

Halifax Regional Council
February 13, 2007
Committee of the Whole

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



Dan English, Chief Administrative Officer



Brad Anguish, Director, Environmental Management Services

DATE: February 1, 2007

SUBJECT: **Solid Waste/Resources Management System-Diversion Opportunities**

ORIGIN

- Regional Council approval in 1996, HRM Integrated Solid Waste/Resource Management Strategy with a 60% Waste Diversion Rate Target (Current 55% Diversion Rate);
- Solid Waste Resources Round Table - Issues Review Papers - Diversion Opportunities.

RECOMMENDATION

It is recommended that Regional Council authorize staff to:

- 1) Initiate the process to amend By-Law S-600, setting a limit of six (6) bags/containers for residential bi-weekly collection, effective August 20, 2007;
- 2) Proceed with a Clear Residential Bag Pilot Program commencing in the Spring of 2008;
- 3) Proceed with an amendment to By-Law S-600 to prohibit the mixing of source separated organics and recyclables with refuse at ICI properties; and
- 4) Proceed with amendment to By-Law S-600 to require signage on commercial organics and recycling bins.

BACKGROUND

More than ten years has elapsed since Regional Council approved the Citizens' Stakeholder Committee's (CSC) Integrated Solid Waste/Resource Management Strategy as the basis for the placement of a new Integrated Solid Waste/Resource Management System (ISW/RMS) for the Region.

Considering that just over ten years ago that:

- the landfill in Upper Sackville had been closed for little more than a month;
- private sector partners and an Implementation Plan for the new ISW/RMS had not been finalized;
- no waste disposal facility existed within the Region; and
- the infrastructure for the management of organics and for the processing and disposal of mixed solid waste did not exist; that

the achievements in the management of solid waste/resources, including a waste diversion rate of over 50% since 2000 (currently at 55%), which is the envy of many municipalities, provinces and states around the world, is impressive. However, the task is not complete. The 60% diversion rate set by Regional Council has not yet been attained.

This report, accompanied by a staff presentation, provides:

- an overview of the past ten years of solid waste/resource management for the HRM; and
- potential diversion opportunities identified at the Solid Waste Resource Round Table session in November 2005.

DISCUSSION

A) Ten Year Review of HRM's ISW/RMS

In 1996, Regional Council approved the CSC Integrated Solid Waste/Resource Management Strategy as the basis of the placement of a new integrated solid waste/resource management system for the HRM. Attachment #1, the Executive Summary of the CSC's ISW/RMS, is provided for the information of Council members. Attachment #2 is a document dated December 19, 2006 entitled "A Ten Year Synopsis of HRM's Integrated Solid Waste/Resource Management System", which provides detail of:

1. the history of the circumstances that lead to the creation of the CSC and the new strategy;
2. an assessment completed by O'Halloran Campbell Associates in 2004 of the progress of HRM's ISW/RMS and potential opportunities to improve the Region's waste diversion rate;
3. the success of the "10% Challenge" which was launched in September 2004, to further the then 52% diversion rate (current diversion rate is 55%); and

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- Diversion Opportunities**

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4. specific opportunities identified at the Solid Waste Resource Round Table in November 2005 to further HRM's diversion rate.

To summarize, HRM has been a leader in the field of waste management since the full implementation of the system in 1999, with very few adjustments, being:

- weekly summer green cart collection for the convenience of residents, particularly in the urban core;
- the expansion of the FEP tipping floor, to accommodate more waste resulting from an increase in population and a strong local economy.

No other changes to the system has been required, a remarkable achievement considering no similar undertaking for the management of solid waste had been attempted before by a municipality. However, the goal of 60% diversion set by Regional Council in 1996, has not been attained. Other municipalities in Nova Scotia, and elsewhere in Canada, are now equal to or ahead of HRM's diversion rate. Audits in 2004 revealed that approximately 50% of the refuse in bags/cans/containers from residential and commercial properties is either organics (food or leaf and yard material) that has not been separated for composting, or paper, and/or food and beverage containers that have not been placed in a blue or grocery bag for recycling.

B) Solid Waste Resource Round Table-Issues Review Papers

To explore future opportunities for enhancing HRM's solid waste diversion rate, staff hosted a Round Table in November 2005, which provided an opportunity for input by members of the Solid Waste Resources Advisory Committee (SWRAC), Regional Council, HRM's partners/contractors, industry representatives, NSEL, RRFB, Clean Nova Scotia and solid waste staff from other municipalities. The following issues were identified as top priorities.

1. Enhancing Residential Diversion Through Municipal Policy by;
 - a) reducing the ten (10) bag limit and introducing tags for extra bags
 - b) requiring clear bags for residential refuse
2. Improve Compliance and Enforcement by;
 - a) enhancing the separation requirements of and the enforcement of By-Law S-600
 - b) improve the accessibility at recycling, HHW, C&D and compost facilities
3. Enhancing the Diversion of C&D Materials by;
 - a) making source separation a condition of all building permits
 - b) integrating the stewardship of materials from the generator to end user
4. Enhancing Commercial Waste Diversion of Recyclables and Organics by;
 - a) requiring clear bags, increasing monitoring and enforcement
 - b) implementing a standard training program for source separation

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Staff has completed an Issue Review Paper for each of the above opportunities. Issues 1(b) and 4(a) have been combined. Attachment #3 consists of the seven (7) Issue Review Papers, each one with a recommendation that is intended to enhance HRM's diversion rate. Issues Review Papers 1(a), 1(b)/4(a), and 2(a) will require an amendment to By-Law S-600.

BUDGET IMPLICATIONS

There are no immediate budget implications. The estimated cost of the Clear Bag Residential Pilot Program is \$65,300. The Resource Recovery Fund Board has agreed to provide funding for 50% of the project costs to a maximum of \$32,650. Funding for the remaining costs of the project will be determined through the 2007/08 budget process and will come forward to Regional Council for consideration within the context of the 2007/08 proposed operating budget.

A review of the findings of the Pilot Program will identify if additional resources are required for Council approval of an expansion of the program to all HRM. If required, this element of the Program would be considered in conjunction with the 2009/10 Operating Budget.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

Each Issues Review Paper contains a recommendation which is designed to further HRM's solid waste diversion rate. One alternative, which is not recommended, is not to action any of the recommended initiatives.

Issues Review Papers 1A "Reducing Refuse Bag/Can Limits" includes several options. Staff has already or will action shortly, those Issue Review Papers that do not have policy or budget implications.

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ATTACHMENTS

1. Executive Summary, Citizens Stakeholder Committee Integrated Solid Waste/Resource Strategy;
2. Ten Year Synopsis of HRM's Integrated Solid Waste/Resource Management System;
3. Round Table Issues Review papers (seven total).

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/agenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

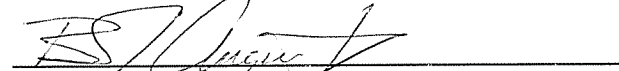
Report Prepared by: Jim Bauld, Manager, Solid Waste Resources 490-6606

Financial Approval by:



Catherine Sanderson, Senior Manager, Financial Services, 490-1562

Report Approved by:



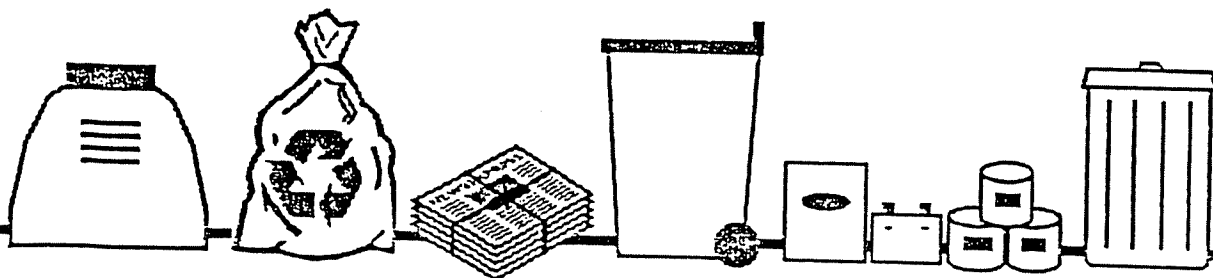
Brad Anguish, P.Eng., Director, Environmental Management Services 490-4825

REGIONAL SOLID WASTE MANAGEMENT PROJECT

Resource
An Integrated Waste Management Strategy
for
Halifax County/Halifax/Dartmouth/Bedford

Executive Summary

Prepared by
The Community Stakeholder Committee (CSC)
and Adopted in Principle, March 25, 1995



MISSION STATEMENT

This Integrated Waste/Resource Management Strategy (IWRMS) is designed to address the municipal solid waste stream, to achieve the maximum possible diversion of resources from disposal and to encourage citizens to adopt the necessary lifestyle changes to move from a consumer to a consumer society.

The Strategy is designed to be flexible enough to incorporate new, environmentally sustainable technologies that will move us towards our ultimate goal of "Zero Waste."

Let Us Tell You What We Have Done

Over the past five months in many meetings of the Community Stakeholder Committee (CSC), dozens of citizens from our community have met to discuss and draft a new approach to the "garbage problem." We have a solution.

We offer not a waste management system, but rather a *resource* management strategy – "Waste Not Our Future." We have prepared a vision which is an essential first step in mapping out a management system for those materials which can no longer be regarded as waste, but must be turned into *resources* to benefit both our economy and our environment. We call on everyone, citizens and politicians together, to help build a truly sustainable future.

Past efforts to manage our solid waste have failed but the past is the past. The Highway 101 Landfill in Upper Sackville has damaged the local community and the environment. Costs continue to skyrocket. We can no longer afford to make the same mistakes.

"Waste Not Our Future" is a consensus statement of the CSC. Its deliberations have been open to all citizens of the Metro-region. We have met together as equals. We have studied the problem, investigated today's waste management system, debated the components of a new system, and found agreement.

We have adopted principles and goals which can best be summed up in a single word: *stewardship*. Stewardship represents a new direction in the management of our solid wastes. It places responsibility on everybody – because we all generate material that must be managed.

We ask that this Strategy be considered as a whole. It has a coherence of vision and an integrity that requires full implementation. It is not a Strategy that can be adopted piecemeal. We do not find or suggest any other acceptable alternative strategy. If a new residuals disposal facility is to be recommended by November 1995, if the Highway 101 Landfill is to close on December 31, 1996, and if a new residuals disposal facility is to be opened on January 1, 1997, this Strategy must be reviewed and adopted

**Simply stated,
our Strategy
is based on
maximizing the
beneficial use of
resources and
on minimizing
disposal.**

in its entirety as the new solid waste/resource management system, as soon as possible.

We believe that this Strategy presents a cost-effective solution, especially when all of the present and future costs and liabilities are included.

We also believe that this Strategy is a challenge to the people of the Metro-region, and that we can meet that challenge. The Strategy is practical and workable. It is an understandable, convenient system which rewards the conserver.

Simply stated, our Strategy is based on maximizing the beneficial use of resources and on minimizing disposal. It is also important to state that the proposed system aims for "zero waste" and places emphasis on the diversion of the recyclable, toxic and organic materials that cause problems at disposal sites. The success of our Strategy will be based on separating materials at source and by collecting and processing them separately and appropriately.

Now, What is the Strategy all About?

Composting is at the heart of this Strategy. Its success depends on composting. The municipal collection system will be based on collecting compostables in specially designed containers as part of a modified system which also includes recyclables and trash collection.

Waste reduction, household hazardous waste (HHW), backyard composting, as well as education and promotion programs, are also integral to the Strategy's objectives. Source-separated materials will go to facilities for recycling, composting and HHW processing.

Several figures summarize and illustrate the Strategy:
(see attached)

- Reducing Waste: Today & Tomorrow (Chart 3-1);
- Diversion Comparison: Achievable & Effective (Chart 6-1);
- Framework for Integrated Waste/Resource Management Strategy (Figure 4-1);
- Cost-Benefit Comparison: Affordable Stewardship (Chart 7-1); and
- Implementation Plan: Achievable Challenge (Figure 8-1).

All mixed waste will go to Front-End Processing Facilities to extract any remaining recyclables, compostables and hazardous substances. This will not only capitalize on their resource value but will also ensure that no material is sent for residuals disposal (landfill) without processing. This will avoid problems such as toxic leachate and emissions, odours, or the attraction of birds and/or vermin. No material will be disposed of without processing. Free of toxics and organics, materials sent for disposal will be available for reuse by future generations. This Strategy mandates that Front-End Processing Facilities will be operational before the opening of the new Residuals Disposal Facilities.

