca or call 705-728-6332.

Budget Public Engagement Opportunity

Tony Guergis LIVE on ROGERS TV

Tuesday, November 22, 2011 at 9:00 p.m.

Join Mayor Jeff Lehman and City Treasurer Ed Archer for a special live call in show on the City's 2012 Business Plan.

Call in with your questions or email them to budgetquestion@barrie.ca.

OVERNIGHT Parking

PARKING RESTRICTIONS

You may be wondering what exactly a Winter Maintenance Event is? Well, it's not a special celebration, but rather the City's function of cleaning and keeping our streets safe from pre and post winter flash storms.

In late September 2011, the City amended the overnight parking By-law to include arrangements for Winter Maintenance Events: snow storms that occur outside of the regular winter season. Residents are reminded that from December 1 to March 31 each year, parking of a vehicle on any street or part of a street within the City of Barrie between the hours of 12 midnight and7 a.m. is prohibited and subject to a $30.00 fine ($20.00 early payment).

Within the Downtown Business Improvement Area, on street parking is prohibited between the hours of 3 a.m. and 6 a.m.

Notwithstanding these provisions, the City of Barrie can at anytime declare a "winter maintenance event". Notice of such declaration will be communicated through the media and parking will be prohibited as specified in the Notice.

Any vehicle found parked in contravention of By-law 2007-209 may be ticketed and/or towed.

By keeping the City streets clear of vehicles during this period, you allow the City crews access to help ensure that your roadways are maintained and that large emergency vehicles can get down the street.

Parking is also prohibited over sidewalks and on City boulevards.

The City of Barrie greatly appreciates your cooperation helping it keep the City streets clean and safe during the winter season. For more information on Winter Maintenance Events or Winter Control, please visit City Services under the Living section of Barrie.ca.

WORKSHOP MATERIALS

June, 2012
Report No. 10-1188-0055

The City of BARRIE

Barrie's Sustainable Waste Management Strategy

IC&I Sector: Future Service Delivery
Community Planning Workshop
Thursday November 3, 2011
1 to 4 pm
City Hall, Barrie, ON

AGENDA	
1. 45 min	**Presentation:** • **Review of Strategy Goals** • **Review of Consultation Series 1** • **Options Identified** • **Q&A**
2. 45 min	**Open Space Activity:** • **Methods to reduce waste** • **Future diversion targets** • **Funding IC&I Waste Management** • **Ideas to Improve System**
3. 1 hour	**Round Table Discussion:** • What has your organization done to minimize the amount of waste it generates? Are you aware of/in compliance with the provincial 3R regulations? • The Provincial waste diversion target is 60%. The provincial IC&I recycling rate is currently estimated at 12%. With respect to waste diversion, where should the IC&I sector be in: a) 10 years b) 30-50 years? • What types of incentives would encourage your business or institution to strive for these targets? • As a taxpayer, who do you think should be responsible for waste from the IC&I sector? What role should the City play? • As a taxpayer, would you support a modest increase in your current tax bill for improved accessibility to existing waste diversion programs and/or the establishment of additional City-managed waste diversion programs for businesses? • What can be done to make the waste management system more efficient in the downtown area? • What can be done to make the waste management system more efficient in schools, colleges and other institutional settings? • What can be done to make the waste management system more efficient for all other businesses located throughout Barrie?

The City of BARRIE

Sustainable Waste Management Strategy

IC&I Future Service Delivery
Community Planning Workshop
November 3, 2011

Barrie's sustainable waste management strategy

The City of BARRIE

Agenda

1. Introductions
2. Overview of the Barrie's Sustainable Waste Management Strategy
   - Planning process
   - Goals
3. Community Engagement Activities
4. Overview of options identified for IC&I sector
5. Questions?
6. Open Space Activity
7. Round Table Discussion

Barrie's sustainable waste management strategy

The City of BARRIE

Creating the Vision

Established in consultation with the Community Liaison Committee (CLC) and Steering Committee:

- Strategy Priorities
- Mission Statement
- Strategy Values
- Strategy Goals
- Guiding Principles

Barrie's sustainable waste management strategy

The City of BARRIE

Mission Statement

To develop a community strategy for sustainable waste management that supports current and future service expectation in a manner that is fiscally responsible, socially acceptable and environmentally sound.

Strategy Values

Achievement (clarity of scope and direction)

Dedication

Collaboration

Service to our Community (engagement, openness, inclusion)

Sustainability/Integrity

Continuous Improvement

Goals

Maximize Recovery of Resources

Cost Effectiveness

Pollution Prevention

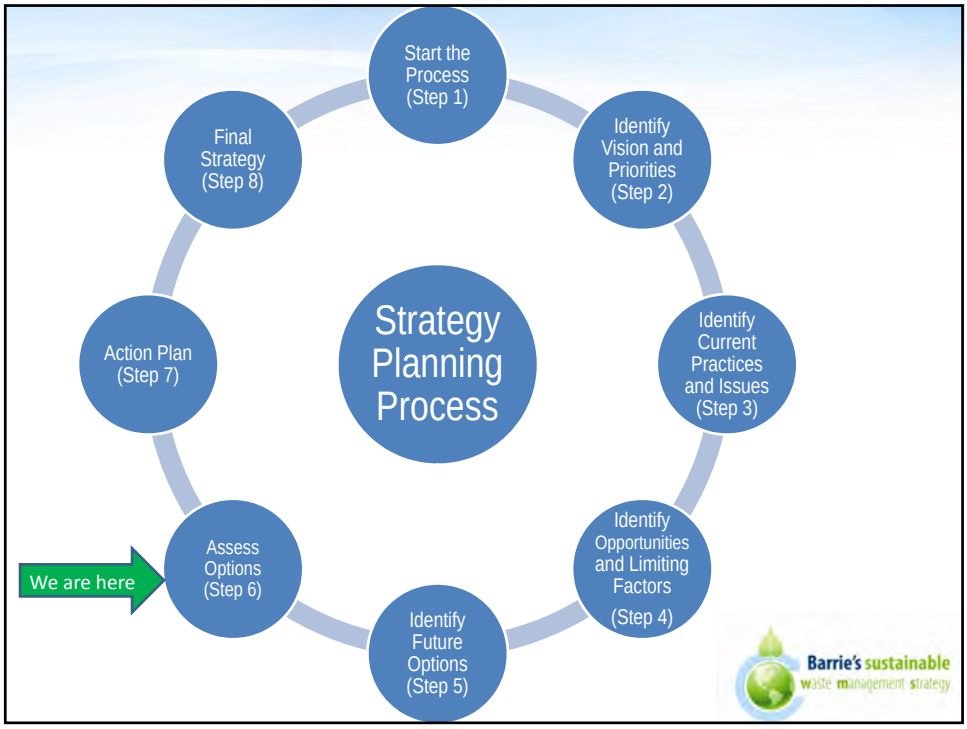
Clean and Healthy Environment

Social Responsibility

Optimization of Partnerships

Align with City and Provincial Plans

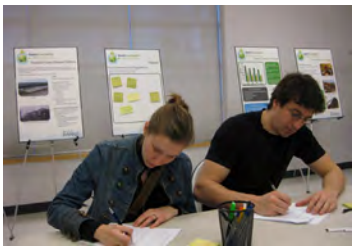
Barrie's sustainable waste management strategy



Community Engagement Activities

The City of BARRIE

- Initiate Strategy Planning (Winter 2011)
  - Community Liaison Committee (CLC) meeting 1
- Identify Options (Spring 2011)
  - Public Consultation Series 1
    - 2 Workshops and 2 Open Houses
  - CLC meeting 2&3
    - Assess outcomes of Consultation Series
- Assess and Prioritize Options (Fall 2011)
  - Consultation Series 2
    - 4 planning workshops (we are here)
  - CLC meeting 4
    - Assess outcomes of Consultation Series 2



Barrie's sustainable waste management strategy

Ongoing Consultation

- Displays at community events
- Online surveys
- Enhanced website with continuous updates
- Increased advertising on the Strategy (Sept and Oct)
  - Radio and TV
  - Newspaper advertisements and articles
  - Social media

Consultation Series 2 – Workshops

- IC&I Sector Workshop
  - Afternoon of Nov 3
- Residential Sector Workshop
  - Evening of Nov 3
- Multi-Residential Sector Workshop
  - Afternoon of Nov 10
- Future Disposal Options
  - Evening of Nov 10

Current Options Identified

The City of BARRIE

- Biweekly garbage collection may be acceptable
- Partial user pay systems, but not full (e.g. bag tag system or pre-purchased bins)
- Four day collection cycle to prevent Saturday collections
- Standardize diversion programs locally and regionally, provide services to IC&I for fee, consistent bin colours
- Green bin programs for multi-family units
- Plastic film and mattress recycling
- Encourage diversion and "Zero Waste" at public events
- Reuse centres or bulky collection for reuse
- Recycling program for Construction & Demolition (C&D) waste
- More diversion depots/ longer hours
- Central depots in downtown area for recyclables, old corrugated cardboard (OCC) and garbage
- Support for Extended Producer Responsibility (EPR), Zero Waste
- More promotion and education (P&E)
- Policy of mandatory curbside diversion participation
- Identify partnerships for future disposal and Energy From Waste (EFW)
- Support for EFW

Barrie's sustainable waste management strategy

Next Steps

The City of BARRIE

November
- Complete assessment of future options

December
- Recommend Preferred System

January
- Business Case and Implementation Plan
- Blue Box Strategy
- Public Awareness and Communication Plan

February
- Final Presentation to Council

Barrie's sustainable waste management strategy

The City of BARRIE

IC&I SECTOR: FUTURE OPTIONS

Barrie's sustainable waste management strategy

The City of BARRIE

Standardize Waste Programs

This option would allow School Boards and Georgian College to offer the same diversion programs offered to residents

Standardization would involve partnership with institutions and the City for recycling contracts

This option could increase diversion from institutions and residences in the following ways:

- Opportunity to practice same diversion concepts at home and schools
- Children can have significant influence on adult diversion behaviors
- Consistent diversion programming would allow development of a focused P&E program that would apply to residential services and at schools

Questions to consider:
- Should taxes be increased to provide service to schools?

Barrie's sustainable waste management strategy

The City of BARRIE

Promotion &Education (P&E) in Schools

Some ideas for a focused P&E program include:

- Continue participation in school certification programs such as *Ontario EcoSchools*
- Develop recycling drives, and waste reduction mascots
- Intra or inter school waste reduction challenges
- Awards (e.g. waste minimization champion, diversion rate champion, organics recycling champion, recycling champion)
- Special event days, school trips to a waste management facility, or guest speakers promoting waste diversion
- Promote existing education centre at the Barrie Environmental Centre
- Develop a Mobile Education Unit (MEU)

The City could provide support for these programs by:

- Conducting yearly waste audits at each school
- Tracking diversion rates and promoting school diversion initiatives on Barrie's website
- Facilitating waste diversion challenges
- Providing grants or prizes to schools demonstrating leadership
- Conducting landfill tours and leading demonstrations
- Note: participation in these programs would require additional funding and resources

Questions to consider:

- Which of these P&E initiatives do you think would be effective?
- What should the City's involvement be? How should these programs be funded?

Barrie's sustainable waste management strategy

The City of BARRIE

Standardize Waste Programs

- Offer same diversion programs offered to residential sector across businesses and government offices
- Standardization could involve offering service to businesses for a fee

Businesses

Questions to consider:

- Should these services be provided to businesses if it results in an increase in taxes?

Barrie's sustainable waste management strategy

The City of BARRIE

Consistency of Bin Colouring & Type

- Important to maintain high public participation rates
- Consistent bin types should be offered throughout the City (i.e. bins for Source Separated Organics (SSO), two-stream recyclables and garbage should be available)
- Bin colouration/labelling should be consistent with what the public uses at home (i.e. green for SSO, blue for containers, and grey for fibres)

Public Space Bins
Questions to consider:
- Are there enough public space bins currently available downtown and in parks around the City?
- Are these bins located in the right places?

Questions to consider:
- Is it possible to standardize bins available in businesses and institutions?
- How would these bins be paid for?

Barrie's sustainable waste management strategy

The City of BARRIE

Policy Changes to Encourage Diversion

- Zero Waste Policy for public event diversion
- Mandatory source separation and curbside diversion of recyclables and organics
- Disposal ban for Construction and Demolition (C&D) waste
- Partial user pay system
- By-law for retailers to post prominent recycling signage (where materials are accepted for recycling)

Questions to consider:
- How would these policy changes affect your organization?
- Would you support the implementation of these polices?

Barrie's sustainable waste management strategy

The City of BARRIE

Central Drop-off Location Downtown

This option would improve the aesthetic environment of Barrie's downtown, and minimize collection costs

The drop-off location could collect:

- Residual garbage
- Blue box paper fibres and co-mingled containers
- Large quantities of Old Corrugated Cardboard (OCC)
- Food waste organics
- Other designated wastes (e.g., WEEE, MHSW, tires)

A complimentary by-law could be developed requiring businesses to source-separate their food waste organics, Blue Box materials and designated wastes at the depot

–Note: this bylaw would apply to all businesses not just those located in the BIA

Questions to consider:
- Where should the drop off be located?
- Is one drop-off downtown enough, or would multiple locations be more efficient?

Barrie's sustainable waste management strategy

The City of BARRIE

Other Options to Improve Waste Drop-off

- Develop Eco-Stations
  - Convenient depots for recyclable and reusable goods only
  - Could include partnership with non-profit organizations for drop-off of reusable goods
  - Encourages waste reduction and re-use
- Expand the existing drop-off depot / area at the Barrie Environmental Centre into an Eco-Station
- Develop C&D waste diversion
- Promote Barrie's existing education centre
- Develop and promote Mobile Unit

Questions to consider:
- How would these drop-off options affect your organization?
- Which of these options would be most effective in increasing diversion?
- Where should Eco-Stations be located?

Barrie's sustainable waste management strategy

The City of BARRIE

Extended Producer Responsibility (EPR)

- Public requests for City to lobby for EPR
- Advantages of EPR include:
  - **Costs shifted off tax base:** protects waste reduction programs from pressures created by government deficits, changes in political direction, and competing priorities, and free up tax dollars for other services
  - **Promotion of better product and packaging:** When required to pay for recycling or composting, manufacturers have an incentive to redesign for greater recyclability, decreased toxicity, and less material usage
  - **Increasing waste diversion:** Increased funding (for new and enhanced programs) and a strong commitment by partner usually leads to higher participation rates, greater coverage and more materials recycled

Barrie's sustainable waste management strategy

The City of BARRIE

Questions/Comments?

Thank You!

Your input is valued towards developing a Sustainable Waste Management Strategy that works best for the people of Barrie.

For more information and opportunities for input, please visit our website:
www.barrie.ca
Just look for the Strategy logo to link to the page

Barrie's sustainable waste management strategy

The City of BARRIE

Open Space

- Four topics are posted in four corners of room with a flip-chart
  - **Methods to reduce waste**
  - **Future diversion targets**
  - **Funding IC&I Waste Management**
  - **Ideas to Improve System**
- Please circulate room freely and discuss topics, or post ideas on post-its

Barrie's sustainable waste management strategy

The City of BARRIE

Barrie's Sustainable Waste Management Strategy

Residential Sector: Collection/Diversion Workshop
Community Planning Workshop
Thursday November 3, 2011
5 pm to 8 pm
City Hall, Barrie, ON

AGENDA	
1. 45 minutes	**Presentation:** • **Review of Strategy Goals** • **Review of Consultation Series 1** • **Options Identified to Date** • **Q&A**
2. 45 minutes	**Open Space Activity:** • **Methods to reduce waste and encourage diversion** • **Future diversion targets** • **Funding Waste Management** • **System barriers and possible efficiencies**
3. 1 hour	**Round Table Discussion:** • The Provincial waste diversion target is 60%. In 2009, the City's residential diversion rate was 47%. The Provincial diversion rate was 44% for the same year. What should the City set as a waste diversion goal in: a) 10 years b) 30-50 years? • Provide some examples of mindset (behavioral) changes that will be required to reduce the amount of waste generated and to increase waste diversion rates. How can the City assist in creating the behavioral changes? • As a taxpayer, who do you think should be responsible for waste from the IC&I sector? What role should the City play? • As a taxpayer, would you support a modest increase in your current tax bill for improved accessibility to existing waste diversion programs? What about for the establishment of additional City-managed waste diversion programs for businesses? • What are current barriers to residents generating less waste and diverting more? • What can be done to make the City's waste management system more efficient for residents?

