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INTEGRATED WASTE MANAGEMENT MASTER PLAN PHASE 1 CONSULTATION UPDATE AND TECHNICAL REPORT

The Environmental Services Committee recommends:

- 1. Receipt of presentation by Dave Gordon, Manager, Waste Management Program and Policy, Environmental Services, Peter Loukes, Director of Operations, Town of Markham, and Ilmar Simanovskis, Director, Public Works, Town of Aurora; and**
- 2. Adoption of the recommendation contained in the following report dated December 20, 2011, from the Commissioner of Environmental Services.**

1. RECOMMENDATION

It is recommended that:

1. The Regional Clerk circulate this report to the Clerks of the local municipalities and the Minister of the Environment.

2. PURPOSE

The purpose of this report is to update Council on the progress of the Integrated Waste Management Master Plan Study, including the public consultation elements for the study.

3. BACKGROUND

Comprehensive understanding of current baseline and lessons learned to date provides foundation for Master Plan

Master Plans outline the Region's long-term vision and infrastructure needs for waste management, water, wastewater and transportation. These long term plans are based on sustainability objectives which preserve and enhance the natural environment, economic vitality and healthy communities while providing safe, affordable and efficient servicing for the Region's residents and visitors.

The Integrated Waste Management Master Plan, also known as the SM4RT LIVING plan explores and develops leading edge integrated waste management solutions that will guide the future of waste management in the Region. The vision is for a comprehensive program that goes beyond traditional long-term strategies by presenting innovative,

integrated waste management and waste minimization solutions that meet the needs of the Region and the local municipalities.

This plan focuses on how people in the Region purchase goods and services, how waste is generated and disposed of, and encourages residents to think and act in sustainable ways. Emphasis is placed on developing new policies and programs that maximize waste reduction and reuse, along with strategies to maximize recycling and energy recovery. Solutions must meet sustainability principles that balance environmental, economic and social factors, be flexible enough to adapt to the rapidly changing environment and secure the Region's leadership role in waste management.

The Master Plan is being completed in three phases as follows:

Figure 1
Three Phases of the Integrated Waste Management Master Plan



Phase 1 – Where We Are

To better understand 'where you want to go', it is first important to have clear insight into 'where you are', including what programs are already in place, what others are doing in the industry and what potential changes are occurring that could impact the future. To develop this understanding, a detailed assessment was undertaken as follows:

- A Baseline Assessment which included the review of all aspects of the Regional and Local Municipal waste management system

- A Policy Review investigating existing, pending and potential future policies and programs that could impact waste management in York Region
- A Current and Innovative Practices Review investigating other communities around North America and the World, who have implemented and operated highly successful waste management programs.

For each of these tasks, a comprehensive report has been prepared and is summarized in the following sections. Please refer to *Attachment 1* for the Phase 1 Executive Summary and *Attachment 2* for a more graphical summary of outcomes to date. The detailed Baseline, Policy and Current and Innovative Practices reports are available on the SM4RT LIVING website at SM4RTLIVING.ca.

This phase was recently completed and is the subject of this report.

Phase 2 – Where We Want To Go

Now that the baseline has been established and the current situation is clearly understood, the process of developing the road map for where the Region could go in the future has been initiated. This phase includes development of long-term vision and goals and detailed waste management projections, as well as identification of opportunities for innovative program delivery and funding models. In addition, given the distribution of waste management roles and responsibilities within the Region, a decision making framework will be developed to facilitate greater communications, cooperation and sharing of information among all responsible parties in the future. Regular updates to Environmental Services Committee and Council will continue through 2012.

Phase 3 – How We Are Going To Get There

Once goals and vision for the future are set, a plan will be developed to get from today to tomorrow. This will be an interactive and iterative process utilizing technical analysis in concert with stakeholder engagement. The final product will be one that provides a long-term vision for the future, with comprehensive steps to prepare for it.

4. ANALYSIS AND OPTIONS

Reframing waste - it is more than what goes in your blue box

Most people's initial reaction when they hear the words waste management is to think about recycling. This is in some respect the low hanging fruit where residents have achieved outstanding results. Through this SM4RT LIVING plan, emphasis is now being placed on waste prevention and reuse, a significant and complex future challenge. Through development of the SM4RT LIVING plan, new possibilities for a more

sustainable economy will be examined, including new economic opportunities that help to generate prosperity through environmental consciousness.

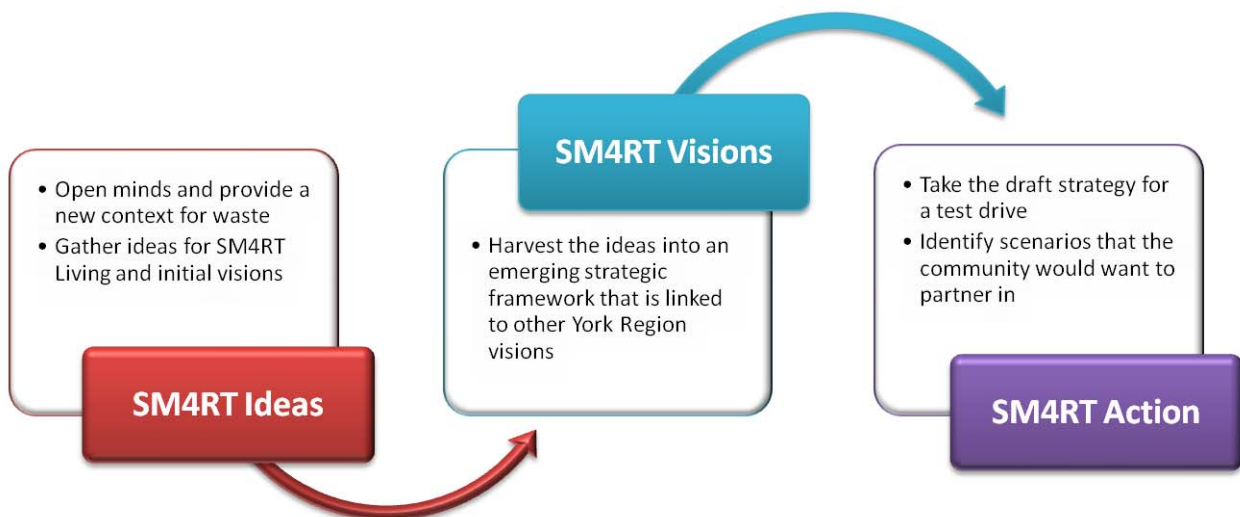
During the 2008 economic downturn, the Region experienced a significant decrease in the amount of waste generated, which highlighted the relationship between the economy, purchasing habits and waste generation.

At the same time, however, there is a shift underway that recognizes that increased possession of material goods, is not directly linked to increased well being. The concept of waste is therefore an excellent vehicle to elevate the conversation from garbage, to what will be important and valued over the next 40 years.

Launch of one of the most extensive and innovative waste consultation programs in North America

An integral component to successfully and collaboratively developing this Master Plan is the engagement of the public and stakeholders throughout the Region. Community engagement includes a range of innovative forms of consultation that both attract and engage a cross-section of community members in bringing new meaning and ideas to reduce, reuse, recycle and recover.

Figure 2
Waste as a Vehicle for SM4RT LIVING



The consultation program to date has included:

- Places and spaces events included attendance at 22 different fairs, festivals, sporting events and other high traffic areas such as shopping malls and farmers' markets. More than 500 residents talked with staff and shared their ideas and concerns, with many more being exposed to the project in passing. Almost 300 of these residents expressed an interest in being updated on the project as it progresses and put their names on the project contact list. The list currently has over 1800 names on it.
- A Citizen Panel which involved a telephone survey of 500 residents was conducted during July and August 2011. The survey provided baseline information and opinions.
- Four idea generating sessions were held that explored bold new possibilities of what SM4RT LIVING can look like in York Region over the next 40 years.
- Industry specific meetings are currently being held to explore opportunities for the Region to work with its industrial and commercial leaders in developing more effective waste reduction, reuse and recycling programs.

Public input at these events identified a desire by participants to move towards waste elimination. Ideas and concepts related to waste elimination will be explored further as part of the development of a vision and goals in Phase 2 of the Master Plan.

Extensive consultation, reaching a diverse audience will continue throughout the project

Consultation and engagement will continue throughout the project and will include:

- A Stakeholder Advisory Committee
- Visioning Sessions and Strategy Sessions
- Technical Working Group Meetings
- Additional Citizen Panel Surveys
- More Places and Spaces Events
- www.SM4RTLIVING.ca
- A SM4RT Living Challenge

Baseline assessment demonstrates York Region has one of the most advanced waste management and diversion systems in North America

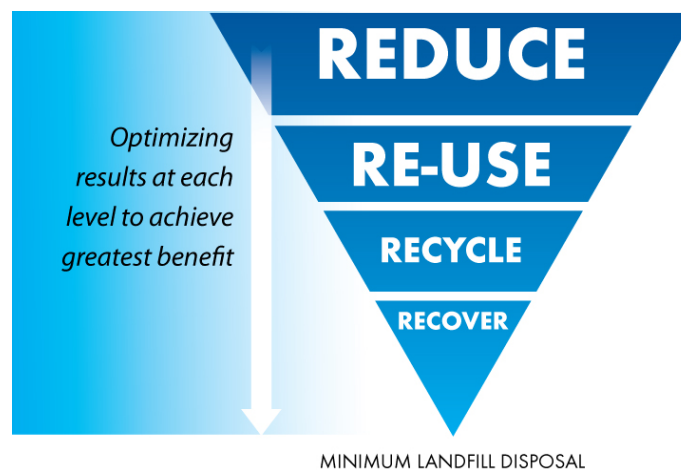
In York Region, waste management services are a shared responsibility between the Region and the nine local municipalities. The local municipalities are responsible for providing collection services and local waste management/diversion promotion and education services. The Region is responsible for providing processing, recovery, marketing and disposal services, as well as Regional promotion and education services.

Working together, the Region and its local municipal partners have implemented one of the most comprehensive integrated waste management systems in North America, as

shown in *Attachment 3*. Significant program and facility development and implementation have taken place in the Region over the past 10 years. This development has been completed in accordance with, and supported by, comprehensive and progressive strategies including Vision 2026 and more recently Vision 2051, the Regional Official Plan, the Region's Sustainability Strategy and Strategic Plan. In addition, the Joint Waste Diversion Strategy, updated in 2009, collaboration between the Region and the nine local municipalities provided an early blueprint for the future of waste management in the Region.

Council's endorsement of the 4R's principle: reduce, reuse, recycle and recover guides development of the Master Plan

Figure 3
4R's HIERARCHY



The Region, through its Sustainability Strategy, has established a 4R's approach for the waste management system.

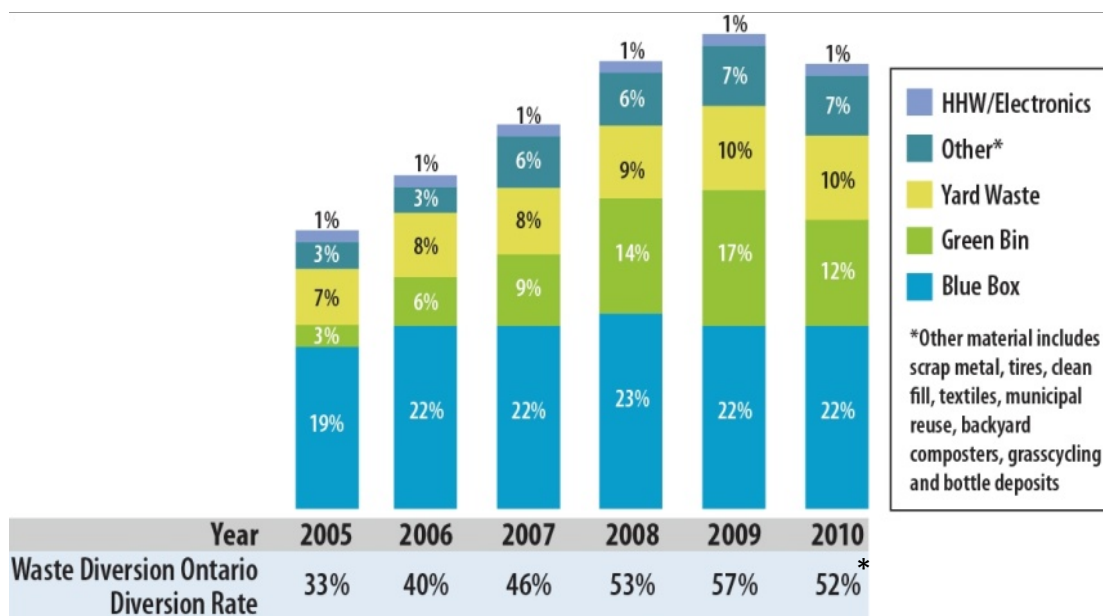
- 1) Reduction of packaging and improved handling options to prevent waste generation
- 2) Re-use of products and materials to maximize their useful life
- 3) Recycling of materials to reduce consumption of new raw materials
- 4) Recovery of energy and recyclable materials to minimize reliance on landfills

As shown in Figure 4, York Region's diversion rate has increased steadily from 33 per cent in 2005, to 57 per cent in 2009. In 2010, the rate decreased to 52 per cent as a result of unprocessed organics requiring disposal and is expected to rebound to 59 per cent in 2011.

Advancements have also been made in decreasing per capita waste generation in the Region. In 2004, the rate was 356 kg per person per year. By 2010, this amount had dropped by 10 per cent to 320 kg per person per year.

The Region has one of the most advanced waste management and waste diversion systems in North America. The following graph demonstrates our diversion in five key areas.

Figure 4
YORK REGION WASTE DIVERSION (WDO) DIVERSION RATE



*2010 is unverified Waste Diversion Ontario Rate

Provision of Regional Waste Management Services represents 5 cents of each Regional tax dollar

As part of the development of the baseline report, financial information is being collected to calculate the total cost per household for provision of waste management services. This cost calculation includes all service components from waste collection, processing and disposal to promotion and education, communications, administration, and financing. Currently, waste management services at the Regional level cost each household approximately \$126 per year. The Region is currently working with local municipalities to develop a similar local cost per household. Costs per household will be used later in the study to determine the impact of implementing new components of a potential future waste management system on a per household basis.

The future of waste management will rely on “Front-of-Pipe” solutions including waste prevention, reduction and reuse

The Region and its local municipal partners are already leaders in solid waste management approaches and waste diversion performance. The Region and its local municipal partners have led the way in developing and implementing the following system improvements:

- Sustainability strategies to help guide future programs and development using a triple bottom line approach
- Green procurement strategies to lead by example
- Developing user pay and bag limit systems in most municipalities for waste collection to encourage residents to reduce the amount of garbage set out for collection
- Promoting programs that remove waste from the system completely, such as grass cycling and backyard composting. In 2010, approximately 14,500 tonnes of material was managed by residents at home without having to be put to the curb for collection and management
- Implementing mandatory recycling by-laws to ensure participation in waste management programs
- Supporting industry led initiatives, such as the LCBO deposit return system. In 2010, an estimated 7,850 tonnes of glass was diverted Region-wide through this program
- Advocacy to encourage “design for the environment” concepts in the manufacturing and sale of consumer products
- Development of Community Environmental Centres to provide residents convenient access to drop-off reusable and recyclable materials. In 2010, Goodwill in York Region diverted approximately 560 tonnes of material that would have otherwise been landfilled. Of the 560 tonnes, 95 tonnes was diverted through the Goodwill at the McCleary Court Community Environmental Centre.

Largest opportunity for York Region to better manage waste in the future is to focus on waste prevention, reduction and reuse

Identifying measures, approaches, programs and policies which will divert additional waste will be challenging as the incremental impacts of additional improvements will be marginal rather than significant. Historically, the emphasis on waste management planning has been focused on developing and implementing programs to more effectively manage waste that is generated; however, it has only been recently that a shift in focus from waste management to waste prevention has begun.

Based on the initial baseline review of the current waste management system, the following are key items that warrant specific attention:

- Waste prevention solutions, including waste reduction and reuse
- Organics Processing Capacity/Management
- Multi-Residential and Mixed Use Waste Management

- Sustainable Community Environmental Centre Network
- Taking a systems approach to decision making based on greater communication with local municipalities and partners
- Review how to best measure performance of the waste management system

There is a strong need for continued focus on recycling and waste diversion to adapt to industry dynamics

The Region and its local municipal partners have adopted a waste diversion target to exceed 70 per cent by 2016 in the Joint Waste Diversion Strategy (2009). Many of the programs and facilities required to meet this ambitious target have already been put in place.

Successful Blue Box Program generates over \$8 million (net) in revenue annually

All single family households in the Region are provided with curbside collection service to collect “Blue Box” recyclable materials. The Blue Box system is a harmonized system throughout the Region, with all municipalities collecting the same blue box materials. Blue Box recycling accounts for nearly 80,000 tonnes of material being diverted from landfill each year in York Region. Participation in the program is very high and the actual amount of residue in the recycling stream is very low compared to other single-stream Material Recovery Facilities, at approximately 11 per cent as shown in Figure 5 below. The low residue rate is a combination of a number of factors including: resident awareness, collection contractor performance, an aggressive promotion and education campaign with the school boards over the last 20-25 years and effectiveness of processing equipment at the Region’s Material Recycling Facility. The value of the materials recycled and sold each year amounts to approximately \$8 million.

The Garfield Wright Material Recycling Facility, processes all curbside Blue Box material collected by the local municipalities.

Figure 5
Material Recovery Facility Residue Rate Comparison

Municipality	Residue Rate
York Region	10.1%
County of Northumberland	17.9%
City of Toronto (Dufferin Material Recovery Facility)	18.6%
City of Greater Sudbury	22.7%
City of Guelph	33.9%

From a financial perspective, the Region's program also compares favourably to other large regions and cities. As illustrated in Figure 6, the Region has the third lowest blue box program net cost per tonne among these seven Regions and large cities.

Figure 6
Recycling Program Comparison for Blue Box Collection and Processing as reported by Waste Diversion Ontario, 2010 Data

Program Name	Blue Box Tonnes Marketed	Net Cost Per Tonne
Halton Region	41,735.71	\$162.97
City of Hamilton	40,272.24	\$178.18
York Region	78,493.50	\$183.90
Durham Region ¹	45,161.89	\$184.60
City of London	25,485.00	\$224.71
Region of Peel	90,367.20	\$245.49
City of Toronto	155,010.00	\$273.69
Total	431,363.65	
Simple Average²		\$181.38
Weighted Average³		\$228.92

Note: All data available through Waste Diversion Ontario¹

Note: Durham Region, City of Hamilton and City of London operate two-stream Materials Recovery Facilities.

1. Not part of WDO Large Urban Category, however, added for comparison given proximity to York Region and similarities.
2. Simple average of per tonne values
3. Weighted averages are group total costs or revenues divided by total group tonnage (does not include Durham Region)

Trends in packaging and use of electronic media versus newspaper may result in impacts to Blue Box system

Looking towards the future, a number of considerations will be investigated that could impact the performance of the blue box system including:

- Reduced paper fibre being set-out for collection and processing as a result of more residents using on-line forms of media. This reduces the overall amount of waste being generated which is good, however, will also reduce the amount of material being collected and therefore may actually make the program appear as if it is not doing as well.
- Product packaging is changing on a regular basis resulting in increased processing difficulty and resident confusion as to what material is recyclable. New packaging

¹ <http://www.wdo.ca/content/?path=page82+item35932>

made of multiple materials can be difficult to process ending up in greater residue. In addition, the move towards “light weighting” of packaging has changed the way many items are packaged and will impact future blue box processing requirements.