The Industrial, Commercial and Institutional (IC&I) sector can use the municipally-sponsored recycling, composting and screening facilities, or they can provide their own equivalent. User fees will encourage source-separation. Construction and

Absolutely essential to the Strategy's success is the ongoing role of citizens and communities...

Demolition (C&D) debris will be managed through reuse, recycling and permitted clean-fill sites. Existing IC&I collection systems should suffice with only slight modifications. Non-residential IC&I hazardous waste will continue to be managed separately from the municipal system.

Absolutely essential to the Strategy's success is the ongoing role of citizens and communities in the development, implementation and operation of all the components of this system. More than the advisory committee model, this Strategy includes very specific, permanent decision-making roles mandated for citizens and community groups. Without this protection, the public will not buy into a system sufficiently for it to work and it will not be possible to site Residuals Disposal Facilities.

The following components are marked for accelerated implementation as early as 1995 and 1996: centralized composting, disposal bans, source reduction, backyard composting, a permanent HHW depot, and C&D debris sites. Rapid success is necessary to build credibility with communities near potential sites that will be wise enough to know that only action now will convince them that the next system will actually be done right.

For more about the system please read our full report. More detail will be added as the components are put in place, so there is room for everyone to contribute. Any citizen of the Metro-region is welcome to join the Community Stakeholder Committee at any time. Please join the CSC in ensuring the rapid and successful implementation of our Integrated Waste/Resource Management Strategy.

Background and Technical Summary

On October 7, 1994 the four Mayors of the Metro-region municipalities reached an important agreement: to transfer responsibility for Municipal Solid Waste (MSW) from the Metropolitan Authority to Halifax County Municipality. The agreement, to take full effect as of January 1, 1997, was reached after many years of inconclusive waste management planning by the Metropolitan Authority. Its timing is meant to coincide with the permanent closure of the existing Highway 101 Landfill operated by the Metropolitan Authority.

Once the Mayors' Agreement was signed, the Municipality embarked on an innovative and democratic planning process to develop a waste management strategy and to identify a candidate site(s) for a new modern residuals disposal facility. The planning process was initiated on October 26, 1994, and has continued with numerous meetings, workshops and the efforts of dozens of citizen volunteers. The Integrated Waste/Resource Management Strategy (IWRMS) has been written by these volunteers, and is presented for consideration and adoption by the four Metro-region municipalities: Halifax County Municipality, the Cities of Halifax and Dartmouth and the Town of Bedford.

The Strategy represents a framework, which, upon approval on a regional scale, will form the basis for detailed system planning and design. The Strategy framework also includes methods for identifying criteria for siting new waste/resource management facilities.

The Strategy is founded on a fundamental philosophy: that materials currently considered "wastes" should be treated as "resources", and that the reduction, reuse, recycling and composting of those resources should be encouraged through broad-ranging principles of stewardship. The Strategy presents waste diversion goals which arise from this philosophy of stewardship. In the Metro-region today, less than five percent of the total municipal solid waste (MSW) stream managed by the Metro Authority is recycled. Over 95% is landfilled.

In 1997, the new waste management system proposed in the Strategy will result in 25% of the MSW being landfilled. Once all

The Strategy presents the objectives of the waste management components necessary for achieving these goals.

aspects of the new waste/resource management system have been fully implemented and participation has reached its targets, 12% of the MSW is expected to be landfilled. Chart 6-1* illustrates the anticipated progress toward these diversion targets.

The Strategy presents the objectives of the waste management components necessary for achieving these goals. Figure 4-1* illustrates the system which has been designed by the CSC. This system comprises new methods of waste/resource collection for both the residential and IC&I sectors. The residential collection will be enhanced with a separate organics stream. IC&I waste/resource separation will be encouraged through appropriate charge mechanisms, aimed at encouraging separation at source. For example, materials which have been sorted and delivered to allow resource recovery will be accepted at far lower charges than materials which have been delivered in a "mixed" fashion.

Source separated organics will be routed to new central composting facilities. Materials which have not been sorted, and which can be termed "mixed waste", will be sent to new screening and resource recovery facilities for processing. Materials to be landfilled will be processed, and will contain an absolute minimum of organics and economically recyclable materials.

The Strategy presents programs designed to support the new waste/resource management system. Clearly, the success of the system in meeting the diversion goals will depend upon participation. Accordingly, the importance of education and communication programs is heavily stressed. Budgets for these programs, starting immediately, are proposed in the Strategy.

The CSC has identified a mechanism for continued citizen involvement in the new waste management system. This involvement is to be sustained through the Independent Stakeholders' Audit and Review Group (ISARG). Details on the membership and role of the ISARG have been considered and are detailed in the Strategy.

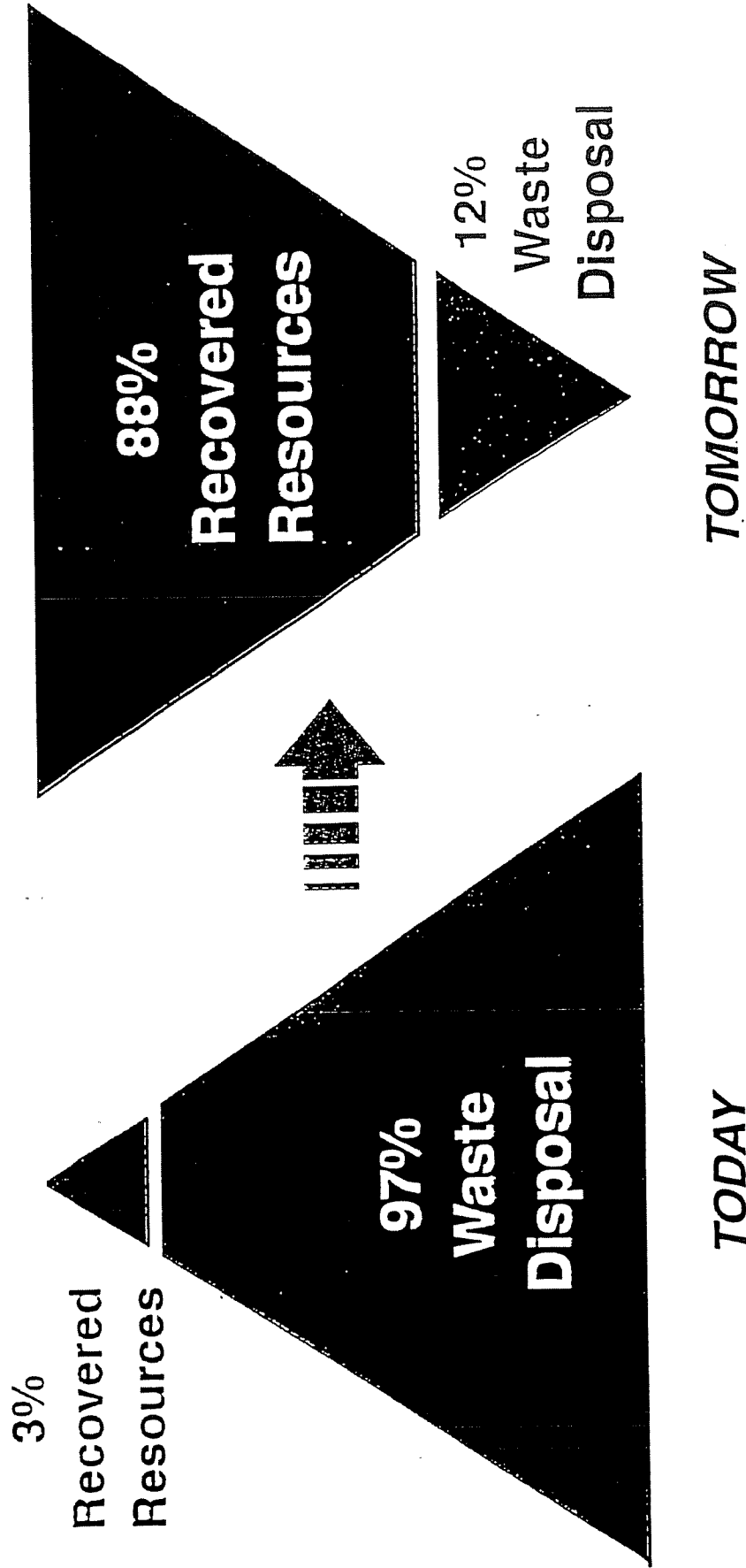
*See attached

The new waste/resource management system presented in this document will be more costly than today's waste management system, when strict dollar terms are considered. However, the new system represents the only clear option for the region to move towards responsible resource management, while at the same time facilitating waste diversion and ensuring that a new residuals disposal facility, which replaces the aging Highway 101 Landfill, is acceptable to local communities.

The cost of the new system has been estimated in 1996 dollars. Table 7-1* shows system cost estimates for the Integrated Waste/Resource Management Strategy compared to today's system costs (based on 1994/95 Metro Authority budget and 1995/96 proposed budget). For illustrative purposes, Table 7-3* compares the costs of the proposed system to the projected costs of the Metro-region system proposed in a 1992 report by Sound Resource Management as well as to the projected costs of the (now-rejected) Metropolitan Authority incinerator proposal. The proposed system is well within the costs envisioned by the 1992 Sound Resources Management study, and is far lower than the previous Metro Authority proposal. The proposed system is affordable and sustainable. The CSC strongly recommends that it be adopted in principle by the Metro-region municipalities.

CHART 3-1 "REDUCING WASTE: TODAY & TOMORROW"

METRO REGION
COMMUNITY STEWARDSHIP &
RESOURCE CONSERVATION STRATEGY

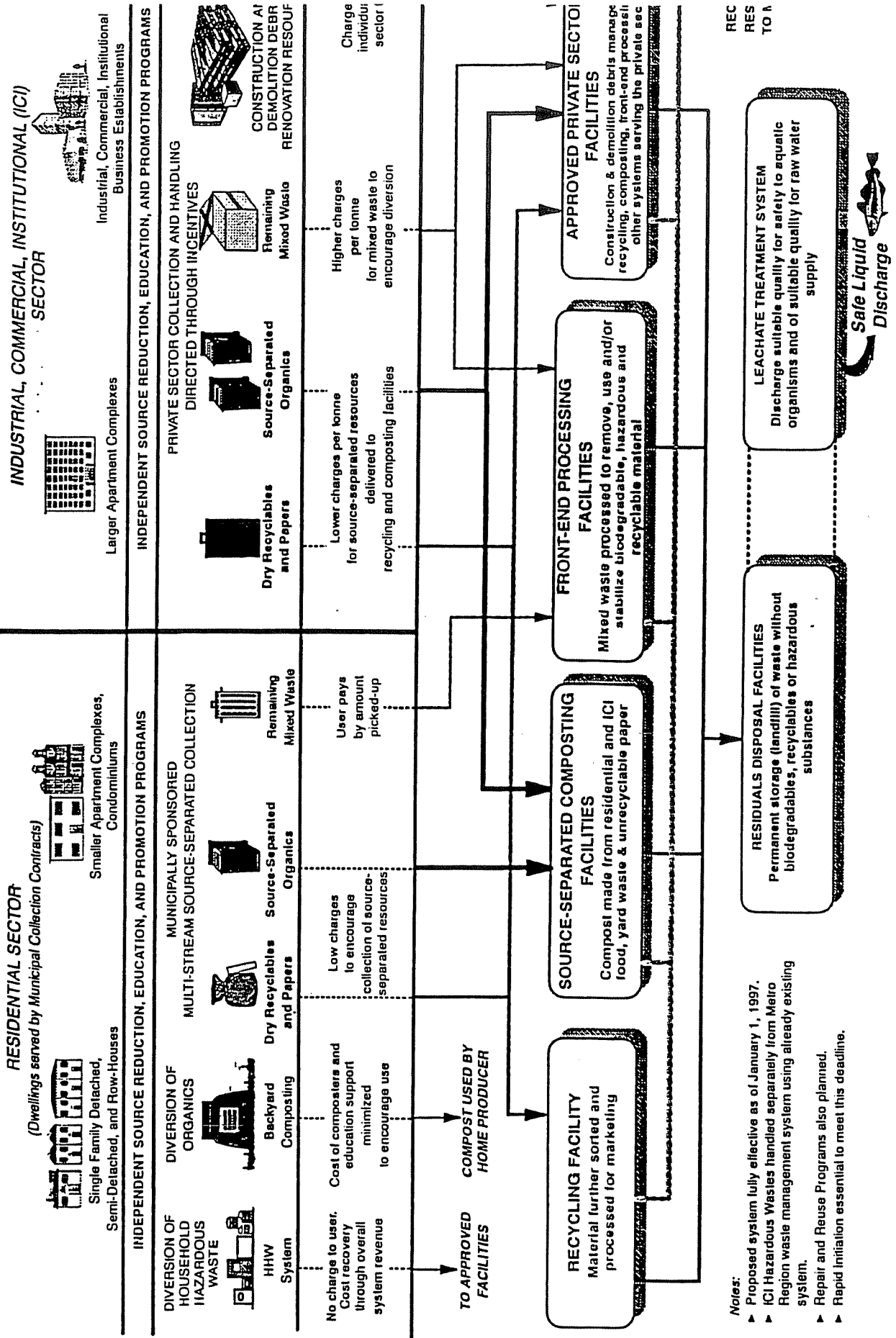


ENVIRONMENTALLY SUSTAINABLE & ECONOMICALLY ACHIEVABLE

RESOURCE

FIGURE 4-1 FRAMEWORK FOR INTEGRATED WASTE MANAGEMENT STRATEGY FOR METRO REGION CONVENIENT AND COMPREHENSIVE

Developed by the COMMUNITY STAKEHOLDER COMMITTEE Regional Solid Waste/Resource Management Project, Halifax County/Halifax/Dartmouth/Bedford, Marct