The City of BARRIE

Sustainable Waste Management Strategy

Residential Sector: Collection/Diversion

Community Planning Workshop

November 3, 2011

Barrie's sustainable waste management strategy

The City of BARRIE

Agenda

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Barrie's sustainable waste management strategy

The City of BARRIE

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Barrie's sustainable waste management strategy

The City of BARRIE

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Pollution Prevention

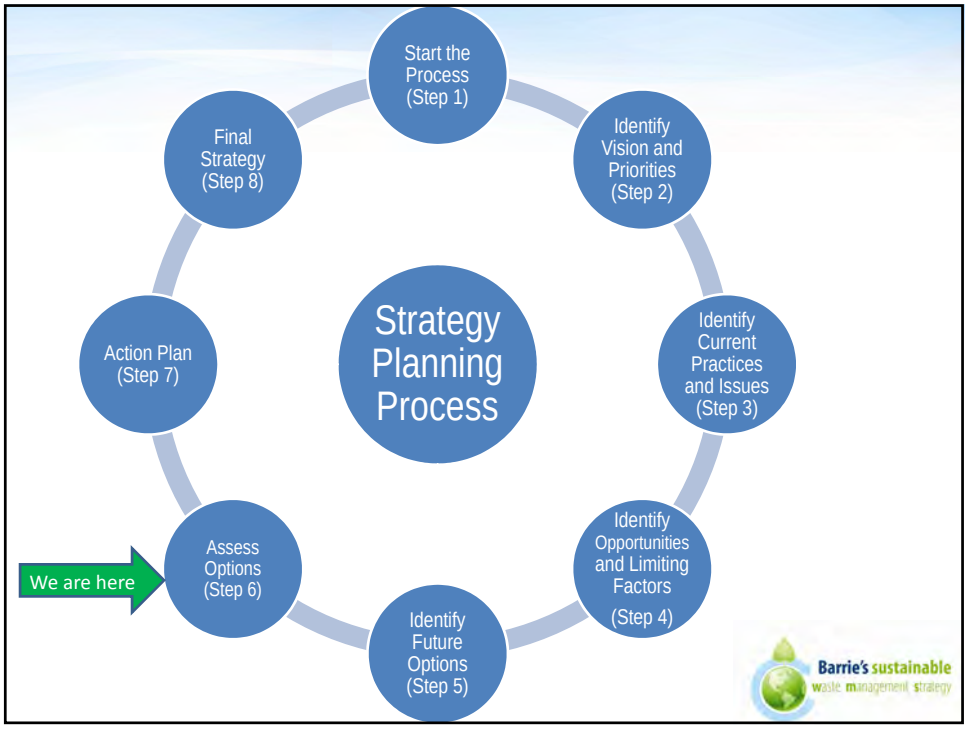
Clean and Healthy Environment

Social Responsibility

Optimization of Partnerships

Align with City and Provincial Plans

Barrie's sustainable waste management strategy



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The City of BARRIE

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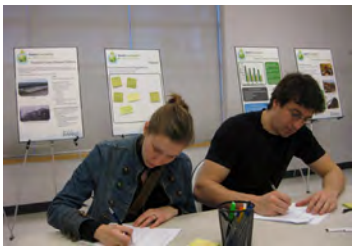

Barrie's sustainable waste management strategy

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- Multi-Residential Sector Workshop
  - Afternoon of Nov 10
- Future Disposal Options
  - Evening of Nov 10

Options Currently Identified

The City of BARRIE

- Biweekly garbage collection may be acceptable
- Partial user pay systems, but not full
- Four day collection cycle to prevent Saturday collections
- Standardize diversion programs locally and regionally, provide services to IC&I for fee, consistent bin colours
- Green bin programs for multi-family units
- Plastic film and mattress recycling
- Encourage diversion and "Zero Waste" at public events
- Reuse centres or bulky collection for reuse
- Recycling program for Construction & Demolition (C&D) waste
- More diversion depots/ longer hours
- Central depots in downtown area for recyclables , cardboard and garbage
- Support for Extended Producer Responsibility (EPR), Zero Waste
- More promotion and education (P&E)
- Policy of mandatory curbside diversion participation
- Identify partnerships for future disposal and Energy From Waste (EFW)
- Support for EFW

Barrie's sustainable waste management strategy

Next Steps

The City of BARRIE

November	• Complete assessment of future options
December	• Recommend Preferred System
January	• Business Case and Implementation Plan • Blue Box Strategy • Public Awareness and Communication Plan
February	• Final Presentation to Council

Barrie's sustainable waste management strategy

The City of BARRIE

RESIDENTIAL COLLECTION AND DIVERSION OPTIONS

Barrie's sustainable waste management strategy

The City of BARRIE

Garbage Collection

Biweekly Garbage Collection

- Increased diversion rates (weekly recycling and green bin collection becomes more important and convenient)
- May reduce collection costs

User Pay System

- **Full user pay program:** users pay for all the garbage they want collected in advance, by purchasing a tag, custom bag or selected size container
- **Partial user pay program:** the municipality decides on a maximum number of bags or containers of garbage (paid for by taxes), additional bags or containers can be disposed of for a fee

Four Day Collection Schedule

- Flexible schedule to accommodate holidays (no collection Monday)
- May reduce collection costs

Questions to consider:
- Do you have any concerns with bi-weekly garbage collection?
- How could the City mitigate these concerns?

Barrie's sustainable waste management strategy

The City of BARRIE

Yard Waste Collection

- Public comments identified that current yard waste schedule is confusing to some residents
  - A more simple and standardized collection schedule may facilitate participation
- Consider implementing a simplified standardized yard waste collection schedule from April to November (or December)
- Until simplified schedule can be implemented, increase P&E by:
  - Distributing flyers specific to each collection zone, detailing when residents can expect yard waste pick-up
  - Updating Barrie's website to include a yard waste collection schedule specific to each collection zone (for those who find the map hard to understand)
  - Note: these additional P&E activities would require additional resources

Questions to consider:
- Would this schedule make the yard waste program easier to use?
- How else can we improve our yard waste collection service?
- What do you think about our current Christmas tree collection service?
- How should additional P&E be funded?

Barrie's sustainable waste management strategy

The City of BARRIE

Residential Green Bin Collection

- Existing program launched in 2006 (bin liners not accepted)
  - Public concerns around odour, pests
  - Confusion around acceptable materials
- Program re-launch could increase organics diversion rate
  - Sample bin liners could be distributed
  - Factsheets on odour and pest prevention
  - Partnerships with neighbouring municipalities to increase education (cost savings)

Questions to consider:
- How can we improve our green bin program?
- Do you think a program re-launch would increase participation?

Barrie's sustainable waste management strategy

The City of BARRIE

Enhanced Promotion and Education (P&E)

- Most residents are aware of longstanding items that can be recycled
- Challenges include keeping individuals engaged and motivated, and promoting new items that can be diverted and new diversion programs
- In Barrie, residents identified the following areas for increased P&E:
  - Yard waste collection schedule
  - Return-to-retailers program
  - Municipal, Hazardous and Special Waste (MHSW) program
  - Reuse services
  - Blue and grey box programs
  - Green Bin program

Barrie's sustainable waste management strategy

The City of BARRIE

Options for Enhanced P&E

- Develop a communications plan and establish an adequate budget for additional staff and resources
- Employ a mix of communication media to create more awareness, including social media
- Establish a recognition & rewards program for recycling
- Re-assess collection sticker program
- Re-launch Green Bin program
- Blue and Grey Box recycling program
- Welcome package for new residents
- Update and maintain City website

Questions to consider:
- Which of these P&E initiatives do you think would be effective?
- How do you think these programs should be funded? Would you support a tax increase to fund these programs?

Barrie's sustainable waste management strategy

The City of BARRIE

Additional Waste Diversion Opportunities

Based on the current waste management system and a review of the waste composition data, the following waste diversion programs may be considered:

- Plastic film recycling
- Textile recycling
- Mattress recycling
- Bulky item reuse – partnerships with non-profit organizations

Barrie's sustainable waste management strategy

The City of BARRIE

Other Options to Improve Waste Drop-off

- Develop Eco-Stations
  - convenient depots for recyclable and reusable goods only
  - could include partnership with non-profit organizations for drop-off of reusable goods
  - encourages waste reduction and re-use
- Expand the existing drop-off depot / area at the Barrie Environmental Centre into an Eco Station
- Develop Construction and Demolition (C&D) waste diversion
- Promote Barrie's waste education centre
- Develop and promote Mobile Unit

Questions to consider:
- How would these drop-off options affect your diversion practices?
- Which of these options would be most effective in increasing diversion?
- Where should Eco-Stations be located?

Barrie's sustainable waste management strategy

The City of BARRIE

Policy Changes to Encourage Diversion

- Zero Waste Policy for public events (divert organics)
- Mandatory source separation and curbside diversion of recyclables and organics
- Disposal ban for Construction and Demolition (C&D) waste
- Partial user pay system (e.g. current bag tag system)
- By-Law for retailers to post prominent recycling signage (where materials are accepted for recycling)

Questions to consider:
- How would these policy changes affect you?
- Would you support the implementation of these polices?
- Who should be responsible for funding Zero Waste public events? (event organizers or taxpayers)

Barrie's sustainable waste management strategy

The City of BARRIE

Extended Producer Responsibility (EPR)

- Public request for City to lobby for EPR
- Advantages of EPR include:
  - **Costs shifted off tax base:** protects waste reduction programs from pressures created by government deficits, changes in political direction, and competing priorities, and frees up tax dollars for other services
  - **Promotion of better product and packaging:** When required to pay for recycling or composting, manufacturers have an incentive to redesign for greater recyclability, decreased toxicity, and less material usage
  - **Increasing waste diversion:** Increased funding (for new and enhanced programs) and a strong commitment by partner usually leads to higher participation rates, greater coverage and more materials recycled

Questions to consider:
- Do you think EPR is important?
- Do you want the City to lobby for EPR?

Barrie's sustainable waste management strategy

Consistency of Bin Colouring & Type

- Important to maintain high public participation rates
- Consistent bin types should be offered throughout the City (i.e. bins for Source Separated Organics (SSO), two-stream recyclables and garbage should be available)
- Bin colouration/labelling should be consistent with what the public uses at home (i.e. green for SSO, blue for containers, and grey for fibres)

Public Space Bins
Questions to consider:
- Are there enough public space bins currently available downtown and in parks around the City?
- Are these bins located in the right places?

Questions to consider:
- Is it possible to standardize bins available in businesses and institutions?
- How would these bins be paid for?

Standardize Waste Diversion Programs Across Municipalities

- Could result in greater resident participation and smoother operation of diversion programs
  - Similar service levels/procedures, co-operative P&E programs makes participation and diversion easier for commuters and new residents
  - Long term cost reductions from reduced staff time and promotional savings (less re-education and reduced collection rejection)
  - Contamination levels often decrease and diversion is maintained or increased as a result of the diminished need to educate residents
- City's program is similar to Simcoe and Orillia (exceptions – plastic film, empty paint cans, aerosols, Styrofoam)
- In future should move to form partnerships with municipalities across the Greater Golden Horsehoe as opportunities arise
  - move forward with cross-program standardization where possible

Questions/Comments?

The City of BARRIE

Thank You!

Your input is valued towards developing a Sustainable Waste Management Strategy that works best for the people of Barrie.

For more information and opportunities for input, please visit our website:
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Barrie's sustainable waste management strategy

Open Space

The City of BARRIE

- 4 Topics are posted in four corners of room with a flip-chart
  - **Methods to reduce waste and encourage diversion**
  - **Future diversion targets**
  - **Funding waste management**
  - **Ideas to improve system**
- Please circulate room freely and discuss topics, or post ideas on post-its

Barrie's sustainable waste management strategy

The City of BARRIE

Barrie's Sustainable Waste Management Strategy

Multi-residential Sector: Future Service Delivery
Community Planning Workshop
Thursday November 10, 2011
1 to 4 pm
City Hall, Barrie, ON

AGENDA	
1. 45 minutes	*Presentation:* • Review of Strategy Goals • Review of Consultation Series 1 • Options Currently Identified • Q&A
2. 45 minutes	*Open Space Activity:* • Current waste diversion practices • Future diversion targets • Behavioural changes needed to increase diversion • System barriers and possible efficiencies
3. 1 hour	*Round Table Discussion:* • What has your building done to minimize the amount of waste it generates? Are you aware of/in compliance with the provincial 3R regulations? • What are current barriers to multi-residential units generating less waste and diverting more? Are you familiar with Barrie's Landfill Tipping Fee Exemption program? • Provide some examples of mindset (behavioral) changes that will be required to reduce the amount of waste generated in apartment buildings and to increase waste diversion rates? How can the City assist in creating the behavioral changes? • What can be done to make the waste management system more efficient in your multi-residential building? • The Provincial waste diversion target is 60%. The City's current multi-residential diversion rate is 21%. Do we know what the provincial average is for 2010 or 2011YTD? With respect to waste diversion, where do you want to be in: a) 10 years b) 30-50 years?

The City of BARRIE

Barrie's Sustainable Waste Management Strategy

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Sustainable Waste Management Strategy

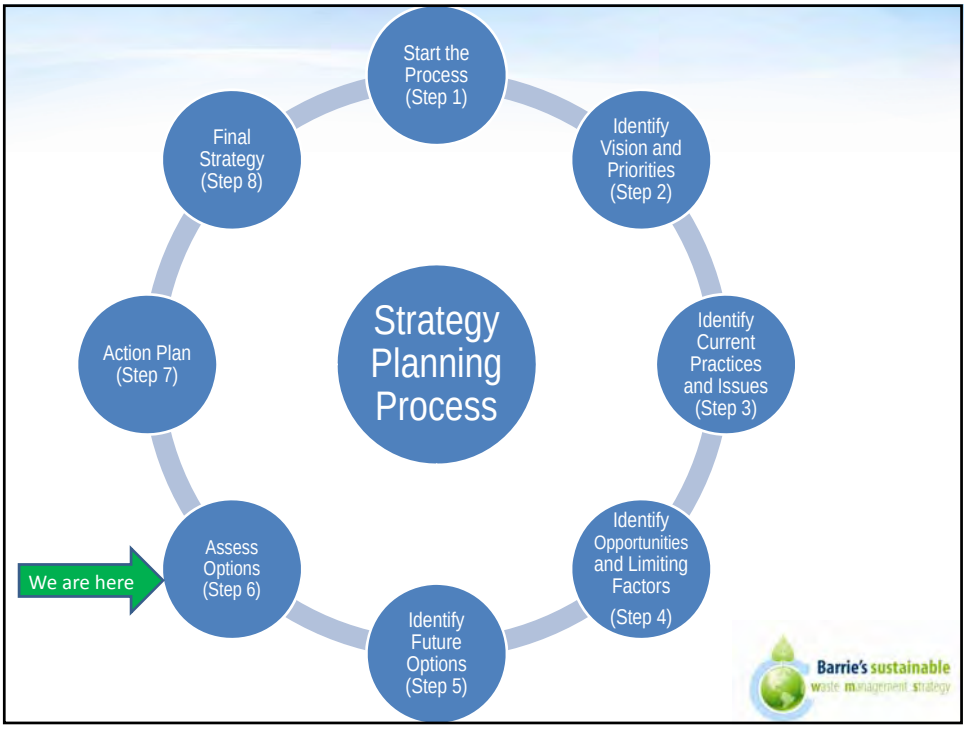
Multi-Residential Sector: Future Service Delivery
Community Planning Workshop
November 10, 2011