Given these changes to the waste stream, as well as increased promotion and education on reduction and reuse, the diversion rate could decrease. An alternative to our current method of measuring diversion will be explored to recognize the system impact of reduction and reuse.

Source Separated Organics Program diverted 45,000 tonnes of waste from landfill in 2010

The Region and its local municipal partners offer one of the most diverse green bin programs in Ontario, allowing residents to compost diapers, sanitary products, pet waste, animal bedding, etc. However, over the past several years, the Region has experienced problems with its contracted organics processing facilities. This has resulted in organic material ultimately not being diverted in some cases, while in other cases organic material is shipped to Massachusetts for processing at a cost of \$178 / tonne (fully burdened). In May 2011, the Region and most local municipalities moved to the use of compostable bags in the green bin program to help reduce process residue from the composting process. This lack of reliable and local organics processing capacity will be investigated further as part of the Master Plan process.

The Master Plan process will also investigate potential implications of reduced food waste requiring processing as a result of increased consumer consciousness when it comes to buying food. For instance, in a recent waste audit in York Region, it was discovered that more than 10 per cent of food waste generated was unconsumed food, still in the package.

More than 3,000 tonnes of municipal hazardous solid waste and waste electronics were diverted from landfill in 2010

In addition to the Blue Box, Green Bin and Residual Waste collection programs, the Region and local municipalities also collect a wide range of “Special” materials through a range of drop-off facilities. These materials in large part are either hazardous or are materials that need to be removed from the waste stream however, cannot be removed efficiently through a curbside collection program. To provide this service, the Region operates four drop-off depots where residents can take everything from waste paint and chemicals to used computers and television for proper management. In addition, private companies and retailers are starting to set up take-back programs for materials such as batteries, electronics, medical equipment, etc.

Although generated in small quantities when compared to other programs, these materials present significant environmental risk, if not managed properly, therefore special attention is required. Based on recent waste audit data and the citizen panel survey, there

are still special waste materials being thrown in the garbage. Recent waste data found that .7 per cent to .9 per cent of the residual waste stream is classified as hazardous. Materials found include: medical waste/sharps, paints, oils and batteries. The citizen panel survey found that 8 per cent of residents in York Region admitted to still putting their hazardous waste in the garbage. Increasing participation in special waste programs and reducing the amount of hazardous material in the garbage will be an important consideration in the Master Plan process.

Considering waste as a resource through investing in residual waste and energy recovery technologies

When faced with the Michigan border closure, York Region was one of the first GTA municipalities to start looking “outside the box” for alternative ways to manage residual waste and recover additional resources. York Region took a leadership position and embarked on two new opportunities; Dongara’s residual waste pelletization project, and the Durham/York Energy Centre Facility.

After all efforts at waste diversion have been expended, York Region is seeking to manage its remaining residual waste primarily through energy recovery, with landfill disposal remaining as the final and least preferred option.

Durham / York Energy Centre Facility will significantly reduce the Region’s reliance on landfill

After many years of study and consultation, York Region with its partner Durham Region received approval to construct the first greenfield energy-from-waste facility in Canada in more than 20 years. This facility will:

- Recover 80 per cent of the ferrous metal and 60 per cent of the non-ferrous metal that still remains in the residual waste to be recycled
- Reduce the volume of waste being landfilled by up to 90 per cent
- Generate electricity that can be sold to the electrical grid for distribution at an estimated annual revenue of \$8.6 million

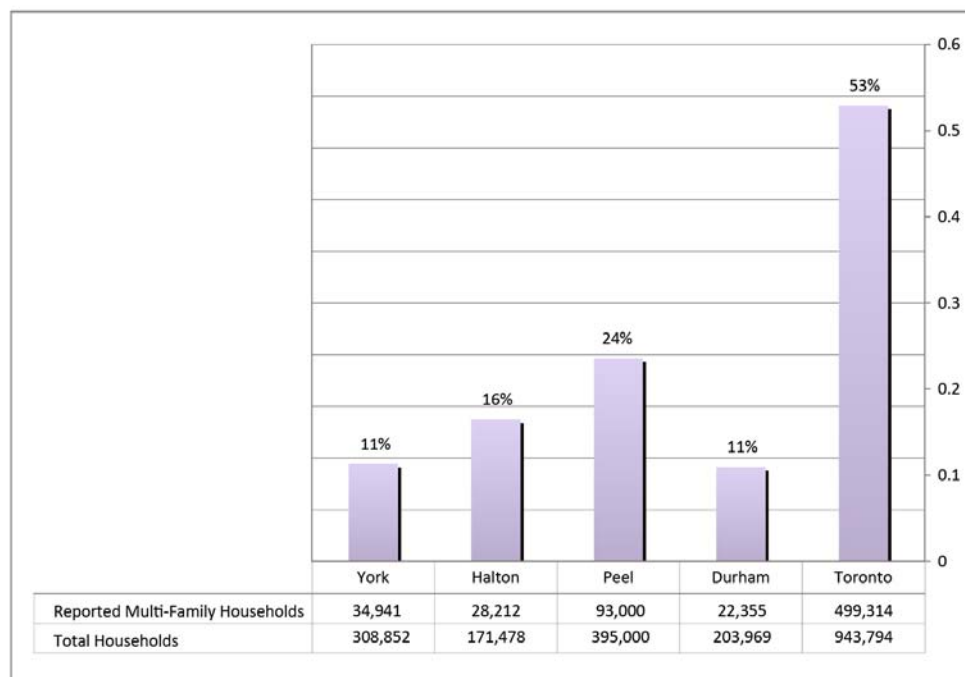
York Region’s investment in this facility distinguishes itself as a leader in North America when it comes to energy and material recovery and considering residual waste as a resource.

Future growth plans for York Region include increased intensification through multi-residential developments and mixed use buildings

Multi-residential and mixed-use buildings present a waste management challenge. For instance, determining appropriate collection processes for a five story building with retail on the first floor, professional offices on the second and residential units on floors three to five is complex. Depending on how this building is classified, the collection system

and cost recuperation could be very different. While these types of development present waste management and diversion challenges, an opportunity exists now to develop a plan to accommodate and address these new developments before they are constructed. The Region and local municipalities have the ability to influence future development through planning policy, site plan review and building permits to ensure proper waste management and waste diversion facilities are included. Regional Council adopted a policy in June 2010 requiring all local municipalities to include conditions of planning and building approval for high-rise multi-family residential buildings that provides internal building capabilities for three stream waste management. Figure 7 shows a number of multi-residential households there are in York Region compared to other Greater Toronto Area Municipalities.

Figure 7
Percentage of High Rise Multi-residential Households Compared to Total Households in Each Greater Toronto Area Region



Policy review highlighted that influences from a wide variety of parties and directions impact waste management in York Region

The Region and its local municipal partners influence and are influenced by policy from a wide variety of sources, including the Province and Federal governments. As the Master Plan is developed, these influences and the ability to influence need to be taken into careful consideration. Ultimately, recommendations of the Master Plan will need to be consistent with Federal and Provincial Policy, and ensure sufficient flexibility in future

waste management systems reflecting potential changes in policy over which the Region has limited control. For example, development and planning policies, particularly related to Smart Growth, intensification and multi-unit housing will impact long-term solid waste management planning considerations, waste collection requirements and processing needs.

Waste Prevention through increased Extended Producer Responsibility measures is a top priority

One of the primary policy drivers in Ontario is Extended Producer Responsibility. For the past 10 years, the concept of Extended Producer Responsibility has dominated the discussion of future waste management systems in Ontario, especially for blue box materials, electronic waste, tires and household hazardous waste. Essentially, those that are responsible for producing the waste (i.e. manufacturers and distributors) should be responsible for its management throughout its life cycle.

Transition to full Extended Producer Responsibility needs to be carefully managed to avoid service level impacts and negative financial impacts on the Region. Full cost steward responsibilities could lead to assumption of program delivery and service by the steward organizations. If program delivery was assumed by industry stewards, municipalities would have to be appropriately compensated for existing long-term investments in current infrastructure along with the assurance that level of service and environmentally responsible decision-making would not be compromised.

Current and innovative practices review looked at programs in North America and beyond

To support the development of a “Best in Class” solid waste program for the long-term, the first step was to look outside York Region to municipalities throughout North America and beyond to identify programs considered to be a “Best Practice”.

The current and innovative practices report provides existing and potential practices, programs and policy approaches in solid waste reduction and diversion that should be taken into consideration when developing the Integrated Waste Management Master Plan. Practices are discussed in seven separate categories reflecting different parts of the solid waste collection system, as well as overarching and supportive practices to enhance system performance which include funding models and communication, education and social marketing. The seven separate practice areas are:

- Single-Family Residential Waste
- Multi-Family Residential Waste
- Industrial, Commercial and Institutional Waste
- Construction and Demolition Waste
- Funding Models

- Communication, Education and Social Marketing
- Municipal Sustainability Practices

Practices report highlights a series of case studies including a study on food waste in the United Kingdom and Pre-cycling in Halifax

Love Food Hate Waste Campaign

United Kingdom citizens throw away 8.3 million tonnes of food from their homes every year. In response, the United Kingdom government has launched a campaign to address the problem and educate the public about food wastage. The campaign “Love Food Hate Waste” provides information, recipes, handy tips and advice to waste less food. At the same time, the United Kingdom government is working with grocery retailers to change marketing campaigns, such as the “two for one” sales that result in significant food wastage.

The concept of Food Waste will be explored in more detail through the development of the SM4RT LIVING plan.

Halifax urges residents to think before they buy

Halifax has developed an innovative source reduction program called Pre-cycling. The Pre-cycling campaign urges the public to think before they buy, “Precycling is preventing waste before it happens”. A dedicated page on the Halifax website provides an extensive list of activities at home, work and school to eliminate the production of garbage, such as:

- Use rechargeable batteries
- Buy in bulk, quantities that are needed
- Purchase loose fruits and vegetables instead of packaged
- Buy concentrates
- Avoid single-serving packages
- Purchase reusable products such as cloth napkins
- Select items with the least amount of packaging or packaging that can be reused or recycled

Region and its local municipal partners are already at “Best Practice” for many of the programs, policies and practices, but opportunities for improvement do exist

To continue to be a leader in the industry, there are still many opportunities for York Region that will be investigated further as the Master Plan develops. The following are a few highlights identified at this early stage for further review:

- Developing waste diversion and waste reduction policy can help encourage and enforce the use of sustainable waste management practices

- Examining waste management services for multi-residential buildings, given the number of units will significantly increase across the Region over the next 25 years
- Exploring Municipal role in managing waste from the Industrial, Commercial and Institutional Sector as part of the master plan
- Influencing Construction and Demolition waste reduction and diversion through purchasing specifications and building permit processes
- Continuing and advancing of education and outreach efforts with a focus on Reduction and Reuse are fundamental to the success of all future waste management programs and initiatives. Education and Outreach was a key component of the public outreach undertaken by Halifax in the Pre-Cycling campaign and the United Kingdom's response to food waste
- Exploring alternate funding models that will move waste management financing off the tax base and onto a more sustainable footing will be explored
- Developing Community Environmental Centre strategy prior to deployment of any future Environmental Centre
- Developing comprehensive advocacy strategies to support waste prevention, reduction and reuse initiatives
- Reviewing how performance of waste management system is measured as a critical component of the Master Plan

Link to key Council-approved plans

SM4RT LIVING is linked to and consistent with other Regional strategies. As part of the process of developing this master plan, staff have identified linkages and are working closely with Regional staff from other departments who are co-ordinating other Strategic Plans, including Vision 2051 and Making Ends Meet (Human Services Planning Board). Staff are ensuring that recommendations coming forward are consistent across all strategies and have taken advantage of opportunities to promote other Regional programs. As an example, contact lists for the Vision 2051 project and the SM4RT LIVING plan have been shared and there has been cross-communication of public events for the two projects.

5. FINANCIAL IMPLICATIONS

Sufficient funding available in the approved 2011 capital budget

Activities described in this report are consistent and within the approved budget for this project and the contract signed with HDR Corporation for delivery of consulting services.

As the Master Plan progresses through phase 3, funding and resources required to implement the plan will be better understood and brought forward.

6. LOCAL MUNICIPAL IMPACT

Region and local municipal staff have worked collaboratively to assemble data necessary to prepare the report

The Phase 1 reports include information specific to each local municipality in York Region. Throughout Phase 1, local municipal representatives have been engaged in the development of the plan including:

- Representation on the Steering Committee - The Steering Committee consists of senior staff representing local municipalities as well as senior York Region staff. The primary function of the Steering Committee is to provide high level direction from the Regional and local levels to guide the development of the Plan
- Representation on the Project Team - The Project Team is made up of Regional staff, as well as representatives from each of the local municipalities. The Project Team provides expertise and input to overall Plan development. To date, local municipal staff have met 10 times as a group to provide input, as well as several other communications, including one-on-one meetings, feedback over email and briefings at other meetings
- Presentations to local municipal Councils are slated to occur in the spring of 2012, as the Master Plan proceeds through Phase 2, which includes Vision and Goal setting

Full collaboration of local municipal staff in developing the Plan is required to ensure it is comprehensive and has full input of local issues and perspectives on waste management

The Region continues to work with local municipalities to collect information on local waste programs to facilitate a full understanding of services and costs associated with providing waste management services to residents. Local municipalities have received all Phase 1 reports for their review and their input has been considered in development of the final report.

Recommendations from the master plan must be implemented with an integrated approach that considers the impacts to both the Region and the local municipalities. The ultimate goal is to continue to provide a seamless service to our residents.

7. CONCLUSION

The Integrated Waste Management Master Plan will establish a planning framework and strategic direction for waste management within the Region for the next 40 years. The Plan will enable the Region to maintain its position as a waste management leader and

continue its movement towards more sustainable waste management, by focusing on driving waste prevention and reuse, while maximizing recycling, composting, and energy recovery opportunities.

For more information on this report, please contact Laura McDowell, Director of Environmental Promotion and Protection at 905 830-4444 Ext. 5077 or Loy Cheah, Director of Infrastructure Planning at Ext. 5024.

The Senior Management Group has reviewed this report.

(The three attachments referred to in this clause were included in the agenda for the January 18, 2012, Committee meeting and are not re-printed for this Agenda. Please bring the attachments from the January 18, 2012 Committee meeting to Regional Council.)



Integrated Waste Management Master Plan Phase 1 Update

Presentation to
Environmental Services Committee

**Dave Gordon
Peter Loukes
Ilmar Simanovskis**

January 18, 2012

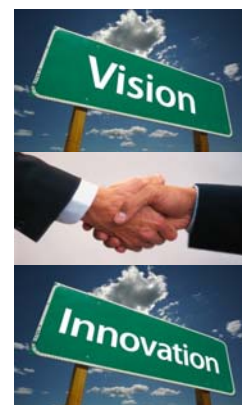
Slide 1

Overview of SM4RT LIVING Plan



Plan Vision

A comprehensive program that goes beyond traditional long-term strategies by presenting innovative, integrated material management and waste minimization solutions that meet the needs of the residents



SM4RT LIVING means working towards a zero waste society

Environmental Services Committee / January 18, 2012

Slide 2

Project Phases



Environmental Services Committee / January 18, 2012

Slide 3

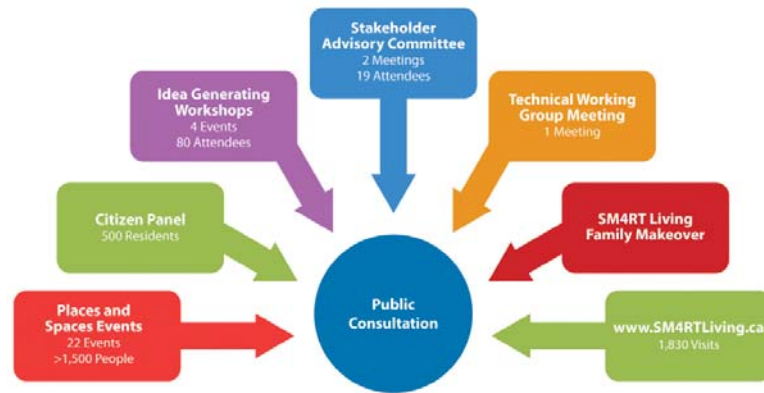


Phase 1: Where We Are

Highlights of Public Consultation

Slide 4

Phase 1 – Public Consultation & Engagement



SM4RT LIVING Plan is one of the most extensive and innovative waste consultation plans in North America

Environmental Services Committee / January 18, 2012

Slide 5

Broad Representation on the Stakeholder Advisory Committee



- | | |
|--|---|
| ☐ Georgina Chamber of Commerce | ☐ Recycling Council of Ontario |
| ☐ Ministry of the Environment | ☐ Canada's Wonderland |
| ☐ York District Catholic School Board | ☐ Cathy's Composters |
| ☐ York District School Board | ☐ Lone Star Grill |
| ☐ Goodwill | ☐ Magna International Inc. |
| ☐ Habitat for Humanity | ☐ PAC Next |
| ☐ Greater Toronto Homebuilders Association | ☐ Tim Hortons |
| ☐ Ontario Restaurant Hotel Management Association | ☐ Walmart |
| | ☐ Retail Council of Canada |
| | ☐ Vaughan CARES |
| | ☐ York Region Environmental Alliance |

Members are interested in shift to SM4RT LIVING and many are already leaders in implementing sustainable initiatives

Environmental Services Committee / January 18, 2012

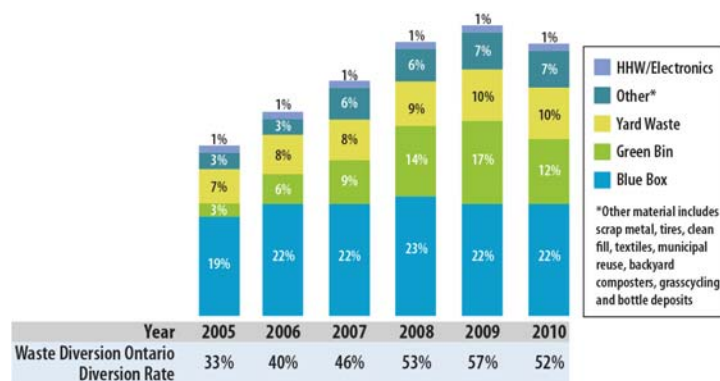
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Phase 1: Where We Are

Highlights of Findings

Slide 7

Waste Diversion



York Region's Diversion Rate dropped to 52% in 2010 due to SSO processing disruptions. Projections for 2011 indicate diversion back on track.