SECTOR

SERVICE

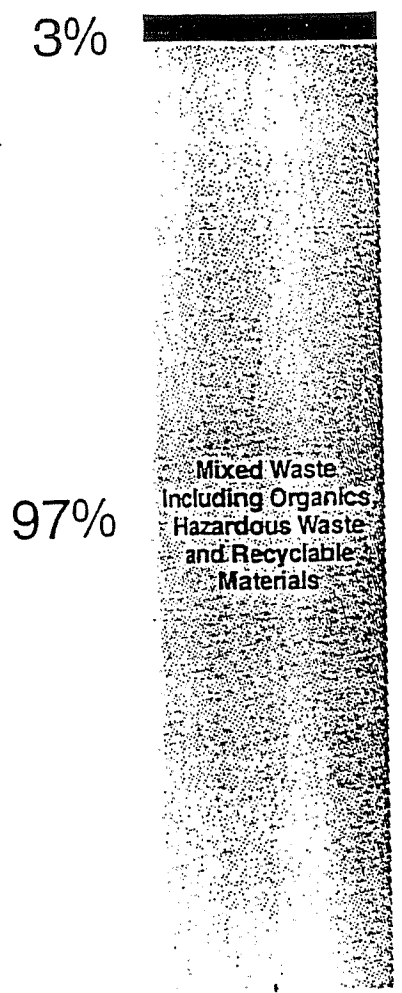
CHARGES

DESTINATIONS

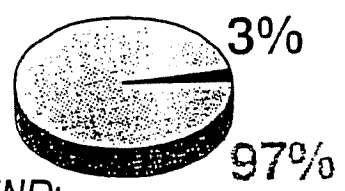
REC
RES
TO A

1997 diversion will be achieved through early initiation projects phased-up to full participation. The CSC strategy delivers only stable, non-harmful residuals going to final disposal, necessary for siting a new landfill.

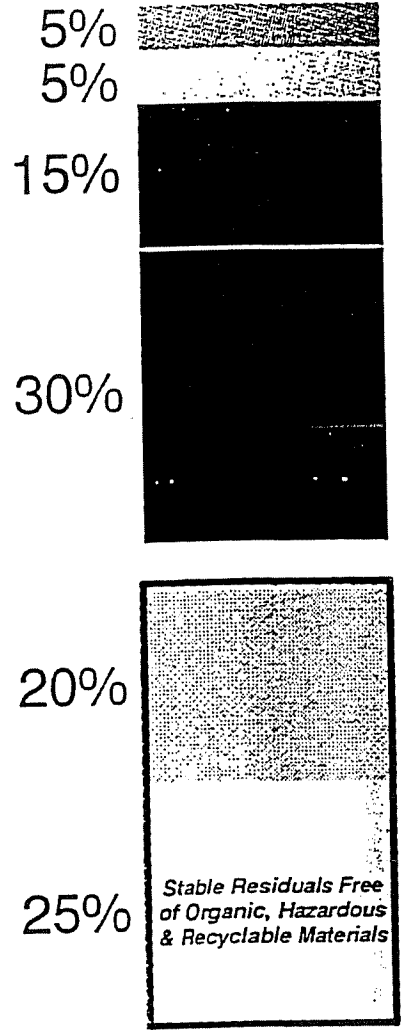
Metropolitan Authority



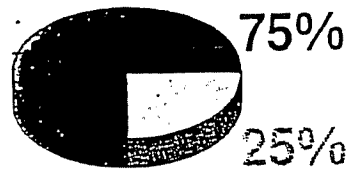
TODAY



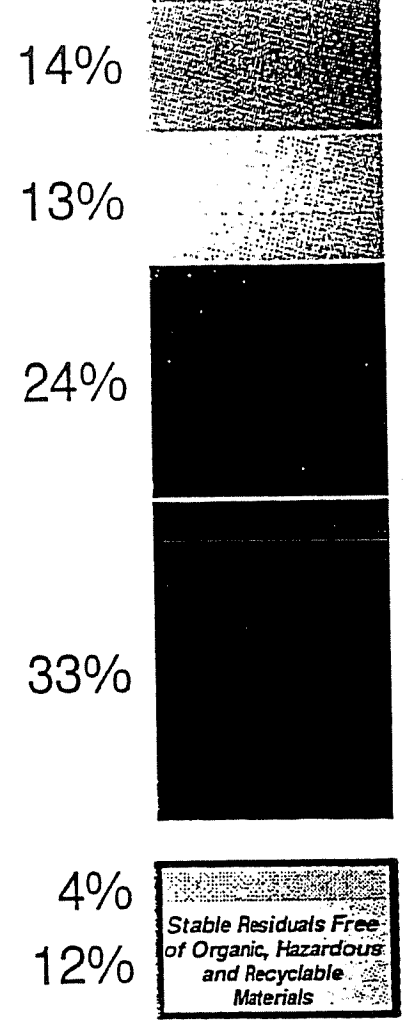
Integrated Waste/Resource Management Strategy



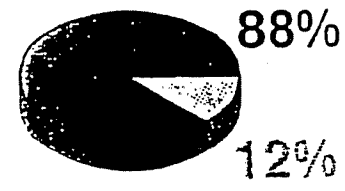
1997



Strategy



MATURE SYSTEM*

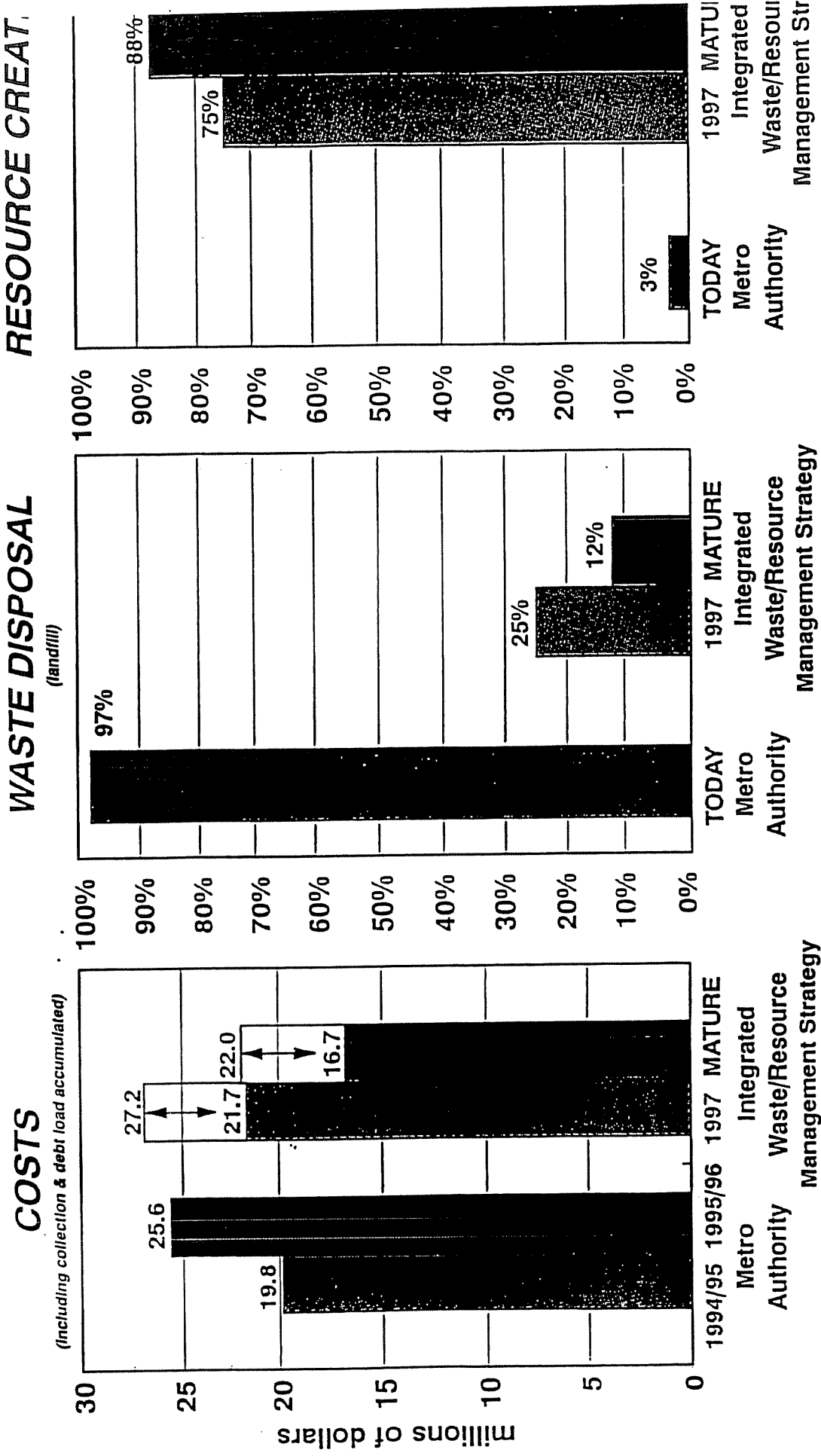


LEGEND:

	Backyard & On-Site Composting		Central Processing of Mixed Residuals
	Inert Materials Management		Centrally-Separated Composting & Recycling
	Source-Separated Recycling		Final Disposal (Landfill or Stable Residuals)
	Source-Separated Composting		Total Diversion

*Some members of the CSC believe a good target date for the mature system is year 2000.
 **Waste/Resource System Diversion Performance Rates reflect the best information and estimates of the CSC. They are adopted from waste composition data from Metropolitan Authority, Sound Resource Management (1992), Metropolitan Toronto data, and other sources and the anticipated performance of this proposed system.
 ***Household Hazardous Waste Collection and other programs diverting less than 1% are not displayed here.

CHART 7-1 COST-BENEFIT COMPARISON: AFFORDABLE STEWARDSHIP



For the same range of costs we are paying now for an objectionable system, we can have a far superior system. Future costs will go down and diversion will go up.

January 18, 2007

Prepared by: Jim Bauld, Manager
Solid Waste Resources

A Ten Year Synopsis of HRM's Integrated Solid Waste/Resource Management System

1.0 Background:

By 1994, failure of the regional waste management system (which resulted in the purchase by the Metropolitan Authority of homes within 1 km of the landfill in Upper Sackville and compensation to the community for pervasive environmental impacts), and the Province not approving incineration of waste as the new management practise, Halifax County received approval from the other three municipalities to initiative a new innovative approach for the management of waste for the region. This new approach asked the citizens to develop a new model for the management of waste, and criteria for the siting of the new regional landfill.

1.1 The CSC Strategy:

Over five months, hundreds of citizens (i.e. the Citizens Stakeholder Committee (CSC)), supported by a facilitator and consultants, developed a new strategy for the management of waste. The new strategy is based on the separation of materials at the source (i.e. home, work place) to maximize the recovery and reuse of various types of materials, and minimize waste disposed. The principles of the CSC strategy are:

1. An Integrated Resource Management System;
2. Stewardship: We Manage the Materials We Generate;
3. Success is Based on Separating Materials at Source;
4. Stable or Inert Materials Only will be Disposed in the Landfill;
5. The Waste/Resource Management System will Feature Citizen Involvement;
6. Achieved Diversion will be a Key Measure of Success;
7. Opportunities for Local Employment & Entrepreneurs.

