



Stantec

PHASE 1: Draft Technical Memo – Updated December 16, 2009

To: County of Simcoe, Staff
County of Simcoe, Waste
Management Steering
Committee

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Reference: County of Simcoe Solid Waste Management Strategy

PHASE 1: THE FRAMEWORK FOR DEVELOPMENT OF THE STRATEGY

1. INTRODUCTION

1.1 SIMCOE COUNTY

The County of Simcoe (the County) is located in South-Central Ontario, and is comprised of 16 member Municipalities including: Adjala-Tosorontio, Bradford West Gwillimbury, Clearview, Collingwood, Essa, Innisfil, Midland, New Tecumseth, Oro-Medonte, Penetanguishene, Ramara, Severn, Springwater, Tay, Tiny and Wasaga Beach. As of 2008, approximately 125,000 households were receiving waste services from the County with these households dispersed over an area of 4,840 square kilometers. The majority of the population is located in settlement areas, with the remainder scattered through rural areas that make up the bulk of the land area within the County. The County is experiencing significant growth, and as a result increased demand for municipal services such as waste management. The Province has recognized the importance and uniqueness of the Simcoe area, given that it is under intense development pressures and contains extremely important environmental assets, and in June 2009 released a strategic vision for growth in the Simcoe area.

1.2 THE COUNTY'S SOLID WASTE MANAGEMENT SYSTEM

The County assumed responsibility for waste from the member municipalities in 1990, along with existing approved landfill and waste disposal facilities and a number of proposed disposal facilities that were in various stages of Environmental Assessment and/or Environmental Protection Act approvals.

Since that time, the County has established a number of programs that have significantly increased waste diversion. In summary as of 2009, these programs consist of:

One Team. Infinite Solutions.

Reference: Simcoe County Solid Waste Management Strategy

- Progressive steps to provide disincentives to disposal, including a reduction in allowable curbside collected residential waste to one bag per week as of late September 2008 and a mixed waste policy to encourage sorting of divertable materials at waste management facilities;
- An enhanced Blue Box program that accepts the majority of recyclable material that can be recovered and marketed in Ontario, including recent expansions in September 2008. As of 2007 Simcoe County was diverting approximately 58% of the Blue Box recyclables generated by County households;
- Implementation of a Green Bin program in late September 2008, to divert food waste materials;
- A Municipal Hazardous or Special Waste (MHSW) Program;
- A Waste Electronics and Electrical Equipment (WEEE) Program;
- Various initiatives to divert the following materials at certain landfill and/or depot facilities:
 - Wood Waste
 - Shingles
 - Drywall
 - Leaf and Yard Waste (including Brush)
 - White Goods
 - Tires
 - Other Metals.

While the County has made significant progress in diversion system improvements, it has been some time (over 10 years) since a comprehensive review and planning exercise has been undertaken for the entire solid waste management system.

1.3 PROJECT PURPOSE AND SCOPE OF THIS DISCUSSION PAPER

The County has retained Stantec, to work with the County Staff and Elected Officials, the Steering Committee and other stakeholders, to develop an integrated Solid Waste Management Strategy (the Strategy) that will establish a long-term approach to manage the municipal waste stream.

Reference: Simcoe County Solid Waste Management Strategy

The purpose of the Strategy will be to provide direction for the County's waste management system through recommendations to improve current waste diversion programs, to make progress towards zero waste and to address processing and disposal needs for the next twenty years.

The first phase of the work involved in developing the Strategy, is to undertake initial strategic planning, i.e. develop the overall framework for the Strategy. Development of this framework encompasses three key Tasks:

Task A: State (define) the Problem that will be addressed by the Strategy;

Task B: Determine the Goals and Objectives of the Strategy; and

Task C: Determine the planning Area (physical area) that the Strategy will cover.

This discussion paper has been prepared to outline the framework for the Strategy, addressing the three key tasks as noted above. This framework is not intended to be static, but rather is expected to evolve over the course of the Strategy, to reflect additional information regarding program performance as it becomes available and to reflect the input from the County and Steering Committee.

2. TASK A - STATED PROBLEM

As the first task in the development of the County of Simcoe Solid Waste Management Strategy, Stantec has completed a preliminary review of the performance of the solid waste management system in the County.

Preliminary review of system performance indicates the following key areas that reflect the 'problems' associated with the current solid waste management system, or in other words the factors that are driving the need to review the County's waste management programs:

- Lack of secure long-term processing capacity for recyclable and organic materials;
- Need for improvements to the effectiveness and efficiency of the County's overall waste diversion system, in order to sustain diversion performance;
- Need to develop additional strategies to increase diversion over the longer term;
- Desire to maximize the use of existing approved disposal capacity in the County, recognizing this capacity as a finite resource that has value to the broader community; and

Reference: Simcoe County Solid Waste Management Strategy

- Lack of disposal capacity necessary to manage residual wastes over the longer term.

The following sections discuss each of the above noted 'problems' culminating in the development of a 'Problem Statement' that describes the problem that will be addressed through the development and implementation of a preferred Solid Waste Management Strategy.