York Region is Provincial Leader in Diversion



Region	Total Materials Generated		Total Diverted		Diversion Rate
	(tonnes)	(kg/cap/yr)	(tonnes)	(kg/cap/yr)	
York	332,696	322	210,996	204	57%
Durham*	227,896	371	115,343	188	51%
Halton	197,536	416	107,229	226	54%
Peel	492,586	404	246,191	202	50%
Toronto	853,168	339	373,097	148	44%

*not considered large urban

York Region has obtained tremendous results and is a provincial leader in diversion

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Opportunities in Residual Waste Stream



RANK	Material Category	Per cent of total residual stream (%)	York Region tonnes/yr
1	Food Waste	17%	14,605
2	Drywall –used	11%	10,091
3	Furniture	7%	5,842
4	Diapers and Sanitary Products	7%	5,842
5	Textiles	5%	4,426
6	Tissue/Towelling	4%	3,541
7	Pet Waste	4%	3,364
8	Laminated/Other Plastic Film and Bags	4%	3,098
9	Construction & Renovation (other) which includes everything from spent caulking tubes to insulation.	3%	2,921
10	Leaf and Yard Waste	3%	2,390
Program already exists to Capture		58%	50,101
No Program exists to Capture		7%	6,019
Total Top 10 Materials		65%	56,120

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Comparison of Total Blue Box System



Program Name	Blue Box Tonnes Marketed	Net Cost Per Tonne
Halton Region	41,735.71	\$162.97
City of Hamilton	40,272.24	\$178.18
York Region	78,493.50	\$183.90
Durham Region	45,161.89	\$184.60
City of London	25,485.00	\$224.71
Region of Peel	90,367.20	\$245.49
City of Toronto	155,010.00	\$273.69

York Region's Net Cost per Tonne is \$45 lower than the weighted average

Source Separated Organics Program Comparison (Processing only)



Program Name	Materials Accepted	Residue Rate	Diversion Rate (2009)
York Region	Accepts all organic materials	11.70%	57%
Halton Region (City of Hamilton Contract)	Does not accept Diapers, Sanitary or Animal Waste	3.60%	54%
Durham Region	Does not accept Diapers, Sanitary or Animal Waste	4%	51%
Region of Peel	Does not accept Diapers, Sanitary or Animal Waste	5% – 10%	50%

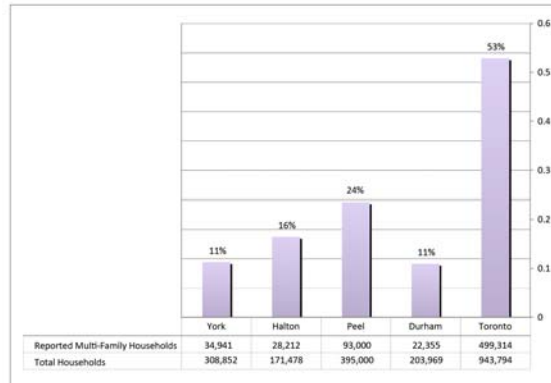
While the materials collected in York Region's Source Separated Organics program has higher cost and residue rate, it also results in highest community support and highest yield in the Province

High Rise Multi-residential Households Significant Future Opportunities



In preparation for the significant growth in this sector the Region has

- By-laws in place
- Consideration of future infrastructure included in capital budget
- Region and local municipalities working on solutions



High rise multi-residential households expected to grow to 22% of households in York Region by 2031

Challenges of Servicing Multi-Residential Sector



- ❑ Less space within living quarters for storage of materials
- ❑ Set out location is generally farther from the unit
- ❑ Mixed use buildings, defined as a mix of residential and commercial tenants/owners
- ❑ Enforcement of improper waste setout
- ❑ There is less outside space for storage of Blue Box and Source Separated Organic materials
- ❑ More transient population

Multi-residential standards implemented, positions Region well to address challenges that come from increasing service to multi-residential residents

Extended Producer Responsibility



Making producers responsible for the products they produce right through to the products end of life

Extended Producer Responsibility could result in:

- A change in the responsibility for waste collection and processing
- Additional costs to the consumer at point of purchase
- Potential reduction of taxes required to support the municipal waste management system



Master Plan process enables Region and Local Municipalities to examine waste management system and be well positioned to respond to Extended Producer Responsibility programs

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Waste Reduction and Reuse Activities



- ❑ Sustainability Strategies
- ❑ Green procurement strategies
- ❑ User pay and bag limit systems
- ❑ Zero waste programs
- ❑ Removing waste from the system
- ❑ Mandatory recycling by-laws
- ❑ Supporting industry led initiatives
- ❑ Advocate environmental design of consumer products
- ❑ Development of Community Environmental Centres and Drop-off Depots
- ❑ Working with partners such as Habitat for Humanity and Goodwill



Master plan focuses on waste reduction as the most critical step to long-term sustainability

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Opportunities to be Explored Further



Efforts over last 30 years have been highly effective in diverting waste using end-of-pipe solutions.
Efforts now shifting to prevent waste generation and encourage resource conservation

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Waste Management Services delivered through Integrated Partnership Model



Commitment to achieve common specific performance standards that define success, phased implementation approaches, areas for program harmonization and autonomy for Local Municipalities to achieve and surpass common standards to lead continuous improvement



Full collaboration between Region and Local Municipal staff in developing the Plan is required to ensure it is comprehensive and has full input of local issues and perspectives on waste management

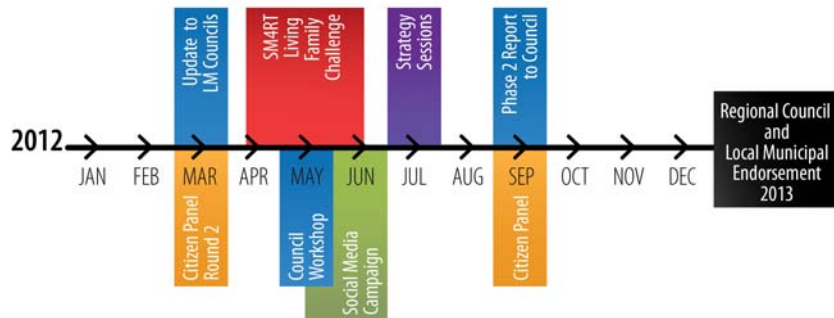
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Regional, Local Municipal Council and Public Engagement



Regional, Local Municipal Council and Public Engagement 2012



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Next Steps – Phase 2



- ❑ Develop long-term vision, goals and waste management projections
- ❑ Develop and implement decision making framework
- ❑ Identify opportunities for innovative program delivery and funding models



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SM4RT LIVING

YORK REGION'S INTEGRATED WASTE MANAGEMENT MASTER PLAN



December 15, 2011

Phase 1: "Where We Are"
Baseline, Policy and Practices
Review Summary Report





Phase 1: “Where We Are”

Baseline, Policy and Practices Review Summary Report

PREPARED FOR:

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can be viewed on our website at www.SM4RTLIVING.ca

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Appendix B – Phase 1 "Where we Are" Policy and Greater Toronto Area Review

Appendix C – Phase 1 "Where we Are" Current and Innovative Practices Review

1.0 Introduction and Background

Master Plans outline the Region's long-term vision and infrastructure needs for waste management, water, wastewater, and transportation. These plans are based on sustainability objectives which preserve and enhance our natural environment, economic vitality and healthy communities while providing safe, affordable and efficient servicing for the Region's residents and visitors.

In March 2011, the Regional Municipality of York and its local municipal partners initiated the development of its first Integrated Waste Management Master Plan. Over the years, components of the system have been studied and assessed, however a truly holistic integrated systems approach has never been undertaken.

The Master Plan, also known as the SM4RT LIVING Plan, will establish a planning framework and strategic direction for waste management within York Region for the next 40 years. The Master Plan will build on the Region's position as a waste management leader, by focusing on driving waste reduction and reuse, while maximizing recycling and energy recovery from the materials that remain.

This Master Plan focuses on how people in the Region purchase goods and services; how waste is generated and disposed; and encourages residents to think and act in sustainable ways. Solutions developed will be required to meet sustainability principles that balance environmental, economic and social factors as well as be flexible enough to adapt to the rapidly changing environment and, support the Region's continued leadership role in waste management.

Waste is a highly complex area as it touches a very deep chord in most people. For many, it represents a society in which everything has become disposable. For others, waste is a result of the need to continually showcase material wealth and status through 'stuff'. Waste can also represent industrial practices that are based on the assumption of infinite resources and planned obsolescence. We have an economy driven by consumer behaviour; where it is thought that the more we consume, the stronger our economy. At the same time however, there is a shift underway that recognizes that increased wealth, defined as material goods, no longer links to happiness or well-being. The concept of waste is therefore an excellent vehicle to elevate the conversation from garbage to what truly matters to us.

A community engagement approach based on innovative forms of consultation that both attract and engage a diverse cross-section of community members has been planned to bring new meaning and ideas to reduce, reuse, recycle and recover. The community engagement process will consider issues beyond waste management, including topics such as lifestyle, happiness, community design and consumerism, etc. to ultimately develop an understanding of the role waste can play in reframing and implementing a more sustainable future.

The innovation in the community engagement process will be paralleled with a comprehensive environmental, technical and social analysis, exploring each aspect of a potential new waste management system using the three pillars of sustainability as the foundation from which all decisions will be made.

1.1 The Master Plan Process

The Master Plan is being completed in three phases as follows and illustrated in Figure 1:

Phase 1 – "Where We Are"

This phase was recently completed and includes the Baseline Assessment, Policy and Greater Toronto Area Review and Current and Innovative Practices Review described herein.

Phase 2 – "Where We Want To Go"

Now that the baseline has been established and the current situation is clearly understood, the process of developing the road map for where the Region could go in the future can be initiated. This phase will include the development of long-term vision and goals and detailed waste management projections, as well as identification of opportunities for innovative program delivery and funding models. In addition, given that waste management services are provided through a partnership between the Region and local municipalities, a decision making framework will be developed to facilitate greater communications, cooperation and sharing of information among all responsible parties in the future.

Phase 3 – "How We Are Going To Get There"

Once goals and vision for the future have been set, a plan will be developed to get from today to tomorrow. This will be an interactive and iterative process utilizing technical analysis in concert with stakeholder engagement. The final product will be one that provides a long-term vision for the future, with comprehensive steps to prepare for it.

Figure 1: Phases of the Integrated Waste Management Master Plan



1.2 Purpose of this Report

To better understand where you want to go, it is first important to have a very detailed understanding of where you are, including what programs are already in place, what others are doing in the industry and what potential changes are occurring that could impact the future. To develop this understanding a detailed assessment of "Where We Are" was completed. This assessment consists of three (3) separate tasks, as follows:

- A **Baseline Assessment** (See Appendix A) which included the review of all aspects of the Regional and local municipal waste management system;
- A **Policy and Greater Toronto Area Review** (See Appendix B) investigating existing, pending and potential future policies and programs that could impact waste management in York

Region as well as reviewing what neighbouring Greater Toronto Area municipalities are currently doing and how they compare; and,

- A **Current and Innovative Practices Review** (See Appendix C) investigating other communities around North America and beyond, who have implemented and operated highly successful waste management programs.

The following report and supporting appendices documents "Where We Are". It is important to note that as this project progresses new information, insights and technical innovations are being discovered and as such, this document will remain a "living" document throughout the duration of the project.

2.0 4R's Approach to Waste Management Services

The Region and its local municipal partners have implemented one of the most comprehensive waste management systems in North America. Over the past 10 years in particular, significant program implementation and facility development has been achieved. Figure 2 below provides a chronology of major achievements over the past decades.

Figure 2: History of Waste Management in the Region



In York Region, waste management services are a shared responsibility between the Region and the nine local municipalities. The local municipalities are responsible for providing collection services and local waste management/diversion promotion and education services. The Region is responsible for providing processing, recovery, marketing and disposal services as well as Regional promotion and education services.

The overall sharing of responsibilities is presented in Figure 3 and Table 1 below.

Figure 3: Solid Waste Management Material Flow and Responsibilities

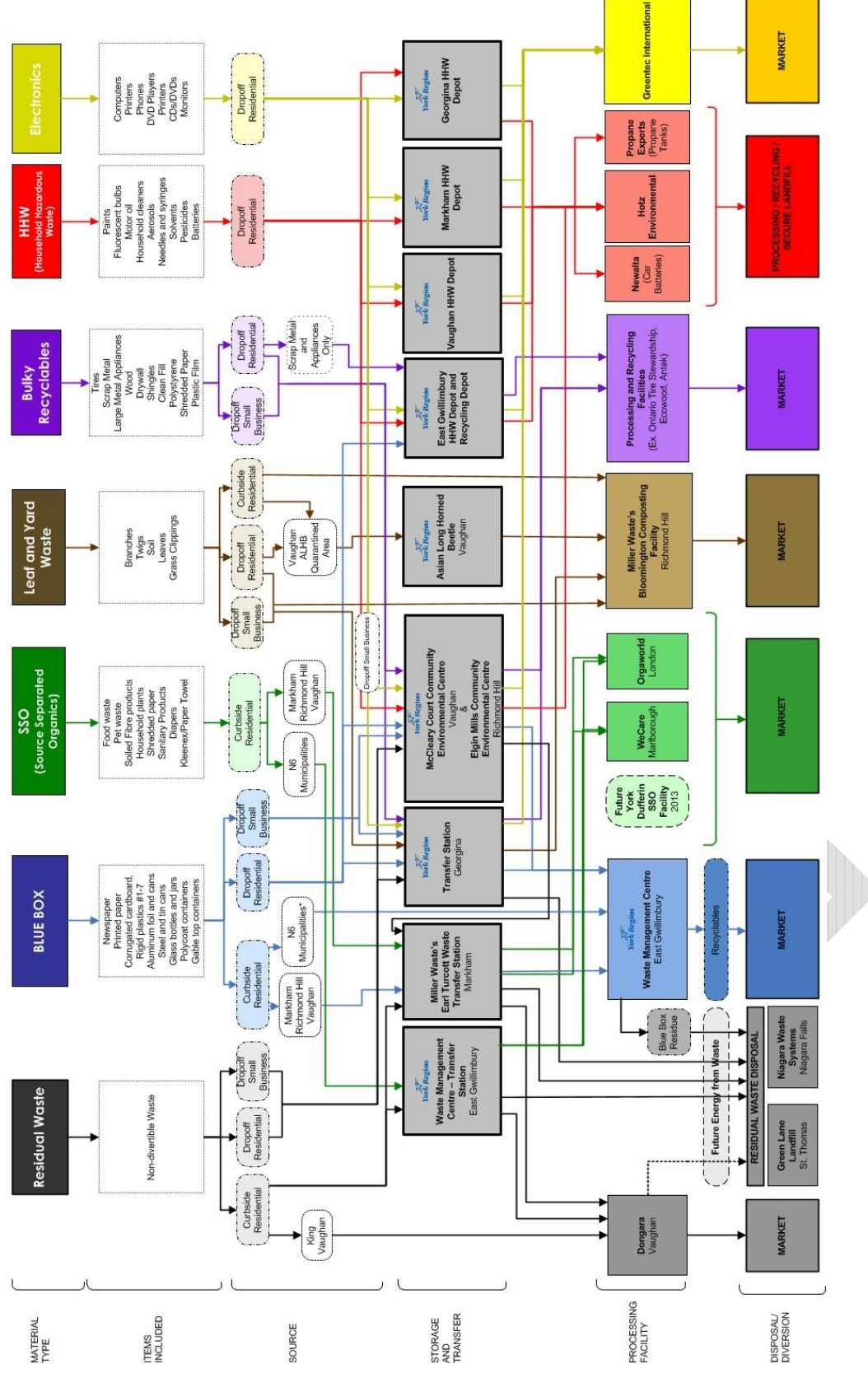


Table 1: York Region and Local Municipal Joint Waste Management Summary

OTHER INITIATIVES										
Waste Minimization Policies										
Details										
Multi-Residential Collection										
Details										
Public Space Recycling Parks & Facilities										
Details										
Depots/Facilities										
Community Environmental Centre										
Household Hazardous Waste Depots										
Recycling/Reuse Depots										
Bulky Item Collection Cost per item										
White Goods Collection Cost per item										
Yard Waste Collection										
Weekly Green Bin Collection										
Weekly Blue Box Collection										
Alternating Week Bag Collection Limit (Cost per bag)										
AURORA	3 (No tags)									
EAST GUILDFORD	2 (No tags)									
GEORGINA	1 (1 limit 5 items)									
KING	2 (1 limit 5 items)									
MARKHAM	3 (1 limit 5 items)									
NEWMARKET	3 (Tags, limit 3 items)									
RICHMOND HILL	3 (5 tags for 52, 6 item limit)									
VAUGHAN	3 (52 limit 3 items, includes bulky items)									
WHITCHURCH-STOUFFVILLE	3 (52)									
YORK REGION										

*Most tags are sold in sheets of 5 or 10 *Includes fridges, stoves, dryers, washers and more

The development of this extensive system is a reflection of several comprehensive and progressive strategies including Vision 2026, the Regional Official Plan, and the Region's Sustainability Strategy as well as a range of local municipal sustainability strategies and planning policies. In addition, the 2006 and 2009 updated Joint Waste Diversion Strategy, a collaboration between the Region and the nine local municipalities, provides a blueprint for future diversion activities in the Region.

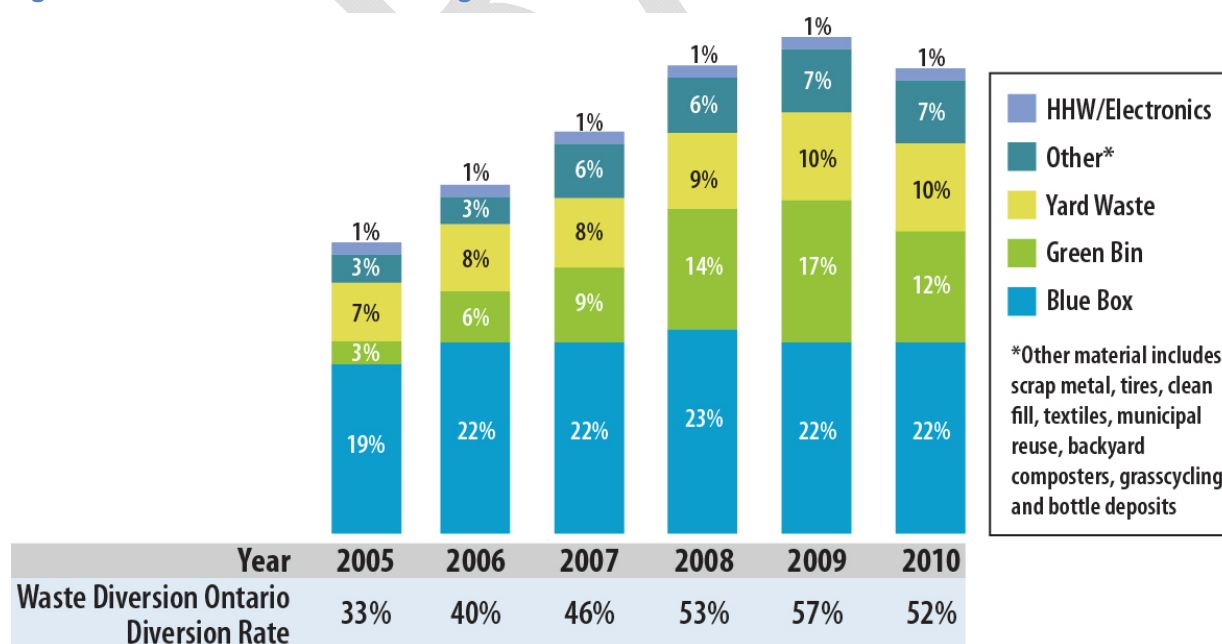
The Region, through its Sustainability Strategy, has established a 4R's approach for the waste management system, as follows:

- 1) **Reduction** of waste and improved handling options to prevent waste generation;
- 2) **ReUse** of products and materials to maximize their useful life;
- 3) **Recycling** of materials to reduce consumption of new raw materials; and,
- 4) **Recovery** of energy and recyclable materials, after all other diversion efforts have been exhausted, to minimize reliance on landfills.