In February 1996, HRM thanked the County of Halifax and approved the CSC strategy as the basis for a new integrated solid waste/resource management system, and set a waste diversion target of 60%. Between 1996 and January 1999, multiple private sector service providers were engaged to place the required infrastructure, including a new regional landfill that does not accept organic and hazardous waste materials. The new Otter Lake mixed waste processing and residual disposal facility, and the two compost facilities, commenced full operations in January 1999.

2.0 Five Year Review

In 2004, O'Halloran Campbell Consultants Ltd. completed a five year review of HRM's ISW/RMS. Their findings are summarized as follows, with a brief status report for each:

<u>Recommendation</u>	<u>Status/Action</u>
1. <u>Goals</u>	
- reduce waste disposed at Otter Lake	Waste Characterization studies completed, <u>more than 50% of material in residential and ICI waste stream is recyclable paper, plastic and organics</u>
- efficient delivery of SWR new programs/retain principles	MIRROR contract \$3 million avoided cost, internalized C&E contract, measure with other matrix i.e., population growth, the economy, building permits
2. <u>Residential</u>	
- increase C&E, promote BYC	C&E internalized - higher output/lower cost two BYC sales conducted (1,600 units sold)
- study participation rates, more education and enforcement	residential participation measured i.e. Weekly Summer Green Cart, stickers issued /monitored compliance, 10% Challenge launched
- harmonize receiving hours at all facilities	included in Issue Paper review
- evaluate bag limits and tags	included in Issue Paper review
- target C&E campaign for new residents	educational material developed, continued use of Welcome Wagon, C&E material issued with Occupancy permits
3. <u>ICI</u>	
- assess data from Waste Characterization study, maximize monitoring of ICI at Otter Lake	10% Challenge launched Sept. 04, diversion rate increased from 53% to 56%, enhanced monitoring at FEP tip floor
- enhance C&E, enforcement, incorporate SS in HRM bldg. approval process	Diversion Planning Officer established with high rate of inspections, SOTs etc., tool developed by Community Development
- effect packing change	lobbying the Province and RRFB, SWR representation on provincial packing committee

In addition the Round Table concluded a need for a continuation of a comprehensive education program as an integral component of all waste diversion activities.

The challenge facing HRM is to effect new opportunities that enhance waste diversion in a fiscally responsible manner which is acceptable to the general public. The Issue Papers analysis will identify successful programs in other locals that have proven effective in reducing waste disposed (kg/per property serviced and kg/per capita), lower than the current 530 kg/per capita for residential waste disposed in the HRM.

The challenge of By-Law S-602, which prohibits the exportation of specific types of waste, threatens the sustainability and principles of the HRM ISW/RMS. Should the appeal set for February 13, 2007, not be successful and the Province fails to amend the MGA, the likely outcome is the disassembly of the Provincial ISW/RMS of seven economically viable and self sufficient regions, resulting in the stranding of significant tax dollars. For HRM, the tenets of the CSC strategy would be lost as well as the ability for the governance, i.e. monitoring for source separation compliance, as the material exits the Region. HRM has to be seen to manage all materials generated within the Region - those that are acceptable as deemed by NSEL - at the Otter Lake landfill.

Since the development of the CSC visionary strategy more than 10 years ago, and the full implementation of the HRM ISW/RMS in January 1999, the achievements have been impressive. Except for two system changes being:

- weekly summer green cart collection for the convenience of the public particularly those in the denser urban core; and
- an expanded tipping floor at the FEP - the result of a strong local economy and a major increase in population,

no other changes have been required. This is remarkable considering no undertaking of this magnitude for the management of solid waste has been attempted before.

COW February 13, 2007

At the December 4/06 meeting of SWRAC, it was agreed that SWR staff would present a progress report of the HRM ISW/RMS, including the achievements and opportunities for enhancing waste diversion, at a COW meeting in early 2007.

The presentation at COW on February 13, 2007, provides an excellent opportunity for staff to advise Regional Council how far HRM has come in solid waste/resource management in the past ten years, report on the progress relative to the seven principles of the CSC strategy, and identify new opportunities for furthering waste diversion to achieve the 60% target.

**Halifax Regional Municipality - Solid Waste Resources
Next Steps - Round Table Findings “Enhancing Diversion”
Issues Review Paper # 1A**

Issue Name: Reducing Refuse Bag/Can Limits

1.0 Objective:

To assess the implications and potential to enhance waste diversion by reducing the ten (10) bags/cans biweekly refuse limit to six (6) bags/cans per household.

2.0 Background:

In 1999 Regional Council approved the limit for refuse collected at residential properties.

The limit is 10 bags/cans of refuse, plus 1 large item (appliance/furniture, etc.) every two weeks for each household (i.e. Single family dwelling, or unit in a semi-detached house, rowhouse or townhouse). Multi-unit apartments (up to 6 units) have a limit of 5 bags per unit, up to a maximum of 30 bags of refuse, plus 2 large items. HRM has the highest bag/can limit for refuse in Canada, of all the municipalities with a multi-stream waste/recycling/organics collection program. The 10 bag/can limit for refuse has been in effect since 1999, since the adoption of By-Law S-600.

HRM was the first large municipality in Canada to implement curbside collection of organics with the introduction of green carts in 1998, which continues to be supported by a comprehensive education and communications campaign. A survey of NS municipal units, with biweekly collection services, revealed that 93% have a refuse bag/can limit of **6 or less**, as outlined in Table 1.

Table 1

NS Municipalities Garbage Bag/Can Limits	
Municipality	Bag/Can Limit - Biweekly Collection Service
*Annapolis County, *Berwick, *Bridgetown, *Greenwood, *Kentville, *Kingston, *Middleton, *New Minas, *Wolfville, *Lunenburg (Town), *Mahone Bay, *Queens, *New Glasgow, *Pictou County, *Pictou (Town), *Stellarton	4
**Annapolis Royal, St. Mary's, **Cumberland	4
*Bridgewater, *Windsor, *Shelburne District, *Yarmouth (District), *Yarmouth (Town), *Argyle	5
** Clark's Harbour, **Lockport, **Shelburne (Town),	5
*Hantsport, *Truro, *Colchester, *Stewiacke, *East Hants	6
**West Hants, **Amherst, **Springhill,	6

*Chester, *Lunenburg (District), *Digby (District),	8
* Clare	***10 (includes combination of recycling and garbage bags)
*Digby (Town)	*** 12 (includes combination of recycling and garbage bags)

Notes:

- * Municipalities with mature (more than 5 years in place) curbside organic green cart program.
- ** Municipalities with no organics collection services or only just recently (since 2004/05) have rolled out green carts or only have backyard composting options.
- *** Bag limit is a combination of recycling and refuse.

Note: Municipality District of Lunenburg, Town of Lunenburg, Queens, Mahone Bay and Bridgewater have weight and volume limits.

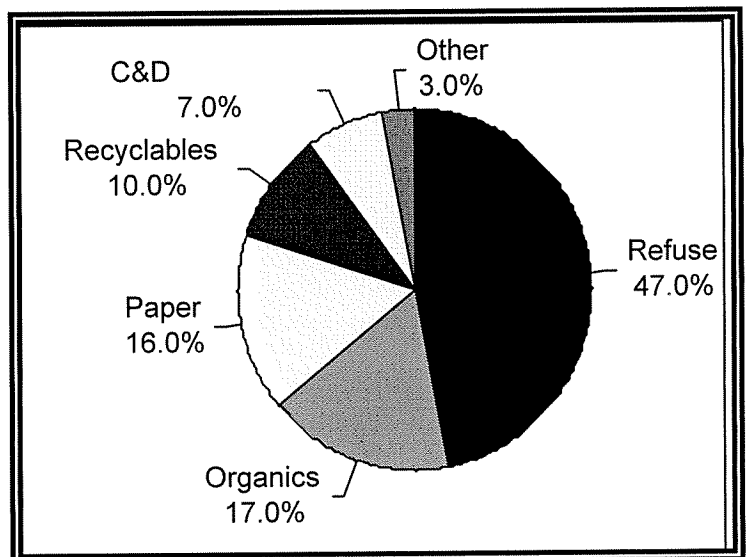
3.0 Discussion:

3.1 Measurement of Success: A Citizens Strategy:

While HRM is recognized worldwide as a leader in waste/resource management, success in maximizing diversion, as defined in the Citizens Solid Waste/Resource Management Strategy and as approved by Council in 1996, has not been fully achieved. One principle of the strategy is "Achieved Diversion Will Be a Key Measure of Success". Overall, diversion initially reached 56% in 2000 as source-separation of organics and full stream recycling programs became established; however, by 2002/03 the rate levelled off to 53%. In 2004, with the launch of the "10% Challenge" (an enhanced communication and education campaign), the overall diversion rate increased to 54-56%. However, the goal of at least 60%, set by Regional Council in 1996, has not been attained. A significant portion of the current diversion is attributed to the commercial sector with construction, demolition and renovation (C&D) building materials diverted to the HRM C&D licensed sites. Residential diversion is at 48.7% for the year ending December 2006.

What is left in the black refuse bag ?

To further pursue opportunities for residential diversion, audits were conducted at the Otter Lake landfill in 2003/04. The audits revealed that 43% of materials in the residential black refuse bags should have been diverted in the recycling and/or organics (composting) programs.



Recyclable materials comprise the single largest component (26%), consisting of metal/glass/plastic containers (10%) and recyclable paper (16%). Organics comprised 17%, C&D 7% (home renovation type materials) and Other 3% (i.e. HHW, including waste oil, batteries and tires) materials that are not acceptable at Otter Lake.

To measure the link between participation in curbside recycling and composting programs and bag limits, Solid Waste Resources (SWR) staff conducted curbside monitoring at 1,200 residential households in urban, suburban and rural areas, over a 3 year period (2004, '05 & '06). Monitoring included documenting the number of garbage bags placed curbside and participation in green cart and recycling programs. The monitoring was throughout all seasons. The following data was collected during the 2005 monitoring:

Table 2

Monitoring Residential Household Set Outs		
Number of Refuse Bags/Cans Placed Curbside	% of H/H	*Were there Recyclables and Green Carts Placement?
1 to 6	78%	Yes Majority of Occasions
7 to 8	17%	No, Not Always
9 to 10	4%	No, Never
Average of 3.5 bags/cans of refuse per household/biweekly		

***Note:** Recyclables were documented for weekly collection service in urban/suburban and during biweekly service frequency in rural areas.

78% of households set out 1 to 6 refuse bags/cans every 2 weeks. The most frequent number of refuse bags set out was in the range of 2 to 4 bags per collection cycle. In households with 2 to 4 bags of refuse, blue bag recyclables, paper recycling and green cart set out occurred at every property. Households with set outs in the range of 4 to 6 refuse bags/cans, did not always participate in the blue bag, paper recycling or organics separation programs for the applicable collection cycle. The average set out rate for collection at the 1,200 households was 3.5 bags/cans per collection cycle.

21% of households set out in excess of 6 bags/cans of refuse. There was little to no participation in blue bag recycling, paper recycling or green cart programs when there were more than 6 bags of refuse curbside. While many HRM citizens are doing an outstanding job of separating the materials, many residents are not. The 10 bag/can refuse limit provides a convenient excuse/opportunity not to recycle or compost.

In 2005, as a component of the "10% Challenge", staff conducted door to door education where residents did not participate in the green cart, blue bag or paper recycling programs. This resulted in an initial increase in recycling and composting activity, however, this increase was not sustained (measured upon return monitoring).

For some residents, the 10 bags of garbage bag/can limit acts as a dis-incentive to continue to recycle and compost.

4.0 Measuring Public Opinion - Citizens Input on Bag Limits:

SWR staff have gathered public opinion data over the past 2 years, through surveys as well as a series of articles published in the HRM's Naturally Green newsletter. Feedback was solicited respecting changes to refuse bag/can limits via email, regular mail, website and by calling 490-4000.