2.1 PROCESSING CAPACITY AND DIVERSION SYSTEM PERFORMANCE

The County is achieving success in diversion, and anticipates achievement of approximately 60% residential diversion in 2009, given that this will be the first full year following implementation of curbside organics collection, enhanced recycling and more restrictive curbside waste limits. Confirmation of current diversion performance will be an essential step early in Phase 2 of the Strategy workplan.

In regards to recycling, the County's application for CIF funding indicates that some problems with the current recycling system have already been identified. The County of Simcoe has limited recycling processing capacity located within its geographical boundaries. The County has its own small Material Recovery Facility (MRF) and a paper fibre operation, which is owned and operated by the County. Recycling collection and processing services are provided to County residents under four separate contracts. For North Simcoe, recyclables are hauled to the County's small MRF where paper fibres are sorted, baled, and marketed, while comingled containers are baled and shipped to an external MRF for processing. The collection contractors for the other three contract areas arrange for processing capacity and ship materials loose in walking floor trailers to other MRFs located outside of the County. This system has potential inefficiencies in regards to collection service, with service provision divided over four collection areas under different contracts. The County is also in the position of having little to no control over processing costs, as the majority of processing costs are incorporated into the current collection service costs charged to the County, and private contracts often bid higher to protect their interest against market volatility.

In regards to overall program performance the cost per household for the recycling program (2008\$) varied from approximately \$29 to \$54 per household or by as much as \$25 per household between the four contract areas. The lowest cost reported was for both collection and processing (West Simcoe). Detailed review of the current system in Simcoe County should determine the rationale for some of the differences in costs between the contract areas. It is possible that further contract consolidation could allow for improvements in program efficiencies.

When examining blue box program costs for similar jurisdictions, Simcoe had the highest net cost per tonne (\$242 in 2007) compared to other five (5) urban regional municipal programs in Ontario. In comparison with the fourteen (14) rural regional municipal programs in Ontario, Simcoe's net costs per tonne (2007\$) were just below the average (\$252 in 2007). Simcoe's

Reference: Simcoe County Solid Waste Management Strategy

gross program costs per tonne were in line with the average for urban regional municipalities, however, its revenues lagged behind given that the County does not directly process or directly receive revenues for the majority of its own recyclable materials. Given that past and projected system performance indicates that in the order of 25,000 tonnes per year of residential recyclables may be managed by the County's program, it appears reasonable to examine developing MRF capacity within the County, thus reducing transfer/haul costs and allowing for the County to better control processing costs.

In regards to the Green Bin program, County residents are expected to divert in the order of 10,000 to 15,000 tonnes of household organics in 2009, an estimate based on pro-rating organics diversion for the first few months of the program. The organics are currently being processed by the Central Composting Facility (CCF) owned by the City of Hamilton. In early 2009, the City of Hamilton had identified issues with their CCF processing capacity.¹ In order to continue to process Simcoe organics under the current 5-year contract, Hamilton had to consider changes to its Leaf and Yard collection program. Should the City of Hamilton require that a larger portion of the CCF capacity be allocated to process its own materials, the County may need to secure another processing option. With organics tonnages in the order of 10,000 to 15,000 (household organics only) to 20,000 – 25,000 tonnes (including yard waste), it may be viable to either develop composting capacity within the County or to look at entering into longer term partnership arrangements for secure processing capacity located closer to the County.

The recent issuance of the report *"From Waste to Worth: The Role of Waste Diversion in the Green Economy, Minister's Report on the Waste Diversion Act 2002 Review, October 2009"* signals the potential for a shift in diversion infrastructure in the whole of Ontario. The exact nature of this change is as yet unknown. Certainly the options considered in the Strategy for recycling processing capacity, and potentially organics processing capacity must consider to the extent possible the potential for province-wide changes as they become known.

2.2 INCREMENTAL DIVERSION SYSTEM IMPROVEMENTS

As noted above, Simcoe County anticipates achievement of approximately 60% residential diversion in 2009 based on the successful implementation of system changes in 2008. Note: for the purpose of the Strategy, the diversion 'rate' is defined as the proportion of waste managed by the County that is diverted from disposal as compared to the total amount of waste generated in and managed by the County. This includes virtually all residential materials, but only a small portion of wastes generated by the Industrial, Commercial & Institutional (IC&I) sector that are largely managed by the private sector. Detailed review of the waste system in Phase 2 of the

¹ City of Hamilton, Report to Public Works Committee, Green Cart and Leaf and Yard Waste Program Changes (PW08126a) - (City Wide), January 2009

Reference: Simcoe County Solid Waste Management Strategy

Strategy is necessary to confirm the proportion and composition of materials managed by the County's system.

The current diversion system includes restrictive waste limits, an expanded recycling system and organics diversion program. These programs address the 'low hanging fruit', i.e. the portions of the residential waste stream that are relatively straightforward to address in a curbside diversion system. The County has addressed other portions of the waste stream through various 'depots' through which other materials such as WEEE, MHSW, scrap metal etc. can be diverted.