As shown in Figure 4, the Region's diversion rate has increased steadily from 33 per cent in 2005, to 57 per cent in 2009. In 2010, the rate decreased to 52 per cent as a result of challenges experienced by the Regions' organic waste processing contractors. The Region is currently on track to process approximately 90,000 tonnes of organic material in 2011.

Figure 4: Waste Diversion in York Region



Advancements have been made in decreasing per capita waste generation in the Region. In 2004, York Region residents generated approximately 0.36 tonnes per person per year. By 2010, this amount was down to 0.32 tonnes per person per year. Table 2 provides an overview of waste quantities managed in the Region over the past 5 years.

Table 2: Tonnes of Waste Managed by the Region and Local Municipalities

	2006	2007	2008	2009	2010
Residual Waste (Garbage)	197,964	152,331	123,273	121,700	124,934
Blue Box	71,733	74,865	81,277	77,318	79,105
Source Separated Organics	24,809	60,290	86,266	88,671	91,680
Other Diverted	32,314	31,878	39,913	45,007	45,219
Household Hazardous Waste (HHW)	1,445	1,568	1,697	1,670	1,652
Electronics	440	536	709	988	1,473
Leaf and Yard Waste	24,463	23,229	31,016	34,007	32,001
Leaf and Yard Waste - Asian Longhorned Beetle	4,276	5,130	5,358	6,335	7,229
Scrap Metal	1,223	1,112	903	1,117	1,205
Tires	105	90	108	118	173
Clean Fill	362	213	122	633	1,057
Textiles	-	-	-	74	127
Wood	-	-	-	65	302
Sub Total	326,820	319,364	330,729	332,696	340,938
Year-Over-Year Change	4%	-2%	4%	1%	3%
Non-York Region Tonnage (Blue Box) ¹	2,732	180	837	178	173
Total	329,552	319,544	331,566	332,874	341,111
Households (Source: Planning Dept.) ²	277,987	294,022	303,043	308,852	318,381
Tonnes per Regional Household	1.18	1.09	1.09	1.08	1.07
Population	933,357	983,056	1,011,360	1,032,606	1,061,983
Year-Over-Year Population Change	3%	5%	3%	2%	3%
Tonnes per capita	0.35	0.33	0.33	0.32	0.32
Waste Diversion Ontario Diversion Rate	40%	46%	53%	57%	52 %³

Notes.

General Table Note: Some municipal waste is also managed outside the Regional system and hence the information above does not reflect these quantities. Refer to Section 8.0 of this report for additional detail.

¹ Occasionally the Region will receive and process Blue Box materials from other jurisdictions on a short-term as required basis. Typically this is a result of another jurisdiction temporarily experiencing a loss of processing capacity due to such things as facility shutdowns, labour disputes, etc.

² Includes single family and multi-residential units.

³ Waste Diversion Ontario unverified diversion rate. The Region experienced a lower than expected diversion rate in 2010 due to unprocessed Source Separated Organics requiring landfill disposal as a result of a temporary loss of organics processing capacity.

Through the development of the Baseline assessment a number of discrepancies with respect to per capita waste generation were identified. In particular, some local municipalities include Industrial, Commercial and Institutional stops as part of residential collection routes, including small commercial

establishments, mixed use developments, Business Improvement Areas, and institutions. In many cases these small businesses are considered "residential" as they are located along residential routes and are therefore not tracked separately. This can lead to a higher residential per capita generation rate as not all the material collected is actually residential. While refining these measures will be explored further in Phase 2 of the Master Plan, this is a common practice given the amounts of non-residential waste collected are relatively small.

In addition, the population used for the per capita calculation includes a number of multi-residential units that exist in each local municipality that receive private collection services with waste managed outside the Region system. As a result, the per capita waste generated calculation is lower than expected. This data will also be investigated further as part of Phase 2 of the Master Plan process.

As part of the development of the Baseline report, financial information is being collected calculate the total cost per household for the provision of waste management services. This cost calculation includes everything from waste collection, processing and disposal to promotion and education, communications, administration, and financing. Currently, waste management services at the Regional level costs each household approximately \$126 per year. The Region is currently working with the local municipalities to develop a similar local cost per household. Costs per household will be used later in the study to determine the potential impact of implementing new components of a potential future waste management system on a per household basis.

3.0 Current Communication, Education and Engagement Programs

The Region and local municipalities actively promote waste diversion programs through extensive communication and education programs. The objectives of the Promotion and Education programs are to:

- Promote and encourage participation in waste reduction, waste reuse practices and waste diversion programs;
- Provide resources and tools to residents; and,
- Encourage compliance with municipal and Regional waste management policies.

The Region and local municipalities recognize the importance of consistent messaging to minimize confusion among residents and leverage economies of scale wherever possible.

York Region is recognized as culturally diverse; therefore, it is sometimes necessary to provide education materials in different languages.

A wide-array of communication approaches (by the Region and/or local municipalities) are used including:

- Household Brochures
- General/Newspaper advertisements
- Radio and/or television advertisements
- School tours/presentations
- Student/Teacher education kits
- Reuse Events
- Open Houses
- On-line Directories
- Outdoor (e.g. transit signs, billboards)
- Special events
- Door hangers and magnets
- Calendars
- Speaking Engagements
- Videos
- Vehicle Decals/ Advertisements
- Call Centre and Email inquiries
- Specially Designed Multi-residential Program
- Flyer Drop Offs
- Backyard Composter and Blue Box Sales and Compost Giveaways
- Newsletters
- Posters
- Waste specific web based information
- Facility Openings & Promotions
- School Events (e.g. Litter Roundup, Poster Contests)



The Region and local municipalities are consistently recognized by Provincial, Federal and International organizations such as the Municipal Waste Association, Regional Public Works Commissioners of Ontario, Federation of Canadian Municipalities, and the Solid Waste Association of North America for our promotion and education efforts. These awards recognize the significant investment in promotion and education by the Region and local municipalities.

As part of the partnership involving the collaborative collection contract, the six northern municipalities share promotion and education literature and costs, ensuring that the messages and information associated with waste management and waste diversion are harmonized for those residents living in the six municipalities. The other three municipalities (Markham, Richmond Hill and Vaughan) have separate promotion and education programs. Key program components are identified in Table 3 below.

Table 3: Current Promotion and Education Programs by Municipality

Materials	Aurora	East Gwillimbury	Georgina	King	Newmarket	Whitchurch-Stouffville	Vaughan	Richmond Hill	Markham	York Region
Calendar	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Website	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recycling guide	✓						✓		✓	✓
Brochure							✓	✓	✓	✓
Newsletters							✓	✓	✓	✓
Reference guide							✓	✓		✓
Notices/ ads in local newspaper	✓				✓	✓	✓	✓	✓	✓
Public Displays	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Public Events	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Call Centres	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

It is anticipated that innovative communication, education and social marketing approaches will be required to engage the public in the behaviours needed to support the long-term strategy. The Current and Innovative Practices report (Appendix C) identifies a number of alternatives such as the one below; however, the success of each of these alternatives is very community specific and therefore what works in one location may not in another.

City of Hamilton, Ontario - Gold Box Reward Program

To promote successful waste management practices in the home, the City of Hamilton's Waste Management Division launched the "Gold Box" Reward and Recognition Program in January 2007. The Gold Box program recognizes residents who reach and exceed the goal of 65 per cent waste diversion from landfill.

In order to reward more residents, the City modified the reward program in 2011.

Residents are encouraged to complete an on-line registration form provided on the City's website. From the submitted forms, City staff draw the name of one resident and perform an audit on their household waste, recyclables and source separated organics. All audited households cannot exceed the three strike contamination rule. If the resident achieves the audit goals he/she receives a gold box and a gift coupon. Participation is voluntary and the contest is only open to households within the City of Hamilton that receive curbside waste collection service. The City hopes to hand out 100 gold boxes in 2011.

The gold box is used as a prompt demonstrating that the householder is a "super recycler" and a role model for others to follow. Most prize winners have achieved between 82 per cent and 90 per cent waste diversion.

4.0 Waste Reduction and Reuse

Historically, the emphasis on waste management planning has been the development and implementation of programs to more effectively manage the waste that is generated. However, it has only been recently that a shift in focus from waste management to waste prevention has begun. This shift has resulted because continuing to identify measures, approaches, programs and policies to divert additional waste has become increasingly challenging as much of the "low hanging fruit" has already been "picked" (i.e. Blue Box recyclables). The most beneficial opportunity for The Regional Municipality of York to better manage waste in the future is to focus on waste prevention. Waste prevention also presents significant opportunities for York Region residents to reduce their overall impact on the environment.

Reduction, reuse and recycling can significantly reduce the need for primary extraction of raw materials, processing and transportation which has a significant environmental burden on global resources. These opportunities also exist in the Industrial, Commercial and Institutional sectors as well as in the Construction and Demolition industry.

The Region and local municipalities have developed several reduction and reuse initiatives:

- Sustainability Strategies to help guide future program development using a triple bottom line approach;
- Developing and implementing green procurement strategies to lead by example in the purchasing of everything from paper towels to new ISO 14001 and LEED registered buildings and facilities;
- Developing and implementing user pay and bag limit systems for residual waste collection to encourage residents to reduce the amount of residual waste they set-out for collection;
- Promoting programs that remove waste from the system completely such as grasscycling and backyard composting;
- Implementing mandatory recycling by-laws to ensure participation in waste management programs;
- Supporting industry led initiatives such as the LCBO deposit return system;
- Advocacy to encourage "design for the environment" concepts in the manufacturing and sale of consumer products;
- Development of Community Environmental Centres and Drop-off Depots (Regional and Town of Markham) to provide residents convenient access to drop-off reusable and recyclable materials; and,
- Working with partners such as Habitat for Humanity and Goodwill to support waste reuse initiatives.

Quick Facts

- In 2010, approximately 14,500 tonnes of source separated organics and leaf and yard waste was managed by residents at home without ever having to be put to the curb for collection.
- In 2010, an estimated 5,851 tonnes of glass was diverted through the LCBO bottle return program in York Region.
- In 2010, Goodwill York Region diverted approximately 560 tonnes of material that would have otherwise been landfilled.

Backyard composting and grasscycling campaigns and programs have been effective at increasing the amount of yard waste managed on property and reducing the amount of yard waste set out at the curb.

Education campaigns may have the potential to impact source reduction behavior, as do economic incentives through curbside fees or curbside policies such as bag/container limits. These measures are typically implemented at the curb where collection takes place.

Food waste is one area where significant source reduction could occur through effective awareness campaigns. The United Kingdom Love Food Hate Waste campaign is a campaign targeting the reduction of food waste. The concept of reducing food waste will be explored in more detail through the development of the Master Plan.

"Love Food Hate Waste" Campaign in the United Kingdom

United Kingdom citizens throw away 6.7 million tonnes of food from their homes every year. In response, the United Kingdom government has launched a campaign to address the problem and educate the public about food wastage. The campaign "Love Food Hate Waste" provides information, recipes, handy tips and advice to waste less food. At the same time, the United Kingdom government is working with grocery retailers to change marketing campaigns, such as "two for one" sales that result in significant food wastage. To date organizers believe the program has resulted in approximately 137,000 tonnes of waste being avoided and estimate an average annual savings of approximately £296 million a year.

5.0 Recycling and Waste Diversion

The Region and its local municipal partners have adopted a waste diversion target to exceed 70 per cent by 2016 (Joint Waste Diversion Strategy 2009). The Region, through its Official Plan, has adopted a waste diversion from landfill target to exceed 90 per cent by 2016 and eliminating the disposal of unprocessed waste in landfill by 2020 (Regional Official Plan (2009)). The following provides an overview of the programs and facilities that have been established to help meet these targets.

5.1 Blue Box Recycling Program

The Blue Box system is a harmonized system throughout the Region, with all municipalities collecting the same Blue Box materials. York Region residents can recycle almost 70 items through this comprehensive diversion program. Blue Box recycling accounts for approximately 80,000 tonnes of material being diverted from landfill each year in York Region and participation in the program is very high.

To date, the following guiding principles¹ have been considered when determining whether to establish a program to divert Blue Box materials from disposal:

- A reasonable expectation to divert material from landfill whereby the material must not pass through the diversion process only to be landfilled as residue;
- The availability of two or more domestic markets, or a market with a stable operational history and financial security; and,
- The completion of a "due diligence" review of the proposed market outlet.

¹ Report No. 7 of the Solid Waste Management Committee Regional Council Meeting of November 17, 2005

5.1.1 Blue Box Material Collection

In the last five years, the Greater Toronto Area regions of Toronto, Peel, Halton and York have moved to single-stream recycling. This required the construction of new Materials Recovery Facilities to handle single-stream recyclables, but has the advantage that materials can be co-collected in one truck. Co-collection of single-stream Blue Box recyclables with combinations of organics or residual waste have made implementation of source separated organics programs more viable from a cost perspective. This is especially true in rural areas.

All single family households in the Region are provided with curbside collection service by their local municipality to collect Blue Box recyclable materials. The Region also offers Blue Box recyclable collection at McCleary Court and Elgin Mills Community Environmental Centres, Georgina Transfer Station and East Gwillimbury Recycling Depot, as does the Town of Markham at their public Drop-off Depots.

Depending on the local municipality, the cost to collect Blue Box materials at curbside ranges from \$79 per tonne to \$99 per tonne.

Blue Box materials collected at some parks, public spaces, special events, municipal facilities, and at Markham's Drop-off Depots are managed privately outside of the York Region system.

5.1.2 Blue Box Material Processing

The Garfield Wright Material Recycling Facility, located in East Gwillimbury, processes all curbside Blue Box material collected by the local municipalities. The facility is owned by the Region and currently operated by Miller Waste who is also responsible for marketing the separated Blue Box materials at a cost of approximately \$82/tonne.



When compared to other recycling facilities, the York Region facility compares favourably. For instance, with respect to residue rates Table 4 provides a comparison of York Region's Material Recovery Facility to other single-stream Material Recovery Facilities in Ontario.

Table 4: Material Recovery Facility Residue Rate Comparison

Municipality	Residue Rate
York Region	10.1%
County of Northumberland	17.9%
City of Toronto (Dufferin Material Recovery Facility)	18.6%
City of Greater Sudbury	22.7%
City of Guelph	33.9%

From a financial perspective, the Region's program also compares favourably as illustrated in Table 5 by the third lowest net cost per tonne. Given that gross revenue per tonne varies depending on the revenue sharing agreement between the municipality and the contractor, net cost per tonne is a better measure to focus on.

Table 5: Recycling Program Comparison for Blue Box Collection and Processing as reported by Waste Diversion Ontario, 2010 Data

Program Name	Calculated Blue Box Tonnes Marketed	Gross Costs Per Tonne	Gross Revenue Per Tonne	Net Cost Per Tonne
Halton Region	41,735.71	\$195.64	\$32.67	\$162.97
City of Hamilton	40,272.24	\$304.68	\$126.51	\$178.18
York Region	78,493.50	\$301.23	\$117.33	\$183.90
Durham Region ¹	45,161.89	\$327.91	\$143.31	\$184.60
City of London	25,485.00	\$349.28	\$124.58	\$224.71
Region of Peel	90,367.20	\$369.17	\$123.69	\$245.49
City of Toronto	155,010.00	\$396.48	\$122.79	\$273.69
Totals	431,363.65			
Simple Average²		\$320.63	\$112.98	\$181.38
Weighted Average³		\$342.63	\$113.72	\$228.92

General Table Note: All data available through Waste Diversion Ontario²

General Table Note: Durham Region, City of Hamilton and City of London operate two-stream Materials Recovery Facilities.

1. Not part of WDO Large Urban Category, however, added for comparison given proximity to York Region and similarities.
2. Simple average of per tonne values
3. Weighted averages are group total costs or revenues divided by total group tonnage (does not include Durham Region)

5.1.3 Blue Box Industry/Stewardship Funding

Created in October 2002, Stewardship Ontario was the first Industry Funding Organization responsible for the development of Blue Box standards supporting the delivery of Blue Box program services. The *Stewardship Ontario Blue Box Program Plan* was developed by Stewardship Ontario and was accepted by the Ontario Minister of the Environment in December 2003. Under this plan, all designated stewards (manufacturers and first distributors) of Blue Box materials were required to pay fees to Stewardship Ontario to help finance the collection and diversion of Blue Box materials in municipal programs. Currently, through this program, 50% of the cost to municipalities to collect and process Blue Box

² <http://www.wdo.ca/content/?path=page82+item35932>

materials is paid for by industry. Blue Box stewards are defined as companies that introduce and distribute packaging and print paper into the Ontario residential marketplace. Stewards are the brand owners, first importers and franchisors in Ontario of products that result in consumer packaging and printed paper waste. As of February 1, 2004 affected industry stewards were responsible for funding 50 per cent of the total net costs incurred by municipalities as a result of Ontario's Municipal Blue Box Programs. Since 2004, through this program, the Region has received over \$34 million in Blue Box funding, as shown in Table 6 below. As you will note, each year the funding received by the Region has increased. This annual increase reflects higher system costs and more complex infrastructure requirements such as the need for optical sorting equipment, glass cleaning/screening, etc.

Table 6: Blue Box Funding Received By the Region, 2004 to 2011

Year	Blue Box Funding Received	Gross Annual Blue Box Program Costs
2004	\$ 2,037,071	\$12,029,058
2005	\$2,618,802	\$18,278,226
2006	\$ 3,636,802	\$20,409,653
2007	\$4,599,022	\$20,481,169
2008	\$4,790,368	\$21,695,183
2009	\$4,597,734	\$22,259,196
2010	\$ 5,118,606	\$23,644,655
2011	\$6,998,241	n/a
Total	\$ 34,396,646	\$138,797,140*

*Note: Does not include 2011 costs.

Looking towards the future, a number of considerations will be investigated that could impact the performance of the Blue Box system, including:

- Reduced paper fibre being set-out for collection and processing as a result of more residents utilizing on-line forms of media. This will result in a reduction in Blue Box material collected and therefore may actually make the program appear as if it is not performing as well (i.e. fewer tonnes collected and therefore higher collection cost per tonne of material collected); and,
- Product packaging is changing on a regular basis resulting in increased processing difficulty and resident confusion as to what is recyclable. New packaging made of multiple materials can be difficult to process resulting in greater residue. As manufacturers and retailers attempt to maximize the marketability of the product (and shelf life in some cases) while minimizing the cost, new materials and/or combinations of materials are being introduced into the waste stream. In addition, the move towards "light weighting"³ of packaging has

³ Lightweight packaging is a relatively new approach to packaging in particular in the liquid food industry. By using a minimal amount of material to generate a package that contains the same volume, a lightweight package is created that still provides the same consumer convenience. This has the environmental advantage of saving raw materials, saves energy during production, and transport and waste handling. However, in many cases recycling programs are not currently designed to effectively manage this new packaging material. In addition, there are now more containers per tonne of material resulting in larger volumes and additional volumes to sort.

changed the way many items are packaged and will impact future processing requirements as total Blue Box tonnage will decrease overtime.