Agenda

1. Introductions
2. Overview of the Barrie's Sustainable Waste Management Strategy
   - Planning process
   - Goals
3. Community Engagement Activities
4. Overview of options identified for multi-residential service
5. Questions?
6. Open Space Activity
7. Round Table Discussion

SWM Strategy - Project Overview

- Barrie is one of the fastest growing cities in Canada
  - 50% growth over next 20 years
- Landfill is expected to reach capacity around 2024
- Long term waste management strategy that will guide collection, diversion and disposal practices for the next 20 years
- 1 year planning process
- Community Engagement integral
  - Identify issues with current practices
  - Assess options for the future
  - Develop an action plan



Vision and Priorities

"To develop a community strategy for sustainable waste management that supports current and future service expectations in a manner that is fiscally responsible, socially acceptable and environmentally sound"

Priorities for the development of the Strategy include:

- Community engagement
- Review of Barrie's collection, diversion, and disposal systems
- Integration of current and future waste policies, plans and directions
- Exploring opportunities for sustainable change, including:
  - Collection, diversion and disposal system improvements
  - Program funding opportunities
  - Partnerships with neighboring municipalities
  - Development of an action plan

Community Engagement Activities

- Initiate Strategy Planning (Winter 2011)
  - Community Liaison Committee (CLC) meeting 1
- Identify Options (Spring 2011)
  - Public Consultation Series 1
    - 2 Workshops and 2 Open Houses
  - CLC meeting 2&3
    - Assess outcomes of Consultation Series
- Assess and Prioritize Options (Fall 2011)
  - Consultation Series 2
    - 4 planning workshops (we are here)
  - CLC meeting 4
    - Assess outcomes of Consultation Series 2

Ongoing Consultation

- Displays at community events
- Online surveys
- Enhanced website with continuous updates
- Increased advertising on the Strategy (Sept and Oct)
  - Radio and TV
  - Newspaper advertisements and articles
  - Social media

Consultation Series 2 – Workshops

- IC&I Sector Workshop
  - Afternoon of Nov 3
- Residential Sector Workshop
  - Evening of Nov 3
- Multi-Residential Sector Workshop
  - Afternoon of Nov 10
- Future Disposal Options
  - Evening of Nov 10

Options Identified

- Biweekly garbage collection may be acceptable
- Partial user pay systems, but not full
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- Standardize diversion programs locally and regionally, provide services to IC&I for fee, consistent bin colours
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- Identify partnerships for future disposal and Energy From Waste (EFW)
- Support for EFW

Next Steps

November	• Complete assessment of future options
December	• Recommend Preferred System
January	• Business Case and Implementation Plan • Blue Box Strategy • Public Awareness and Communication Plan
February	• Final Presentation to Council

The City of BARRIE

MULTI-RESIDENTIAL FUTURE SERVICE DELIVERY

Barrie's sustainable waste management strategy

The City of BARRIE

Garbage Collection

Biweekly Garbage Collection

- Increased diversion rates (weekly recycling and organics diversion becomes more important and convenient)
- May reduce collection costs
- Possible effects in Tipping Fee Exemption program due to additional space requirements for larger garbage, recycling and organics bins

User Pay System

- **Full user pay program:** users pay for all the garbage they want collected in advance, by purchasing a tag, custom bag or selected size container
- **Partial user pay program:** the municipality decides on a maximum number of bags or containers of garbage (paid for by taxes), additional bags or containers can be disposed of for a fee

Four Day Collection Schedule

- Flexible schedule to accommodate holidays (no collection Monday)
- May reduce collection costs

Barrie's sustainable waste management strategy

The City of BARRIE

Funding Multi-residential Waste Management

Development of a partial user pay system for multi-residential waste management has a numerous challenges

- Develop of infrastructure
- Standardization of system between buildings
- Impacts in existing development agreements
- Difficulties in monitoring and enforcement
- Possible impacts on Tipping Fee Exemption program

Questions to consider:

- How could the City facilitate the development of a partial user pay system for multi-residential buildings?
- How would the Tipping Fee Exemption program need to be changed to accommodate this?
- Would this be possible in your building?
- Would you support this initiative?
- Do you think this system would increase waste diversion, and reduce waste?

Barrie's sustainable waste management strategy

The City of BARRIE

Tipping Fee Exemption Program

- Changes could improve diversion while mirroring the residential program
- Issues with current recycling cart program
  - Capacity issues with 95 gallon cart system
  - Accessibility of cart/recycling depots for tenants and staff
  - Health and safety concerns for collectors and building tenants and staff

Questions to consider:

- How could the Tipping Fee Exemption Program be changed to improve diversion?
- How could the recycling cart program be improved?

Barrie's sustainable waste management strategy

Multi-Residential Green Bin Program

The City of BARRIE

There is strong demand for the development of a green bin program for multi-residential residents. The tools necessary for implementing a Green Bin program include:

- Kitchen mini-bin container for each unit
- Green Bin collection cart(s) located in an accessible area for all unit residents
- Certified compostable liners for the in unit bins and cart(s)
- Promotion and education materials (e.g. flyers)
- A dedicated staff member to work with superintendents, property managers, building owners and tenants

Implementation could include distribution of the Source Separate Organics (SSO) carts and promotional materials and face-to-face education with residents and building superintendents:

- Displays set up in the building lobby at the time of material distribution and/or meetings with the building residents
- Recommended that the building superintendents also be provided with posters and stickers and an updated Superintendent's Handbook

Questions to consider:

- Would your building support development of a Green Bin program for multi-residential buildings?
- What challenges do you foresee with implementing a green bin program in your building?
- How would it impact garbage collection costs and frequency? and the Tipping Fee Exemption Program?

Enhanced Promotion and Education (P&E)

The City of BARRIE

- Most residents are aware of longstanding items that can be recycled
- Challenges include keeping individuals engaged and motivated, and promoting new items that can be diverted and new diversion programs
- In Barrie, residents identified the following areas for increased P&E:
  - Return-to-retailers program
  - Municipal, Hazardous and Special Waste (MHSW) program (e.g. batteries)
  - Reuse services
  - Blue and grey box recycling program information

Barrie's sustainable waste management strategy

Options for Enhanced P&E

- Develop a communications plan and establish an adequate budget
- Employ a mix of communication media to create more awareness
- Establish a recognition & rewards program for recycling
- Implement Blue Box sticker program
- Increased advertising for Blue Box recycling program
- Continue welcome package for new residents, tenants and condo owners
- Update and maintain City website

Questions to consider:
- Which of these P&E initiatives do you think would be effective for increasing diversion in your building?
- Can you think of any others?

Additional Waste Diversion Opportunities

Based on the current waste management system and a review of the waste composition data, the following waste diversion programs may be considered:

- Plastic film recycling
- Textile recycling
- Mattress recycling

Other Options to Improve Waste Drop-off

- Develop Eco-Stations
  - convenient depots for recyclable and reusable goods only
  - could include partnership with non-profit organizations for drop-off of reusable goods
  - encourages waste reduction and re-use
- Expand the existing drop-off depot / area at the Barrie Environmental Centre into an Eco Station
- Develop Construction and Demolition (C&D) waste diversion
- Develop and promote Mobile Unit

Questions to consider:
- How would these drop-off options affect multi-residential diversion practices?
- Which of these options would be most effective in increasing diversion?
- Where should Eco-Stations be located?

Policy Changes to Encourage Diversion

- Zero Waste Policy for public event diversion
- Mandatory source separation and diversion participation in recycling and organics programs
- Disposal ban for Construction and Demolition (C&D) waste at the landfill
- Partial user pay system, affecting the Tipping Fee Exemption program
- By-Law for retailers to post prominent recycling signage (where materials are accepted for recycling)
- Changes to the Tipping Fee Exemption program

Questions to consider:
- How would these policy changes affect you?
- Would you support the implementation of these polices?

Extended Producer Responsibility (EPR)

Public demand for City to lobby for EPR

Advantages of EPR include:

- **Costs shifted off tax base:** protects waste reduction programs from pressures created by government deficits, changes in political direction, and competing priorities, and free up tax dollars for other services
- **Promotion of better product and packaging:** When required to pay for recycling or composting, manufacturers have an incentive to redesign for greater recyclability, decreased toxicity, and less material usage
- **Increasing waste diversion:** Increased funding (for new and enhanced programs) and a strong commitment by partner usually leads to higher participation rates, greater coverage and more materials recycled

Questions to consider:
- Do you think EPR is important?
- Do you want the City to lobby for EPR?

Questions/Comments?

Thank You!

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Open Space

- 4 Topics are posted in four corners of room with a flip-chart
  - **Current waste diversion practices**
  - **Future diversion targets**
  - **Behavioural changes needed to increase diversion**
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The City of BARRIE

Barrie's Sustainable Waste Management Strategy

Barrie's Future Disposal Options
Community Planning Workshop
Thursday November 10, 2011
5 to 8 pm
City Hall, Barrie, ON

AGENDA	

1. 45 minutes	**Presentation**
	• Review of Strategy Goals
	• Review of Consultation Series 1
	• Current Viable Approaches
	  o Landfill
	  o Mechanical Biological treatment
	  o Thermal Treatment
	  o Refuse Derived Fuel (RDF) Production
	• Q&A

2. 45 minutes	**Round Table Discussion:** Detailed discussion on each of the disposal technologies proposed.
3. 45 minutes	**Open Space Activity** • Environmental Criteria • Social Criteria • Economic Criteria

Sustainable Waste Management Strategy

Barrie's Future Disposal Options
Community Planning Workshop
November 10, 2011

Agenda

1. Introductions
2. Overview of the Barrie's Sustainable Waste Management Strategy
   - Planning process
   - Goals
3. Community Engagement Activities
4. Overview of options identified for future waste disposal
   - Advantages and Disadvantages
5. Round Table Discussion
6. Evaluation Criteria
7. Open Space Activity

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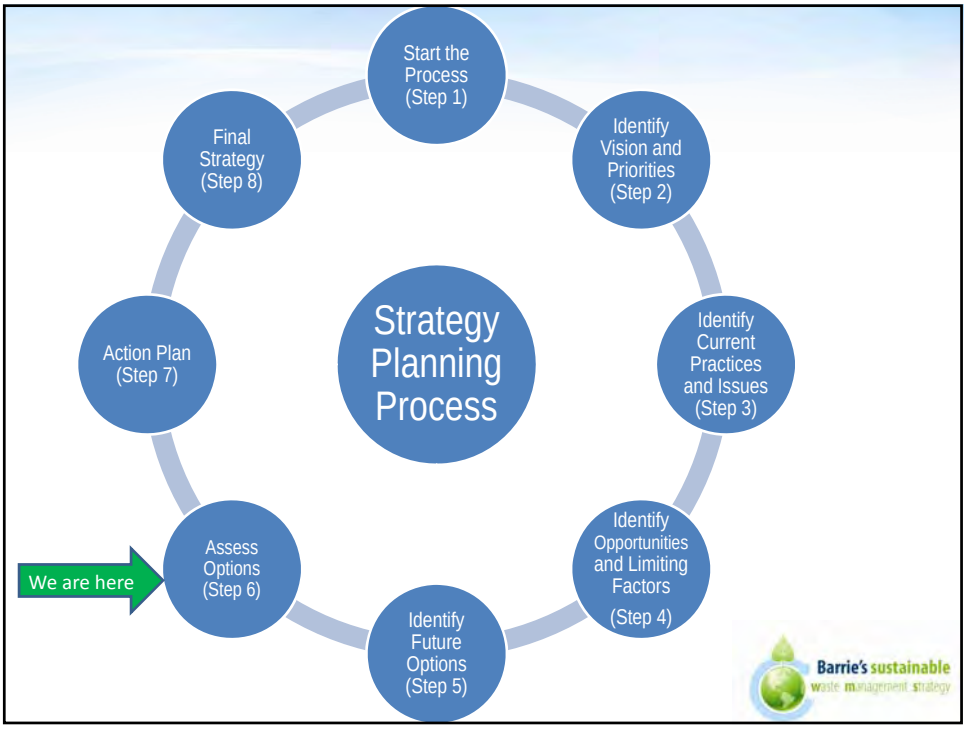

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The City of BARRIE

FUTURE DISPOSAL OPTIONS

Barrie's sustainable waste management strategy

The City of BARRIE

Waste Disposal Approaches

- Landfill
- Mechanical Biological Treatment (MBT)
- Thermal Treatment
  - Mass burn
  - Rotary kiln
  - Fluidized bed
  - Plasma gasification/Pyrolysis
- Refuse Derived Fuel (RDF) Production

Barrie's sustainable waste management strategy

The City of BARRIE

Landfilling

Advantages of Landfilling

- Typically lower cost per tonne than alternative disposal technologies
- Potential energy recovery from landfill gas
- Simple and well established method of dealing with waste

Disadvantages of Landfilling

- Public opposition
- Requires large land area
- Potential for surface water and groundwater contamination
- Potential for odour, noise, litter, vermin
- Costs for management of landfill continue long after the site has been closed
- Siting new facilities is difficult

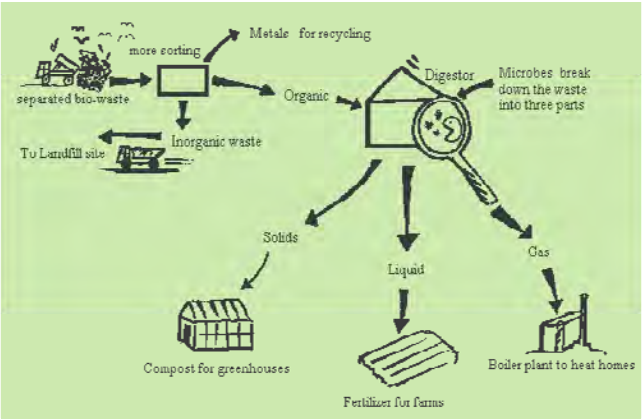
Barrie's sustainable waste management strategy

The City of BARRIE

Mechanical Biological Treatment (MBT)

Objectives:

- Reducing quantities to landfill
- Stabilization of waste prior to landfill
- Collection of biogas for energy production
- Curing of the resulting compost or digestate



Barrie's sustainable waste management strategy

The City of BARRIE

MBT with Aerobic Composting

- *Aerobic – with oxygen*
- Pre-processing (removal of large objects, size separation, recovery of recyclables)
- Active composting in a controlled aerobic process
- Aeration and moisture is controlled to promote decomposition
- Material curing for further maturation
- Possible screening of compost product to remove oversize materials (compost product referred to as compost-like-output)

Barrie's sustainable waste management strategy

The City of BARRIE

MBT with Anaerobic Digestion (AD)

- *Anaerobic – without oxygen*
- Anaerobic digestion produces two main products: digestate/compost-like-output and biogas
- Pre-processing (removal of large objects, size separation, recovery of recyclables)
- Digestion (conversion of organic material into biogas and digestate)
- Energy production (the biogas can be used to produce energy)
- Composting the solid digestate
- Final curing of the solid digestate takes place aerobically in windrows

Barrie's sustainable waste management strategy

The City of BARRIE

MBT Advantages and Disadvantages

Advantages of MBT

- Increased diversion of waste from disposal
- Avoidance of greenhouse gas (GHG) emissions
- Net energy production
- Reduced reliance on traditional waste disposal methods
- Anaerobic Digestion (AD) plants need small footprints

Disadvantages of MBT

- Higher cost compared to landfilling or composting
- Potential for odour less for AD than aerobic composting
- Cannot process entire waste stream
- Markets for products are dependant on quality of compost
- Siting facilities may be difficult, although generally more acceptable than landfill

Barrie's sustainable waste management strategy

The City of BARRIE

Thermal Treatment

- Waste pre-processing and feed control
- Combustion/gasification unit
- Heat and/or energy recovery system
- Air pollution control system
- Ash management system

Barrie's sustainable waste management strategy

The City of BARRIE

Thermal Treatment

Advantages of Thermal Treatment

- Increased diversion of waste from disposal
- Energy recovery
- Net energy production
- Recovery of ferrous and non-ferrous metals
- Destruction of contaminants in waste stream