With most municipal waste systems diversion performance tends to "plateau" once an expanded curbside diversion system is in place and disincentives are placed on curbside waste collection and direct haul of waste for disposal. For example, the Halifax Regional Municipality in the Province of Nova Scotia, despite having implemented Extended Producer Responsibility (EPR) for many materials, having curbside recycling programs and mature organics diversion systems and stringent regulations on the landfilling of putrescible wastes, has achieved and is sustaining 59 to 60% diversion² depending on how the rate is measured and reported. The overall diversion rate for the Province of Nova Scotia (calculated as the percentage of waste diverted out of the total quantity of waste generated), has incrementally increased from 37.5% in 2004 to 40.7% in 2006.³

Zero Waste communities such as the Regional District of Nanaimo (RDN) have been reported to achieve in the order of 64% diversion as of 2006⁴, accounting for both residential and IC&I wastes managed by the RDN. For 2008, the RDN reported residential diversion of approximately 29%.⁵ In the European Union, the most progressive jurisdictions have reached and remained at 60 to 65% diversion⁶ for the past few years. At the same time, population increases and increases in consumption have resulted in some cases in an overall increase in the amount of waste actually generated on a per capita basis.

In part, this should be expected as technology and new programs can only go so far in achieving increased diversion. There is a human element that needs to be taken into account. The following figure (Figure 1) provides an example of how human behavior, can influence the diversion rate of materials that can be relatively easy to divert. As noted, if 90% of the people in a community participate in a program and these individuals do the right thing (i.e. recycle) 90% of the time, only 81% of the target material will be diverted. This kind of participation and

² FCM, Getting to 50% and Beyond, Success Stories from Canadian Municipalities, 2009

³ Statistics Canada, 2004 and 2006 Waste Survey Analysis

⁴ FCM, Getting to 50% and Beyond, Success Stories from Canadian Municipalities, 2009

⁵ RDN Zero Waste Newsletter, Spring 2009.

⁶ Dr. Ella Stengler, CEWEP, based on data from EUROSTAT for 2007 (Treatment of municipal solid waste)⁸

Reference: Simcoe County Solid Waste Management Strategy

capture rate is relatively common for easy to manage materials, but is not so common for materials that may be difficult to handle like various plastics and household organics.

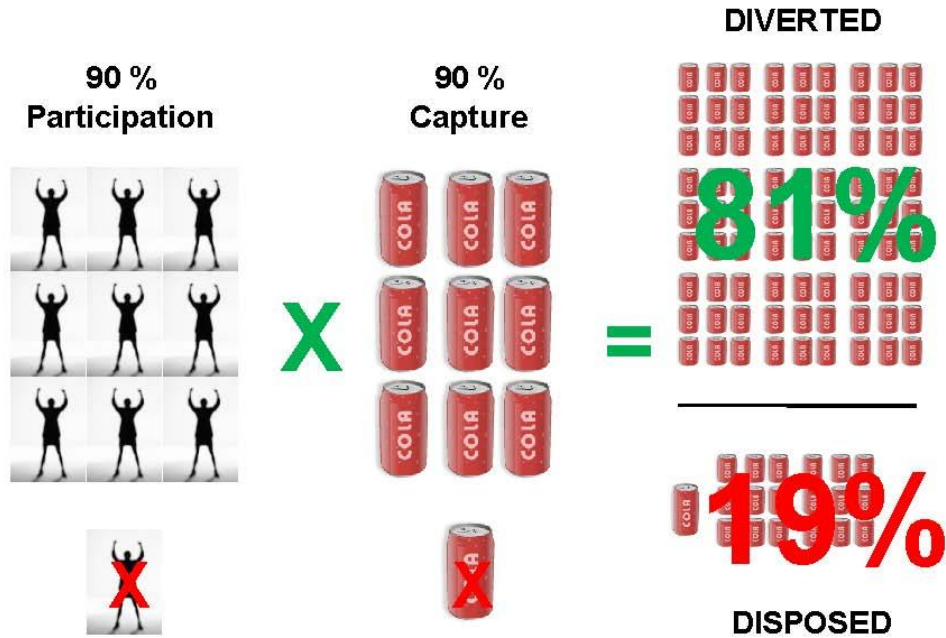


Figure 1 Participation, Capture and Diversion

In order to make progress beyond 60% diversion, options for incremental improvements to the diversion performance need to be examined. This may include adjustments to current programs in order to improve public participation, new programs that are designed to target key material streams and/or technological approaches that may be able to capture materials that remain in the residual waste stream.

In order to continue to make progress in reducing the overall tonnes of waste sent to disposal, incremental increases in diversion of at least 2.5% per annum will be needed, just to offset increased population growth in the County which is expected to increase from 272,000 (2006) to 439,500 by 2031.⁷ Should economic growth and other factors result in increases in overall waste generation per capita, additional growth in diversion rates will be needed to offset these changes as well. According to Statistics Canada, per capita waste generation (kg of waste per

⁷ Simcoe County Official Plan, as Adopted.

Reference: Simcoe County Solid Waste Management Strategy

person that was disposed and diverted) increased in all provinces between 2004 and 2006; this increase was 2.74% for Ontario (Statistics Canada, 2009).