4.1 Public Opinion Survey:

A public opinion survey conducted in 2005, supports the findings of the curbside monitoring program. A survey conducted by Corporate Research Associates asked residents to indicate the number of refuse bags they place curbside. Results revealed that **86% of residents indicated they place 6 or fewer refuse bags curbside**. The detail of survey results are as follows :

Table 3

"In HRM household refuse is picked up every two weeks. In an average two-week period, how many bags of refuse does your HH place curbside for pickup?"	
1 bag	19%
2 bags	26%
3 bags	18%
4 bags	12%
5 bags	6%
6 bags	5%
7 bags	1%
8 bags	3%
10 bags	1%

Note: Remainder 9% live in an apt not serviced by HRM municipal services

Residents have shown commitment to HRM's waste management programs and have indicated that they can do more to support recycling and composting programs. In a survey conducted in 2005, 60% of residents think it would be very, to somewhat easy, to increase the amount of blue bag recyclable materials they can place in the HRM recycling program. In the same survey, 56% think that it would be very, to somewhat easy, to increase the amount of green cart compostable materials for placement in the HRM green cart composting program. This public opinion supports a reduction in the refuse bag limit, with a resultant increase in recycling and composting.

4.2 Naturally Green Newsletter - Looking at Bag Limits:

In the Spring of 2005, SWR solicited public input on methods to reduce waste and encourage recycling and composting. A sample summary of public feedback on looking at bag limits, is as follows, received via letter, phone and e-mail transmission:

Public Feedback Sample Summary

1. "Thanks for your publication Naturally Green which my husband and I read from beginning to end. We strongly support the bag limit to 3. We are a family of 6 and have rarely put out 3 bags. This has to stop somewhere!"
Gail & Charlie Wainwright
2. "The garbage bag limit should be cut back to 5 bags per household. We have 4 people in our household and every second week we have 2 bags, so 5 bags is still over the amount of the average household should be placing at the curb."
Dave Whittle
3. "I normally have only 1 bag every 2-weeks with the occasional second with rarely a third bag. Your suggested change of bag limit will not bother me or my neighbours."
Charles Webber
4. "HRM is a leader in waste reduction and we should be limited in what we put out to the curb for landfill. Packaging is a problem, lets go back to the source, if its not recyclable, it is not acceptable".
Mike Hackett
5. "Each week I use 1 Sobey's bag for recycling papers, 1 blue bag and 1 garbage bag. 10 bags is far too high"
Dan MacDonald
6. "I say don't just reduce the limit to 6. I say reduce it to the average and make Halifax a greener city."
Dave Ciochetto
7. "I was surprised to note the bag limit was so high, and can't imagine why any household would require even half that number. We are a household of 2, and typically have from 1/3 to 1/2 bag of actual garbage every 2 weeks. A lower limit may convince some more residents to recycle and use their green bin more".
Bill MacDonald
8. "I think HRM is doing a good job, however we cannot become complacent and if we are last in ranking in having the highest bag limit in Canada you should ACT."
Frances Jamieson
9. "Agree with reducing the bag limit and the even 6 bags is way too high. Voting for a much reduced limit of 2 to 3 bags."
Glen Frasier

5.0 Benefits & Risks:

HRM provides collection services to approximately 130,000 households (H/H). In 2005/06, 70,000 tonnes of residential waste was processed at the Otter Lake facilities. From the waste audits, up to 30,100 tonnes (43%) were recyclables or organics contained inside refuse bags.

From the data collected during the curbside monitoring over three years, 102,700 HH (78% of 130,000 HH) produce 6 bags or less, while 17% (22,100 HH) set out between 7 to 8

bags/cans, and 4% (5,200 HH) set out 9 to 10 bags/cans of refuse, every two weeks. If the 6 bag limit were applied to those 27,300 households, there is the potential to divert at least 6,000 tonnes annually to the recycling and composting facilities as follows:

5,200 HH x 3 bags x 4 kg/bag* x 26 collection days	= 1,622 tonnes
22,100 HH x 2 bags x 4 kg/bag* x 26 collection days	= <u>4,596 tonnes</u>
TOTAL	6,218 total tonnes

***Note:** 4 kg/bag measurement is conservative.

5.1 Revenue, Environmental Benefits and Costs

5.1.2 Revenue/Avoided Costs:

(A) Recycling Revenue:

HRM receives revenue from the sale of recyclable materials. Assuming that 80% of the 6,218 tonnes is diverted = 4,974 tonnes, and that 50% are recyclables which have a net market value of \$70/Tonne revenue for the HRM (\$70.00/tonne x 2,487 tonnes), equates to \$174,090 per year.

(B) RRFB Diversion Credit Revenue:

For every tonne of waste diverted from the Otter Lake landfill, HRM receives revenue in the form of Diversion Credits. The present value is \$22/tonne. Therefore, \$22/tonnes x 4,974 tonnes = \$109,428 additional diversion credit revenue for HRM each year.

(C) Avoided Costs - Landfill Savings - Operating and Capital

Operating:

A reduction in waste at the Otter Lake landfill benefits HRM in avoided operating costs. Avoided costs are specified in the contract in a band of 3,000 tonne increments.

In 2005/06, HRM generated 165,350 tonnes of waste, comprised of 70,349 tonnes residential, and 95,001 tonnes commercial, received at the Otter Lake Facilities. For every 3,000 tonne increment, the cost to HRM is an additional \$113,000. Reducing the bag limit has the potential to divert at least 4,974 tonnes from the Otter Lake Facilities, realizing \$113,000 in avoided costs for HRM yearly.

(D) Capital & Capacity Demand at Other Lake:

Capital costs are avoided at the Otter Lake facilities in the form of deferred capital construction costs associated with the building of landfill cells.

In today's costs, HRM expends approximately \$15 million to construct a landfill cell that has the capacity for approximately 420,000 tonnes of waste. At the current rate of waste generation, a new cell is required every 3 years.

The 4,974 tonnes diverted away from the Otter Lake Facilities yearly, represents 3.5% of the capacity of a cell. Over the remaining design life of the landfill: 17 years x 3.5% = 7 months deferred capital construction and closure of cell #9, combined construction and closure costs of cell #9 at \$32.4 million x 4.5% carrying charges, equals savings of \$1,462,500 (\$86,029/yr). (As the avoided capital costs are not realized for 17 years, they cannot be included in this analysis.)

Annually, total refuse received, processed and disposed at the Otter Lake landfill, has increased on average of 2%. In 05/06, in excess of 165,000 tonnes of refuse was received at Otter Lake. A 2% increase annually will result in a demand for additional receiving and processing capacity.

The current contract with MIRROR NS, which expires in March 2010, guarantees the management of up to 177,555 tonnes, which at the current annual growth rate, would occur in 09/10. It is to be determined if an additional capital investment (i.e. expansion of the FEP tip floor or a third processing line) will be required, once the tonnage exceeds 177,555 tonnes annually.

A reduction of 4,974 tonnes annually, through a reduced refuse bag limit, provides an opportunity to delay potential expensive capital investment at Otter Lake by at least several years, perhaps longer.

5.1.3 Costs - Compost and Recycling Processing:

Processing additional recyclables results in increased costs to HRM. Assuming 50% of 4,974 tonnes are recyclables diverted to the Materials Recovery Facility (MRF), the incremental operating cost is approximately \$96,993/year. For the composting facilities, initially for 07/08, the addition of 3,000 tonnes annually will not result in additional processing costs, as this 3,000 tonnes can be accommodated within the 20,000 tonnes/year "put" defined in both contracts.

5.1.4 Collection:

It is not anticipated that the shifting of materials from the refuse bag to the recycling and/or composting stream will result in any additional costs for residential collection, as there will be no net increase in the volume of materials collected.

5.1.5 Summary of Annual Costs/Savings:

Additional Revenue:

Recyclables	+ \$174,090
Diversion Credits	+ \$109,428

Avoided Cost:

Otter Lake Operating	+ \$113,000
Otter Lake Deferred Capital	+ \$ 86,029 (excluded)

Total Revenue/Avoided Costs	\$396,518
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Additional Processing Costs:

Recycling Facility	- \$96,993
Compost Facilities	-\$ 0 (Note: within 2 years, additional composting processing costs could occur when the 20,000 tonne put at both compost facilities is exceeded. At current per tonne processing rate, costs would be \$330,000/year)

Minus Education, Promotion and Compliance Program to communicate new limits - \$20,000

Net Savings/Yr (12 months) \$279,525 \$ 0 (future years)

Note: It is anticipated that the diversion of 4,974 tonnes would not be achieved until 18 months after the changes in bag/can limit.

5.1.6 Environmental & Societal Benefits:

From USEPA Data, diverting 4,947 tonnes away from landfill equates to the following:

- 6,121 megawatt electricity saved/yr;
- 34,706 trees saved/year;
- 58,830,000 litres wastewater not produced/year; and
- 61,215 kg. reduction in air emissions/yr.

5.2 Risks:

Potential risks could include:

- Public opposition to a perceived decrease in service levels;
- Illegal dumping;
- Increase in incidents of bags left at the curb and demands for By-Law Enforcement

5.2.1 Public Opposition:

Data from the public opinion survey indicates that 14% of residents have reported placing more than 6 bags of refuse out for collection, while actual curbside monitoring reveals that up to 21% of residents place more than 6 bags of refuse curbside. Therefore, between 79% and 86% of residents will not be affected by a change in the policy to a new limit of 6 bags of refuse biweekly.

Residents who will most strongly oppose a 6 bag/can limit, are those who are not recycling or composting regularly or not at all - as legally required by the HRM By-Law S-600 and the N.S. Solid Waste/Resource Management Regulations. A change in policy or By-Law will not impact the majority of residents who currently generate 6 bags/cans of refuse or less (the average is 3.5 bags/HH collection cycle).

Four principles of the HRM citizen's based strategy align and are consistent with a policy change to a 6 bag limit for refuse, which include:

- 1) Stewardship - We manage the materials we generate;

- 2) Success is Based on Separating Materials at Source;
- 3) The Waste/Resource Management System will Feature Citizen Involvement;
- and
- 4) Achieved Diversion Will be a Key Measure of Success.

5.2.2 Experiences of Other Municipalities

The Valley Region, containing 13 municipal units, is one example where a reduction in refuse bags was successfully implemented. The Valley implemented a 4 bag limit for refuse for biweekly collection, jointly with the introduction of the green cart composting program. Previously, the bag limit for refuse was 4 bags every week. Excess waste is not collected and is the responsibility of residents to drop off at the waste management centres in Lawrencetown or Kentville.

In the Valley Region, bulky items (fridge, stove, furniture, etc.) are not collected curbside every two weeks. The current HRM residential collection policy, of the collection of one large item (i.e. stove, washer, dryer, sofa, bed, etc.) and up to 5 bundles of C&D material (included in the proposed six (6) bag/can or item limit) at residential properties biweekly, would continue. Other jurisdictions in NS do not provide biweekly collection of large items. The Valley has not made any change in their 4 bag limit since the introduction in 1999. Other municipalities, such as the District of Lunenburg, have similar experience as the Valley.

Currently, in HRM there is no correlation between the amount of refuse generated and residential property taxes. There is no economic incentive to reduce, recycle or compost. A lower bag limit of 6, supported by public education, monitoring and enforcement, has been proven effective in other NS municipalities. Table 4 identifies HRM's residential waste disposal rate, along with other NS municipal units and the refuse bag limits.

Table 4

Municipality	Disposal Rates - 2005	Bag Limits/Tags
HRM	530 Kg/HH/Yr	10 Bags - No Tags
Valley	430 Kg/HH/Yr	4 Bags - No Tags
Colchester	330 Kg/HH/Yr	6 Bags - No Tags

HRM has the highest residential waste disposal rate in Nova Scotia. The Valley Waste Regional Management Authority's 4 bag/can limit and Colchester's 6 bag limit, have reported lower rates of disposal than HRM.

5.2.3 Illegal Dumping

Other municipalities in NS and across Canada, have reported that they did not experience an increase in illegal dumping following a reduction in the bag limit for refuse. Illegal dumping is a systemic problem, often inter-generational, and occurs where there are no or low disposal fees for residential waste, and/or where the municipality collects a wide range of materials at residential properties, similar to the HRM.

Other jurisdictions, such as the Valley, have actioned enforcement for illegal dumping. Where dumping of household garbage has occurred, the owner has been identified by inspecting the material (bills, letter, etc). The Valley Region has a dedicated by-law officer that is resourced to investigate and prosecute illegal dumping cases. The Valley Region has a record of successful prosecutions, however, Judges' decisions on award of costs have, to date, not covered the full clean-up costs.

For HRM to combat the practice of illegal dumping, a separate strategy, supported by resources, including a dedicated Enforcement Officer, would be required. Illegal dumping, as shown by the experiences of other municipalities, is not a result of changes to refuse bag limits.