Disadvantages of Thermal Treatment

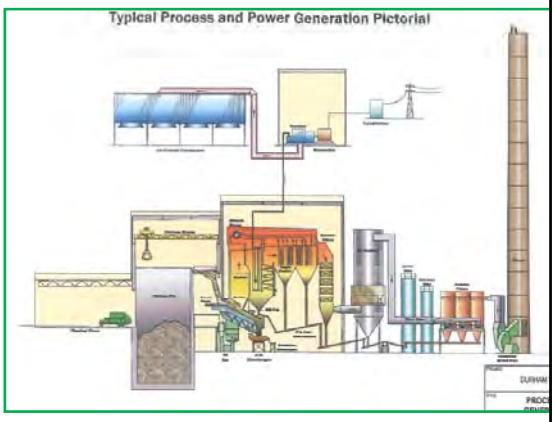
- Not considered as diversion in Ontario
- Higher cost compared to landfilling
- Thermal treatment is a high-tech system that requires skilled operators
- Availability of local energy markets is critical
- Need waste of high heating value and consistent quantities
- Siting facilities may be difficult, although generally more acceptable than landfill

Barrie's sustainable waste management strategy

The City of BARRIE

Mass Burn

- Well established technology for over 100 years
- Waste is fed onto grates for burning
- Gases rise into the combustion chamber then to energy recovery system
- Durham/York building a mass burn facility in Clarington to be operational in 2014



Barrie's sustainable waste management strategy

Rotary Kiln

- Rotating drum enables thorough mixing of waste with air
- Operating temperature from 800 – 1400 ^{o}C
- Can be used for the destruction of liquids, sludges, solids, or gases

Fluidized Bed

- Incineration chamber has bed of silica sand on bottom
- Air is injected through the sand
- Typically used for sewage sludge

Plasma Gasification/Pyrolysis

The City of BARRIE

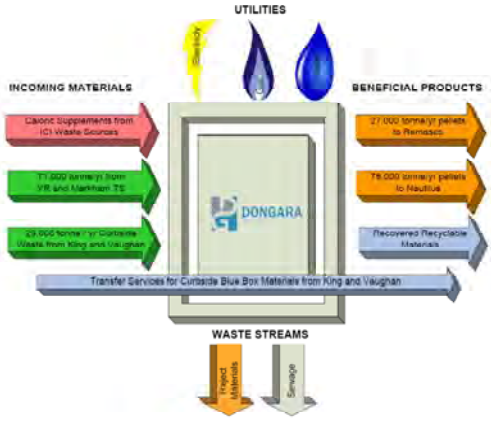
- Combustion of waste in a low oxygen setting
- Plasma torch used to refine combustible gases into synthetic fuel
- Plasco Energy demonstration unit has operated in Ottawa for 4 years

Barrie's sustainable waste management strategy

Refuse Derived Fuel (RDF) Production

The City of BARRIE

- Preprocessing removes recyclables
- Waste is shredded and dehydrated to produce pellets or fluff that is used for an alternative fuel (e.g., cement kilns)
- Dongara Facility has operated in Vaughan since 2008



Barrie's sustainable waste management strategy

RDF Production

Advantages of RDF Production

- Costs similar to MBT or Thermal treatment options
- Produces a clean fuel product

Disadvantages of RDF Production

- Product is considered a waste
- Markets for fuel pellets is not well established
- Unacceptable materials result in processing issues

Round Table Discussion

Questions? Comments? Concerns?

We want to know what you think about each of the proposed technologies:

- Landfilling
- Mechanical Biological Treatment (MBT)
- Thermal Treatment
- Refuse Derived Fuel (RDF) Production

Evaluation Criteria

A comprehensive evaluation process for future waste disposal technologies is an important part of the Strategy, including:

- A comprehensive technology screening process to narrow the number of technology options by eliminating those that are not compatible or reasonable for Barrie
- Decision criteria based on the overall goals and objectives of Barrie's Sustainable Waste Management Strategy, objectives and relevant regulations and policies already adopted

An important part of the criteria development is input from key stakeholder groups and the community

Examples of Evaluation Criteria

Environmental	Economic	Social
Minimize net greenhouse gas emissions	Minimize life-cycle capital, operations & maintenance costs	Maximize protection of community health and safety
Minimize waste disposal and increase diversion rate	Maximize revenues from renewable power generation and carbon credits	Maximize community benefits, including amenities
Minimize impacts on surface water quality	Maximize spin-offs benefits to local businesses	Maximize local jobs
Minimize impacts on groundwater quality	Reduce reliance on public finding	Minimize risk for the health and safety of workers
Maximize conservation and protection of the environment	Optimize partnership agreements	Ease of compliance with regulations
Minimize waste going to landfill	Minimize perpetual costs (after facility is closed)	

Evaluation Criteria

A combination of **social**, **environmental**, and **economic** factors will be considered by Barrie as part of the evaluation and comparison of potential residual waste management technologies.

What do you feel are important criteria for this evaluation?

Open Space Activity (45 minutes)

Three stations are set up around the room:

- Environmental Criteria
- Social Criteria
- Economic Criteria

We would like your input on what criteria should be considered within each of these categories

Questions?

Thank You!

Your input is valued towards developing a Sustainable Waste Management Strategy that works best for the people of Barrie.

For more information and opportunities for input, please visit our website:
www.barrie.ca
Just look for the Strategy logo to link to the page

COMMENT FORMS

7. What types of incentives would encourage your business or institution to strive for these targets?

_____

_____

_____

_____

8. How important is it that the City be given access to waste statistics from local businesses and institutions for waste planning purposes?

- O Very important
- O Somewhat Important
- O Not Important
- O Not sure

9. Please provide any other comments or suggestions for the Strategy:

_____

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Thank you for taking the time to complete this worksheet!

Thank you for taking the time to participate in this community planning workshop. We encourage your input as part of the development of Barrie's Sustainable Waste Management Strategy.

1. The table below lists the proposed options for future IC&I service delivery. First, please rank the options based on the importance of implementation. Next, consider the timeline of implementation (short, medium and long term), and indicate which category applies to each option. You are welcome to include other options that you feel are important in the spaces provided.

Option	Priority (Please rank options numerically)	Timeline for Implementation (Please check applicable box for each option)		
		Short term (1-5 years)	Medium Term (5-10 years)	Long Term (10-20 years)
Standardize diversion programs schools				
Standardize diversion programs across business				
Consistent waste bins throughout the City				
Zero Waste Policy for public event diversion				
Mandatory source separation and curbside diversion of recyclables and organics				
Disposal ban for C&D waste				
Partial user pay system				
By-Law for retailers to post prominent recycling signage				
Develop recycling program for C&D waste				
Central waste depots in downtown area				
Development of Eco-Stations				
Expand the existing drop-off depot / area at the Barrie Environmental Centre				
Mobile Unit for recycling collection				
Policy of mandatory curbside diversion				
Extended producer responsibility (EPR)				
Other:				
Other:				

2. Please describe how the City can implement your top three options:

Option 1: _____

_____

_____

_____

_____

Option 2: _____

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_____

_____

Option 3: _____

_____

_____

_____

_____

3. In the future, how important is it that the City manages its own IC&I waste (including, hospitals, businesses, schools, and construction) locally?

   - O Very important
   - O Somewhat Important
   - O Not Important
   - O Not sure

4. How important is it that the City increase responsibility for the collection, processing and disposal of IC&I waste?

   - O Very important
   - O Somewhat Important
   - O Not Important
   - O Not sure

5. How important is it that businesses and institutions remain responsible for the collection, processing and disposal of their own waste?

   - O Very important
   - O Somewhat Important
   - O Not Important
   - O Not sure

6. The Provincial waste diversion target is 60%. The provincial IC&I recycling rate is currently estimated at 12%. With respect to waste diversion, where should the IC&I sector be in:

   A. 10 years? _____

   _____

   _____

   B. 30-50 years? _____

   _____

   _____

7. What are current barriers to residents who live in multi-residential buildings from generating less waste and diverting more?

_____

_____

_____

_____

8. Do you think it's important for the City to develop a recycling program for construction and demolition waste?

- O Very important
- O Somewhat Important
- O Not Important
- O Not sure

9. Please provide any other comments or suggestions for the Strategy here:

_____

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Thank you for taking the time to complete this worksheet!

Thank you for taking the time to participate in this community planning workshop. We encourage your input as part of the development of Barrie's Sustainable Waste Management Strategy.

1. The table below lists the proposed options for future multi-residential service delivery. First, please rank the options based on the importance of implementation. Next, consider the timeline of implementation (short, medium and long term), and indicate which category applies to each option. You are welcome to include other options that you feel are important in the spaces provided.

Option	Priority (Please rank options numerically)	Timeline for Implementation (Please check applicable box for each option)		
		Short term (1-5 years)	Medium Term (5-10 years)	Long Term (10-20 years)
Biweekly garbage collection				
Partial user pay system				
Four day collection schedule				
Develop Green Bin program for multi-residential				
Enhanced promotion and education using a mix of media				
Re-assess Blue Box sticker program				
Establish a rewards & recognition program for recycling				
Re-launch Blue Box Recycling Program				
Develop welcome package for new residents				
Update and Maintain City Website				
Plastic film recycling				
Textile recycling				
Mattress recycling				
Zero Waste Policy for public event diversion				
Mandatory source separation and curbside diversion of recyclables and organics				
Disposal ban for C&D waste				
By-Law for retailers to post prominent recycling signage				
Develop recycling program for C&D waste				
Central waste depots in downtown area				
Development of Eco-Stations				
Expand the existing drop-off depot / area at the Barrie Environmental Centre				
Mobile Unit for recycling collection				
Policy of mandatory curbside diversion				
Extended producer responsibility (EPR)				
Other:				
Other:				
Other:				

2. Please describe how the City can implement your top three options:

Option 1: _____

_____

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Option 2: _____

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_____

Option 3: _____

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3. How important is it that the City manages its own waste (including, recyclables, organics and garbage) locally?

- O Very important
- O Somewhat Important
- O Not Important
- O Not sure

4. Which of the following would you be most likely do to in order to reduce the amount of waste you generate?

- O Buy less
- O Reuse more
- O Exchange goods more
- O Buy more durable goods
- O Recycle/compost more
- O Unsure
- O Other:

5. How important is it that businesses and institutions (including school, and hospitals) remain responsible for the collection, processing and disposal of their own waste?

- O Very important
- O Somewhat Important
- O Not Important
- O Not sure

6. The Provincial waste diversion target is 60%. The City's current multi-residential diversion rate is 21%. Where do you think this diversion rate should be in:

A. 10 years? _____

_____

_____

B. 30-50 years? _____

_____

_____

The City of BARRIE

Sustainable Waste Management Strategy
Barrie's Future Disposal Options Workshop
Worksheet

Thank you for taking the time to participate in this community planning workshop. We encourage your input as part of the development of Barrie's Sustainable Waste Management Strategy.

1. The table below lists includes example evaluation criteria for evaluating potential waste disposal technologies. The criteria are organized into three categories (environmental, social and economic). First, please list any other criteria you think should be considered when evaluating potential waste disposal technologies. Next, consider the relative importance of each criterion, and distribute an allocation of 100% amongst each of the criteria you think are important.

Evaluation Criteria	**Importance** Please indicate what percentage each criteria should hold overall, the total should equal 100%
Environmental	
Minimize net greenhouse-gas emissions	
Minimize waste disposal and increase diversion rate	
Minimize impacts on surface water quality	
Minimize impacts on groundwater quality	
Maximize conservation and protection of the environment	
Other:	
Other:	
Other:	
Social	
Maximize protection of community health and safety	
Maximize community benefits, including amenities	
Maximize local jobs	
Minimize risk for the health and safety of workers	
Ease of compliance with regulations	
Other:	
Other:	
Other:	
Economic	
Minimize life-cycle capital, operations & maintenance costs	
Maximize revenues from renewable power generation and carbon credits	
Maximize spin-offs benefits to local businesses	
Reduce reliance on public finding	
Optimize partnership agreements	
Minimize perpetual costs (after facility is closed)	
Other:	
Other:	
Total	**100%**

2. Is it important to you that the City manages its own waste (including, recyclables, organics and garbage) locally?

   - O Very important
   - O Somewhat Important
   - O Not Important
   - O Not sure

3. If the City plans to develop a waste disposal facility, who should it be owned by?

   - O The City
   - O Private sector
   - O A public/private partnership

4. Is it important to you that the City take a leadership role in exploring and planning regional waste facilities? These waste facilities could serve other communities, and may or may not be located in Barrie.

   - O Very important
   - O Somewhat Important
   - O Not Important
   - O Not sure

5. Do you think that there will be a need for waste disposal facilities in:

   A. 10 years? _____

   _____

   _____

   B. 30-50 years? _____

   _____

   _____

6. Would you support the development of a waste disposal site in your neighbourhood if an adequate property was available?

_____

_____

_____

7. What options should the City consider for long term waste disposal?

- O Landfill
- O Mechanical Biological Treatment (MBT)
- O Thermal treatment (Energy from Waste)
- O Refuse Derived Fuel (RDF) Production
- O Other:

Comments: _____

_____

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8. Please provide any other comments or suggestions for the Strategy:

_____

_____

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Thank you for taking the time to complete this worksheet!

7. What are current barriers to residents generating less waste and diverting more?

_____

_____

_____

_____

8. Do you think it's important for the City to develop a recycling program for construction and demolition waste?

- O Very important
- O Somewhat Important
- O Not Important
- O Not sure

9. Please provide any other comments or suggestions for the Strategy:

_____

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Thank you for taking the time to complete this worksheet!

Thank you for taking the time to participate in this community planning workshop. We encourage your input as part of the development of Barrie's Sustainable Waste Management Strategy.

1. The table below lists the proposed options for future residential service delivery. First, please rank the options based on the importance of implementation. Next, consider the timeline of implementation (short, medium and long term), and indicate which category applies to each option. You are welcome to include other options that you feel are important in the spaces provided.

Option	Priority (Please rank options numerically)	Timeline for Implementation (Please check applicable box for each option)		
		Short term (1-5 years)	Medium Term (5-10 years)	Long Term (10-20 years)
Biweekly garbage collection				
Partial user pay system				
Four day collection schedule				
Simplified, standardized yard waste collection schedule				
Enhanced promotion and education using a mix of media				
Re-assess sticker program				
Establish a rewards & recognition program for recycling				
Re-launch Green Bin program				
More P&E for Blue and Grey Box recycling program				
Develop welcome package for new residents				
Update and maintain city website				
Plastic film recycling				
Textile recycling				
Mattress recycling				
Zero Waste Policy for public event diversion				
Mandatory source separation and curbside diversion of recyclables and organics				
Disposal ban for C&D waste				
By-Law for retailers to post prominent recycling signage				
Develop recycling program for C&D waste				
Central waste depots in downtown area				
Development of Eco-Stations				
Expand the existing drop-off depot / area at the Barrie Environmental Centre				
Mobile Unit for recycling collection				
Policy of mandatory curbside diversion				
Extended producer responsibility (EPR)				
Standardize programs with neighbouring municipalities				
Other:				
Other:				
Other:				

2. Please describe how the City can implement your top three options:

Option 1: _____

_____

_____

_____

_____

Option 2: _____

_____

_____

_____

_____

Option 3: _____

_____

_____

_____

_____

3. How important is it that the City manages its own waste (including, recyclables, organics and garbage) locally?

- O Very important
- O Somewhat Important
- O Not Important
- O Not sure

4. Which of the following would you be most likely do to in order to reduce the amount of waste you generate?

- O Buy less
- O Reuse more
- O Exchange goods more
- O Buy more durable goods
- O Recycle/compost more
- O Unsure
- O Other:

5. How important is it that businesses and institutions (including school, and hospitals) remain responsible for the collection, processing and disposal of their own waste?