The County cannot be expected to be solely responsible for implementing programs to discourage generation of waste and to encourage increased diversion of the wastes that are generated. As noted previously, recent issuance of the report *"From Waste to Worth: The Role of Waste Diversion in the Green Economy, Minister's Report on the Waste Diversion Act 2002 Review, October 2009"* signals the potential for a shift in diversion infrastructure in the whole of Ontario. A detailed discussion of the components of the Minister's report, and potential ramifications in regards to this Strategy will be presented separately. In brief, the proposed changes to Ontario's waste diversion framework can be summarized as follows:

- Outcomes-based Individual Producer Responsibility (individual producers would be fully responsible for meeting waste diversion requirements for waste discarded in both the residential and IC&I sectors);
- Clarifying the Concept of Diversion (the material value recovered and preserved will be counted as diversion);
- A Long-term Schedule for Diversion (designating more materials for diversion with five-year material specific collection and diversion targets, will include IC&I generated paper and packaging, additional electronics, construction and demolition materials, bulky items, vehicles, branded organics and small household items);
- Effective Oversight (clarifying the role of the MOE and WDO);
- Supporting Producer Responsibility (through banning materials from disposal and a disposal levy)
- Transitioning Existing Programs (phased dates to modify the Blue Box Program Plan, Municipal Household or Special Waste and Waste Electronic and Electrical Equipment programs).

The Ministry is currently accepting comments through the Environmental Registry on the WDA review until January 11, 2010. It is expected that the Province will announce the proposed changes to the WDA in the spring/summer of 2010.

2.3 SHORT TERM DISPOSAL CAPACITY

On September 9, 2009, County Staff presented report CS 09-158 to Corporate Services Committee. In that report, staff included the most recent information regarding the potential

Reference: Simcoe County Solid Waste Management Strategy

remaining disposal capacities estimated to be available at approved and operating County sites as of January 1, 2009 (determined based on recent surveys of the landfills).

The remaining capacities estimated to be available at the sites currently accepting waste (as of January 1, 2009) are outlined below. Two of the County's landfills (the Matchedash Landfill (Site 8) and the Elmvale Landfill (Site 5)) were identified as likely reaching capacity in 2009. The Collingwood Landfill has a remaining capacity of 476,130 cubic metres, but was not included as it is used for disposal of construction and demolition (C&D) waste and does not accept curbside garbage.

Site	Annual Utilization 2006 (m3)	Annual Utilization 2007 (m3)	Annual Utilization 2008 (m3)	Remaining Capacity as of Jan. 1/09 (m3)	Estimated Utilization 2009 (m3)
Elmvale/Flos (Site 5)	11,100	12,800	19,400	0	
Matchedash (Site 8)	1300	1400	1400	0	
Nottawasaga (Site 10)	32,200	24,600	20,600	173,300	
Oro (Site 11)	41,800	44,100	50,600	458,280	
Tosorontio (Site 13)	25,800	31,160	32,000	135,730	
West Gwillimbury (Site 16)	19,356	15,484	0	0	
Total (of sites accepting putrescible wastes)	124,420	131,660	135,850	767,310	110,000

Annual utilization rates have decreased due to County diversion efforts and decreases in the quantity of commercial garbage accepted at County Facilities. The actual decrease in utilization over 2009 will be determined as soon as possible in the New Year so that it can be factored into the Strategy.

Utilization rates will decline further if the majority of non-putrescible transfer station wastes are disposed at the Collingwood Landfill. With this change, as of 2010 the new annual utilization rate (for sites 10, 11 and 13) would be approximately 100,000 cubic meters/year. This could be decreased to 90,000 cubic metres per year if only curbside waste was accepted at these sites and all non-curbside waste was disposed at the Collingwood landfill. The remaining operating period for the sites accepting curbside garbage (Sites 10, 11, and 13) from January 2010 onwards is expected to be between 6 and 7 years. This figure does not account for any increase in growth or changes to commercial delivery of wastes which could significantly impact consumption of landfill capacity.

The remaining approved capacity at sites 10, 11 and 13 is an asset to the County's waste management system, as is the capacity at the Collingwood site that allows for rationalization of use of the disposal capacity in the system. Seven (7) years may not be sufficient to achieve either the higher diversion rates needed to reduce landfill requirements and/or to implement a

Reference: Simcoe County Solid Waste Management Strategy

new residual disposal option. Certainly, it has been the experience in Ontario, that in the order of 5 to 10 years are needed between the initiation of planning studies, through to the approvals, permitting, development and commissioning of new disposal facilities.

The remaining capacity calculations prepared by the County did not include three sites that have a potential, subject to appropriate approvals, for further development. These sites are Site 9 (Medonte), Site 12 (Sunnidale) and Site 42 (Georgian Triangle). The available capacity at Site 9 is approximately 150,000 cubic metres, the available capacity at Site 12 is approximately 877,000 cubic metres and the capacity at Site 42 is 1,362,000 cubic metres. Environmental Assessment Act (EAA) and Environmental Protection Act (EPA) approvals are in place for Sites 9 and 12, however in both cases the Ministry of the Environment has yet to approve the Design and Operations plan necessary to begin development and use of the sites. Site 42 received Environmental Assessment approval without a Joint Board Hearing. Site 42 will require a Certificate of Approval and a Ministry of the Environment approved Design and Operations Report prior to operation and may require an amendment to the EA approval as it was granted more than five years ago.