It is important to note that the traditional measure of total tonnes of waste diverted on an annual basis will need to be investigated in the Master Plan. With changes to packaging, waste reduction, reuse, etc. measuring system performance solely by waste diversion may not result in an accurate reflection of how well the system is operating.

5.2 Source Separated Organics Program

The Region's Source Separated Organic Green Bin program was introduced in phases beginning in 2005 with all nine municipalities participating in the Green Bin program by September 2007.

5.2.1 Source Separated Organics Curbside Collection

Source Separated Organics curbside collection was introduced with a pilot project in the Town of Markham in 2004 and finishing with implementation in the six northern municipalities in 2007, as follows:

- 2004 – Town of Markham Green Bin pilot project
- 2005 – Full implementation of the Green Bin program in the Town of Markham
- 2006 – Green Bin program implemented in the City of Vaughan
- 2007 – Green Bin program implemented in the Town of Richmond Hill
- 2007 – Green Bin program implemented in Newmarket, Aurora, King, Georgina, East Gwillimbury, Whitchurch-Stouffville.

An online survey conducted by the Region in 2009 was used as a tool to determine the success of the Green Bin program. As of September 2009, 760 residents surveyed indicated that:

- 99 per cent used the Green Bin
- 67 per cent used free plastic shopping bags to line their bins
- 13 per cent purchased compostable bag liners.

Knowing that plastic accounted for 6 per cent residue in the Region's organic program, the Region developed a new policy of only permitting the use of compostable bags as liners in the kitchen containers in order to reduce residue and drive incremental diversion. Between 2009 and 2011, the Region encouraged and promoted the voluntary use of compostable bags for source separated organics in all local municipalities.

In May 2011, the Region rolled out mandatory use of compostable bags in the Green Bin program for households throughout the Region. In spring 2011, Markham deferred implementing compostable bags until the Town rolls out other updates to their waste management program in early 2012. Source separated organics audits conducted in the summer of 2011 revealed that 33% of single family homes in York Region are using compostable liner bags.

Depending on the municipality, the cost to collect Source Separated Organic materials ranges from \$79 per tonne to \$99 per tonne.

5.2.2 Source Separated Organics Processing

The Region and its local municipal partners offer one of the most diverse Green Bin programs in Ontario, allowing residents to compost food waste, diapers, sanitary products and pet waste. Over the past

several years, the Region has experienced problems with its contracted organics processing facilities. This has resulted in organic material ultimately not being diverted in some cases, while in other cases organic material is shipped as far away as Massachusetts for processing at cost of \$155/tonne. This lack of reliable and local organics processing capacity is being investigated further as part of the Dufferin-York Source Separated Organics project whereby the Regions would own the facility and contract out the operation.

When compared to other source separated organics programs, the Region's program accepts a larger range of organic waste materials. For instance, Diapers, Sanitary and Pet Waste account for approximately 10 to 12 per cent of the waste currently generated by single family households in the Region. By accepting these materials, it provides residents a greater opportunity to divert more materials than residents living in Durham, Halton or Peel as per the table below. As is demonstrated in Table 7, accepting a broader range of materials does result in the Region having a higher waste diversion per household (net of residue) and increased convenience to residents, however, in turn, processing costs and residue rates are higher.

See Table 7 below for a comparison to other Greater Toronto Area based municipalities.

Table 7: Source Separated Organics Program Comparison (Processing only) (2009 Data)

Program Name	Estimated Cost/tonne	Materials Accepted	Residue Rate	Overall Diversion Rate
Halton Region (City of Hamilton Contract)	\$77/tonne	Does not accept Diapers, Sanitary or Animal Waste	7%	54%
York Region	\$132/tonne	Accepts all organic materials	15%	57%
Durham Region	Not Available	Does not accept Diapers, Sanitary or Animal Waste	4%	51%
Region of Peel	\$75 to \$85/tonne	Does not accept Diapers, Sanitary or Animal Waste	5% – 10%	50%

5.2.3 Source Separated Organics Management and Extended Producer Responsibility

Extended Producer Responsibility for organic waste will require progressive thinking and may involve steward funding for the organics stream that is sold through grocery stores for which a "brandowner and/or first importer" can be identified. Examples of potential targets for extended producer responsibility in the organics stream include paper toweling, cardboard, tissues and diapers. One estimate developed by the City of Toronto through audits of their Green Bin program suggested that 15-20 per cent of all organic waste from households collected through the Toronto Green Bin program can be tracked through grocers as a brandowner. The Region's Source separated organics program collects the same list of materials as the Toronto Green Bin program; therefore the same 15-20 per cent figure would likely apply to the Region. The feasibility of establishing a funding program on the same basis as other "stewarded material" is worth investigating further. If successful, this could allow for a portion of the cost incurred by municipalities for collection and processing of organic waste to be offset by the stewards in the industry, similar to the current Blue Box program described above.

The Master Plan process will also be investigating the potential implications of reduced food waste requiring processing as a result of increased consumer consciousness when it comes to buying food. For instance, in a recent waste audit in York Region, it was discovered that more than 10 per cent of the food waste generated was unconsumed food, still in the packaging. Through consumer education, the amount of food waste generated could be reduced which could reduce the need for as much organics processing capacity in the future as is currently required.

5.3 Multi-Residential Waste Management Practices

Approximately 28 per cent of the households in the Region are classified as medium to high-density residential (11 per cent are considered multi-residential). This percentage is expected to grow to 47 per cent in 2031. Recycling and source separated organics diversion in high rise multi-residential buildings, mixed use buildings and town-house/row-house developments can be more challenging for a number of reasons:

- There is less space within living quarters for storage of materials;
- The set out location is generally farther from the unit, requiring residents to bring source separated materials to a common collection point;
- Mixed use buildings, defined as a mix of residential and commercial tenants/owners, presents a challenge as historically residential waste is managed by the municipality while commercial waste is managed privately and outside of the municipal system. When they are in the same building and collected together it presents a challenge to determine collection services and allocation of funding;
- Enforcement of improper waste setout is problematic if the service is only provided to one group of building inhabitants (municipally serviced residents) versus privately serviced commercial tenants; and,
- There is less outside space for storage of Blue Box and source separated organic materials in densely developed areas unless the developments have been designed to ensure sufficient space.

Because of intensification targets, the concentration of multi-residential households and mixed use buildings will increase over time, therefore these two types of generators will need to be addressed specifically. Current approaches to servicing the multi-residential sector vary by municipality in Ontario, Canada and the United States. The City of Toronto (53 per cent multi-residential households) and Region of Peel (24 per cent multi-residential households) provide full residual waste and recycling collection service to multi-residential buildings eligible for municipal collection. The level of service provided to high density York Region residents ranges from two to three-stream collection through a variety of collection methods, and is described in the Baseline Report (Appendix A). The existing provincial 3Rs regulations require owners of multi-residential buildings to implement recycling programs but most owners are not aware of this requirement and the regulations are rarely enforced by Ministry of Environment.

There needs to be concerted effort in the future to identify opportunities and implement programs and/or facilities to allow for greater waste diversion in multi-residential facilities. This could be accomplished in several ways:

1. Assume responsibility for the collection of waste materials from these facilities and thereby assume control over the programs they have access to. This approach has already been taken by some local municipalities;
2. Develop policies and supporting enforcement mechanisms to influence these facilities without taking over the responsibility for collection. This could be done through site plans (already being done to a degree), tenant and property management education programs, provincial enforcement under the existing 3Rs regulation; and/or,
3. Develop processing facilities capable of managing a mixed waste stream that would take the emphasis off the waste generator to participate to the same degree in waste diversion (i.e. build a facility that would separate the material, rather than ask the resident to do it).

There are many examples of successful municipal approaches within York Region to address waste diversion in the multi-residential sector:

- Some municipalities (such as Markham, Richmond Hill and Vaughan) have implemented by-laws requiring mandatory recycling or source separation of recyclable materials in multi-residential buildings. Failure to comply results in the refusal of services.
- Developing requirements for new multi-residential buildings that ensure waste diversion is as convenient as residual waste collection. Some municipalities in the Region have already started to implement these types of requirements. The Region, through its Regional Official Plan, already requires all new multi-unit residential buildings to incorporate three-stream waste collection capabilities and has been working with local municipalities to have provisions that enable adoption within their communities.
- Providing financial incentives and disincentives to encourage greater participation in recycling programs. This may include charging variable rates for residual waste collection, charging levies for additional residual waste generated, and/or applying fines for non-compliance.
- Providing waste management information in welcome packages for new tenants.
- Engaging tenants more through social marketing and incentive programs.

Mandatory Recycling and Composting in Multi-Residential Buildings in San Francisco, California – Case Study

In fall of 2009, the City of San Francisco introduced an ordinance making recycling and composting mandatory. The ordinance requires every residence and business to have three separate color-coded bins for waste: blue for recycling, green for compost and black for trash. If recyclable or compostable items are found in the garbage bins, the resident will be warned on the first offense. Repeat offenders will be issued fines of up to \$1,000 for large businesses and multi-unit buildings.

This requirement has had a big impact on business, residents, and the amount of waste diverted from landfills. The City reports mandatory source separation in multi-residential buildings resulted in a 5% increase in city wide waste diversion in the first year of the ordinance. An estimated 95% of multi-residential buildings participate in the recycling program.

The key to successful waste diversion in multi-residential buildings requires policies and programs that target building owners and managers, as well as tenants and waste haulers. These policies and programs can be driven without providing the actual waste collection service, however, are more easily implemented when the local municipality is providing/controlling the collection service. Encouraging

diversion in multi-residential buildings is a critical element of long-term strategies for municipalities with large multi-residential components (existing and projected). Examples of policies in these cases include:

- Mandatory recycling;
- Termination of service if the building fails to recycle, as determined through audits and monitoring;
- Chute closure powers, at the municipal level, to encourage diversion;
- Enforce 3Rs requirements for new buildings;
- Tenant and building superintendent support programs; and,
- Distribution of communication and education materials.

Given that the diversion of organics may not be practical in all multi-residential buildings, additional processing of residual waste may be required to reach higher diversion targets. The Region currently processes residual waste through Dongara as well as at the future Durham-York Energy-from-Waste facility. An additional mixed waste processing facility within the waste management system could be considered to recover materials from this stream.

5.4 Leaf and Yard Waste Program

Yard waste represents approximately 12 per cent (2010) of the waste stream in the Region. The nine local municipalities provide curbside pick-up for source separated leaf and yard waste through the growing season (April to November).

In January 2005, the Region banned the use of plastic bags for leaf and yard waste. It is mandatory that all residents place leaf and yard waste in kraft paper bags to avoid plastic contaminants in the finished compost. All leaf and yard waste collected within the Region is sent to a Regionally contracted open windrow composting facility owned and operated by Miller Waste. In addition, Christmas tree curbside collection is provided in January.

York Region municipalities have been sending leaf and yard waste to Miller Waste's composting facility intermittently for over 20 years. Since 1990, the Miller Waste composting facility has diverted over 400,000 tonnes of material from landfill and produced value added soil amendments and other products used regularly by local residents and municipal operations.

In 2010, the Region extended its yard waste contract with Miller Waste for a 10-year term to provide leaf and yard waste services up to a total of 22,000 tonnes annually. The cost to collect this material ranges from \$95 per tonne to \$130 per tonne and the cost to process this material is approximately \$69 per tonne.

5.5 Bulky Waste Programs, White Goods and Metal Recovery Programs

Bulky waste and white goods collection are also provided by the local municipalities within their curbside collection programs previously described. In most cases, white goods collection is provided to residents by scheduling a pick up directly with the waste management company. In Aurora, East Gwillimbury, Richmond Hill and Whitchurch-Stouffville, this collection service is provided for free. In the other local municipalities, residents are required to purchase and affix tags to each white good item at a cost ranging from \$1 to \$27.

It is important to note that scavenging at the curbside for white goods has been increasing over time due to high scrap metal values. For example, Richmond Hill has indicated that as much as 50 per cent of

the white goods placed to the curb for scheduled collection are removed before the designated collector arrives.

It is also important to note that appliances are included in the list of potential materials to be targeted in a broader electronics stewardship program under the Waste Diversion Act. Appliances have not been designated by the Ministry of the Environment to date as industry associations such as Canadian Appliance Manufacturers Association (CAMA) have been able to prove that the current diversion rates are high with an estimated recovery of over 80 per cent.

5.6 Community Environmental Centres and Drop-off Depots

In addition to the more traditional curbside Blue Box, source separated organics and residual waste collection programs, the Region and local municipalities also

collect a wide range of "special" materials through a network of Drop-off facilities. In large part these materials are either hazardous in nature or are materials that should be removed from the waste stream, but cannot be

segregated efficiently through a curbside collection program. To provide these services, the

Region operates two Community Environmental Centres, four Drop-off Depots and the Town of Markham operates 4 Drop-off Depots where residents can take materials such as construction waste to used computers and televisions for proper management. In 2010, more than 1,600 tonnes of Municipal Hazardous and Special Waste materials were diverted for safe management by Regional Drop-off facilities alone. Although not large quantities when compared to other programs, these materials present significant environmental risk if not managed properly and therefore special handling is required.



McCleary Court, Community Environmental Centre, Vaughan

5.6.1 Community Environmental Centres

Establishing the network of Regional Community Environmental Centres was presented as a priority in the Joint Waste Diversion Strategy (2006 and 2009) and approved by Regional Council in fall 2006.

Community Environmental Centres are intended to provide citizens with convenient access to solid waste management services and provide opportunities to manage waste in an environmentally sound



Elgin Mills Road, Community Environmental Centre, Richmond Hill

manner. However, in order to maximize this investment, the services and facilities need to be fully utilized and taken advantage of by the public in order to reduce the operating costs on a per tonne basis.

Through requests from local municipal Councils and collaboration with local municipal staff, three Community Environmental Centres have been approved. In spring 2009, McCleary Court Community Environmental Centre opened in Vaughan. The Elgin Mills Community Environmental Centre in Richmond Hill opened in October 2011. The Georgina Transfer Station will be converted into the Warden Avenue Community Environmental Centre by the end of 2012.

In 2010, the McCleary Court Community Environmental Centre managed approximately 3,916 tonnes of waste materials.

The current cost to operate these facilities is approximately \$230 per tonne, making these facilities and programs the most expensive of all services offered by the Region. As part of the Master Plan process, the need for additional facilities and/or opportunities to maximize the current facilities will be investigated further.

5.6.2 Drop-off Depots

The Region operates four public Drop-off facilities in addition to the Community Environmental Centres described above. These facilities are located in East Gwillimbury, Georgina, Markham, and Vaughan and are designed to receive Household Hazardous Waste and Waste Electronics, however, the Georgina Transfer Station accepts a broader range of materials, including used motor oil, Blue Box recyclables, metal appliances, scrap metal, tires, clean fill, agricultural bale wrap, leaf and yard waste and residual waste.

Based on recent waste audit data and the citizen panel survey, there are still special waste materials being thrown in the residual waste. Recent waste data found that 0.7 per cent to 0.9 per cent of the residual waste stream is classified as hazardous. Materials found include: medical waste/sharps, paints, oils and batteries. The citizen panel survey found that 8 per cent of the residents in York Region admitted to putting their hazardous waste in the residual waste.

Increasing participation in special waste programs and reducing the amount of hazardous material in the residual waste will be an important consideration in the Master Plan process. In addition, the two Regional leaf and yard waste Drop-off facilities are provided to the public (see Section 5.4 above).



*Georgina Transfer Station and Drop-off Depot,
Georgina*

5.6.3 Town of Markham Drop-off Depots

The Town of Markham operates four depots offering waste diversion drop off services to its residents, however, the materials are managed outside the Regional waste management system. The Town of Markham Drop-off Depots accept Blue Box items, reuse materials, polystyrene, Cell Phones; Ink Cartridges; Plastic Bags; Scrap Metal; Tires (maximum of four); Used Fluorescent Tubes & Compact Fluorescent Light Bulbs; and, Rechargeable Batteries. These facilities operate on a smaller scale with a

more limited list of acceptable materials than a Community Environmental Centre and are estimated to operate at approximately \$115 per tonne.

5.6.4 Return to Retail and Take it Back Programs

Over the past few years, with the increased emphasis and support of Extended Producer Responsibility in Ontario, a number of Industrial and Commercial industries (in particular the retail industry) have started to provide waste collection programs for materials they sell. For example, some retailers who sell paints and oils will now take used items back to be recycled. For example, Canadian Tire is currently working on the development of a program to take back fluorescent light bulbs. Many pharmacies are now providing take back programs for medical and pharmaceutical products. Battery collection boxes at electronic stores are becoming more and more prevalent. Beer and Liquor containers can be returned for a refund. The Beer container return program is one of the oldest operating take it back programs in Ontario, dating back to its start in 1927⁴.

These initiatives provide an opportunity for the consumer to return old materials back to the retailer when going to purchase new materials, offering a number of advantages including:

- Safe management of special waste materials;
- Convenient locations for drop-off/return; and,
- Management of materials within the Region without the direct municipal taxpayer burden to provide this service.

The City of Ottawa's "Take it Back" program is a good example of this type of program where currently over 820 retailers and non-profit organizations participate.

Voluntary Take Back in Ottawa, Ontario - Case Study

In the *Take It Back! (TIB)* Program, the City of Ottawa encourages partnerships with local businesses to "take back" many of the Household Special Waste materials that they sell. Over 500 retailers participate in the program, which collects an array of items (over 97 items) under the headings of automotive (i.e. used motor oil, tires, car batteries, propane tanks), garden supplies (i.e. pots, trays), health (i.e. medications, needles), electronics (i.e. computers, toner cartridges, cell phones, batteries) and household (i.e. hangers, garment bags, bubble wrap, disposable batteries). In 2002, an audit was performed on 14 different products taken back by participating retailers. It was determined that participating retailers diverted at least 402 tonnes of material per year from landfill or City run hazardous waste depots.

These opportunities will be reviewed further as the Master Plan progresses to identify their success in collecting these materials and the potential benefit of promoting and tracking these initiatives.

6.0 Waste and Energy Recovery

When faced with the Michigan border closure, the Region was one of the first Greater Toronto Area municipalities to start looking "outside the box" for alternative ways to manage their residual waste and recover additional resources. York Region took a leadership position and embarked on two new opportunities; Dongara's residual waste pelletization project and the Durham-York Energy Centre Facility.

⁴ <http://www.bottlebill.org/legislation/canada/history/onhis.htm>

Dongara - In November 2006, Regional Council signed a contract with Dongara Developments Inc. in Vaughan to process a maximum of 100,000 tonnes per year of residual waste for 20 years. The Dongara Pellet facility converts waste to fuel pellets. The Region is currently sending up to 1,800 tonnes per week of curbside residual waste to this facility for processing.