5.3.1 Education/Monitoring/Compliance

A reduction in the bag limit for refuse will require resources for a NEW public education campaign, for a period of approximately three months. The public education campaign would commence in advance of a policy change and would consist of a minimum of:

- Notification in HRM Naturally Green Newsletter, distributed to all households in HRM;
- Eastlink advertising;
- HRM SWR website update;
- Newspaper ads, if required; and
- Corporate Call Centre 490-4000.

SWR successfully delivered the major public education campaign in 1998/99, which included changes to collection frequency (weekly to biweekly), eligibility of properties, and the introduction of the green cart program. In comparison to the major systematic changes in 1998/99, which impacted the entire population, a change of the bag/can limit (from 10 to 6) will impact only those residents who are not participating in the green cart or blue bag and paper recycling programs. The magnitude of the proposed bag/can limit change is moderate in context of the 1998/99 campaign. However, an enhanced education and communication campaign, valued at \$20,000 would be a no net cost for HRM.

5.3.2 Larger Families - Personal Assistance Program:

None of the municipalities in NS with a six (6) bag/can limit or less, have experienced an issue respecting larger families being non compliant. Six (6) bags/cans, each .5m x 1m, to a maximum of 25kg, as specified in the By-Law, totals 125kg (275 pounds) or equivalent to the volume of a trunk of a small car, biweekly. One bulky item (i.e. furniture/appliance) would continue to be collected biweekly.

Many residents currently do not fill to capacity the standard refuse bag, often leaving the top 1/3 of the bag empty. Statistics Canada indicates that 2,300 households (1.8%) in HRM have 6 or more family members. Testimonials from families with 6 members, advise that by recycling and composting, they rarely put out 3 bags of refuse biweekly.

Larger families who regularly recycle and compost, will not be affected by the changes in refuse bag/can limit.

Recognizing that larger families may need support, staff will provide a personal assistance program. The program would consist of residents being advised to call the HRM Corporate Call Centre (490-4000) line to request the receipt of educational material. Should a resident desire additional assistance, they will be transferred to the Solid Waste Resources department, where staff will advise how to maximize recycling and composting; and, if requested, will arrange personal home visitation. This personal assistance program for larger families, will be promoted in the June edition of the Naturally Green newsletter, on the HRM website and through the Corporate Call Centre.

6.0 Options with a Reduced Bag Limit

6.1 Option #1: 6 Bag/Can Limit with Seasonal Fall/Spring 10 Bag Limit:

From weigh scale data at Otter Lake, the peak weekly tonnage from residential waste is in the Spring and early Fall. During these two weeks (one week in Spring, one week in Fall), the 6 bag/can limit may be a challenge for some residents, compared to the remainder of the year. An option would be an increase to a 10 bag/can limit for one week in May and one week in October. Those weeks with a 10 bag/can limit would be promoted in the Naturally Green Newsletter, HRM website as well as the annual Corporate Calendar.

6.2 Option #2: User Pay - Tags for Excess Bags:

Numerous municipalities in Canada and the USA, have implemented either a full or partial user pay system, i.e. utility approach for solid waste/resource services. In each case a low bag limit (approximately 3 every two weeks), or a smaller receptacle for refuse is provided within the general tax rate. Residents pay a fee for the disposal of additional bags or a larger container for refuse.

For bags, the fee is in the form of a tag which is purchased by the resident if/when required. Tags are purchased at local retail outlets, municipal offices or online through municipal website. The additional cost for tags or a larger refuse container is an incentive for residents to reduce their waste and recycle and compost more.

Tags are often used in other jurisdictions with a lower bag limit (i.e. usually 3 or less). The tags enable residents to place additional bags curbside, for a small fee (\$1.50 to \$3.00 per bag).

The following table outlines an example of the user pay programs of two municipalities in Ontario with reduced bag/can limits for refuse. More than 200 municipalities across Canada and the USA, have adopted a tag system or variable can rate approach.

Table 5

	Markham, ON	Region of Peel, ON
Population	268,500	1,000,000
Refuse Collection	3 bags biweekly (over 3 bags requires tag)	3 bags weekly* (over 3 bags requires tag)
Recyclables	Weekly	Weekly
Organics	Weekly	Curbside organics collection is not region wide
Change in garbage after program was implemented	-8%	-4%
Diversion Rate	65%	45% (no full organics collection program)
Cost of tags	Free - 12 free tags each year	\$1/bag (329,000 purchased in 2004)
Options for additional waste	Drop off at City of Toronto transfer stations at cost to resident	No limit to number of tags able to be used
Average set out rate	3/bags/biweekly	1.6 bags/week

***Note:** Region of Peel does not yet have full scale curbside organics collection implemented throughout the Region.

In both examples, a very low bag limit in conjunction with tags appears to have reduced residential refuse.

6.3 Implementation of Reduced Bag Limit - Timing

From weigh scale records at Otter Lake facility, February, August and December are the lowest months for residential refuse tonnage. The implementation of a six (6) bag/can limit biweekly for residential refuse requires amendment to By-Law S-600, typically a 2 to 3 month process. Accordingly, an opportune time to reduce the bag limit for residential refuse is August 2007, supported with an enhanced education and communication campaign.

7.0 General comments

There is good public support for a reduction in the bag/can limit for refuse. A behavioural change will be required for those residents who, despite eight years of public education, are still not recycling or composting. Other municipalities in N.S. with the green cart system have a lower refuse bag limit than HRM.

8.0 Conclusion & Recommendation

Based upon the public survey and data analysis, reducing the refuse bag/can limit of ten (10) to six (6) has the potential to achieve an increase in recycling and composting , at no net cost for the HRM. Reducing the residential bag/can limit to 6, without tags, will:

- bring HRM in line with other municipalities;
- finally engage those residents who are not recycling and composting; and
- contribute to achieving the minimum 60% diversion target set by Regional Council in 1996.

Staff will complete an assessment, 18 months after the implementation of a 6 bag/can limit, to determine the requirement of a further reduction in the bag/can limit, in conjunction with a tag program for additional bags.

Submitted by	Shannon Betts Waste Resource Analyst
	Andrew Carter Collection & Processing Officer
	Fred Wendt, Waste Resource Analyst
Reviewed by	Laurie Lewis Diversion Planning Coordinator
Approved by	Jim Bauld, Manager

**Halifax Regional Municipality - Solid Waste Resources
Next Steps - Round Table Findings “Enhancing Diversion”
Issues Review Paper # 1B/4A**

ISSUE NAME: Clear Bags for Refuse

OBJECTIVE(S):

- (1) To assess the diversion potential and implications of clear bags only for residential refuse; and
- (2) To assess the diversion potential and implications of clear bags only for commercial refuse.

BACKGROUND:

HRM's Solid Waste/Resources By-Law requires residents to source separate - i.e. place recyclable containers in the blue bags, paper in a grocery bag, bundle cardboard and organics in the green cart. Clear bags may currently be used for recyclable paper or leaf and yard waste. Green or black bags or cans are typically used for refuse. Bags and containers acceptable for municipal collection are defined (specifications and requirements) in By-Law S-600, Section (7), Regulation Containers for Municipal Collection.

The commercial sector is governed by Section 13 of By-Law S-600 where containment of materials in separate containers is required for waste, organics or recyclables. Black/green bags are typically used for refuse at commercial properties - placed inside a commercial waste bin.

A waste characterization study conducted at the Otter Lake Facilities in 2003/04, revealed there is still a large amount (43%) of food waste and recyclable paper products in residential refuse, while greater quantities (56%) of recyclables and organics remain in the commercial waste stream¹.

DISCUSSION

Experience in other jurisdictions:

Thirteen (13) of fifty-five (55) municipalities in Nova Scotia have introduced clear bags for refuse, for both the residential and commercial sector. These same municipalities simultaneously introduced curbside organics collection or other diversion programs. In

¹ SNC Lavalin, Waste Characterization study for Halifax Regional Municipality, 2003/04
(Samples from 15 loads of residential and ICI waste was audited to CCME protocols)

all 13 municipalities, the residential (curbside collection) bag limit is less than 6 bags/cans for refuse. HRM's limit is 10 bags/cans refuse biweekly.

In reviewing the diversion reported by the 13 municipalities, it is noted that significant diversion was achieved with the simultaneous introduction of an organic green cart program, or a new backyard composting program. A similar spike in diversion occurred in HRM following the 1999 introduction of curbside organics collection. Organics is typically 30% of the materials diverted through a separate organics collection program.

Waste diversion increased by 31% in West Hants, when clear refuse bags were simultaneously introduced with green cart collection services. Richmond County is another example where clear bags were implemented, along with distribution of backyard composters (no green cart collection).

HRM has a mature (8 years old) green cart system. Both West Hants' and Richmond County's baseline diversion rate would have been relatively low, as compared to HRM's current diversion rate. Consequently, a significant increase in diversion rates was reported in Richmond and West Hants with the adoption of clear bags for refuse, at the same time as a "new organics" program.

(A) Clear Bags - Potential Issues:

Mandatory use of clear bags raises a number of issues for both residential and commercial sectors including:

1. Costs of Clear Bags;
2. Privacy of householders' information;
3. Monitoring & Enforcement;
4. Recycled content and supply of clear bags;
5. Scavenging; and
6. Clear Concise Messaging.

1. Costs of Using Clear Bags Versus Opaque Bags:

Collectively, each year HRM residents set out for curbside collection nearly 11 million refuse bags. At a price of approximately 10 cents each, residents spend a total of over \$1 million per year on refuse bags. Residents also use an estimated 48 million small plastic "kitchen catchers" or waste basket liners a year. Many householders use grocery bags for refuse (from locations inside the home) to line waste baskets, with some residents purchasing small bags at a price range of 5 to 12 cents each.

Clear bags are more expensive than regular refuse bags. A survey of HRM stores indicates that the current price of clear bags is at least 20 cents each, double the cost of regular garbage bags. Although the cost differential may be reduced as demand for clear bags increases, this cost is estimated to be an additional \$770,000 annually, or 22 cents/House Hold/biweekly.

2. Privacy of Householders' Information:

One issue arising from the use of clear refuse bags is the potential loss of privacy, as the items in the bag may be visible to the public. While some residents may place refuse in a clear bag then inside a refuse can for security, not all will do so. To eliminate the potential for identity theft, HRM residents would need to be more vigilant in shredding receipts and other documents. The privacy issue has been addressed in other municipalities by allowing residents to use one opaque or grocery bag inside a clear bag (which also can contain personal hygiene products). With proper measures, identity theft has not been an issue in other municipalities with a clear bag policy for refuse.

3. Monitoring & Enforcement:

The purpose of clear refuse bags is to identify materials which should not be in the refuse stream. By identifying these materials, the generator can be contacted to ensure that they source-separate their recyclables and organics for collection. A mandatory clear bag initiative for the residential sector would require additional resources to conduct curbside monitoring and enforcement. To date, HRM has not inspected refuse bags placed at the curb to determine whether a householder is source separating recyclables and compostable materials. It is anticipated that while householders adjust their behaviour, an increase in non compliance will be experienced, which will require education and assistance by collection contractors, SWR staff and By-Law Enforcement staff. It is not known if the additional time expended by the collector conducting curbside inspections will impact either the collection costs, collection completion times, or both.

For commercial waste, between 100 to 250 trucks unload at Otter Lake daily. Commercial waste is inspected at the front end processing facility tipping floor at Otter Lake. Clear bags would allow for better viewing of bag contents. The high volume of waste received at Otter Lake (90,000 tonnes in 05/06) generated by the ICI sector, precludes every load/bag from being inspected. Currently, the obvious non compliant loads are inspected for unacceptable materials. MIRROR is not responsible and doesn't have the resources to conduct inspections of all loads arriving in clear bags. For an enhanced level of inspections and compliance, HRM staff would be required to take on this role, requiring at least one FTE. The position would be independent of MIRROR NS and the hauling industry.

One challenge faced by other municipalities that have introduced clear bags for the commercial sector, is the ability to determine the responsible party when loads of commercial material arrive that continue to contain opaque bags. Each commercial load is generated at numerous properties from specific owners and/or property managers.

4. Recycled Content and Supply of Clear Bags:

Most retail outlets currently carry clear bags, in addition to opaque garbage bags. Bag manufacturers have advised there would be no difficulty supplying the HRM market with clear bags, however, they require six months notification to shift production and delivery to HRM retail outlets.