As of September 22, 2009, County Staff were authorized to begin working with Stantec to report to the Waste Management Sub-committee on options to ensure that the County has sufficient short-term disposal capacity. These options could include:

- Proceeding with the necessary approvals related to the use of other County disposal capacities.
- Out of County garbage transfer to preserve some disposal capacity to manage emergency situations and potentially to address the long-term needs of the County. This would entail consideration of changes to the County's import/export guiding principle for garbage requiring disposal. It could also involve development of transfer station facilities for the County or the use of contractor-owned transfer facilities.

2.4 LONG TERM DISPOSAL CAPACITY

With the decision in September 2009, not to proceed with development of the Site 41 Landfill, it appears that the County does not have sufficient long-term disposal capacity. Certainly, it appears that the capacity at the existing permitted and operating landfill sites will be exhausted well before the end of the 20-year planning period. It is uncertain what role, if any, the approved but not yet fully permitted landfills (Sites 9, 12 and 42) could fill in the County's solid waste management system.

Reference: Simcoe County Solid Waste Management Strategy

It is also uncertain, what diversion goal is reasonable to set for the County, and what diversion performance could be expected. It is certain however, that population growth in the County will likely increase demand for disposal capacity if increases in diversion do not keep pace.

The fundamental question of how much disposal capacity will be needed, and for what material streams, cannot be answered until:

- the full system review is completed (Task D);
- waste generation projections have been developed (Task E); and
- the diversion components of the system have been determined (as part of Task F).

It does appear however, that there will be some residual waste that will require disposal for the foreseeable future and that the County does not have a secure long-term option to dispose of this residue.

2.5 PROBLEM AND VISION STATEMENTS

From the initial assessment of program performance we have gained insight into the problems faced by the County as discussed above. The following problem statement has been formulated in order to encapsulate the waste management issues that the Strategy will need to address:

While having achieved significant progress on waste diversion, Simcoe County lacks the necessary infrastructure to sustain and further improve diversion performance to make progress towards Zero Waste. While Simcoe County has existing assets in the form of approved landfill capacity, they may be insufficient to address its disposal needs in the near term. Simcoe County also appears to lack sufficient long-term capacity to manage the residual waste remaining after diversion, particularly given the potential growth and demand for waste services over the next 20 years.

The Vision for the long-term solid waste management system that would arise from implementing the recommended Strategy is a system where:

- a. *the County continues to be a leader in diversion performance;*
- b. *increases in the County's diversion rate keep pace with growth and paired with provincial Extended Producer Responsibility (EPR) programs, reduces the demand for disposal of residual waste;*
- c. *the County has secure, cost effective, long-term capacity to process the diverted materials for which it is responsible;*

Reference: Simcoe County Solid Waste Management Strategy

- d. the County makes best use of its available, fully permitted landfill capacity;*
- e. the County has secured sufficient long-term capacity to process and/or dispose of the residual wastes left after diversion, for which it is responsible; and*
- f. The system has the necessary flexibility to align with potential changes to the Waste Diversion Act and the overall waste management system in the Province.*

3. TASK B - GOALS AND OBJECTIVES

In addition to striving to reach beyond the overall Provincial target of 60% diversion for Municipal Solid Waste (MSW) and the recent target of 70% diversion of recyclables set by the Minister of the Environment for the Blue Box Program Plan, other preliminary goals and objectives have been identified for consideration by the County. These draft goals and objectives are based on the adoption of the following principles:

- the principles for waste management planning as set out by the Province of Ontario in the “*Policy Statement on Waste Management Planning (June 2007)*”;
- a ‘triple bottom line’/sustainable approach which refers to the consideration of environmental, economic and social factors in the decision making process;
- a waste management hierarchy (otherwise referred to as the “Waste Value Chain”) aligned with that adopted by other progressive jurisdictions; and,
- the general principles of Zero Waste.

These guiding principles are discussed further below.

3.1.1 PROVINCIAL POLICY STATEMENT

The Provincial policy statement on waste management planning, sets out a series of principles that should be considered in the waste management planning process, as follows:

Reference: Simcoe County Solid Waste Management Strategy

- a. Environmental protection is a shared responsibility.
- b. Integrated waste management systems that reflect local circumstances are in place.
- c. Diversion of materials from final disposal is maximized in consideration of the provincial 60% diversion target, including the creation of incentives where appropriate.
- d. Public and private sectors cooperate, where possible, to realize cost savings and maximize efficiencies.
- e. Waste management choices consider economic, social *and* environmental costs.
- f. Investment in infrastructure is made to accommodate growth.
- g. Waste is managed as close to the source of generation as possible.
- h. Producer responsibility is incorporated into waste reduction and management.
- i. Decision-making is open and transparent.
- j. Informed citizens support waste management choices and participate in waste management programs.
- k. Maximum value from waste is recovered from the waste stream (see Figure 1: The Waste Value Chain).
- l. Innovative waste management technologies and approaches are incorporated as appropriate to local circumstances to achieve sustainable solutions.