Dongara Pelletization Facility, Vaughan

The facility processes municipal residential waste by removing some recyclable materials and then grinding and compressing the remaining processed waste into pellets that are burned for an industrial energy source. Market development for the pellets includes energy for greenhouses, gasification and as coal replacement. Dongara is working with the Ministry of the Environment to have its end product designated as a resource rather than a waste. As long as the pellets are classified by the Ministry of the Environment as a waste product then all end users must be designated as waste management facilities and receive Certificates of Approval in order to use the pellets. This, combined with low natural gas prices, has significantly inhibited Dongara's ability to market pellets in Ontario.



Finished Pellet Product, Dongara Facility

It is important to note that the Dongara facility is a demonstration facility and it is the first plant with this particular technology arrangement in the world. As such, issues have arisen that Dongara has been working to address to increase plant throughput capacity and operational performance. The Region currently pays \$88.02 per tonne for processing services at the Dongara facility.

Durham-York Energy Centre Facility - After many years of study and consultation, York Region with its partner Durham Region received approval to construct the first greenfield energy-from-waste facility in Canada in more than 20 years. This facility will:

- Recover 80 per cent of the ferrous metal and 60 per cent of the non-ferrous metal that still remains in the residual waste to be recycled;
- Reduce the volume of waste being landfilled by up to 90 per cent, significantly reducing the Region's reliance on landfill disposal; and,
- Generate electricity that can be sold to the electrical grid for distribution at an annual revenue of at least \$8.59 million.

The Energy-from-Waste facility will be situated on a 12 hectare site in the Municipality of Clarington and will have a capacity to process 140,000 MT/yr of municipal waste with the intent to produce electricity for sale into the market. The estimated costs for the facility are approximately \$270 million. The Region's portion of this cost is approximately \$68 million.



Conceptual Rendering, Durham-York Energy Centre, Clarington, Ontario

In the initial operating year, the unit cost of the Energy-from-Waste facility totals \$233/tonne comprised of \$42/tonne for operation & maintenance plus \$191/tonne for repayment of principal and interest on the capital debt. As the debt is repaid over the duration of the facility operation period, this cost per tonne reduces to approximately \$111 per tonne in the year 2035.

This investment represents a premium over other waste disposal options in the early years. However, through the evaluation of this long-term alternative it was determined that recovering additional energy and materials from the residual waste was a much better alternative for the environment and worth the additional costs. The facility has a planned operation date of August 2014.

York Region has committed 30,000 tonnes per year of residual waste (post waste diversion programs) to the Energy-from-Waste facility in a put or pay contract with Durham Region and Covanta.

This initiative is important in terms of the Regions' long-term integrated waste management plan for two reasons:

1. It is the first Energy-from-Waste plant to receive a Certificate of Approval in the Province of Ontario since the Algonquin Power Energy from Waste facility in the Region of Peel received its Certificate of Approval in 1991. This represents an important new addition to the waste management infrastructure in the province and potentially "opens the door" for future facility development as an alternate or complement to landfill and disposal.
2. The Durham-York Energy-from-Waste facility will process only municipally collected household waste left over after aggressive diversion efforts (i.e. recycling and composting). The plant therefore represents a component of, rather than a competitor to, the Regions' comprehensive, integrated waste management programs.

York Region's investment in these facilities clearly distinguishes them as a leader in North America when it comes to energy and material recovery and truly considering waste as a resource.

7.0 Waste Disposal

Between 2006 and 2010, the Region began to significantly reduce waste exported to Michigan. On December 31st, 2007, the Region's contracts with Onyx Arbor Hills (now Veolia) and with Republic Carleton Farms expired but it was able to extend the contract with Veolia on a conditional short-term basis to August 2008, because permitting and land acquisition issues had delayed the start up of the Dongara facility.

With the purchase of the Green Lane Landfill by the City of Toronto in March 2007, the Region renegotiated the terms of its contract and settled on a long range contract extending to 2012 with two five year optional extensions that could be exercised by the Region. The Region's contract enables shipping 80,000 tonnes of residual waste per year for 20 years to the facility with a put or pay minimum provision of 25,000 tonnes per year at an approximate cost of \$91 per tonne (including haulage).



Greenlane Landfill, St. Thomas, Ontario

Depending on the municipality, the cost to collect residual waste materials ranges from \$53 per tonne to \$56 per tonne.

8.0 Materials Managed Outside the Regional System

As part of this baseline assessment it was identified that a portion of waste generated within the Region is being managed outside of the Regional system. These wastes can be classified into three categories:

- Municipal Waste from privately serviced multi-residential and mixed used buildings and/or public depots and public spaces;
- Industrial, Commercial and Institutional Waste; and,
- Construction and Demolition Waste.

Most Ontario municipalities have chosen not to, nor are they legally required to, involve themselves with the collection and management of Industrial, Commercial and Institutional waste and Construction and Demolition waste, leaving these sectors to manage their own waste streams. Industrial, Commercial and Institutional sectors and Construction and Demolition materials contribute 60 per cent or greater of the solid non-hazardous waste stream. Mandated by the Ontario government to achieve 60 per cent waste diversion within its municipal boundaries, many municipalities are beginning to address opportunities to promote waste diversion within the Industrial, Commercial and Institutional and Construction and Demolition sectors.

8.1 Municipal Waste

Some local municipalities have contracts for the processing of waste materials with private sector processors outside of the Regional system. These contracts are largely for public space and events recycling where the material is collected in plastic bags. The Regional Materials Recovery Facility is

currently not capable of accepting bagged material and therefore some local municipalities have opted to send this material to private processors outside the Regional system for processing. In addition, the materials collected at the Town of Markham depots, described above, are managed outside the Regional system.

There is also a significant portion of municipal waste in multi-residential and mixed-use buildings throughout the Region that currently receive private collection whereby the waste is managed outside of the Regional system. This makes waste generation per capita calculations challenging when comparing residential populations, including multi-residential and mixed-use, to waste tonnage numbers from a subset of the total population. It is hoped that through the development of this Master Plan that the residential tonnage figures can be better understood and service levels examined.

From a taxpayer viewpoint, it would make sense that multi-residential tenants would receive municipal waste management services, however, under Ontario Regulation 101/94, multi-residential is categorized as Industrial, Commercial and Institutional with the owner/building manager responsible for providing the service. Advocacy efforts for clarification on this separation will also be investigated throughout the Master Plan.

As part of this Master Plan process the opportunity to accept and process recyclable materials currently collected under privately serviced contracts will be reviewed.

8.2 Industrial, Commercial and Institutional Waste Management Practices

The Region's local municipalities provide Blue Box recycling services to selected businesses such as downtown Business Improvement Areas. Many local municipalities provide recycling services to area schools. Several local municipalities have rolled out Source Separated Organics collection service to their downtown businesses as well.

In recent years, municipalities in Ontario and throughout Canada and much of the United States have adopted a "hands off" approach to Industrial, Commercial and Institutional waste management, as they consider that Industrial, Commercial and Institutional waste is adequately managed by the private sector haulers and waste service providers. In addition, in Ontario, municipalities do not have the jurisdictional control to direct waste (sometimes referred to as "flow control") and therefore have limited ability to control its management. The Industrial, Commercial and Institutional waste generated in York Region is a significant quantity of material and something that will be investigated further. Establishing actual amount and composition of the Industrial, Commercial and Institutional material is problematic as there is not a comprehensive tracking and reporting system being maintained anywhere in Ontario. The only quantitative data which appears to be accurate is that over 3 million tonnes of Industrial, Commercial and Institutional waste are exported

The Ontario 3Rs Regulations also require mandatory source separation and recycling by many businesses in the Industrial, Commercial and Institutional sector, and by Construction and Demolition projects over 2,000 square metres in size. The Regulations have never been widely enforced, and most of the businesses affected are unaware of their existence, therefore compliance levels are very low. This is a significant lost opportunity to divert waste from non-residential sources in the Region and throughout the Province of Ontario.

to the US each year and a total of 6.4 million tonnes of Industrial, Commercial and Institutional waste are disposed from non-residential sources in Ontario⁵.

As a result, development of the Integrated Waste Management Master Plan will include a review of what stakeholders consider to be an appropriate municipal and Regional role in Industrial, Commercial and Institutional waste management. It is important to note that currently the Certificates of Approval at Regional facilities do not allow for the receipt of Industrial, Commercial or Institutional waste.

The Current and Innovative Practices Report contains examples and opportunities to reduce waste from the Industrial, Commercial and Institutional sector. In some jurisdictions in Europe (e.g. the United Kingdom and Germany), waste diversion targets and performance are measured against the total waste stream, not just municipal solid waste. In the United Kingdom for example, the target for the diversion of paper waste has focused primarily on corrugated containers in the Industrial, Commercial and Institutional waste stream. While this approach is not currently used in Ontario, and is not consistent with the current regulatory framework, it is notable that some jurisdictions have focused on stewardship of the Industrial, Commercial and Institutional stream as a more affordable marginal cost consideration than trying to increase diversion from single family households, where the most cost effective diversion is already occurring, and additional diversion will be more costly.

San Francisco Food Service Waste Reduction Ordinance Case Example

Launched in June 2007, San Francisco's *Food Service Waste Reduction Ordinance* requires that all disposable food ware (take-out containers) used in San Francisco be either compostable or recyclable unless there is no suitable product that is within 15% of the cost of non-compostable or non-recyclable alternatives. The Ordinance also bans the use of polystyrene (PS) disposable food ware but permits a food vendor to charge a "take out fee" to customers to cover the cost difference of the biodegradable or compostable disposable food service ware product that is not affordable. In addition, the City has introduced a ban on plastic bags requiring supermarkets and chain pharmacies to use recyclable or compostable sacks (paper or biodegradable bags) instead.

8.3 Construction and Demolition Waste Measures

The Region and local municipalities have many areas where they can influence Construction and Demolition waste reduction and diversion through purchasing specifications and building permit processes. The existing provincial 3Rs regulations require waste diversion at Construction and Demolition sites above 2,000 square metres but they are rarely enforced. Some options to divert Construction and Demolition waste include:

- Requiring, promoting or incenting waste diversion as part of the building permit process;
- Requiring the diversion of Construction and Demolition waste as part of the construction specifications for all municipal and Regional construction projects;
- Requiring new or existing buildings to meet LEED standards; and,
- Educating owners of construction and demolition projects on the existing 3Rs regulations.

Most Construction and Demolition projects generate the same types of materials which make the waste more convenient to sort. As a result, many jurisdictions in North America have implemented mandatory

⁵ Statistics Canada Waste Management Industry Survey: Business and Government Sectors, 2008. Catalogue No 16F0023X

recycling or source separation bylaws, coupled with mandatory Construction and Demolition diversion targets. For a successful program, viable recycling markets must be established for the end products.

Construction and Demolition waste is a significant part of both the residential and Industrial, Commercial and Institutional waste streams. The quantities of Construction and Demolition waste vary as the level of economic activity varies. Construction and Demolition waste is created both in new construction (in both the residential and Industrial, Commercial and Institutional sectors) and in renovation projects. “Stewardship-type” interventions (e.g. banning some materials from landfill) are described in the Current and Innovative Practices report, and have been more focused on new construction projects because of the higher level of permitting and control exercised by cities and regions. Some jurisdictions focus more on incentives (for instance including a requirement for LEED (Leadership in Energy and Environmental Design) certification for new buildings) than on fees and bans. The Construction and Demolition waste is a large waste stream, and to some degree has not been addressed directly by most municipalities in Ontario until recently. The Region and some local municipalities already have innovative approaches in place to influence Construction and Demolition waste generation and diversion through site approval processes and requirements that new buildings meet LEED standards. LEED in itself does not always lead to waste reduction as marks can be earned for a variety of sustainable practices related to water and energy conservation and landscaping etc. Innovative approaches from other jurisdictions are described in the Current and Innovative Practices Report.

It is important to note that currently the Certificates of Approval at Regional facilities do not allow for the receipt of Construction and Demolition residual waste.

Halifax Regional Municipality, Nova Scotia Case Study of Diversion Targets for Construction and Demolition Processors

In 2001, Halifax Regional Municipality began to implement new bylaws to regulate the Construction and Demolition industry. The Construction and Demolition Licensing Bylaw establishes minimum diversion targets for Construction and Demolition materials using a phased-in approach. The Construction and Demolition Licensing Bylaw stipulates:

- In 2001 - 50% of all incoming Construction and Demolition material arriving at a Construction and Demolition Processing Facility or Transfer Station shall be recycled or otherwise diverted from disposal;
- From 2002 to 2005 - 60% of all incoming Construction and Demolition material arriving at a Construction and Demolition Processing Facility or Transfer Station shall be recycled or otherwise diverted from disposal;
- From 2006 and beyond - 75% of all incoming Construction and Demolition material arriving at a Construction and Demolition Processing Facility or Transfer Station shall be recycled or otherwise diverted from disposal.

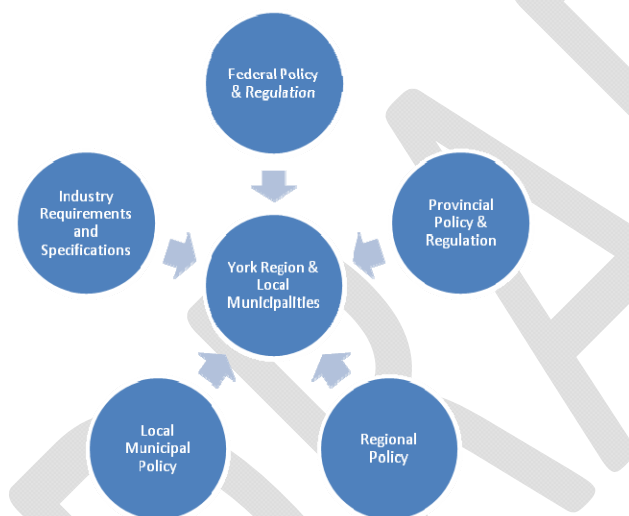
9.0 Policy Influences on the Solid Waste System

The Region and its local municipal partners shape waste management policies and are in turn influenced by policies from many directions, as shown in Figure 5 below. As the Master Plan is developed, these forces need to be taken into careful consideration. Ultimately the recommendations of the Master Plan

will need to ensure consistency with Federal and Provincial Policy over which the Region has limited control. The Plan must also ensure sufficient flexibility is built into the future waste management system to be able to respond to potential changes in policy. For example, development and planning policies, particularly related to intensification and multi-unit housing will impact long-term solid waste management planning considerations, waste collection requirements and processing needs.

Throughout the sections of this report, highlights of relevant and influential policy have been identified as it relates to the content.

Figure 5: Influences on York Region's Waste Policy and Programs



One of the primary policy drivers in Ontario is Extended Producer Responsibility. For the past ten years, the concept of Extended Producer Responsibility has dominated the discussion of future solid waste management systems in Ontario, especially for Blue Box materials, electronic waste, tires and household hazardous waste. Essentially, those that are responsible for producing the waste (i.e. manufacturers and distributors), and consumers who buy the products, should be responsible for its management throughout its life cycle. The impact of Extended Producer Responsibility could be very extensive depending on the degree of its implementation. For instance, Extended Producer Responsibility could result in:

The Municipal Act (2001) promotes regional coordination of waste management services and required regional municipalities to assume responsibility for collection and processing of waste. Most Ontario regional municipalities took over collection, processing and disposal responsibilities. York Region is one of few areas remaining in Ontario where the Region has chosen to operate a two-tier system, working collaboratively with its local municipal partners.

The **Ontario 3Rs Regulations** require municipalities with more than 5,000 people to provide recycling collection equally as frequently as garbage collection. Convenient garden waste diversion opportunities must be provided by municipalities over 50,000 in population. All local municipalities within the Region provide collection services which meet or exceed 3Rs Regulations requirements.

Ontario's Waste Diversion Act was established in 2003 and set the framework for shifting economic responsibility for recycling from municipalities to producers. The Blue Box program was the first to be funded under the provisions of the Act, with stewards required to fund 50 per cent of the net cost of Blue Box recycling. A five-year review of the Act recommended that stewards of printed paper and packaging fund 100 per cent of Blue Box program costs. The issue is currently stalled and resolution is unlikely to occur until sometime in 2012. Other industry funding programs implemented under the Waste Diversion Act include: the Municipal Hazardous and Special Waste Program; electronics; and tires. These programs attempt to shift the costs of managing these materials off the municipal tax base to the stewards.

- Decreased quantities of waste to be managed by the Region and the local municipalities
- A change in waste collection and processing responsibility
- Additional costs to the consumer at the point of purchase
- Reduced taxes required to support municipal waste management systems
- Changes in how materials are packaged, marketed and sold

It appears likely that Extended Producer Responsibility will continue to be the cornerstone of solid waste diversion policy in Ontario for the foreseeable future. The focus for the past 5-10 years has been on Blue Box materials, tires, end of life electronics and a range of household hazardous or special waste materials.

Areas where additional stewardship planning and implementation is likely to occur over the next 5 to 10 years are:

- Residential organic and biodegradable waste;
- Waste generated by the Industrial, Commercial and Institutional sector;
- Construction and Demolition waste; and,
- Bulky waste and white goods.

10.0 Reviewing What Others are Doing

To support the further enhancement of the existing system, one of the first steps was to look outside York Region to municipalities throughout North America and beyond to identify programs that are achieving the greatest results in similar situations to York Region. These programs are being examined as potential models, however to be successful, the Region will need to take these practices one step further to examine how they can be applied to the Regional integrated system.

The Region is a mix of urban, sub-urban and rural households, as well as households in single family dwellings and multi-residential buildings. Approaches used in other jurisdictions may not necessarily work in the Region, and one approach may not work throughout the Region given the different characteristics of the local municipalities. It may not be possible to identify one "best" practice that will be applicable to all circumstances – a practice that may be "best" for one community may not be best for another.

The Current and Innovative Practices report (Appendix C) identifies a range of solid waste management practices that have been successful in leading edge jurisdictions throughout Canada, North America, and in some cases Europe and Australia. It provides a broad range of approaches but is by no means a complete summary of all practices. In later phases of the Master Plan process, suitable practices that support the Vision and Goals we adopt will be researched more fully. The Current and Innovative Practices report addresses existing and potential practices, programs and policy approaches in solid waste reduction and diversion, discussed in seven separate categories which include:

- Single Family Residential Waste;
- Multi-Residential Waste;
- Industrial, Commercial and Institutional Waste;
- Construction and Demolition Waste;
- Communication, Education and Social Marketing;
- Municipal Sustainability Practices; and,
- Funding Models, such as rate based funding for waste.

The Current and Innovative Practices report describes the general approach to each practice, lists communities that have tried or implemented the practice, key lessons learned for practices relevant to York Region. This report will be utilized as a reference document for potential programs and system components that could be implemented to support the future vision and system goals.