- O Very important
- O Somewhat Important
- O Not Important
- O Not sure

6. The Provincial waste diversion target is 60%. The City's residential diversion rate was 47% in 2009. The Provincial average was 44%. What should the City set as a waste diversion goal in:

A. 10 years? _____

_____

_____

B. 30-50 years? _____

_____

_____

RANKING OF OPTIONS (VERBATIM COMMENTS)

Option	Number of times ranked in top three	Comments
Extended producer responsibility (EPR)	8	Participate in a municipal lobby group
		Calculate how the waste from companies is directly affecting Barrie and the approximate cost of contending with it and spreading hat cost across the companies involved who will charge the users accordingly
		Aggressively lobby other municipalities to persuade province to pass appropriate laws
		Mandate producers to develop systems and policies to deal with hazardous products (i.e. batteries) after their usable lifetimes
		Extend producer responsibility - the is could reduce a significant amount of waste
		Penalize manufacturers who make excessive packaging or have manufacturers take back their packaging
Biweekly garbage collection	7	Doesn't solve long term
		Seeing we get none now
		Advise residents through all media channels - local tv/radio/newspaper, city website and calendar. Recycling should increase by default, since it would remain on a weekly pick up
		Seeing as we get zero today – Every time a condo unit changes hands a package should be mailed from the City
		More education and incentives to create personal responsibility
		Redo curbside collection schedule and use a large ad program
Enhanced promotion and education using a mix of media	7	Lots of advertising and promotions
		Advertising is the eighth wonder of the world. Education, repetition, in your face, consistency. Social media. Get your message out there
		Mixed media: CD for each home. QR codes
		Education and promotion - news releases, school education, keeping in peoples mind and making not recycling not socially unacceptable
		Just do it!!!
		Create jobs in this sector
		Learn how to sell and motivate
Development of Eco-Stations	7	Additional stations would encourage usage. I believe the perception of the landfill site/eco station is that there is too long a wait
		More locations for recycling of light bulbs, CFL bulbs paints, oil throughout the city
		Develop eco station in south end of Barrie
		Identify central locations to help facilitate the collection of ecotype things. Education is key to this concept
		Full service vs. self serve - do you want to separate recyclables or pay to have it done for you.
Develop Green Bin Program for Multi-Residential (Multi-Residential Workshop Only)	7	Take a test building that is not too large and see how it works
		Green Bin program - educate tenants by property manager (landlord)
		Good luck. frequent pick-up or air tight storage for weekly pick ups (i.e. like bear proof garbage bins at campgrounds)
		Pick up two or three times a week. proper bins for containment
		Determine what the targets are and promote them in a positive fashion to all residents, not only multifamily
		Green bin pickup 2-3 times per week
		Policies/fees to businesses/industry
Plastic film recycling	5	Add film to blue box
		Legislation that manufacturers use recyclable materials for packaging
		Common sense
		Plastic film is increasing as a percentage of garbage stream. Need to "handle" this waste stream
Other	4	Consumer responsibility - Education re-thinking purchases rewarding businesses who package products, in environmentally responsible manner - promote re thinking to the public. People need reminders - life is fast
		Target 'biggest bang for the buck' that reduces the largest offenders with special programs
		Anaerobic digestion of green bin - Anaerobic digestion methane will feed a combined heat and power "neighbourhood"
		Process green bin stuff here instead of shipping it to Arthur - Develop facility for green bin items close to Barrie or in Barrie, Orillia and other communities could use it too.

		Driving heavy stuff far distances in big inefficient trucks is disgusting and unacceptable
		Waste for energy (methane)
Develop recycling program for C&D waste	5	Develop recycling program for C&D - with an expected boom in multi-residential units - it's important that these get sorted ahead of the building
		Not to sure how to implement this. Right now, Sargeants receive concrete materials from residents - maybe expand on this
		People enjoy reusing stuff people are disposing of. Could a community organization manage a drop-off centre similar to the Re-store. Great way to tie in volunteers or social service agencies. Building stronger communities in doing so
		Education blitz - maybe you don't have money but create a volunteer army
		Source recyclers for C&D waste, fund the program - could consider comparing cost of new landfill to funding a prevention program
Expand the existing drop-off depot / area at the Barrie Environmental Centre	4	Increase availability
		Larger facility - to accept more material in a time efficient manner. Would hopefully encourage residents to utilize the site frequently. personal experience - too long a wait to drop off one or two items
		City can help identify all drop-off centres and locations - start in newspaper and eventually move to website. Everyone thinks stuff needs to go to the dump - increase awareness of all other options
Four day collection schedule	4	4 day collection - more trucks
		Seems pointless
		Work with private sector to encourage businesses to do more and a better job
		Advertise and utilize systems to communicate to the public the gains made toward communication e.g. website register today for... Tell people what to do! Lead them, don't just hope they will discover/use you
Develop welcome package for new residents	4	Develop welcome package as number one making people aware and involved as soon as possible to increase buy in
		Provide a small condo size unit for each condo in the City as well as a large green unit to empty these into
		Easy
Update and maintain city website	4	Make the process easier to find and implement
		Why isn't this done?
		Partner and co-operate with Simcoe County and Orillia. Place AMO and OWMA to pressure province to show leadership
		Need to set program to increase hits
Mandatory source separation and curbside diversion of recyclables and organics	4	Use clear bags - Hire me!
		Credits and fees for level of involvement in waste diversion
		Do C&D instead
		Mandatory source separation and curbside diversion by-laws with education programs. People really want to know where the recyclables go and what is made with them. Barrie specific details
Standardize diversion programs schools	3	1 RFP for all schools/businesses within City and possibly Simcoe City
		Standardize diversion in schools. Need to be consistent with colours/signage and what can go in each bin. This is the main source of problems. Education problems need first person outreach. Organics in the schools is needed!!
		Look at implementing a pilot for starters at one school site for recycling program and organic collection. Next, assess and address any issues prior to rollout to balance of sites
Standardize diversion programs across business	3	Using same service/recycling providers
		Organics in businesses is needed
		One uniform program, if possible, throughout sectors understanding there will be variances
Consistent waste bins throughout the City	3	Establish colour scheme - City purchases and ICI buys from city - along with consistent signage
Textile recycling	3	Textile recycling: more drop offs
		Legislation that manufacturers use recyclable materials for packaging
		Common sense
Partial user pay system	3	Doing now
		We have that already
		Recognition and rewards (tax credits) for high compliance residents and businesses. Certification program, COMMUNICATE TO EDUCATE!
By-Law for retailers to post prominent recycling	3	Get everyone involved - business can and should do their part. Simple cost awareness of not collecting recycling should be enough to drive this as business owners do

signage		understands dollars and cents of business
		Implement municipal by-laws
Policy of mandatory curbside diversion	3	Credits and fees for level of involvement in waste diversion
		Use positive reinforcement instead
Central waste depots in downtown area	2	
Disposal ban for C&D waste	2	Make C&D waste easier to dispose of perhaps not as expensive
		Whatever it takes
		Encourages dumping!
Establish a rewards & recognition program for recycling	2	Challenge to residents within the City of Barrie to champion 60% diversion. Utilize relaunch go blue box/green/grey and 4-R educational programs. Reward - David Suzuki - Recognition, Rick Mercer - other celebrity
		Reward system - this could kickstart better recycling
		Rewards: credits for property owners
Mattress recycling	2	Common sense
		Introduce this programme in Barrie
Re-assess blue box sticker program	2	
Re-launch Blue Box recycling program	2	
Mobile unit for recycling	2	An education unit - something that can be showcased/used at school, public functions, etc. creating awareness and supporting the education piece
Standardize programs with neighbouring municipalities	1	Enter into municipal partnerships
Zero Waste Policy for public event diversion	1	Common sense
		Longer term
Re-launch Green Bin program	1	Important
		Recognition for businesses
Simplified, standardized yard waste collection schedule	0	Communicate better
More P&E for Blue and Grey Box recycling program	0	Ok now

APPENDIX G

Awareness and Communication Plan

March 2012

REPORT

CITY OF BARRIE SUSTAINABLE WASTE MANAGEMENT STRATEGY

Public Awareness and Communication Plan

Submitted to:
Sandy Coulter, Manager
Environmental Operations
City of Barrie
70 Collier Street
Barrie, ON L4M 4T5

Report Number: 10-1188-0055
Distribution:

City of Barrie (2 Copies)

Golder Associates Ltd. (2 Copies)

Golder Associates

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Acronym	Definition
C&D	Construction and Demolition
CLC	Community Liaison Committee
EPR	Extended Producer Responsibility
IC&I	Industrial Institutional and Commercial
NGO	Non-governmental Organization
P&E	Promotion and Education

1.0 INTRODUCTION

In March 2012, the City of Barrie (the "City") concluded the development of a Sustainable Waste Management Strategy (the 'Strategy"). This Strategy is a master planning document that recommends opportunities to promote effective, efficient, and sustainable change in how the City manages the community's waste over the next 20 years. It is a community-based plan, with goals, policies and a vision focusing on issues related to Barrie as a whole and stemming from community feedback. An important part of the implementation of the Strategy includes ongoing education and awareness. This Awareness and Communication Plan (the "Plan") provides a framework for ongoing communications to facilitate the implementation of the Strategy components, including:

- Establishing clear communication objectives;
- Identifying communications tasks that accompany each initiative identified in the Strategy;
- Providing a mixed media toolkit of communication tools that can be used by City staff to achieve these tasks; and
- Identifying a target audience and recommended communication approach for each initiative.

2.0 SUMMARY OF CONSULTATION DURING STRATEGY DEVELOPMENT

A vital component of Strategy development was consultation with community stakeholders, including residents, neighbouring municipalities, local interest groups, local school boards, and local service providers. As this Plan will build on the information collected during the consultation process; it is important to have an understanding of the consultation activities that were completed. Table 1 provides an overview of the consultation events held, including meetings, open houses and workshops. All feedback received as part of the consultation process was reviewed by the Community Liaison Committee (CLC), which was made up of community stakeholders. Upon review of the public's comments, the CLC made recommendations to the Project Steering Committee. The Steering Committee was made up of representatives from the City staff, including engineers, planners, and environmental services representatives, as well as specialists from Golder Associates, the consultant hired by the City to oversee the development of the Strategy. While decisions were ultimately made by the Steering Committee, the CLC's recommendations were carefully considered during the decision-making process.

At the outset of the process, the CLC was engaged to initiate project planning and identify guiding principles for the Strategy. Series 1 consultation events focused on identifying issues with the current system and scoping preliminary options for the future, including partnerships with neighbouring municipalities and school boards. Series 2 consultation events were aimed at evaluating options for future services, and the identification of priorities for waste initiatives.

Table 1: Overview of consultation for the development of the Strategy

Planning	CLC Meeting	March 31, 2011	CLC Members
Series 1	Newsletter	April 6, 2011	Residents
	Intercommunity Collaboration Initiatives Workshop	May 2, 2011	The County of Simcoe and adjacent municipalities, including the City of Orillia, Towns of Innisfil and Collingwood, and the Townships of Springwater, Essa, and Oro-Medonte
	Community Workshop	May 3, 2011	NGOs and community groups (Downtown Barrie; Multi-residential Building Managers; School Boards; Georgian College; City of Barrie Planning and Development; City of Barrie Parks Planning; Barrie Wind Catchers and Zero Waste Simcoe)
	Open House 1	May 4, 2011	Residents
	Open House 2	May 5, 2011	Residents
	CLC Meeting	May 26, 2011	CLC Members
	CLC Meeting	June 23, 2011	CLC Members
Series 2	Industrial, Commercial and Institutional (IC&I) Sector: Future Service Delivery Workshop	November 3, 2011	Canadian Home Builders Association, School of Environmental Studies; Georgian College; Greater Barrie Chamber of Commerce; Royal Victoria Hospital, Simcoe County District School Board; Simcoe Muskoka Catholic District School Board; Nottawasaga Valley Conservation Authority
	Residential Sector: Future Waste Collection/Diversion Workshop	November 3, 2011	Residents AWARE Simcoe; Zero Waste Simcoe; Transition Barrie
	Multi-residential Sector: Future Service Delivery Workshop	November 10, 2011	Residents Multi-Residential Building Owner/Managers/Supervisors
	Barrie's Future Waste Disposal Options Workshop	November 10, 2011	Residents AWARE Simcoe; Zero Waste Simcoe; Transition Barrie
	CLC Meeting	December 12, 2011	CLC Members

Additional community engagement activities included:

- A Focus Group with Grade 11 students at Innisdale Secondary School;
- Displays at community events, including Ecofest and Go Green Barrie; and
- An online survey.

Following the consultation program, the CLC provided the Steering Committee with a prioritization of options for future service, including a recommended timeline for implementation. The top recommendations for short term implementation were:

- Develop recycling program for Construction and Demolition (C&D) Waste;
- Expand the existing drop off depot/area at the Barrie Environmental Centre;
- Develop/enhance welcome packages for new residents;
- Update and maintain City website; and
- Enhanced Promotion and Education (P&E) using a mix of media.

The CLC also provided recommendations on future waste diversion targets, and suggestions for decision-making criteria to be used to evaluate future waste disposal options. The final Strategy recommendations were then developed by the Steering Committee based on the results of the completed consultation program.

3.0 PLAN OBJECTIVES

As a starting point in the Strategy planning process the following mission statement and guiding principles

Strategy Mission Statement:

"To develop a community strategy for sustainable waste management that supports current and future service expectations in a matter that is fiscally responsible, socially acceptable and environmentally sound"

Guiding Principles:

- **Achievement**: Lead by example with sustainable policies and practices
- **Dedication**: Seek integrated waste management solutions including diversion
- **Collaboration / Transparency**: Facilitate cooperation and collaboration, including encouraging partnerships
- **Service to our Community**: Engage the community to ensure the Strategy meets their needs and objectives
- **Sustainability / Integrity**: Recognize waste is a resource and find solutions that support reduction, reuse, recycling and energy recovery before disposal
- **Continuous Improvement**: Invest in infrastructure with the flexibility to accommodate growth, changing policies and encourage innovation

were established in consultation with the Steering Committee and the CLC.

This Plan has been created in line with the overall Strategy mission and guiding principles. The purpose of this Plan is to outline how to effectively implement the Strategy and assess its value to the community as the community grows and changes over time. This Plan will allow the City to keep the community up-to-date with its activities and assess and respond to any changes in public attitude during the implementation phase.

The specific objectives of this Plan are to:

- Communicate changes in waste management services;
- Increase education and awareness of existing services, with the goal of increasing waste diversion;
- Facilitate ongoing dialogue between stakeholders and City staff; and
- Provide a flexible framework to allow the City to easily adapt communications activities to the changing needs of the community.

4.0 COMMUNICATION TASKS

The Strategy establishes a planning framework and strategic direction for waste management in the City over the next 20 years, with recommended solutions to be implemented in five-year increments. Each five-year planning period, or implementation phase of the Strategy, has specific diversion targets to bring the City to a final target of 60% in 2031 (Figure 1). Each implementation phase has specific initiatives, which include components for implementation. Where relevant, communication tasks have been identified for each initiative to facilitate their successful implementation. While this Plan includes a brief overview of each of the initiatives that will require communication, more detailed information on all of the initiatives is available in the Strategy, which can be found online at www.barrie.ca.