These principles will form the primary framework for the development of the Strategy, supplemented by emphasizing focus on three key areas (sustainability, the waste hierarchy and zero waste).

3.1.2 SUSTAINABILITY

The principle of sustainability, or more appropriately ‘sustainable development’ is often integrated in some fashion into the general principles applied to waste management planning. For example, the general principle of sustainability as applied to waste management decision making is set out in “principle e.” of the Provincial Policy statement on waste management planning by making it explicit that waste management choices “*consider economic, social and environmental costs.*”

The definition of sustainable development that is most commonly used is based on that adopted by the World Commission on Environment and Development (WCED) in 1987, commonly referred to as the Brundtland definition:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable development generally means ensuring that well-being is at least maintained over time. The principle of fairness within and between present and future generations should be

Reference: Simcoe County Solid Waste Management Strategy

taken into account in the use of environmental, economic, and social resources. Putting these needs into practice requires living within the limits of the natural environment.

There is a strong relationship between meeting human needs now and into the future, and living within the limits of the environment. Figure 2 represents society and economic activity, which are constructs of people, at the centre of concern for sustainable development. Both are constrained by the natural systems of the Earth.

Figure 2: The Relationship between the Environment, Society and the Economy



The generation of waste is generally counterintuitive to the concept of environmental responsibility, which acknowledges the importance of living within the limits of Earth's resources.

By adopting the general principles of Zero Waste and by taking into account the use of environmental, economic and social resources by various waste management options, the Strategy will generally address the principle of Sustainable Development.

3.1.3 THE WASTE HIERARCHY

The waste hierarchy or value chain places priority on preventing waste generation, maximizing diversion of the waste that is generated and minimizing disposal with preference to disposal methods that allow for recovery of energy.

There are many versions of the waste hierarchy in general circulation as set out in governmental and non-governmental policy statements developed for jurisdictions world-wide. Generally, each version presents certain nuances that reflect certain regional or national differences. Put simply, the hierarchy generally appears as set out in Figure 3.

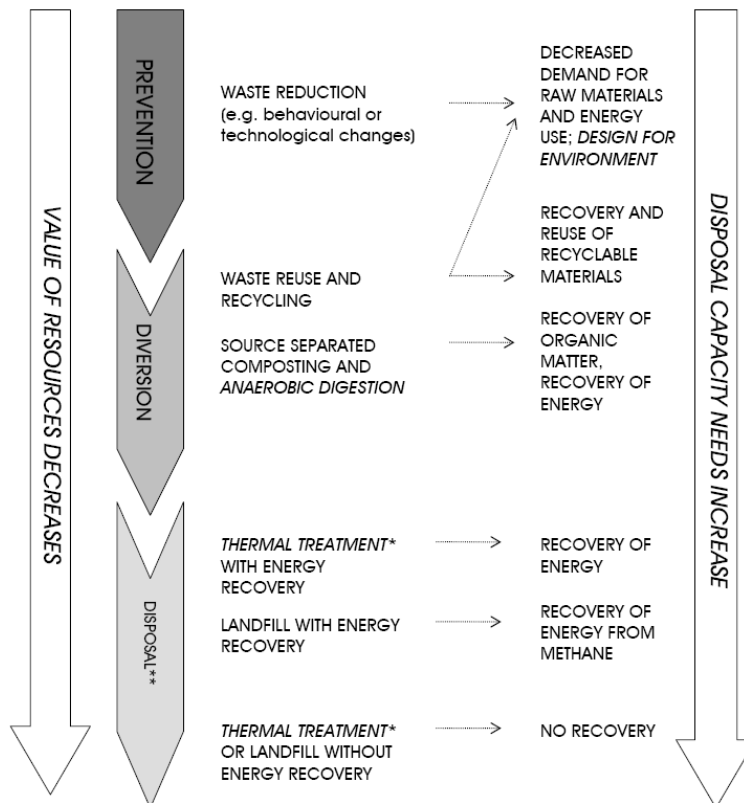
Reference: **Simcoe County Solid Waste Management Strategy**

Figure 3: The Waste Hierarchy



The waste value chain set out by the Province of Ontario as part of the “*Policy Statement on Waste Management Planning (June 2007)*” is more complex, as set out in Figure 4.

Figure 4: The Waste Value Chain



* With potential use of ash or recovery of metals.

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

Reference: Simcoe County Solid Waste Management Strategy

The Strategy will take into account the waste hierarchy as set out in the Provincial Policy paper, placing priority on the development of reasonable measures to prevent and divert waste from disposal, and to recover value from the remainder of the waste stream.

3.1.4 ZERO WASTE

Just as with Sustainability and the waste hierarchy, there are variations in the description as to what Zero Waste is. Some descriptions of Zero Waste clearly incorporate the principles of sustainability and the waste hierarchy as described above, and others are primarily focused on the concept of extended producer responsibility and waste avoidance.