Coloured opaque refuse bags for the consumer market contain about 20-30% recycled content. By contrast, clear bags usually contain no more than 5% recycled content. This is because much of the supply for recycled product comes from coloured plastic, which can only be used to manufacture other opaque bags. HRM's impact on the demand for clear bags would be minuscule across the North American market and therefore, would have very little effect on the demand for recycled opaque bags.

5 Scavenging

Unauthorized collection of refundable containers at the curbside (scavenging) results in the loss of revenue for HRM, littering when bags are broken open, and occasional interference with residential collection crews. While the scavenging of refundable containers is generally restricted to blue bags, clear refuse bags presents opportunities for scavengers to break open bags for refundables or other materials of value to scavengers.

In the case of commercial waste, refuse is placed in bags in large secure commercial containers. The contents are only viewed upon delivery to the Otter Lake Waste Processing and Disposal Facility, where scavenging is not permitted.

6. Clear Concise Messaging

Clear bags have been permitted for leaf and yard waste and for recyclables, as an alternative to the blue bag since 1999. The current colour of bags is a cue for the collector - black or green bags indicates materials for refuse collection. If clear bags are to be used for refuse, an enhanced communications campaign would be required to inform residents of the change in HRM's policy. The impact on contractors collecting clear bags (potentially used for all streams), requires further review.

For clear bags to be mandatory for the commercial sector, staff would communicate to all commercial haulers via a notice in monthly billings, notices distributed at the Otter Lake facility and other avenues, including the Naturally Green newsletter. The majority of commercial haulers have an account with HRM, which provides an opportunity to advise of the requirement for clear bags before a clear bag policy change is instituted. As noted earlier, with additional SWR personnel, independent inspections would occur at Otter Lake with communication and follow up to generators. A warning period would apply, supported by a communications campaign, prior to rejection for improper preparation.

(B) Clear Bags Potential Benefits:

In other municipalities, clear bags were introduced simultaneously with a lower bag limit and/or green carts for organics. Therefore, for HRM with a mature green cart program, the potential increase in diversion with mandatory clear bags for residential refuse collection, requires a detailed analysis/case study to quantify/verify the true diversion potential.

The waste audits revealed that the commercial sector has the greatest potential. Of the total 90,000 tonnes deposited at Otter Lake, 56% of materials in the black bags is recyclable or compostable.

CONCLUSION/RECOMMENDATION & BUDGET IMPLICATIONS

Clear Bag - Residential

There are a number of potential issues associated with a mandatory clear bag program for residential collection service. Further review and analysis is required before implementation of clear bags for all residential properties. A Pilot Program provides an opportunity to document and assess the issues, and to verify any change in HRM's diversion rate.

Funding has been secured from the RRFB NS for 50% of costs, to a maximum of \$32,650.00 for a Clear Residential Bag Pilot Program. The other 50% (\$32,650.00) has been identified for the 07/08 operating budget approval process.

Clear Bag - Commercial

Additional research is required before a change in policy requiring clear bags for the commercial sector. There are a number of potential issues associated with a mandatory clear bag program for the commercial sector. Staff is not aware of any jurisdiction, with as large a commercial base as HRM, where clear bags have been implemented.

An additional HRM FTE at the Otter Lake facility to undertake monitoring and follow-up, is required for mandatory clear bags for the commercial sector. As documented by the waste audits, the commercial sector has more potential to increase diversion. An additional FTE is not recommended at this time.

Alternatives:

There are no alternatives as a Clear Residential Bag Pilot Program, 50% funded by the RRFB, is an excellent opportunity to measure the impact upon HRM's diversion rate. Additional research is required as to the efficacy of clear bags for the commercial sector.

**Halifax Regional Municipality - Solid Waste Resources
Next Steps - Round Table Findings “Enhancing Diversion”
Issues Review Paper # 2A**

Issue Name: Enhanced Enforcement of By-Law S-600

1.0 Objective:

Identify initiatives to further diversion through policy and by-law changes respecting enforcement of Halifax Regional Municipality (HRM) By-Law S-600 - *Solid Waste Resource Collection and Disposal By-Law*.

2.0 Background:

HRM has an internationally recognized and award winning solid waste resource management system. As specified in the HRM By-Law S-600 and the Provincial Regulations, blue bag recyclables, fibre recyclables and organic material are banned from landfill disposal. Accordingly, a source separation program for these materials is required at all residential and industrial, commercial and institutional (ICI) properties in HRM.

An audit of waste received at the Otter Lake Facilities has determined that significant tonnage of recyclables and organics are hidden in the residential waste stream as follows:

<u>Potentially Divertable Material</u>	<u>Tonnage/Year</u>
Fiber	- 11,539
Polycoat	- 325
Glass	- 672
Metals	- 936
Plastic	- 6,032
Organics	- 10,016
Haz-Material	- 285

Total Divertable - 29,805 tonnes

The total residential tonnage received for the same time period was 58,750 tonnes. This indicates that approximately 50% of the residential waste stream has the potential to be recovered, without changing those materials included in the HRM's recycling and/or composting programs.

2.1 Residential Compliance Practice:

Currently, residential monitoring is completed by the collection contractors who applies a rejection sticker for refuse materials over the ten (10) bag limit and for materials improperly prepared for collection. The stickers identify why materials were

not collected and the proper preparation requirements for collection. The resident is required to take the material(s) back in, correct the problem, and properly place the same out on the next collection day.

Provisions exist in By-Law S-600 where residential non-compliance could result in an issuance of a Summary Offence Ticket (SOT), including where residents are not participating in source-separation programs. No SOT's have been issued for residential non-compliance in the recycling and composting programs. To date, the focus has been on education (including rejection of improperly prepared material or material over the collection (bag/can) limits).

2.2 Current ICI Compliance Practice:

The following enforcement approach is used at ICI properties:

- Solid Waste Resources staff visit properties that have been reported noncompliant;
- Upon inspection, where noncompliance is confirmed, a warning in the form of a Notice is sent to the property owner and/or recognized agent outlining the noncompliance issue. A follow-up inspection is carried out after 14 days;
- Upon re-inspection, at properties that remain noncompliant, a SOT is issued in the amount of \$215.00;
- When dealing with repeat offenders, consideration is given to proceed with prosecution, in addition to the enforcement response outlined above. Under long form prosecution, the maximum fine is \$5,000.00 per offence.

One full-time staff member, the Solid Waste/Resources Diversion Planning Officer, is responsible for effecting compliance of By-Law S-600, to achieve source separation at all ICI properties.

2.3 Current Monitoring at the Otter Lake Facilities:

The facility operator (MIRROR NS) at the Otter Lake Waste Management Facilities, visually inspect loads of ICI waste. Loads that contain unacceptable materials are issued a Waste Discrepancy Report (WDR). A copy of the WDR is sent to the HRM Diversion Planning Officer for follow-up (246 WDRs were issued in the 05/06 fiscal year). The generator and hauler of the ICI waste are contacted and in most cases, the generator is visited to confirm the existence of a source-separation system. Repeat offenders are subject to a rejection at the facility.

HRM partners with Nova Scotia Environment and Labour (NSEL) twice each year for joint inspections of ICI loads at the Otter Lake facility. More thorough inspections of loads are completed with appropriate follow-up procedures.

2.4 Other Current Enforcement:

By-Law Enforcement Officers, under Police Services, are responsible for enforcing other sections of By-Law S-600. This includes sections relevant to placement of materials, collection times, placing waste from non eligible premises, etc.

2.5 Current Education on Enforcement:

Enforcement initiatives are regularly promoted through advertisements, Naturally Green, and public events. SWR Collection and Processing Officers regularly hold workshops for the contractors responsible for residential collection services, where an emphasis is placed on curbside education and sticker activities. The SWR Collection and Processing Officers (2) also regularly hold workshops for the HRM Corporate Call Centre staff, to keep current on what is required at residential and ICI properties in HRM. The Diversion Planning Officer provides MIRROR's staff with advice on methods to improve inspections of ICI loads at the Otter Lake facility.

3.0 Discussion

3.1 Potential Increased Residential Diversion Through Curbside Inspections:

Increased monitoring and curbside inspections at residential properties will identify residents who are not participating in the green cart and recycling programs. Once identified, a warning could be issued before issuance of a SOT to the property owner for non-compliance. This approach would require either additional HRM enforcement staff, or the residential collector to document each violation, and possibly have the authority to issue SOT's. Staff could not locate any municipality where the residential collector has this responsibility.

3.2 Potential ICI Diversion Through Enhanced Enforcement:

The Diversion Planning Officer currently administers all reports of ICI properties that are not source-separating. Expanding enforcement requirements for the Diversion Planning Officer is not an option as the current workload is being maximized. Re-allocation of some duties that currently fall under the Diversion Planning Officer, with other SWR staff, is not a viable option to effectively enhance enforcement initiatives.

Since the creation of the Diversion Planning Officer position in 2004:

- 1,658 ICI properties has been inspected;
- 526 notices issued to non-compliant properties;
- 85% compliance rate, after issuance of a notice; and
- 31 SOT's were issued, two were challenged but upheld, with one long form successful prosecution (fine of \$5,000).

Increasing the number of officers in SWR to conduct enhanced enforcement provides an opportunity to increase inspections and compliance.

3.2.2 Amend By-Law S-600:

An opportunity exists to amend By-Law S-600 to strengthen HRM's diversion programs. Amending By-Law S-600 to require waste haulers to provide services that support our waste management strategy is one way to increase waste diversion.

Two specific opportunities to amend By-Law S-600 are:

- (A) The first is to address situations where ICI haulers mix source separated materials (i.e. separated recyclables and/or organics) in same compartment of the collection vehicle with refuse. Currently, the By-Law does not address this particular situation with ICI waste haulers.
- (B) The second addresses communication and proper bin utilization to support proper separation. HRM staff have encountered ICI haulers utilizing green toter bins (organic green compostainers) for garbage and blue recycling bins (toters on wheels) also used for garbage. There is currently no requirement for the commercial sector to use proper "color" bins for organics or recyclables. Signage is also not required, however, the By-Law does specify lettering, text, and size requirements for signage on containers for waste. Many private commercial waste haulers are using containers for organics and recyclables without signage and are not concerned about the bin color or size. This leads to confusion for the property owner/tenant and is counter productive to waste diversion.

The hauler (owner of the commercial bins) is not obligated to provide their clients with information on the requirements for source separation. The client, in many cases, is only provided one bin for garbage, resulting in the property being in violation of By-Law S-600. Many private contracts with haulers do not include information on the requirements for separate bins for organics and recyclables, as required by municipal law. This causes problems for HRM staff when following up with property owners who frequently state that they are not aware of the requirements for source separation and have been provided one bin by their hauler, assuming all is in order, "as required by By-Law S-600."

An amendment to By-Law S-600 could include the requirement for proper bins for source separation and labeling of organics and recycling receptacles, as well as requiring haulers to provide clients with information on source separation receptacles. The requirement for proper bins and labeling is required in other jurisdictions for commercial garbage and recycling collection, specifically in Toronto.

4.0 Resource Requirements

4.1 Residential Compliance:

Additional costs for an enhanced level of curbside inspections by the residential collector and/or SWR staff, requires resources not currently contained within the SWR operating budget.

4.2 ICI Compliance:

Statistics for the 05/06 fiscal year are as follows:

- ICI property inspections: 903
- Number of non-compliant ICI properties that were issued a warning Notice: 296
- Number of apartment buildings contacted for follow-up: 268 (13,754 units)
- Number of SOTs Issued: 22
- Compliance Rate: 85%

A second Diversion Planning Officer has the potential to double the number of properties inspected annually, to achieve compliance with By-Law S-600.

5.0 Recommendations:

1. Amendment to By-Law S-600 requiring proper bins and signage for organic and recycling containers
2. Amendment to By-Law S-600 prohibiting the mixing of source separated materials, by the ICI hauler, from ICI properties (i.e. recyclables and organics) in the same collection vehicle compartment as refuse.
3. Subject to the impact upon diversion of the proposed amendments to By-Law S-600 for the ICI sector, staff will complete an assessment of the benefits of an additional Diversion Planning officer position, commencing in the spring of 2009.

6.0 Conclusion:

Increasing SWR enforcement staff and amending By-Law S-600, will achieve higher compliance by both the residential and ICI sector, thereby diverting more materials from the Otter Lake Landfill.