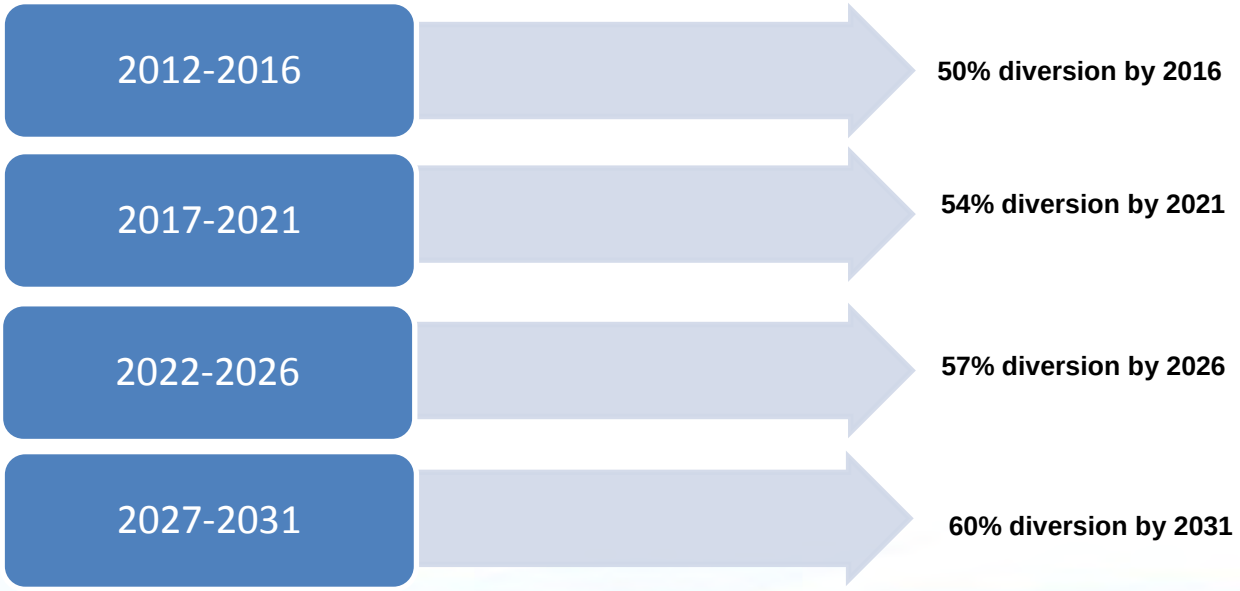


Figure 1: Diversion targets for each implementation phase of Barrie's Sustainable Waste Management Strategy.

4.1 2012-2016 Implementation Phase

The goal of the 2012-2016 Implementation Phase is to reach a diversion target of 50%. Figure 2 provides an overview of the initiatives associated with this phase, and identifies the communication tasks associated with each initiative. The initiatives for this phase include significant changes to residential and IC&I collection and diversion programs, including the implementation of biweekly garbage collection, a 4-day collection cycle, and a green bin collection program for multi-residential buildings.

Successful implementation of these Strategy components will depend on effective communication. In particular biweekly garbage collection will need to be communicated with rationale for service changes. It will be important to educate the public on long term impacts and benefits. For example, residents should be presented with information on the long-term benefits of switching to biweekly garbage collection, including waste reduction and the potential to prolong the life of their landfill. Residents affected by the launch of the multi-residential organics program should be educated and made aware of the new service. The City may want to work closely with building managers to ensure bin placement is accessible, signage is clear and consistent, and education materials are provided to all residents. Older residents, particularly those living in seniors buildings may require additional education and communication to introduce them to the green bin program.

Once these programs have been established, the City will introduce changes in bag limits in the IC&I and multi-residential sectors which will support waste reduction. Additionally, new diversion programs will be implemented including the development of a construction and demolition (C&D) waste diversion program and paint can and aerosols diversion.

During consultation for the Strategy, the public identified Extended Producer Responsibility (EPR) as a high priority recommendation. This phase will include providing City Council and relevant staff with the information they need to effectively lobby for EPR provincially.

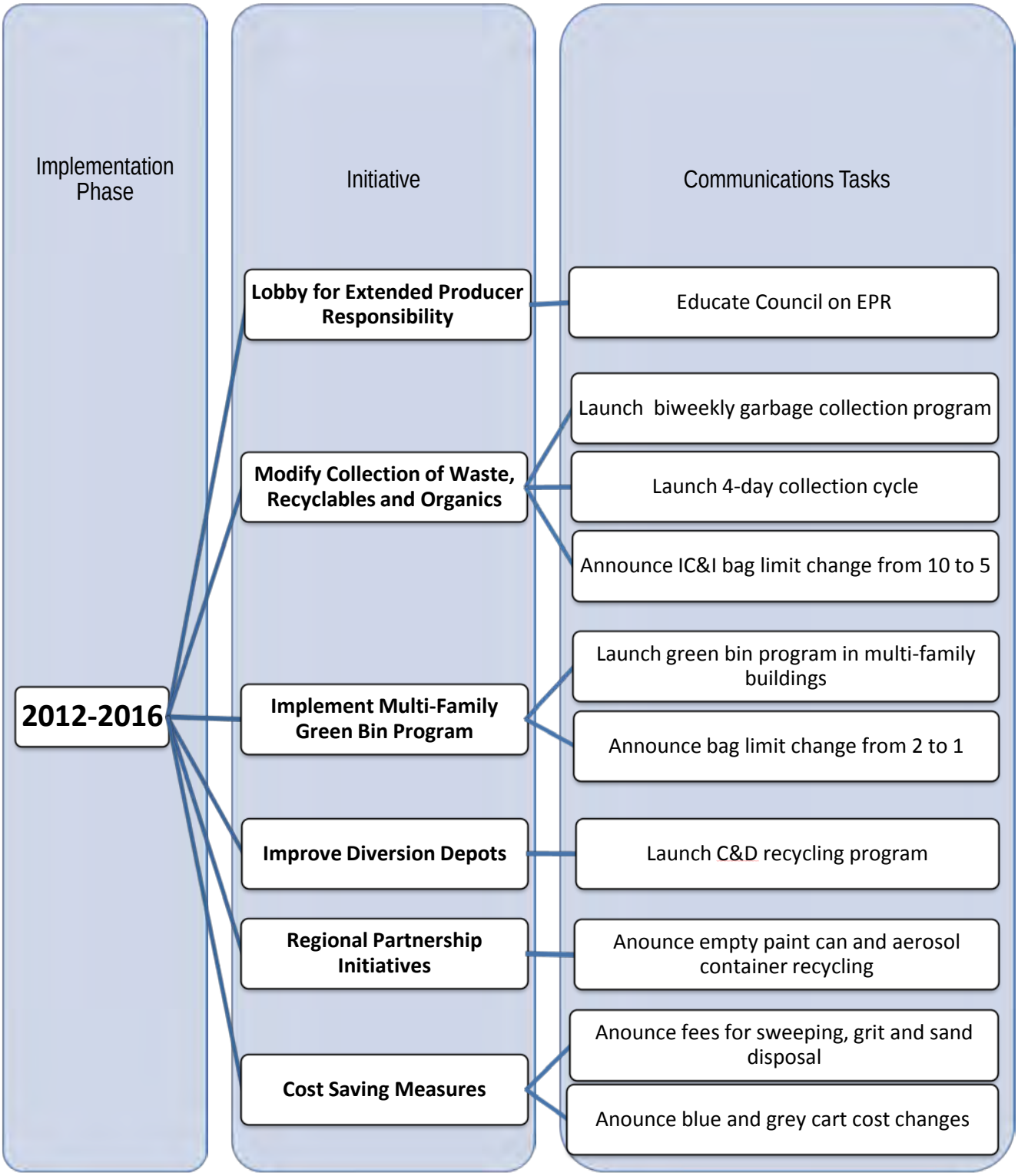


Figure 2: Communication tasks identified for initiatives in the 2012-2016 implementation phase

4.2 2017-2021 Implementation Phase

The ultimate goal of the 2017-2021 Implementation Phase is to reach a diversion target of 54%. Figure 3 provides an overview of the initiatives associated with this phase, and the communication tasks that correspond to their successful implementation. During this phase, enhanced education and promotion activities will include promotion of collection and diversion programs, including the green bin collection program for multi-residential buildings, the C&D waste diversion program and the paint can and aerosols diversion programs.

Ongoing education and awareness campaigns focusing on the promotion of these initiatives are vital to their success. This phase will also include improvements to diversion depots including the opening of a new depot, and the acceptance of textiles and mattresses into the diversion program. The City will also be eliminating the 100 kg free load per household program. This cost saving measure should be announced to residents as part of an overall waste reduction education campaign. Residents should be made aware of the long term cost-savings from maximizing the use of their existing landfill for waste disposal.

As part of this phase the City will form a regional partnership committee that may be used to launch joint Promotion and Education (P&E) initiatives throughout the Region. Regional collaboration on education initiatives poses great cost-savings and the opportunity to maximize resources, and increase efficiency of advertising campaigns.

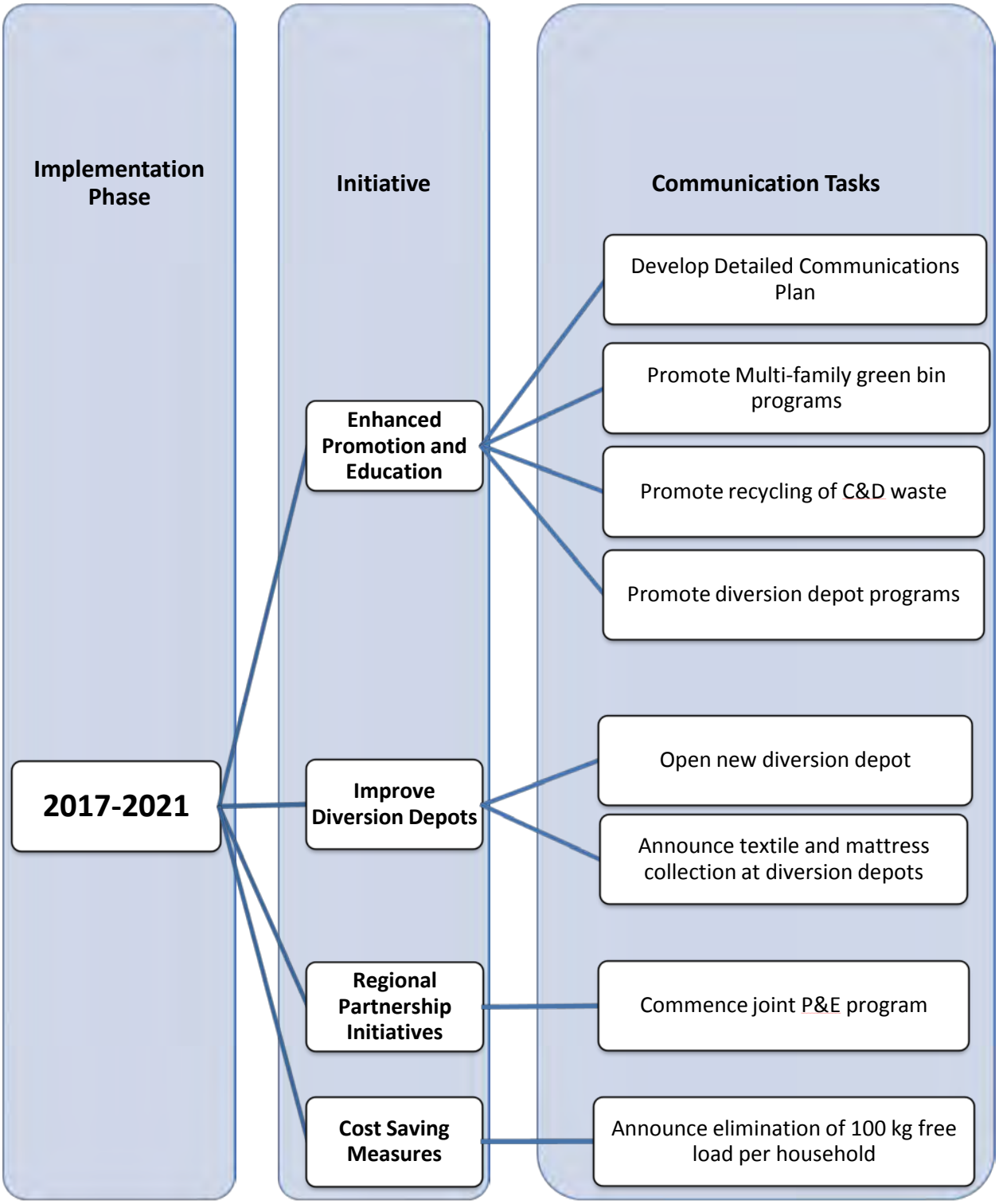


Figure 3 Communication tasks identified for the initiatives for the 2017-2021 implementation phase.

4.3 2022-2026 Implementation Phase

The goal of the 2022-2026 Implementation Phase is to reach a diversion target of 57%. Figure 4 identifies the communication tasks associated with each initiative. Ongoing education and promotion of curbside and depot diversion programs will be important during this phase, including promoting diversion programs in schools, and raising awareness and understanding of mandatory diversion program. During this phase the City will announce a mandatory diversion by-law, requiring separation of recyclables and organics at the curb, banning C&D waste disposal, and announcing a penalty at the landfill for unsorted waste. These changes will require positive messaging to educate residents on the long term impacts and benefits of these changes. The City will also eliminate leaf and yard waste collection for the IC&I sector as a cost saving measure. This phase will include standardizing the public space collection program; communications around this task should include formal announcement of the initiative to highlight the City's progress in encouraging recycling by making it more convenient.

In order to evaluate the need for a central waste depot to collect waste and recyclables in downtown Barrie, is it recommended that the City establish a Downtown Waste Management Committee. This committee can be consulted during the evaluation, and provide valuable input on potential locations and design. If a central depot is established, the committee would provide a channel for education and raising awareness on how the central depot could be utilized.

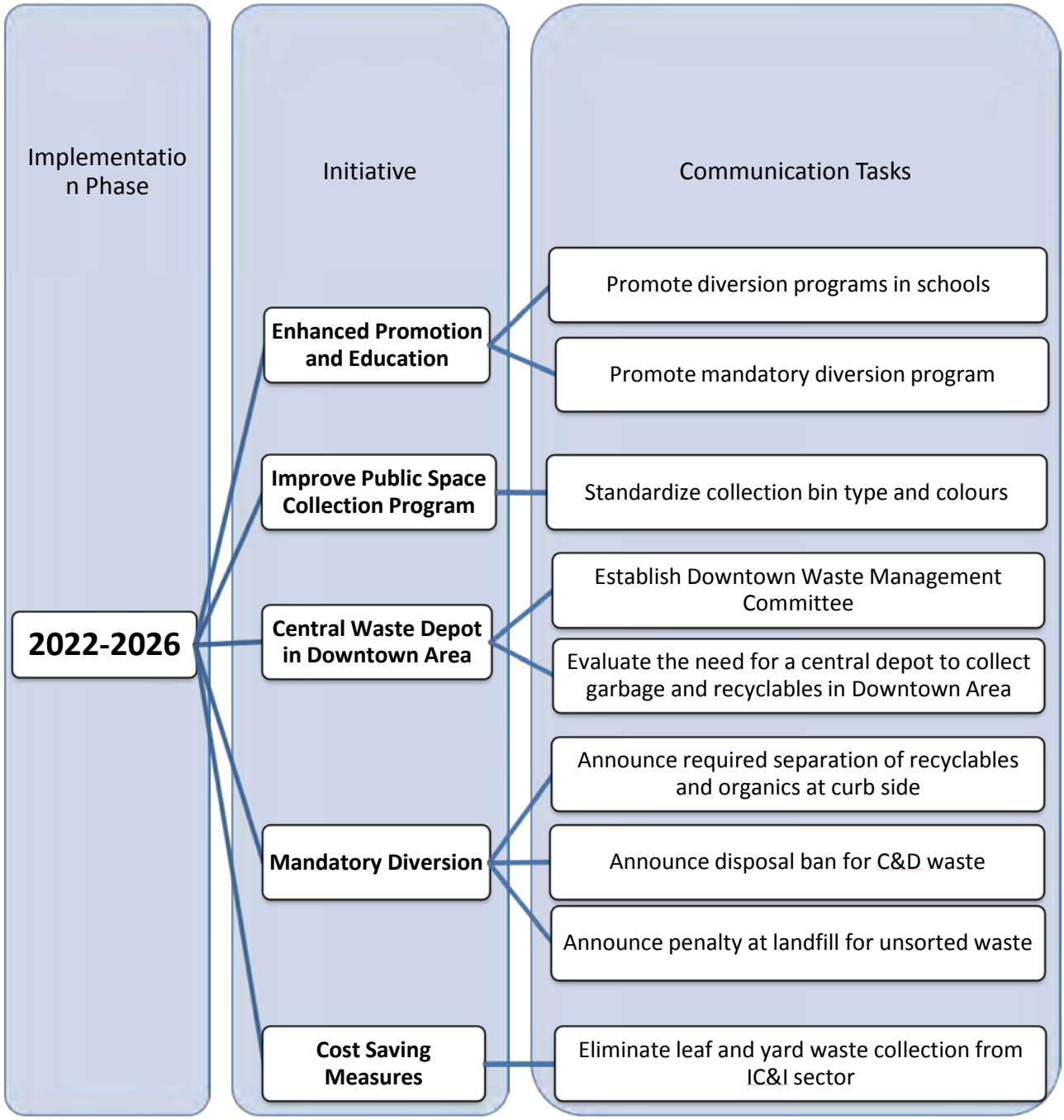


Figure 4: Communications tasks identified for initiatives in the 2022-2026 implementation phase

4.4 2027-2031 Implementation Phase

The goal of the 2027-2031 Implementation Phase is to reach the final diversion target of 60%. Figure 5 provides an overview of the communication tasks associated with the initiatives. An important initiative during this phase will be to continue ongoing promotion of diversion and waste reduction programs. A Zero Waste program for public events will be initiated, and should be accompanied by a program launch in the media highlighting the implications and benefits from the program. The Return to Retailers program should be also promoted. The City should consider consulting the public during their evaluation of the need for a mobile recycling unit.