The zero waste International Alliance defines zero waste as:

“A goal that is both pragmatic and visionary, to guide people to emulate sustainable natural cycles, where all discarded materials are resources for others to use. Zero waste means designing and managing products and processes to reduce the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them. Implementing zero waste will eliminate all discharges to land, water and air that may be a threat to planetary, human, animal or plant health.”

The Federation of Canadian Municipalities, defines ‘Zero Waste Communities’ as:

A community that “has made a long-term commitment to reducing waste through measures such as extended producer responsibility programs, economic instruments to encourage waste reduction, green procurement and product design that includes end-of-life management.”

Municipalities that have adopted Zero Waste, such as many communities in British Columbia, have defined the specific behavior shifts that are required for Zero Waste. For example, the Regional District of Kootenay Boundary has defined the necessary shifts in behavior as follows:

- “1. It asks consumers, taxpayers and local governments to stop thinking of resources as garbage for which they have to pay to landfill, but to maximize reuse, repair, recycling and composting instead.***
- 2. It asks business to seek out materials efficiencies; redesign products and packaging the community cannot reuse, repair, recycle or compost so that they can be handled that way; and extend their responsibility for the product and its packaging by establishing take-back, reuse and remanufacturing systems.***
- 3. It asks senior levels of government to shift economic incentives for the use of virgin resources to renewable and secondary resources and to facilitate the growth of Zero Waste initiatives.”***

All descriptions of the philosophy of Zero Waste, generally have in common the following:

Reference: Simcoe County Solid Waste Management Strategy

- a. Recognition of the need to shift to Extended Producer Responsibility (EPR) where the manufacturers of products and packaging become responsible for the full life-cycle of their products.
- b. Recognition that municipal governments have a role to play, but cannot be wholly responsible for achieving Zero Waste, given that EPR is largely in the hands of the producers of materials and Federal and/or Provincial regulators.
- c. That the ultimate goal of a zero waste approach is to reduce and eventually eliminate the need for waste disposal. The long-term objective of a zero waste approach is to eliminate materials from the waste stream.
- d. Recognition that both landfills and Waste To Energy (WTE) facilities will continue to play a role in residuals management while zero waste practices work towards decreasing the amount of residuals requiring disposal.

Many Zero Waste policy documents, take the approach that Zero Waste is a path or a road, along which society can progress towards a goal of minimizing the waste requiring disposal. Actual progress made along this path by communities that have adopted Zero Waste has varied, and in many cases the means used to measure progress have also varied.

The following table provides a brief summary of various Zero Waste jurisdictions, goals that have been set and progress made towards these goals. Note: to the extent possible, progress towards diversion is noted based on the definition used in the Strategy, being the proportion of total waste generated (and managed by the municipality) that is diverted from disposal.

Jurisdiction	Waste Diversion Goal	Date Set	Current Achievement
City of Toronto	60% by 2006 80% by 2008 100% by 2010	Initially set in 2001. Reset goal to 70% in 2007	Has not yet achieved 2006 goal. Currently expanding diversion infrastructure.
Greater Vancouver	Zero Waste in the Long Term	2006	Currently updating Diversion Plans
Regional District of Nanaimo	Zero Waste in the Long Term		29% Residential Diversion in 2008
Capital Regional District (Victoria)	60% by 2012 80% by 2020		Working towards region-wide source separated organics program.
Province of Nova Scotia	50% Diversion from Landfill	1996	40.7 % diversion reported by Stats Can for 2006

Reference: Simcoe County Solid Waste Management Strategy

Halifax	82% Diversion	1997	Achieved 56% diversion in 2002 as measured by the GAP process.
Seattle	100%	1998, updated in 2004 and 2007	Diverted 52% of residential waste in 2004
Portland, Oregon	75% by 2015	2006	53% of waste stream in 2004

This is just a brief overview of the progress that has been made by some communities, but it is evident that significant additional progress needs to be made over the longer term to achieve this target.

It has been directed by County Council that the Strategy process consider and incorporate the principles of Zero Waste, and it is proposed that those four common principles, identified as a) through d) on the preceding page, be incorporated into the strategy.

3.2 DRAFT GOALS AND OBJECTIVES

Draft goals and objectives have been developed and presented for discussion with the Waste Management Strategy Steering Committee and ultimately for approval by County Council as set out below. These are preliminary in many respects, as development of the Strategy has only recently begun, and actual performance of the current system in the County is currently being studied. At this time, we have not yet defined current capture rates for the various materials managed by the County, and cannot yet identify the actual areas in which the greatest improvements in diversion rates could be achieved.

As the study proceeds and further information is brought forward regarding current system performance and that which may be achieved by the options under consideration, it may be necessary to revisit/refine these goals and objectives for presentation in the final Strategy document that would be brought forward to Council in 2010.

GOAL	OBJECTIVES
#1 Assist County residents in avoiding the generation of waste	<ul style="list-style-type: none"> • Support the concept of Extended Producer Responsibility, understanding that this moves the responsibility for waste at least partially away from the County. • Determine reasonable approaches that the County can implement within its own operations to avoid waste generation.