Submitted by: Grant McKenzie, Collection Officer
Bryan Hartlin, Diversion Planning Officer

Reviewed by: Laurie Lewis, Diversion Planning Coordinator

Approved by: Jim Bauld, Manager

**Halifax Regional Municipality - Solid Waste Resources
Next Steps - Round Table Findings “Enhancing Diversion”
Issues Review Paper # 2B**

Issue Name: Enhance Accessibility at Solid Waste/Resource Facilities

Objective:

Divert more material from the Otter Lake Waste Management Facility by enhancing the accessibility of other facilities, by extending hours and/or payment options at the Material Recovery Facility (MRF) and composting facilities (i.e. weekends, longer hours, cash payments, debit/credit cards) and make the HHW program more accessible and convenient for all residents.

Background:

Presently, there are seven facilities that are either owned, licensed or under contract with HRM that accept materials which are not acceptable at the Otter Lake Waste Management Facility. All of these facilities are located within suburban HRM. As per Table 1, the Otter Lake Waste Processing and Disposal Facility hours of operation offer the most generous access, while the MRF, composting, HHW and C&D facilities have fewer hours and days of operation.

Table 1

Facility	Mon - Fri	Saturday	Sunday	Payment Options
Otter Lake	7:00 to 7:00	10:00 to 4:00	1:00 to 5:00 (residential only)	Cash or on Account
Materials Recovery Facility	7:30 to 6:00	Not Open	Not Open	No Fee
Two Compost Facilities	8:00 to 6:00	Not Open	Not Open	On Account, no Cash, Debit or Credit
Three Construction & Demolition Facilities	7:00 to 6:00	8:00 to 3:00	Not Open	Cash, Debit / Credit or on Account (No \$ to HRM)
Household Hazardous Waste Depot	Not Open	9:00 to 4:00 (most Saturdays)	Not Open	No Fee Residential only

In addition to the above listed facilities, there is a HRM Refuse Collection Depot in Middle Musquodoboit and Sheet Harbour, where small businesses and residents along the Eastern Shore can drop off waste materials without a fee. Throughout HRM there are 23 Enviro Depots where deposit bearing recyclable containers and paint are accepted. In addition, tire retailers accept automotive tires, garages accept used motor oil and local dealers accept scrap metal.

Discussion:

As outlined in Table 1, there are fewer receiving hours at the compost, recycling & C&D facilities. It is noted that there are significantly fewer customers (trucks and frequency) using these other facilities, than at the Otter Lake facility. This issue paper assesses the potential for increasing waste diversion by enhancing the accessibility of other facilities.

To determine whether the offer of greater convenience in enhanced hours of these facilities would be of benefit in diversion, the top ten (by tonnage) commercial waste haulers in HRM were surveyed. Each was asked if enhancing the accessibility of these facilities would increase the amount of material diverted from the landfill. Their response was “No, that they are able to service their customers within the current time frames and payment options, however, enhanced access would be more convenient for the general public”.

The general public and businesses that dispose of their own material (i.e. self haulers), potentially may benefit the most from additional receiving hours and payment options. Based on a trial at the MRF in 2004, an average of ten cars (small pick up loads of recyclables) were received on a Saturday, yielding less than 1 tonne of material/day.

The expansion of the receiving hours at the compost, recycling facility and HHW Depot to match Otter Lake would require re-negotiation of contracts. Based upon the current contract prices, the cost implications to enhance operating hours by facility are outlined in Table 2.

Table 2:

Facility Operating Costs			
Facility	Hourly Cost (Based on current contract or previous additional hourly charges)	Additional Hours per Year to Correspond with Landfill	Projected Yearly Cost
MRF	\$170/hr	910 hours	\$154,700
Compost	\$225/hr	1,040 hours	\$234,000
HHW	\$210/hr	3,340 hours	\$701,400

To change the hours of operations, contracts would either need to be reopened or negotiated at renewal. The compost facilities are presently not contracted or programmed to receive material from anyone not on account with HRM. Changes to these payment options and cost implications are not known. The contract for the HHW program includes the operation of a mobile (one day) HHW event, concurrently with the operation of the permanent HHW depot.

Recommendations and Conclusions

Increased operating hours and payment options at the MRF and the two compost facilities, would be more convenient and may have a minor increase in waste diversion. The cost for additional receiving hours is cost prohibitive. Industry has advised that expanded receiving hours is not required. It is recommend that the status quo remain for the MRF and the two compost facilities. Staff will seek to increase the number of mobile HHW events (currently 3 annually), and revisit the other contracts as they come up for renewal.

Prepared by: Clayton Pemberton, Operations Technician
Reviewed by: Laurie Lewis, Diversion Planning Coordinator
Approved by: Jim Bauld, Manager

**Halifax Regional Municipality - Solid Waste Resources
Next Steps - Round Table Findings - “Enhancing Diversion”
Issues Review Paper # 3A**

Issue Name: Construction and Demolition (C&D) debris diversion through the building permit process.

Objective:

To enhance construction and demolition diversion through notification and communications in the building permit process.

Background:

HRM's C&D License By-Law (L-200) requires designated C&D material to be processed at HRM licensed private C&D facilities. The purpose of the By-Law is to maximize diversion of C&D material, thereby minimizing disposal.

Presently, when HRM receives an application for a demolition permit (only), the application includes a declaration provision where the applicant is required to identify which licensed C&D transfer or processing facility the demolition material will be delivered to. This requirement creates awareness among contractors regarding the proper management of C&D material and provides the opportunity to ensure it is received at an HRM licensed C&D facility. This declaration is currently not contained in the HRM permit application process for renovations or new building construction.

Discussion:

As all construction activity (i.e. new construction, renovation and demolition) creates C&D debris, there is an opportunity to maximize diversion of C&D material through the building permit/renovation approval process. This can be accomplished by including declarations of HRM approved C&D facilities for renovation and new construction permit applications.

There is also opportunity to provide notification and educational information to the applicant about C&D diversion in the form of a brochure/factsheet, to be handed to the applicant at issuance of permit(s).

Solid Waste Resources (SWR) have approached HRM Community Development to identify opportunities for maximizing diversion of C&D material for all types of building

permit activity. We are awaiting inclusion of declaration on the renovation and new construction permits. SWR staff have developed and produced a factsheet targeted to the C&D industry, which is available for issuance with building permits.

In addition to C&D declarations for building activity, SWR has also liaised with Community Development to access the new development database, after issuance of building permits, prior to occupancy. This will enable SWR staff to be proactive with developers and/or owners to discuss requirements for source separation containers and proper management of waste/resources prior to commencement of occupancy.

Conclusion and Recommendation:

Partner with Community Development for the management of C&D materials for all permits, i.e. for new construction and renovation permit applications (in addition to demolition), supported by the distribution of educational literature.

Submitted by: Fred Wendt, Waste Resource Analyst
Reviewed by: Laurie Lewis, Diversion Planning Coordinator
Approved by: Jim Bauld, Manager

**Halifax Regional Municipality - Solid Waste Resources
Next Steps - Round Table Findings “Enhancing Diversion”
Issues Review Paper # 3B**

Issue Name: Integration of Stewardship from Generator to End-User

Objective

To identify opportunities to integrate stewardship from generator to end-user, i.e. Extended Producer Responsibility (EPR) programs.

Background

The N.S. Environment Act and Provincial Solid Waste Resource Management Regulations, empowers the Province to enter into stewardship arrangements with industry, to enact a surcharge or levy on products and packaging; and/or ban designated materials to increase diversion of materials from disposal. The lead agency for the Province to negotiate stewardship agreements is the Resource Recovery Fund Board (RRFB). The following are the eight stewardship initiatives currently operating in Nova Scotia:

1. Beverage Containers - Deposit/Refund system administered by RRFB at ENVIRO-DEPOTS.
2. Milk Container Recycling - Nova Scotia milk producers provide funding and in-kind advertisement to municipalities in Nova Scotia to recycle milk containers. This agreement also enables the dairy industry to address current and future packaging to fund container recycling.
3. Consumer Paint Product Stewardship Program - Nova Scotians can return leftover latex and oil-based paint to any of the 85 ENVIRO-DEPOTS™, 23 are located in the HRM.
4. Daily Newspaper Stewardship Agreement - Program to promote the recycling of newsprint with in-kind advertising.
5. Sharps - Program in partnership with the Pharmacy Association of NS for retrieval and disposal of residential syringes.
6. Telephone Directory Stewardship Agreement - Program to ensure directories are recyclable with in-kind advertising space.
7. Tires - Tires sold within the Province are diverted from disposal for reuse. An Environmental Fee of \$3.00 for all new passenger tires and \$9.00 for all new truck tires, funds the program.
8. Used Crankcase Oil - Retailers who sell motor oil must either accept used oil or provide a collection depot within 5 kilometers of their business. This requirement is mandated by the Provincial Used Oil Regulations and is administered by the Provincial Department of Environment and Labour (NSEL).

Discussion

Halifax Regional Municipality (HRM) has benefitted from the above noted stewardship programs in Nova Scotia. RRFB data shows that for the fiscal year of 2005/2006, HRM residents recycled 104,737,998 beverage containers, 153,511 litres of paint, and 82,347 tires. HRM does not have the jurisdiction to enact stewardship programs with industry. The Province has the authority to implement non-voluntary stewardship programs, or introduce fees on products that will support recovery and diversion of materials away from landfills.

Success/Failure Stories Elsewhere

Many countries around the world have implemented successful non-voluntary stewardships and extended producer responsibility programs for electronics, plastic bags, and other common disposable products. Western Canadian Provinces have also had success with oil container and filter stewardships.

Recommendations and Conclusion

HRM to seek support from UNSM for the Nova Scotia Department of Environment and Labour (NSEL) and RRFB Nova Scotia, to pursue new stewardship opportunities, focusing on priority items to include electronics, packaging, C&D materials and others as identified.

Prepared by : Bryan Hartlin & Fred Wend, SWR
Reviewed by: Laurie Lewis, Diversion Planning Coordinator
Approved by: J im Bauld, Manager

**Halifax Regional Municipality - Solid Waste Resources
Next Steps - Round Table Findings “Enhancing Diversion”
Issues Review Paper # 4B**

Issue Name: Standardized Training Program for Source Separation at ICI Properties

Objective:

To identify potential opportunities to integrate education of solid waste management regulations and practices in the curriculum of the trades sector training program in Halifax Regional Municipality, to further source separation education and compliance. The target audience are trades, including hospitality, food service, and property management.

Background:

The Nova Scotia Community College (NSCC) is a leading agency that provides training in the province. It has a history of successful partnerships with the private and public sectors. Often this partnership involves an agency entering the classroom and instructing students on a certain aspect of their training and providing a certificate to signify completion and comprehension of that trade.

An example of such a partnership is the Culinary Program at NSCC where the College partners with a government department, the Nova Scotia Department of Agriculture, to deliver the “Food Handling Course”. Food Safety Inspectors enter the classroom to provide information on regulatory requirements in the handling of food during the first week of all culinary programs at NSCC. Students become knowledgeable of the correct food handling procedures, and are provided education respecting requirement for compliance with Nova Scotia Food Safety Regulations.

Discussion:

Education is an important tool in enhancing diversion of any material. The lack of education and creation of bad habits is often to blame for improper source separation. Providing education in the trades/training school environment respecting the proper management of solid waste, including organics, recycling and construction and renovation materials, in accordance with Provincial and Municipal Regulations, will introduce students to best management practices. This can lead to source separation practices being part of their daily operations/routine when they enter the workforce.

Implementation of such a on HRM's solid waste/resources management requirements provides an opportunity to target specific business. Delivery of these sessions by HRM staff would ensure consistency and accuracy of the information provided.

Sessions would be arranged through consultation with the NSCC administration and could include topics on: regulatory requirements (Environment Act and By-Law S-600 and L-200), proper separation, bin placement, signage, and green procurement practices.

While some of Solid Waste Resources' (SWR) current C&E material would be of benefit to this program, a course booklet and certificate would have to be developed. Existing SWR staff could be used to develop the educational material.

Although those trained would be employed at a wide range of locations, it may be possible to keep a database of participants and follow up with them, one or two years in the future, to survey their progress and identify real time application of information learned in the training.

Recommendations and Conclusions:

It is recommended that HRM staff contact the NSCC to initiate discussion of possible opportunities to integrate solid waste/resource education and training for designated certification program for graduate students. Staff is prepared to develop training materials and host educational sessions.

Prepared by: Shannon Betts, Waste Resource Analyst
Reviewed by: Laurie Lewis, Diversion Planning Coordinator
Approved by: Jim Bauld, Manager