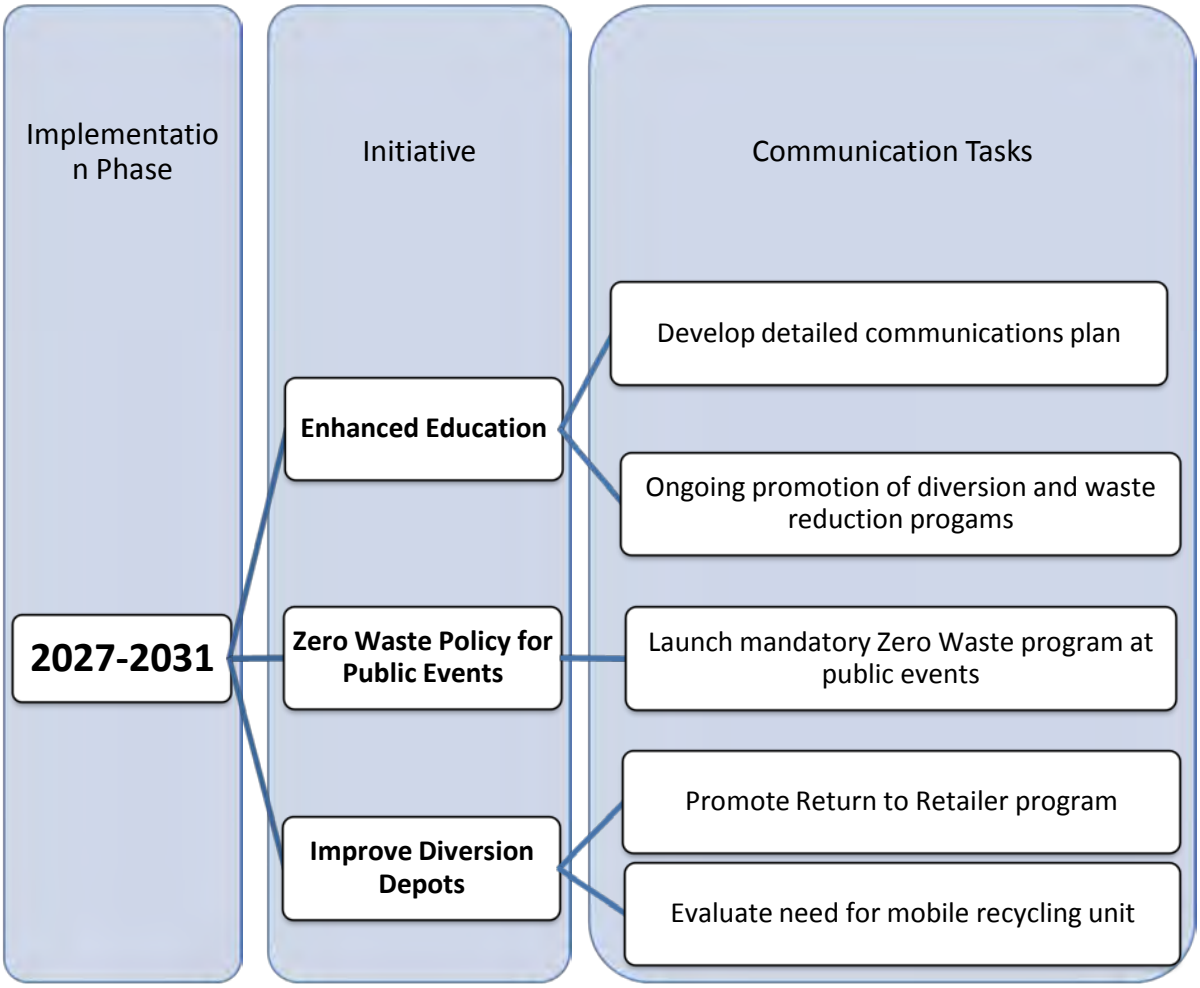
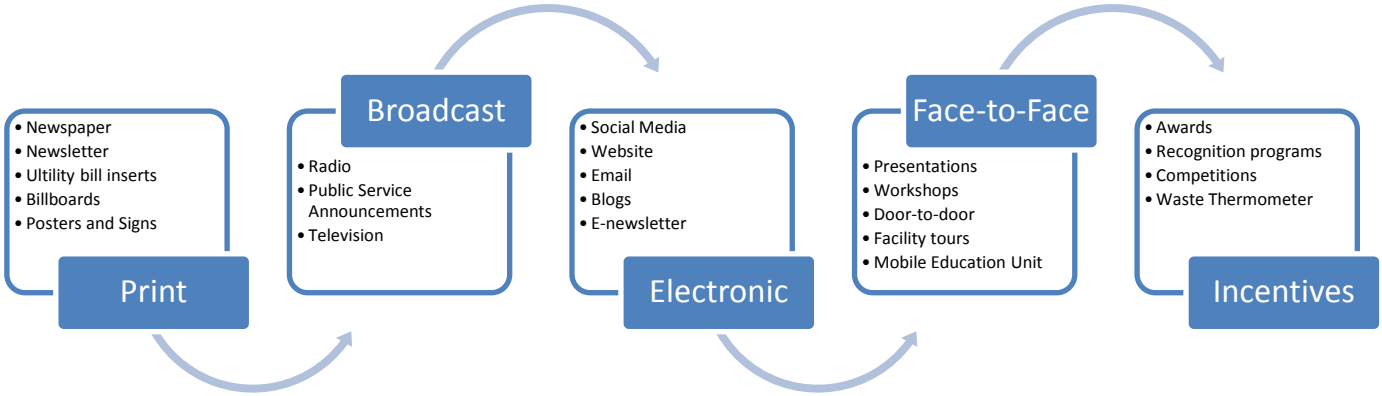


Figure 5: Communication tasks identified for each initiative for the 2027-2031 implementation phase

5.0 COMMUNICATION TOOLKIT

Successful communication and awareness typically employs a mix of media to reach as many residents as possible. The figure below describes different methods that can be used for communication and awareness promotion.



The following sections describe the range of mixed-media tools that can be used by the City to successfully achieve each of the communication tasks outlined in this Plan. This toolkit has been identified upon careful consideration of public feedback received during the Strategy development, and includes recommendations from residents. Different tools are recommended to target different audiences, or convey different types of information.

5.1 Print

Traditional print media, including newspaper, posters, and bill inserts, remain an effective method of disseminating information to a broad spectrum of the public. The Strategy implementation should draw on existing media practices utilized by the City including:

- **Newspaper Advertisement/Advertorial**: The City currently has an agreement with the Barrie Examiner for a weekly two-page spread called "This Week in Barrie" (TWIB) that runs on Thursdays. The size of the ads can vary from ¼-page to ½-page, full colour. There is also an opportunity to book editorial space in TWIB for up to a 450 word advertorial. It is recommended that the City use this space to communicate waste management issues on an ongoing basis. Newspapers are an effective method of reaching large sections of the population. Ads may be utilized by the City to announce new programs or program changes directing residents to the website or staff for more information. Advertorials are an excellent way to provide more information and rationale for new programs.
- **Factsheets**: Factsheets are an effective way to educate residents on new or existing programs, and correct common myths, waste separation mistakes, and address frequently asked questions.

To ensure factsheets are effective, they should use a combination of text and graphics, be colourful and employ simple language that is easily understood.

- **Annual Waste Calendar**: The City produces a waste calendar each year that provides residents with their collection schedule and an overview of waste services.

There are also several forms of new media that could be utilized by the City, including:

- **Bi-annual Waste Newsletter** – Newsletters are an effective method of disseminating information to the general public. It is recommended that the City develop a bi-annual waste issues newsletter that can be used to communicate changes in waste management services, provide ongoing education, and recognition for local businesses, residents and community groups who have contributed to the sustainability initiatives.
- **Tax and utility bill inserts** – Simple inserts with tax and utility bills are an easy and effective way to provide taxpayers with more information about the Strategy initiatives, and long-term savings resulting from sustainability initiatives.
- **Posters/Signs –** Creating a bank of posters and signs providing information on what materials go in what bin/cart that can be shared with building managers, schools, residents, and businesses is a great way to increase awareness and educate the community.
- **Signage on collection trucks** – Visually appealing signage on the sides of collection trucks can be an effective method of raising awareness of waste reduction initiatives and advertising the City's website.

5.2 Broadcast

Advertising diversion practices and service changes through broadcast media will allow the City to reach a larger proportion of the community. Broadcasting methods should employ a mixed-media approach using radio and television resources including:

- **Regular advertisements on radio and TV** - Utilize the City's existing communications resources to place ongoing information updates through media. Currently these resources include TV-ads through A-Channel, and radio spots through Kool FM and Rock. Ads are an excellent method to announce program changes, and launch new services, including the green bin program in multi-residential buildings.
- **Media releases** – media releases are an effective way of raising awareness and drawing attention to the Strategy components as they are implemented. Media releases should be used to communicate larger program changes, and present the public with long term impacts and benefits.

5.3 Electronic Media

Today, communication via electronic media is necessary to reach a wider proportion of the population, particularly youth. It is expected that in the future the importance of electronic media in providing information and raising awareness will increase, with new methods of communication and forms of social

media emerging over the next two decades. The City will need to adapt to new methods of communication, and expand their communication activities as appropriate.

Currently, the main forms of electronic communication include websites, social media and email. Each of these methods should be used for distinct purposes, and to convey different types of information. The following section provides an overview of each of these communication tools and the methods by which City staff can utilize each one to complement the implementation of Strategy initiatives:

- **Website:** People use websites to look up facts, schedules, locations, and resources. The City's website currently provides detailed information on the recycling, organics, and waste services offered. During the consultation program it was identified that the current layout and information provided on the website could be improved to make the site more user-friendly, accessible, and increase functionality. The following recommendations could be implemented to maximize the website potential for providing information to residents:
  - Program Information Resources - Brief, clear, and graphical explanation of the recycling program, including the colour-coded system and the waste value chain. The City should produce factsheet posters for residents, multi-residential buildings and IC&I to consicely communicate program changes through the Strategy implementation. Downloadable posters for multi-family and IC&I that explain the color-coded system and materials that can be disposed of in each container are recommended. Other posters could include composting tips or other helpful recycling tips.
  - Communication Forms - Websites provide a window for communication between the public and City staff. Communication forms where residential and IC&I people can request additional or replacement bins could increase accessibility, and service to residents. Forms where organizations can request in-person presentations or promotional appearances at events.
  - Search Function - Search function or database look up for how to dispose of certain materials. It would be helpful if the website could answer, "How do I properly dispose of _____?"
  - Calendar of Scheduled Pickups - The current graphical version is very well done. It would be helpful to complement the physical version with electronic calendars in PDF, iCal, Google Calendar, and Outlook formats.
  - Schedule of events related to waste management - Events schedule should include electronic versions in PDF, iCal, Google Calendar, and Outlook formats.
  - Archive of Bi-annual Newsletters.
  - Waste News Blog - publish news as a "blog" and collate important news every 6 months for mail out newsletter. Blogs are a great way to promote The City's initiatives and generate interesting content. Interesting content is a key requirement for getting many social media followers.
  - Maps - Location of collection depot and services offered at the depot. The location could be illustrated with an interactive Google map, so residents can get driving or transit directions from their home or office.

- Social Media Links - Links to waste management-specific social media accounts (Twitter and Facebook) and a link to the social media terms of use policy for the public.

- **Email:** Emails are best used to provide direct stakeholder information and present an eco friendly method of proving a number of stakeholders with direct information without using paper and eliminating the cost associated with mailings. Building on the stakeholder contacts collected during the Strategy community engagement activities, the City should maintain an email contact list of residents interested in receiving information about their waste management services. Emails can then be circulated on an ongoing basis to communicate information including:
  - Upcoming community events;
  - Schedule changes;
  - Frequent mistakes, and helpful tips;
  - Bi-annual newsletter; and
  - Recognition of residents or businesses.

- **Social Media**: Unlike websites, which are more static, social media are more dynamic and interactive. Social media, like Facebook and Twitter, are effective for building relationships, communicating emotional or behavioural messages, promoting timely news, and engaging in conversations (like answering questions). Examples of these types of information and messages include:
  - Recognize community waste management leadership and innovation, by linking to news stories, profiles, award events that are published online;
  - Recognize Barrie corporate waste management leadership and innovation to demonstrate Barrie's commitment to sustainable waste management. This can be done by linking to blog or news articles on Barrie's website that profile waste management leaders, new programs, awards, etc;
  - Promote public-private partnerships that Barrie participates in by linking to websites or news articles that talk about the partnership;
  - Promote new infrastructure investment in waste management by linking to websites or news articles that talk about the new investment;
  - Create a network and culture of sustainable waste management by connecting online with waste management leaders within local government, partner organizations, and the public;
  - Promote expansion of new services by linking to program explanation on website. Ask people if they have questions about the new program, and be sure to answer those questions within 24 hours. One way to promote the new program is to "tweet" or post on Facebook facts related to the program:

- Common items that can be placed in certain colour bins
- Unusual items that can be diverted by bins that people often throw away
- What to do with hazardous goods
- Information about new waste diversion programs and depots
- How taxpayers save money through this new program
- What taxpayers would lose financially, environmentally, and socially if this program were not in place;

- Ask followers or fans what they are doing to reduce waste at work or home; and
- Ask followers to submit waste diversion posters that they have made for their office or home.

The City currently has a Facebook account for all corporate communications, including waste management. Because waste management is a unique municipal service, it is recommended that the Environmental Operations department should have its own branded social media accounts, allowing staff to promote waste diversion programs and answer questions in a timely manner. To ensure that the departmental social media accounts maintain the character of Barrie's overall communications, terms of use policies can be developed for staff and the public to set the tone for acceptable behaviour online and explain what the consequences for inappropriate behaviour are. Tools, such as CoTweet and MediaFunnel, also exist to help digital teams collectively manage social media accounts.

5.4 Face-to-Face

While traditional and online media sources are effective methods of providing information and educating residents, these efforts must be supplemented by face-to-face communication to ensure their effective delivery and raise awareness. Outreach can be used to introduce new services, provide additional information and rationale for service changes that may be seen as controversial, raise awareness and foster behavioural changes required to achieve diversion goals in the future.

Recommended outreach activities include:

- **Presentations:** An effective way to provide information with the opportunity to answer questions and receive feedback. Rather than creating stand alone events such as public meetings to provide information, it is recommended that City staff go to residents by providing presentations at:
  - Schools;
  - Community group meeting and events; and
  - Municipal Council or Committee meetings.
- **Event Displays:** City Waste Management Staff currently provide displays at a number of community events (e.g., Ecofest, and Go Green Barrie). These events provide an excellent opportunity to distribute information to a wide demographic. During Strategy development staff

solicited input at the events in addition to providing information. It is recommended that in the future the City continue this practise and ask for input on service and communications activities.