11.0 Master Plan Consultation and Engagement

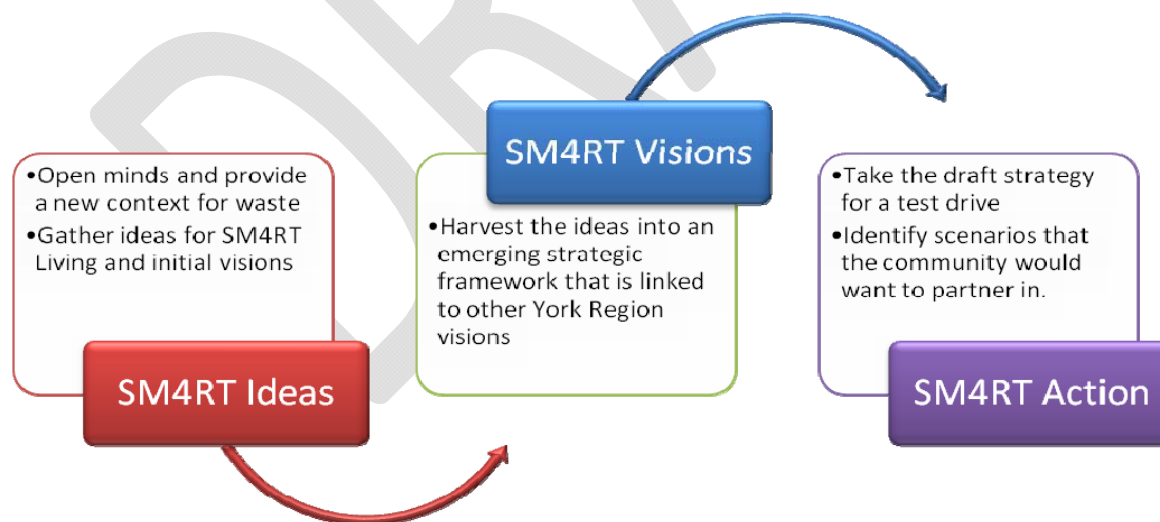
The development of Master Plans and future directions in our communities requires not just input, but authentic involvement of a wide range of community members in both its development and implementation. Extensive consultation, reaching a diverse audience has been accomplished in the first Phase of the Master Planning process and will continue throughout the project. The process followed and initial results are described in the sections below.

11.1 Reframing Waste

Most people's initial reaction when they hear the word waste management is to think about recycling. This is in some respect the low hanging fruit where our residents have achieved outstanding results. Through this SM4RT LIVING plan, emphasis is being placed on waste reduction and reuse, a significant and complicated challenge. Through development of the SM4RT Living plan, new possibilities for a more sustainable economy will be examined, including new economic opportunities that help generate prosperity through environmental consciousness.

At the same time however there is a shift underway that recognizes that increased possession of material goods is not directly linked to well-being. The concept of waste is therefore an excellent vehicle to elevate the conversation from garbage to what will be important and valued over the next 40 years.

Figure 6: Waste as a Vehicle for SM4RT LIVING



The consultation program to date has included:

- Places and Spaces Events;
- Citizen Panel;

- Idea Generating Sessions;
- Stakeholder Advisory Committee;
- Technical Meetings; and,
- Local Municipal Meetings.

The following sections provide a summary of each of these events.

11.2 Places and Spaces Events

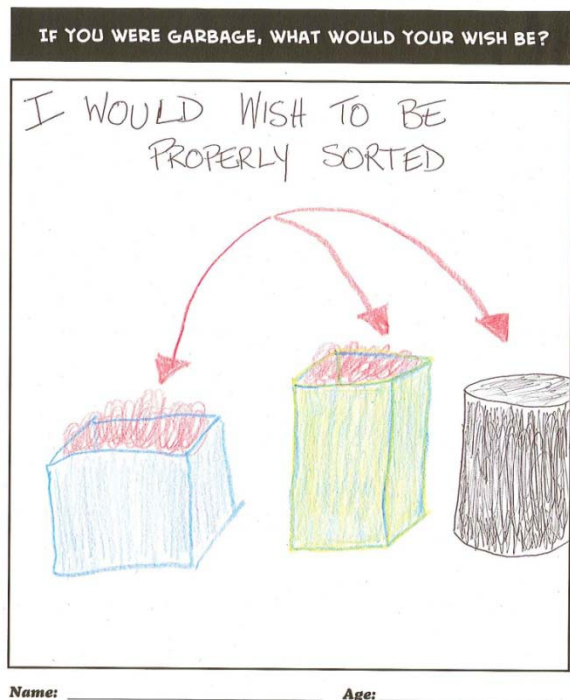
Over the summer 2011, York Region staff and consultants attended 22 different fairs, festivals, sporting events and other high traffic areas such as shopping malls and farmers' markets to "go to where the people are" and talk about SM4RT LIVING. More than 500 residents talked with staff and shared their ideas and concerns, with many more being exposed to the project in passing. Almost 300 of these residents expressed an interest in being updated on the project as it progresses and put their names on our contact list.



As part of the conversations with residents, through the online comment form, and comments received through the project phone line, residents were given the opportunity to share ideas for the future of SM4RT LIVING in York Region. Residents were encouraged to think long-term and to make suggestions for improvements to existing programs.

The range of ideas articulated by residents varied substantially. Recurring themes included:

- Excessive product packaging and targeting packaging reduction
- Simplifying Program / Reduce Confusion
 - Clearly communicate what material goes where (i.e. Blue Box, Green Bin, etc.)
- Expansion of recycling efforts
 - Three-stream waste in parks, public spaces and at public events
 - Expansion of Green Bin to apartments/condos, restaurants, businesses, hospitals, schools, etc.
 - Increase number of acceptable items in Blue Box
- Education – target youth and schools
- Work with contractors to build more homes / buildings in a sustainable manner
- People need to have ownership over the waste they create
 - Create user pay program
- Reduction of waste was an overarching theme with numerous suggestions offered, including:



Name: _____ Age: _____

- Make businesses responsible to reduce packaging
- Eliminate disposable water bottles
- Make shopping bags compostable for use in the Green Bin program
- More opportunities for ReUse i.e. curb give-away days

11.3 Citizen Panel

A Citizen Panel was formed with 500 residents from York Region, proportionally representing each of the nine municipalities that make up the Region. Panel members were recruited through a telephone survey conducted during July and August 2011. The Panel will be used three times over the length of the project to provide necessary baseline information, opinions, direction, and feedback on the Plan. Having a pool of residents that are representative of York Region is a resource that can be drawn on for additional consultation activities, such as forums, focus groups and public meetings, as needed. The Panel can continue to be used by the Region as a representative sample of the York Region population beyond the range of this project and beyond waste management.

The following is a sample of the type of information collected from the Citizen Panel:

Blue and Green Bin Program

- 97.8 per cent indicated that they participate in the Blue Box program.
- 97.4 per cent have access to the Green Bin program participate in it.

Compostable Bags

- Approximately 70 per cent indicated they use compostable bags in the Green Bin program.
- This is a striking difference to waste audit results which indicated that 33 per cent of the bags collected in the Green Bin program during the period from June 7-17, 2011 and from August 23 - September 2, 2011 were compostable.

Hazardous Waste Management

- 58 per cent of the residents are using hazardous waste Drop-off Depots to dispose of their hazardous items.
- 20 per cent return their hazardous products to the retailer or take them to a Community Environmental Centre.
- 8 per cent place hazardous waste in the residual waste.

Waste Electronics

- 47 per cent take electronics to a Drop-off Depot or Community Environmental Centre.
- 22 per cent put waste electronic items in the residual waste, the Blue Box, store the items at home, or don't know what to do them.

Reuse

- 60 per cent stated they often take items to reuse organizations such as Goodwill or Habitat for Humanity.
- 15 per cent often give the item to someone they know
- 9 per cent will sell the item
- 5.7 per cent stated that they throw the item in the residual waste.

This initial survey shows that York Region residents are conscious of responsible waste management practices. Recycling and composting are practiced by nearly all members of the community. Residents are also responsible with items they have that are no longer needed, but still in good working order. Rather than throwing them away, through either selling or donation they will pass the item along to someone who may be able to use it. This shows that many residents have the appropriate attitudes, beliefs and values. Strong participation levels and awareness are important elements that will help create SM4RT lifestyle changes around how waste is generated and managed.

An initial area for action could include examining the barriers to participating in or engaging in desired waste diversion and reduction behaviours. These findings will help guide the Master Plan to transform waste management in York Region beyond recycling and recovery to a lifestyle of reduction and reuse.

11.4 Idea Generating Sessions

Four idea generating sessions were held that explored bold new possibilities of what SM4RT LIVING can look like in York Region over the next 40 years. These sessions included dynamic discussions around the following topics:

1. **SM4RT Food** - The topic of food launched the exploration of SM4RT LIVING. Participants explored the impact of an innovative food strategy at home and in stores and restaurants, including the value of purchasing locally and the significant cost of food waste.
2. **SM4RT Studio** - Nature always finds a use for its waste. This unique form of creative intelligence ensures survival. It is with this spirit that this session explored people's relationship to 'stuff' and the importance placed on consumer driven values. Transforming old items into new art was the vehicle through which participants envisioned a SM4RT LIVING future for York Region, with waste as a key driver for change.
3. **What Really Matters?** - The shift from consumer excess and disposable values to a new emerging set of economic and lifestyle indicators is at the heart of SM4RT LIVING. This session explored how participants can shape a fulfilling future from what really matters to them. The outcome of this session was a SM4RT lifestyle strategy that reduces consumption and waste.
4. **SM4RT Design** - Many of the changes that reflect SM4RT LIVING, especially the manner in which growth is addressed, can be explored through Community design. This isn't just the physical design, but how people interact, connect and create together. Community, connection and creativity are assets in the world of SM4RT LIVING. The hidden potential of diverse communities was examined along with waste related innovations and opportunities.

The result of these sessions has identified a need and interest to move towards waste elimination. This movement drives the following:

- A reframing of the concept of consumerism where we consume only what we need, products are designed for multi-use, durability, and tracking of information along its lifecycle, and we attribute true meaning to our 'stuff'.
- A renewed community culture of sharing, both skills and goods; a greater sense of connectivity to who we are, what we do, and where we live; and, a sense of belonging and creativity;
- The design of our lives and our communities to reflect localized economic development, and,
- The fostering of a mindset that makes conscious decisions about how we can live sustainably.

These ideas and concepts will be explored further as part of the development of a vision and goals in Phase 2 of the Master Plan.

11.5 Stakeholder Advisory Committee

The development of Master Plans and future directions in our communities today requires not just input, but authentic involvement of a wide range of community members in both its development and implementation. One of the key groups in shaping the future of waste in York Region is the Stakeholder Advisory Committee, which held its first meeting on October 25, 2011.

Representatives on the Stakeholder Advisory Committee Include:

- | | |
|--|--------------------------------------|
| • York District School Board | • York Region Environmental Alliance |
| • York District Catholic School Board | • Goodwill |
| • Georgina Chamber of Commerce | • Habitat for Humanity |
| • Magna International Inc. | • Retail Council of Canada |
| • Walmart | • Tim Hortons |
| • Cathy's Composters | • Ministry of the Environment |
| • Recycling Council of Ontario | • ORHMA |
| • Greater Toronto Homebuilders Association | • Canada's Wonderland |
| • Vaughan CARES | • PAC Next |

At its first meeting, the Stakeholder Advisory Committee outlined the role they would like to play in the project. It is one that could best be described as 'Collaborative Leadership' that includes the following:

- Development of a model of collaboration that creates new approaches from which all can benefit, and fosters co-operation while honouring competition;
- Explores and develops new economic opportunities that help generate prosperity through environmental consciousness;
- Explores and develops new business models that help both large corporations and medium/small size businesses benefit from SM4RT LIVING;
- Acts as a sounding board to vet what York Region heard from the public and help to shape innovative ideas;

- Explores how to develop harmonized program at curbside with respect to collection methods, packaging materials, creating cleaner streams making for better marketing/better markets (...more revenue...);
- Takes potential strategies back to their respective organizations and tests, then bring back through a feedback loop;
- Contributes to the development of the core messaging of SM4RT LIVING and help get the message out to the whole system. Collective voices (businesses, organizations, educators, manufacturers....) with different interests will result in a message with more credibility, more widespread and increased uptake; and,
- Balances the need for a long term view with the urgency of undertaking SM4RT LIVING changes today.

In addition to the broad roles outlined above, the SAC members also provided a more detailed set of responsibilities that lined up with the SM4RT LIVING context they had developed.

This committee will meet approximately seven times over the duration of the project.

11.6 Technical Meetings

Industry specific meetings are currently being held to explore opportunities for the Region to work with its industrial and commercial leaders in developing more effective waste reduction, reuse and recycling programs. Targeted industries/service providers include:

- Waste Management Companies
- Multi-residential Superintendents
- Construction and Demolition Industry
- Agricultural Industry
- Regional and Local Municipal Planning Representatives

These meetings are being conducted to help the Region better understand some of the barriers to progressive waste management and waste minimization experienced by industry and how the Region can either help to support or influence future change.

11.7 Local Municipal Meetings

Consultation with the Region's nine local municipal service delivery partners continues to be an integral component of the master plan. Regular and on-going communications continue with each local municipality in the development of the Master Plan and have resulted in the following key issues of concern from their perspective, including:

- Need for greater collaboration between the Region and local municipalities with respect to decisions that consider entire waste management system.
- Continued need for each local municipality to make decisions regarding collection services (single family and multi-residential)
- Need for examination of single use clear blue bags for recycling collection
- Need for future consideration of expansion of the Community Environmental Centre network, how and where new facilities could be established and consideration of optimizing existing depots.

- Source Separated Organics, processing capacity and acceptable materials (i.e. compostable bags) including complexities around enforcement, if required.
- Future urban development and the need for support in addressing multi-residential and mixed use buildings.
- Staff resources and the ability to implement additional changes/enhancements to the current waste management system.

Each of these points will be considered along-side input from the public and stakeholders in the development of the Master Plan.

12.0 Opportunities and Next Steps

To continue to be a leader in the industry, there are many opportunities for York Region to improve its waste management system in the future that will be explored in the next steps of the Master Plan process.

12.1 Opportunities to be Explored Further

The following are opportunities that have been identified at this preliminary stage:

- **Waste Policies** – The Region and its local municipal partners have a history of working cooperatively with a range of governments including the Federal government, Provincial government as well with neighbouring municipalities. Effective waste diversion and waste reduction policy can be influenced and implemented by the Region to help encourage and where necessary, enforce the use of appropriate and sustainable waste management practices (i.e. through permits, by-laws, etc.). This approach could be taken in concert with other municipalities undergoing similar transformations. In addition, the Master Plan will continue to review policy under Regional and local municipal control for potential changes to support the long-term vision and goals being developed for waste management. Based on an initial review of Regional and local municipal policy it is evident that there are considerable differences among each of the local municipalities and the Region that could be creating inefficiencies in the overall waste management system. For example, each local municipality has slightly different requirements in their bylaws, everything from the cost for bulk waste collection to the number of residual waste bags allowed for setout. Policy not under Regional or local municipal control will be reviewed and an appropriate advocacy strategy will be developed to support and/or influence future policy changes.
- **Multi-Residential Waste Diversion** - Approximately 28 per cent of the households in the Region are classified as medium to high-density residential. However, because of intensification targets, the concentration of this type of development is projected to increase to 47 per cent by 2031; therefore these generators need to be addressed specifically. The key to successful waste diversion in multi-residential and mixed use buildings requires policies and programs that target building owners and managers, as well as tenants and waste haulers. Some initial concepts/concerns identified relate to:
 - the difference between influencing new developments and managing/addressing older existing developments and the unique issues each present;
 - the lack of comprehensive data on the current situation with respect to how privately collected facilities are performing;

- inefficiencies with respect to the movement of waste (e.g. multiple collection contractors servicing buildings beside each other); and,
- an inconsistency in the approach to service delivery and communication, promotion and tenant/property manager education.

These issues are compounded by issues with the regulatory definition of multi-residential and the role of municipalities in providing waste management services to these facilities.

- **Industrial, Commercial, & Institutional Sector Waste Management** –While there is considerable room for improvement in waste management within the Industrial, Commercial and Institutional sector, traditionally the municipal focus has been almost exclusively on residential waste management. Part of the mandate for the Integrated Waste Management Master Plan will be to review what stakeholders consider to be an appropriate Municipal role in Industrial, Commercial and Institutional waste management. Some initial concepts identified that require further investigation include the need to create a definition of small business and Business Improvement Area other than those that reside on municipally collected routes; a need for further consultation with the Ministry of Environment with respect to the enforcement of the 3R's regulations; advocacy to the Provincial and Federal governments regarding Extended Producer Responsibility for these waste streams; and, a need for greater cooperation and collaboration with Regional and local municipal planning departments to ensure future community and industry designs reflect good waste management processes.
- **Construction and Demolition** – The Region and local municipalities have many areas where they can influence Construction and Demolition waste reduction and diversion through purchasing specifications and building permit processes. Most Construction and Demolition projects generate the same types of materials, which make the waste more convenient to sort. As a result, many jurisdictions in North America have implemented mandatory recycling or source separation bylaws, coupled with mandatory Construction and Demolition diversion targets. For a successful program, viable recycling markets must be established for the end products. Some initial concepts identified that require further investigation include:
 - the need for further consultation with the Ministry of Environment with respect to the enforcement of the 3R's regulations and potential roles that could be played by the Region and/or local municipalities in identification, follow-up, reporting, etc.;
 - advocacy to the Provincial and Federal governments regarding Extended Producer Responsibility for these waste streams; and,
 - a need for greater cooperation and collaboration with Regional and local municipal planning departments to ensure future community and industry designs reflect good waste management processes.
- **Educational Outreach** - The practices report identifies a number of alternatives for effective education and outreach, however, the success of each of these alternatives is very community specific and therefore what works in one location may not in another. The Region as well as the local municipalities have already implemented a wide array of education and outreach initiatives, everything from calendars, dedicated websites and search engines to school programs and attendance at community events. Much of the success in waste management in York Region is attributable to the engagement and participation of the public. Continuation and on-going advancement of these education and outreach efforts are fundamental to the success

of all future waste management programs and initiatives. Through the public consultation a new approach to public education and outreach is being investigated that will focus on waste in the context of SM4RT LIVING with a focus on Reduction and Reuse.

Funding Models - Solid waste management has traditionally been financed through the property tax base and is not eligible for development charges as is the case in York Region. However, there is a growing interest in Ontario and elsewhere in moving solid waste financing off the tax base and onto a more sustainable footing. Discussions regarding the Waste Diversion Act and the future of Extended Producer Responsibility in Ontario may lead to more funding of the management of the household waste stream by industry stewards. Depending on how Extended Producer Responsibility rolls out in the Province, the role of municipalities in delivering solid waste management services may also evolve. The provision of waste management services is becoming increasingly more expensive and as a result, alternatives to the current method of system funding need to be considered to better understand potential areas for cost reduction.

- **Community Environmental Centres** - The Region has worked over the past several years to implement a series of Community Environmental Centres to allow convenient access to residents to recycle materials in an environmentally friendly manner. Two facilities have been developed with a third underway. However, these facilities are very expensive to operate when compared to other programs on a cost per tonne basis. In addition, the existing facilities have not captured the quantities of materials originally expected. A strategy needs to be developed for deployment of any future Community Environmental Centres facilities in the Region in conjunction with other waste service delivery programs.
- **Advocacy** – The Region will need to develop and implement a comprehensive advocacy strategy to support waste prevention, reduction and reuse initiatives. Using its position as a leader in Ontario, the Region with its local municipal partners should continue to advocate for waste management policy changes at the Provincial and Federal levels to support the implementation of waste management system components. As the plan is developed and additional system component changes and/or additions are identified, issues such as changes to the Waste Diversion Act, Compost Quality Guidelines, Extended Producer Responsibility programs, etc. will need to be taken into consideration.
- **Performance Measurement** - Reviewing how the performance of the waste management system is measured is a critical component of the Master Plan. Measuring the system purely by waste diversion does not necessarily reflect all aspects of a waste management system and given recent changes in the industry could actually result in the appearance of system performance going down, when in fact they are performing better than ever. It is important to have a detailed analysis of each waste stream to identify opportunities for improved efficiencies and to be able to track the performance of current and future programs.