Reference: Simcoe County Solid Waste Management Strategy

	<ul style="list-style-type: none"> • Ensure that the diversion options developed for the County consider the potential results of the review of the WDA, and planning for Provincially mandated EPR. • Implement policies and programs that encourage a decrease in the per capita waste generation rate. (to be refined following the outcome of review of current system performance and diversion options)
<p>#2 Sustain and Improve Performance of the County's Diversion System</p>	<ul style="list-style-type: none"> • Secure long-term capacity for processing recyclables and organics • Increase diversion within the first 5 years of the Strategy (to be refined following the outcome of review of current system performance and diversion options) • Achieve incremental diversion sufficient to keep pace with population growth in the County over the planning period (to be refined following the outcome of review of current system performance and diversion options)
<p>#3 Better management of existing approved and permitted disposal capacity in the County</p>	<ul style="list-style-type: none"> • Ensure that existing approved landfill capacity in the County is available for at least the next 10 years (to be refined following the review of the current disposal system in the County)
<p>#4 Reduce the environmental effects of managing the waste generated in the County</p>	<ul style="list-style-type: none"> • From a Life Cycle Analysis perspective, considering the direct and indirect effects of managing waste (including greenhouse gases, other emissions to air, emissions to water, energy and resource consumption) reduce the environmental footprint of the waste management system • Reduce the consumption of landfill airspace over the planning period, through a combination of decreased waste generation, increased diversion and other programs/practices that result in increasing the density of the residual waste disposed
<p>#5 Implement a sustainable waste management system that</p>	<ul style="list-style-type: none"> • Pursue partnerships and cooperative endeavors with other municipalities and the private sector where

Reference: Simcoe County Solid Waste Management Strategy

<p>balances socio-economic factors with the need to reduce the environmental impacts of waste management while addressing the long-term needs of County residents.</p>	<p>reasonable, to secure processing and/or disposal capacity</p> <ul style="list-style-type: none"> • Pursue diversion system options in which the incremental increase in diversion performance is balanced with the potential increase in system costs such that the percentage increase in waste diverted is numerically no less than ½ of the potential increase in system costs (i.e. if the incremental increase in diversion for a program is projected as being 5%, the overall increase in the cost of the waste management system should be no more than 10%) • Ensure that there is sufficient long-term residual waste disposal capacity available to meet the County's needs
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4. TASK C - AREA THAT THE PLAN WILL COVER

The Solid Waste Management Strategy, as a whole, will primarily focus on the County of Simcoe in its entirety, as the purpose of the Strategy is to address the waste management requirements of the County. The Strategy will set out a 20-year plan for management of the waste materials for which the County has jurisdiction. As noted in the Provincial Policy Statement for waste management planning, to be effective, waste management plans should cover all waste generated within the Study Area (being the County of Simcoe) for which the municipality (the County) has legislated responsibility.

There is a rationale for coordination amongst the municipal governments in the Simcoe Area to provide municipal infrastructure. While the single-tier municipalities of Barrie and Orillia have their own areas of responsibility for service delivery and specific waste management programs, there may be opportunities to coordinate efforts in regards to addressing both diversion and disposal requirements that could be cost effective and beneficial to all parties. Some degree of coordination is already taking place in the delivery of MHSW programs within the three municipalities. The population of these two cities (approximately 60% of that of Simcoe County) is significant, and the potential waste stream managed by both cities is also significant in comparison to that of the County. For certain system components such as development of recycling and/or organics processing capacity, the participation and support of one or both Cities could influence the viability of the options that are considered. For example, an in-vessel aerobic or anaerobic composting facility for processing curbside organics would have better economies of scale if additional organic streams were available in addition to the 10,000 to 15,000 tonnes per year anticipated from the County. The presence of designated officials from both Cities on the Steering Committee, and ongoing discussions during the development of the

Reference: Simcoe County Solid Waste Management Strategy

strategy will be essential to determine if there are realistic opportunities to coordinate the implementation of waste infrastructure in the Simcoe Area. Pursuit of coordinated efforts with the two separated cities, would fulfill the requirements set out in the Provincial Policy Statement for waste management planning, for *“cooperation among municipalities to seek efficiencies and to find mutually acceptable solutions to waste management.”*

Outside of the Simcoe Area, there may be other opportunities in regards to diversion and/or disposal infrastructure that may be available for consideration. Certainly, communities such as Dufferin County and the Region’s of York and Durham may be in a position to discuss or offer options that may otherwise not be as viable when considered from the perspective of the County alone. It is understood that opportunities may be available to use processing and/or disposal capacity at planned facilities located in these municipalities or potentially others within reasonable haul distance from the County.

Therefore, in regards to the area that the plan will cover, it can be summarized as follows:

- The Study Area for the Strategy will be the County of Simcoe. The Strategy will address the waste management requirements of the County as a whole, considering the waste over which the County has jurisdiction as generated within the 16 member municipalities;
- The Strategy will take into consideration options for infrastructure and/or program development that could be coordinated with the separated cities of Barrie and Orillia;
- The Strategy will take into consideration options for infrastructure (diversion and disposal) that could be pursued in partnership and/or under agreement with other municipal jurisdictions or private sector companies located outside of the Simcoe Area.