- **Door-to-Door Education Campaigns:** door-to-door education campaigns provide an opportunity to inform residents about collection programs, encourage behavioural changes, and increase participation.
- **Community Waste Reduction Committee**: Through the Strategy consultation activities it was identified that there are a number of community members and organizations interested in the sustainability of waste management in their community. Utilizing existing networks will complement the City's communications efforts and ensure communications reach targeted audiences. This committee could be made up of volunteers from NGOs, students, and local businesses. Participants could be consulted to advise on communications activities, evaluate activities and distribute information. Volunteers may also be willing to provide information to other members of the public, including implementing door-to-door education campaigns, and giving presentations at schools.
- **Workshops:** Workshops differ from presentations because they are more interactive. Workshops may be used by City staff in order to seek feedback and brainstorm ideas for solutions for any problems that may arise.
- **Mobile education unit:** The County of Simcoe currently operates a Mobile Education Unit, which is used to teach students about waste diversion practices. The City may want to implement a similar program, or work with the County, once their programs are aligned.

5.5 Incentives

Incentives can be used as a method of positively reinforcing behavioural change, while raising awareness of the City's waste management initiatives.

- **Rewards and Recognition:** Positive reinforcement of waste diversion and reduction initiates taken on by residents or local businesses are important to encouraging participation in the City's diversion programs and encouraging innovation. One example of a waste reduction reward would be the City of Hamilton's highly successful "Gold Box" program. Yellow recycling bins, called Gold Boxes, are given to homes that demonstrate proper sorting of their recycling and garbage. The program is carried out through a series of random visual waste audits as opposed to weight-based audits. Households demonstrating high capture rates and low contamination rates, and that have sorted items into the proper containers or bags, are eligible to win a Gold box. In addition to receiving a Gold Box, the City of Hamilton enters each winner into a draw to win a portion of their tax dollars back. Recognition for both residents and businesses who exemplify the goals and of the Strategy is an effective initiative for positive behaviour. Winners could be identified in newsletters, newspaper articles and using social media.
- **Competitions**: Diversion competitions could be utilized to provide an incentive to local businesses, schools or even wards to improve their waste reduction and diversion practices.

- **Public displays:** During the consultation for the Strategy, the public identified that public displays may be a great way to raise awareness and motivate the community to reduce their waste production. One recommendation was to develop a waste thermometer display to publically monitor the City's diversion rate. A giant thermometer billboard could be placed outside City Hall, and clearly show the City's current diversion rate in relation to the diversion goal for each implementation phase of the Strategy.

Initiative	Communication Task	Target Audience	Communication Tools																									
			Print									Broadcast			Electronic						Outreach					Incentives		
			Newspaper Advertorials	Newspaper Advertisements	Brochures/Factsheets	Bi-Annual Waste Newsletter	Annual Calendar	Posters	Bill Inserts	Clear Signage	Billboards	TV advertisements	Media Releases	Radio Advertisements	E-Newsletter	Email Blasts	Facebook	Twitter	Blog	Website	Presentations	Door-to-Door Education Campaign	Workshops	Event Displays	Mobile Education Unit	Rewards and Recognition	Waste Thermometer	Competitions
2012-2016 Implementation Phase																												
Enhanced Education and Promotion	Develop detailed communication plan	City Staff																		X								
Lobby for EPR	Educate Council on EPR	City Council			X											X					X							
Modify Collection of Waste, Recyclables and Organics	Initiate bi-weekly garbage collection	General Public IC&I	X	X		X			X				X	X	X	X	X	X	X	X						X		
	Implement 4-day collection cycle	General Public IC&I		X		X			X				X	X	X	X	X	X	X	X								
	Announce IC&I bag limit change from 10-5	IC&I	X	X		X			X							X	X	X	X	X		X	X	X		X		
Implement Multi-Family Green Bin Program	Launch green bin program in multi-family	Multi-residential	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X		
	Announce bag limit change from 2 to 1	Multi-residential	X			X		X	X						X	X	X	X	X	X			X			X		
Improve Diversion Depots	Launch C&D recycling program	General Public Construction and Home Builders Associations	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X			X		X		
Regional Partnership Initiatives	Announce paint can and aerosol container recycling	General Public		X		X	X		X	X					X	X	X	X	X	X								
Cost Saving Measures	Announce fees for sweeping, grit and sand disposal	General Public, IC&I					X													X								
	Announce blue and grey cart cost changes	General Public					X													X								
2017-2021 Implementation Phase																												
Enhanced Promotion and Education	Develop detailed communications plan	City Staff																		X								
	Promote multi-family green bin programs	Multi-residential			X		X	X		X					X	X	X	X	X	X		X		X		X		X
	Promote recycling of C&D waste	General Public Construction and Home Builders Associations			X		X	X							X	X	X	X	X	X	X			X		X		X
	Promote diversion depot programs	General Public		X			X								X	X	X	X	X	X				X				
Improve Diversion Depots	Open new diversion depot	General Public	X			X	X					X	X	X	X	X	X	X	X	X							X	
	Announce textile and mattress collection at diversion depots	General Public					X		X	X		X	X	X			X		X	X	X	X	X	X				X
Regional Partnership Initiatives	Commence joint P&E program	General Public Schools	X			X	X			X	X	X	X	X			X		X	X	X	X	X	X				
Cost Savings Measures	Announce elimination 100 kg free load per household	General Public				X	X		X						X				X	X							X	

Initiative	Communication Task	Target Audience	Communication Tools																									
			Print									Broadcast			Electronic						Outreach					Incentives		
			Newspaper Advertorials	Newspaper Advertisements	Brochures/Factsheets	Bi-annual Waste Newsletter	Annual Calendar	Posters	Bill Inserts	Clear Signage	Billboards	TV advertisements	Media Releases	Radio Advertisements	E-Newsletter	Email Blasts	Facebook	Twitter	Blog	Website	Presentations	Door-to-Door Education Campaigns	Workshops	Event Displays	Mobile Education Unit	Rewards and Recognition	Waste Thermometer	Competitions
2022-2026 Implementation Phase																												
Enhanced Promotion and Education	Develop detailed communication plan	City Staff																		X								
	Promote diversion programs in schools	School kids																			X				X			X
	Promote mandatory diversion program	General Public		X		X	X				X		X	X	X	X	X	X	X	X		X		X		X	X	X
Improve Public Space Collection Program	Standardize collection bin types and colours	General Public								X					X		X	X	X									
Central Waste Depot in Downtown Area	Establish Downtown Waste Management Committee	IC&I, Barrie Business Association and Chamber of Commerce	X			X									X	X			X	X			X					
	Evaluate the need for a central depot to collect garbage and recyclables in Downtown Area	Downtown Waste Committee																		X			X					
Mandatory Diversion	Announce required separation of recyclables and organics at curb side	General Public	X			X	X		X			X	X	X	X	X	X	X	X	X		X				X	X	
	Announce disposal Ban for C&D waste	General Public, Construction and Home Builders Associations			X				X				X		X	X	X	X	X	X	X							
	Announce penalty at landfill for unsorted waste	General Public, Construction and Home Builders Association, IC&I		X		X	X								X	X	X	X	X	X								X
Cost Saving Measure	Eliminate leaf and yard waste collection to IC&I sector	IC&I														X				X								
2027-2031 Implementation Phase																												
Enhanced Education	Develop detailed communications plan	City Staff																		X								
	Promote diversion programs	General Public		X	X	X	X	X		X	X	X		X	X	X	X	X	X	X	X			X	X	X	X	X
Zero Waste Policy for Public Events	Launch mandatory Zero Waste at public events	General Public, IC&I	X	X	X	X	X				X		X		X	X	X	X	X	X		X	X	X				X
Improve Diversion Depots	Promote Return to Retailer programs	General Public		X		X		X		X				X	X	X	X	X	X	X		X		X				
	Evaluate need for mobile recycling unit	General Public																		X			X					

6.0 COMMUNICATIONS IMPLEMENTATION

Successful public awareness and education will require the initiation of a coordinated program over the course of the Strategy implementation phases. Table 2 provides an overview of the recommended communications tools to complement the implementation of each initiative of the Strategy.

Specific media tools are better suited for targeted audiences. For example, Facebook or Twitter may be used to target youth and young families, while newspaper articles are a better method of targeting the older subset of the population. Additionally, specific tools will be more effective at communicating specific messages. For example, print materials such as newsletters and fact sheets are more suitable for conveying messages about changes to collection schedules, while presentations with Q&A sessions are more suitable for educating Council on EPR. Table 2 presents multiple communications tools for each initiative in order to communicate messages to the largest cross-section of the population using the most effective methods.

In order to effectively use the City's resources, consistent messaging for each program can be utilized and modified for distribution through the relevant media channels. For example news stories may be blogged on the website on a weekly basis, and then compiled and edited every six months for production of a biannual waste newsletter. Advertisements developed for the sides of collection trucks may also be used to create posters, and newspaper ads.

While this Plan includes recommendation for the use of tools for each communications task identified for the full 20-year planning period, it is important that a detailed communication plan be developed at the outset of each five-year implementation phase. The detailed plan should include schedules and budget implications that cannot be realistically or efficiently provided until the beginning of each phase.

7.0 RESOURCE RECOMMENDATIONS

The implementation of a comprehensive awareness and promotion campaign will require dedicated staff. Currently, communications are coordinated by the City's Environmental Services staff in collaboration with the Communications Department. There are no staff members that are fully dedicated to waste communications. It is recommended that the City consider the creation of a permanent staff position to coordinate and manage the education and awareness initiatives. This staff member would work closely with the City's Communication Department and Waste Reduction Coordinators, and liaise with community stakeholders.

8.0 CONCLUSION

An important part of the Strategy implementation will be consideration of the changing needs of the community. This Plan is meant to be a flexible document, and should be re-visited and updated in response to changes in the community and communication methods. Public feedback should be sought on communication methods on a regular basis to ensure that messaging and methods are being effectively implemented. Feedback may be collected through evaluation surveys or feedback questionnaires, either using verbal or written formats as appropriate. It is recommended that the City evaluate their communication methods according to the following criteria:

- Ensuring information is accessible to all community stakeholders;
- Presenting information in a clear and understandable manner;
- Using a variety of different accessible formats and methods when presenting informational resources; and
- Responding to all questions raised by community stakeholders.

While evaluation should be ongoing, it would be useful to have a scheduled evaluation at the end of each five-year implementation phase. The results of these evaluations could then be used to inform the development of the detailed communications plan for the next implementation phase.

Report Signature Page

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Initiative	Communication Task	Target Audience	Communication Tools																									
			Print									Broadcast			Electronic						Outreach					Incentives		
			Newspaper Advertorials	Newspaper Advertisements	Brochures/Factsheets	Bi-Annual Waste Newsletter	Annual Calendar	Posters	Bill Inserts	Clear Signage	Billboards	TV advertisements	Media Releases	Radio Advertisements	E-Newsletter	Email Blasts	Facebook	Twitter	Blog	Website	Presentations	Door-to-Door Education Campaign	Workshops	Event Displays	Mobile Education Unit	Rewards and Recognition	Waste Thermometer	Competitions
2012-2016 Implementation Phase																												
Enhanced Education and Promotion	Develop detailed communication plan	City Staff																		X								
Lobby for EPR	Educate Council on EPR	City Council			X											X					X							
Modify Collection of Waste, Recyclables and Organics	Initiate bi-weekly garbage collection	General Public IC&I	X	X		X			X				X	X	X	X	X	X	X	X						X		
	Implement 4-day collection cycle	General Public IC&I		X		X			X				X	X	X	X	X	X	X	X								
	Announce IC&I bag limit change from 10-5	IC&I	X	X		X			X							X	X	X	X	X		X	X	X		X		
Implement Multi-Family Green Bin Program	Launch green bin program in multi-family	Multi-residential	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X		
	Announce bag limit change from 2 to 1	Multi-residential	X			X		X	X						X	X	X	X	X	X			X			X		
Improve Diversion Depots	Launch C&D recycling program	General Public Construction and Home Builders Associations	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X			X		X		
Regional Partnership Initiatives	Announce paint can and aerosol container recycling	General Public		X		X	X		X	X					X	X	X	X	X	X								
Cost Saving Measures	Announce fees for sweeping, grit and sand disposal	General Public, IC&I					X													X								
	Announce blue and grey cart cost changes	General Public					X													X								
2017-2021 Implementation Phase																												
Enhanced Promotion and Education	Develop detailed communications plan	City Staff																		X								
	Promote multi-family green bin programs	Multi-residential			X		X	X		X					X	X	X	X	X	X		X		X		X		X
	Promote recycling of C&D waste	General Public Construction and Home Builders Associations			X		X	X							X	X	X	X	X	X	X			X		X		X
	Promote diversion depot programs	General Public		X			X								X	X	X	X	X	X				X				
Improve Diversion Depots	Open new diversion depot	General Public	X			X	X					X	X	X	X	X	X	X	X	X							X	
	Announce textile and mattress collection at diversion depots	General Public					X		X	X		X	X	X			X		X	X	X	X	X	X				X
Regional Partnership Initiatives	Commence joint P&E program	General Public Schools	X			X	X			X	X	X	X	X			X		X	X	X	X	X	X				
Cost Savings Measures	Announce elimination 100 kg free load per household	General Public				X	X		X						X				X	X							X	

Initiative	Communication Task	Target Audience	Communication Tools																									
			Print									Broadcast			Electronic						Outreach					Incentives		
			Newspaper Advertorials	Newspaper Advertisements	Brochures/Factsheets	Bi-annual Waste Newsletter	Annual Calendar	Posters	Bill Inserts	Clear Signage	Billboards	TV advertisements	Media Releases	Radio Advertisements	E-Newsletter	Email Blasts	Facebook	Twitter	Blog	Website	Presentations	Door-to-Door Education Campaigns	Workshops	Event Displays	Mobile Education Unit	Rewards and Recognition	Waste Thermometer	Competitions
2022-2026 Implementation Phase																												
Enhanced Promotion and Education	Develop detailed communication plan	City Staff																		X								
	Promote diversion programs in schools	School kids																			X				X			X
	Promote mandatory diversion program	General Public		X		X	X				X		X	X	X	X	X	X	X	X		X		X		X	X	X
Improve Public Space Collection Program	Standardize collection bin types and colours	General Public								X					X		X	X	X									
Central Waste Depot in Downtown Area	Establish Downtown Waste Management Committee	IC&I, Barrie Business Association and Chamber of Commerce	X			X									X	X			X	X			X					
	Evaluate the need for a central depot to collect garbage and recyclables in Downtown Area	Downtown Waste Committee																		X			X					
Mandatory Diversion	Announce required separation of recyclables and organics at curb side	General Public	X			X	X		X			X	X	X	X	X	X	X	X	X		X				X	X	
	Announce disposal Ban for C&D waste	General Public, Construction and Home Builders Associations			X				X				X		X	X	X	X	X	X	X							
	Announce penalty at landfill for unsorted waste	General Public, Construction and Home Builders Association, IC&I		X		X	X								X	X	X	X	X	X								X
Cost Saving Measure	Eliminate leaf and yard waste collection to IC&I sector	IC&I														X				X								
2027-2031 Implementation Phase																												
Enhanced Education	Develop detailed communications plan	City Staff																		X								
	Promote diversion programs	General Public		X	X	X	X	X		X	X	X		X	X	X	X	X	X	X	X			X	X	X	X	X
Zero Waste Policy for Public Events	Launch mandatory Zero Waste at public events	General Public, IC&I	X	X	X	X	X				X		X		X	X	X	X	X	X		X	X	X				X
Improve Diversion Depots	Promote Return to Retailer programs	General Public		X		X		X		X				X	X	X	X	X	X	X		X		X				
	Evaluate need for mobile recycling unit	General Public																		X			X					

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