12.2 Next Steps

Now that the baseline has been established and the current situation is clearly understood, the process of developing the road map for where York Region could go in the future has been initiated. This phase

includes the development of long-term vision and goals and detailed waste management projections, as well as identification of opportunities for innovative program delivery and funding models. In addition, given the distribution of waste management roles and responsibilities within the Region, a decision making framework will be developed to build on established partnerships by facilitating greater communication. Specifically, the next tasks to be completed in the Master Plan process include:

Task 2-1: Vision and Goal Setting

It is important to develop a Region-wide direction for the future through the establishment of common vision and goals statements that create a shared understanding of community success. This provides the Region and local municipalities with a unified direction for the future that will foster collaboration and build on the strengths that already exist within the community as a whole. The Vision and Goal setting process will include visioning sessions to be held with key stakeholders as well as the general public. These sessions will be used to expand on the initial ideas and concepts developed to date and to finalize a comprehensive vision for the future. Once established, this vision and its various supporting goals can be used to identify and evaluate new components of a future waste management system.

Task 2-2: Development of Long-term Projections

A fundamental component in the development of an integrated waste management system plan is the development of waste quantity and composition projections. The projections to be developed will include:

- Projected waste generation rates for Residential and Multi-residential sectors receiving municipal collection;
- Estimates of waste quantities currently being managed in the Industrial, Commercial and Institutional sectors and Construction and Demolition sectors;
- Waste characteristics for each of the waste streams identified as well as potential influential factors such as legislative changes that could impact the composition of wastes to be managed and a sensitivity analysis of the potential degree of impact;
- An accounting of the quantity, composition, and quality of waste materials as they flow through the system from generation to final disposal; and,
- System capacity requirements and facility needs over the next 25 years.

Just as critical in the projection exercise is to ensure that the waste quantity projections are consistent with other relevant planning documents to ultimately ensure that factors such as population growth, densification, urban sprawl, land use changes, etc. are also taken into account as these factors as well can impact waste generation, composition and the type of system required to properly manage the materials.

Task 2-3: Opportunities for Innovative Program Delivery and Funding Models

Following the completion of the projections process, we will then be able to identify options and opportunities for enhancement to the current system, new system components and funding models.

At a minimum, we expect the options/opportunities list to include:

- Waste reduction and diversion practices that will drive waste prevention, waste reduction and waste reuse;
- Recycling and organics collection and processing approaches and technologies;
- Identification of options, timing, sustainable financing and service delivery criteria for infrastructure; and,
- Identification of alternate funding models, partnership opportunities and shared infrastructure;

It is important to also consider that the options being presented are both relevant and applicable to the Region and will be able to satisfy the long-term needs of the Region, allowing for population growth, intensification and additional servicing requirements. The options will also need to be considered in the context of an ever-changing regulatory regime in Ontario and the potential impacts to how waste will be managed and the financial implications of changes to current funding models.

Task 2-4: Decision Matrix, Process/Priority Setting Framework

To facilitate, communications, good decision making and ensure the interests of a "single tax payer" are kept at the forefront in every decision, a decision making framework will be developed. The framework development will use a multi-stakeholder approach and ensure that it is a collaborative process that in the end, all parties can support. This framework will set the foundation for program changes, measured against a common set of goals and objectives that will meet the needs of the both the Region and the local municipalities. The final product will be a decision making approach and priority framework that will be tested in the development of the plan and utilized in the implementation of the plan, and subsequent continuous improvement initiatives.

Consultation and engagement will continue throughout the project and will include:

- Stakeholder Advisory Committee Meetings;
- Visioning Sessions and Strategy Sessions;
- Additional Citizen Panel surveys;
- More Places and Spaces Events; and,
- A SM4RT LIVING Challenge.



YORKregion

York Region

Executive Summary

**Integrated Waste
Management
Master Plan**

Phase 1: "Where We Are"
Baseline, Policy and
Practices Review

Fall 2011

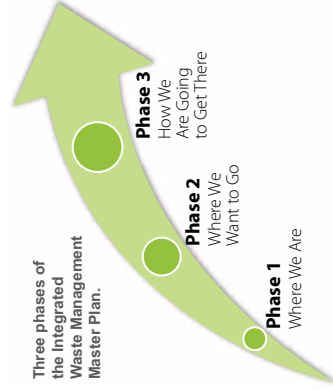
THE MASTER PLAN PROCESS

The Regional Municipality of York has developed master plans to guide the Region's infrastructure needs for waste management, water, wastewater and transportation. These long-term plans are based on sustainability objectives, which preserve and enhance our natural environment, economic vitality and healthy communities while providing safe, affordable and efficient servicing for York Region's residents and visitors.

In March 2011, the Region and its local municipal partners initiated the development of its first Integrated Waste Management Master Plan.

The Master Plan, also known as the **SM4RT LIVING** Plan, will establish a planning framework and long-term strategic direction for waste management within York Region. The Plan will allow the Region to maintain its position as a waste management leader, by focusing on driving waste reduction and reuse, while maximizing

recycling and energy recovery. An integral component to a successful and collaborative Master Plan, from the initial development of ideas through to visioning and development of the recommendations, is the engagement of the public and stakeholders throughout the Region.



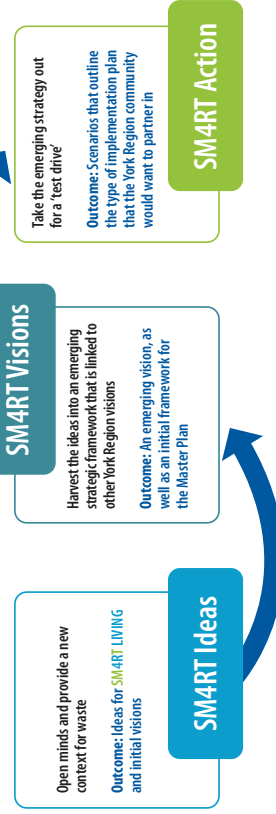
SM4RT LIVING

Reframing Waste

Most people's initial reaction when they hear the words waste management is to think about recycling. This is in some respect the low hanging fruit where our residents have achieved outstanding results. Through this **SM4RT LIVING** Plan, emphasis is being placed on waste reduction and reuse, a significant and complicated challenge. Through development of the **SM4RT LIVING** Plan, new possibilities for a more

sustainable economy will be examined, including new economic opportunities that help to generate prosperity through environmental consciousness. At the same time, there is a shift underway that recognizes that increased possession of material goods, is not directly linked to well-being. The concept of waste is therefore an excellent vehicle to elevate the conversation from garbage to what will be important and valued over the next 40 years.

SM4RT LIVING Transformation Process



BASELINE ASSESSMENT

To better understand where you want to go, it is critical to have a very detailed understanding of where you are. This includes what programs are already in place, what assets you currently possess, and what potential changes are occurring that could impact the future. To develop

this understanding a detailed baseline assessment was completed.

This baseline assessment will be a concrete foundation from which all future programs, policies and facilities will be founded.

Quick Facts

1. York Region has the 3rd largest waste management system in Ontario and services an estimated 1,073,158 residents with approximately 280,000 single family households and approximately 38,000 individual apartment units, along with schools, business improvements areas, etc.
2. On average, a York Region single family household produces more than one tonne of waste each year.
3. In 2010, York Region managed approximately 341,000 tonnes of waste, of which 52 per cent was either recycled or composted. At 52 per cent diversion, the York Region system ranks among the highest in Ontario and North America.
4. Each year, the material collected in the Blue Box program is sold for millions of dollars to end markets. In 2010, the Region generated approximately \$8 million from the sale of Blue Box materials.
5. York Region residents can recycle almost 70 items in the Blue Box. This accounts for nearly 80,000 tonnes of material diverted from landfill each year.
6. Approximately 92,000 tonnes of Source Separated Organic material was collected as part of the Green Bin program in 2010. York Region and our local municipal partners currently operate a wide range of public drop-off facilities where residents can reduce, reuse and recycle. In 2010, Goodwill Industries in York Region diverted 560 tonnes of material that would have been landfilled.



Looking Forward

The Region and our local municipal partners already have an advanced Integrated Waste Management System, however, there is always room for improvement, including:

- Multi-Residential and Mixed-use Waste Management
- Sustainable Community Environmental Centre Network
- Need for greater communication in decision-making to ensure systems approach to waste management
- Reviewing how to best measure performance of the waste management system

POLICY REVIEW

The Region and its local municipal partners influence and are influenced by policy from a wide variety of sources. As the Master Plan is developed, this needs to be taken into consideration. Ultimately, the recommendations of the Master Plan will need to ensure consistency with federal and provincial policy over which the Region has limited control. The Master Plan will

need to be flexible to adapt to future changes in policy. For example, development and planning policies, particularly related to population growth, intensification, mixed-use and multi-residential housing, will impact long-term solid waste management planning considerations, waste collection requirements, and processing needs.

Extended Producer Responsibility

For the past 10 years, the concept of Extended Producer Responsibility has dominated the discussion of future waste management in Ontario, especially for Blue Box materials, electronic waste, tires and household hazardous waste. Essentially, those who are responsible for producing waste (manufacturers and distributors), should be responsible for its management throughout its lifecycle.

Extended Producer Responsibility could result in:

- A change in the responsibility for waste collection and processing.
- Additional costs to the consumer at point of purchase.
- Reduced taxes required to support the municipal waste management system due to reduced material being collected and processed by the local municipalities and the Region.

The impact of Extended Producer Responsibility on the York Region Waste Management System could be

CURRENT AND INNOVATIVE PRACTICES

The Region and its local municipal partners have experienced significant success in solid waste management approaches and waste diversion performance.

To support the development of a "best in class" solid waste program for the long-term, the first step was to look outside York Region to municipalities throughout North America and beyond to identify programs that would be considered a best practice. These programs will be examined further as potential models for York Region. Highlights of the review include:

- **Waste Diversion Policies:** Effective waste diversion and waste reduction policy such as user-pay policies, mandatory recycling, etc. can be influenced and implemented by the Region

and the local municipalities in a wide variety of areas to help encourage and, where necessary, enforce the use of appropriate and sustainable waste management practices.

- **Multi-Residential and Mixed-Use Recycling:** With new intensification targets, the concentration of multi-residential households and mixed-use buildings will increase over time. The key to successful waste diversion in multi-residential and mixed-use buildings requires policies and programs targeting building owners and managers, as well as tenants and waste haulers.
- **Industrial, Commercial and Institutional:** Industrial, Commercial and Institutional waste represents a significant portion of the waste stream. Reduction and diversion of these

COUNCIL ATTACHMENT 2

materials could be improved through education and technical support to businesses and service providers to help them establish on-site waste diversion programs.

- **Construction & Demolition:** Most Construction & Demolition projects generate the same group of materials, which make it easier to require sorting of materials for market. As a result, many jurisdictions in North America have implemented mandatory recycling or

source separation bylaws, together with mandatory waste diversion targets.

- **Sustainable Funding Models:** Currently, waste management programs are funded through property taxes. The Master Plan will investigate alternative methods of funding waste management that could include such things as increased user-pay requirements or greater industry responsibility.

Innovative Practice Profile: "Love Food Hate Waste" Campaign

United Kingdom citizens throw away 8.3 million tonnes of food from their homes every year. In response, the United Kingdom government has launched a campaign to address the problem and educate the public about food wastage. The campaign "Love Food Hate Waste", provides information, recipes, handy tips and advice to waste less food. At the same time, the United Kingdom government is working with grocery retailers to change marketing campaigns, such as the "two for one" sales that result in significant food wastage.

SM4RT LIVING PUBLIC OUTREACH AND CONSULTATION

The consultation program to date has included:

- **Places and Spaces Events:** Over the summer, York Region staff and consultants attended 22 different fairs, festivals, sporting events and other high traffic areas such as shopping malls and farmers' markets. More than 500 residents talked with staff and shared their ideas and more than 300 gave us their contact information to stay involved.

Discussions at these events included:

- Need for manufacturers to reduce packaging,
- Need to simplify the waste program by clearly communicating what material goes where and why.
- Expand recycling to include three-stream waste collection in public spaces, at public events and in apartments, condos, restaurants, businesses, hospitals and schools to increase program consistency.

- **Citizen Panel:** A Citizen Panel was formed with 500 residents from York Region, representing

each of York Region's nine local municipalities. Panel members were recruited through a telephone survey. The following is a sample of the type of information collected:

- **Hazardous Waste Management:** In York Region, fifty-eight per cent of the residents are using Drop-off Depots to dispose of their hazardous items. Twenty per cent return hazardous waste to retailer. Eight per cent put hazardous waste in the garbage.
- **Waste Electronics:** Forty-seven per cent of respondents take electronics to a Drop-off Depot. Twenty-two per cent of panelists do not dispose of their electronics properly.
- **Reuse:** Nearly sixty per cent of respondents stated they often take items to reuse organizations such as Goodwill or Habitat for Humanity. Approximately fifteen per cent often give items to someone they know and nine per cent will sell the item. The smallest percentage, six per cent, stated that they throw the item in the garbage.

YORK REGION AND LOCAL MUNICIPAL JOINT WASTE MANAGEMENT SUMMARY

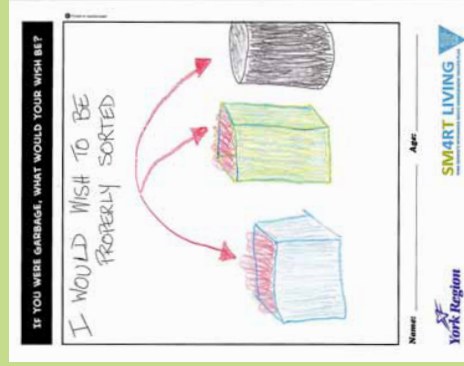
	CURBSIDE COLLECTION					OTHER INITIATIVES	
	Alternation Week Bag Collection Limit (Cost per tag) ¹	Weekly Blue Bin Collection	Weekly Green Bin Collection	Yard Waste Collection	White Goods Collection (Cost per item)	Bulky Item Collection (Cost per item)	Details
AURORA	3 (No tags)						• 2 buildings serviced weekly • Recyclables collected from carts
EAST GUILDFORD	2 (No tags)						
GEORGINA	1 (1 limit 5 items)						• One building and 7/10 apartments located above retail outlets serviced weekly • Recyclables from the building placed in a cart, apartments utilize the curbside recycling program • Implemented duckweed program placed in a cart, apartments utilize the curbside Blue Box program
KING	2 (1 limit 5 items)						
MARKHAM	3 (Tag limit 3 items)						• 51 buildings serviced weekly • Recyclables from 49 buildings • Recyclables and organics from 12 buildings • Mandatory tire services required in all new buildings • Mandatory internal storage of all containers • White goods collection program (10 per item)
NEWMARKET	3 (5 bags for 1/2 green limit)						• 2 buildings serviced weekly • Recyclables collected from carts
RICHMOND HILL	3 (2 limit 5 items, 4 bags for 1/2 green limit)						• Recyclables from 80 buildings collected from carts or front end bins • Organics collected in carts from 21 of the 80 buildings • Additional buildings being phased in during 2011
VAUGHAN	3 (Tag 10 for 1/20, 4 bags for 1/2 green limit)						• 53 buildings serviced weekly • Recyclables collected from carts • Mandatory multi-sort disposal systems in all new buildings • Bulk waste collected from buildings receiving municipal collection services
WILTON/STEELES	3 (S2)						• Five buildings serviced weekly • Recyclables collected from carts

¹Most tags are sold in sheets of 5 or 10 ²Grass clippings accepted ³Includes fridges, stoves, dryers, washers and more
⁴Includes furniture, mattresses, plastic outdoor furniture and more

In addition to the above collection programs, the Region and local municipalities collect a range of waste, recyclable and compostable materials to varying degrees at parks, Regional and municipal facilities, and special events. The Region and the Town of Markham also operate Recycling/Reuse Depots, Household Hazardous Waste Depots and Community Environmental Centres, which accept materials collected at curbside, as well as materials not currently collected at curbside such as household hazardous wastes.

Idea Generating Sessions

Idea Generating Sessions have explored the future of waste through food, 21st Century Consumerism, what really matters to people and community design. The emerging Vision is moving beyond waste reduction towards waste elimination by 2051.



COUNCIL ATTACHMENT 2

There are many opportunities to get involved.



NEXT STEPS

Next Steps:

Now that the baseline has been established and the current situation is clearly understood, the process of developing the road map for where York Region could go in the future will be initiated. This Phase will include the development of a long-term vision and goals, and more detailed waste management projections.

Get involved:

As the plan is developed all York Region residents are encouraged to become involved in public events and workshops, and share ideas about **SM4RT LIVING**. Visit our website for updates on this project, to provide feedback and for new opportunities to get involved.

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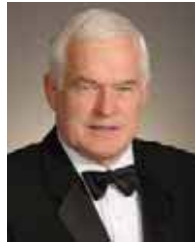




Mayor
Frank Scarpitti
Town of Markham



Regional Councillor
Jack Heath
Town of Markham



Regional Councillor
Jim Jones
Town of Markham



Regional Councillor
Gordon Landon
Town of Markham



Regional Councillor
Joe Li
Town of Markham



Mayor
David Barrow
Town of Richmond Hill



Mayor
Maurizio Bevilacqua
City of Vaughan



Chairman and CEO
Bill Fisch



Regional Councillor
Vito Spatafora
Town of Richmond Hill

A Message from York Regional Council

The Regional Municipality of York remains one of the fastest-growing communities in Canada. To ensure we meet our waste management responsibilities in a sustainable manner, York Regional Council remains committed to working with residents, stakeholders and partners to develop a plan that goes beyond recycling with a focus on waste prevention, reduction and reuse.

York Region residents and stakeholders have already provided valuable input into the study. As the study progresses, we look forward to your continued involvement in the development of our Integrated Waste Management Master Plan.

We encourage you to share your thoughts and comments and participate in upcoming workshops. Your involvement is vital to this important planning process.



Regional Councillor
Gino Rosati
City of Vaughan



Regional Councillor
Brenda Hogg
Town of Richmond Hill



Regional Councillor
Michael Di Biase
City of Vaughan



Mayor
Tony Van Bynen
Town of Newmarket



Regional Councillor
Deb Schulte
City of Vaughan



Regional Councillor
John Taylor
Town of Newmarket



Mayor
Robert Grossi
Town of Georgina



Regional Councillor
Danny Wheeler
Town of Georgina



Mayor
Geoffrey Dawe
Town of Aurora



Mayor
Virginia Hackson
Town of East Gwillimbury



Mayor
Steve Pellegrini
Township of King



Mayor
Wayne Emmerson
Town of Whitchurch-Stouffville

Solid Waste Management

Materials Flowchart – Updated December 5, 2011

