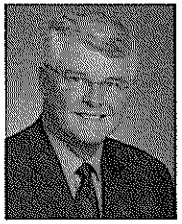
SM4RT Living Plan

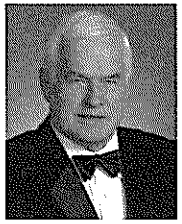
Integrated Waste Management Master Plan | September 2013


WHAT ARE SMALL STEPS
YOU CAN TAKE TO HELP
FUTURE GENERATIONS
LIVE A GREENER, HAPPIER
LIFESTYLE

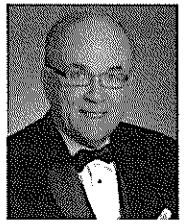
Mayor
Frank Scarpitti
Town of Markham



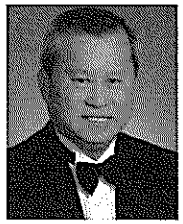
Regional Councillor
Jack Heath
Town of Markham



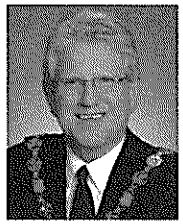
Regional Councillor
Jim Jones
Town of Markham



Regional Councillor
Gordon Landon
Town of Markham



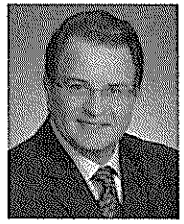
Regional Councillor
Joe Li
Town of Markham



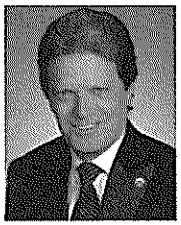
Mayor
David Barrow
Town of Richmond Hill

Mayor
Maurizio Bevilacqua
City of Vaughan

Chairman & CEO
Bill Fisch



Regional Councillor
Vito Spatafora
Town of Richmond Hill



Regional Councillor
Gino Rosati
City of Vaughan

A Message from York Regional Council

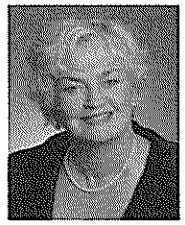
York Regional Council has a long-standing commitment to build sustainable communities for our current and future residents.

The SM4RT Living Plan addresses Regional needs for waste management over the long term, while implementing continuous improvement in service and sustainability.

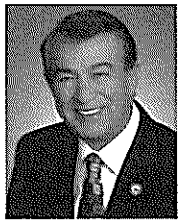
The strategy combines our successful diversion programs with best-in-class ideas from around the world. This results in a balanced approach, which optimizes current facilities, identifies crucial infrastructure investments and engages the community in innovative programs emphasizing reuse and waste reduction.

The key to success is collaboration between Regional and local councils, residents, businesses, schools and community groups, as we build a sustainable future for York Region.

Together, our actions will make a difference.



Regional Councillor
Brenda Hogg
Town of Richmond Hill

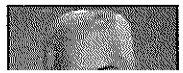


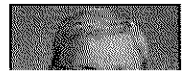
Regional Councillor
Michael Di Biase
City of Vaughan

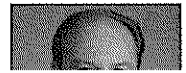
Mayor
Tony Van Bynen
Town of Newmarket

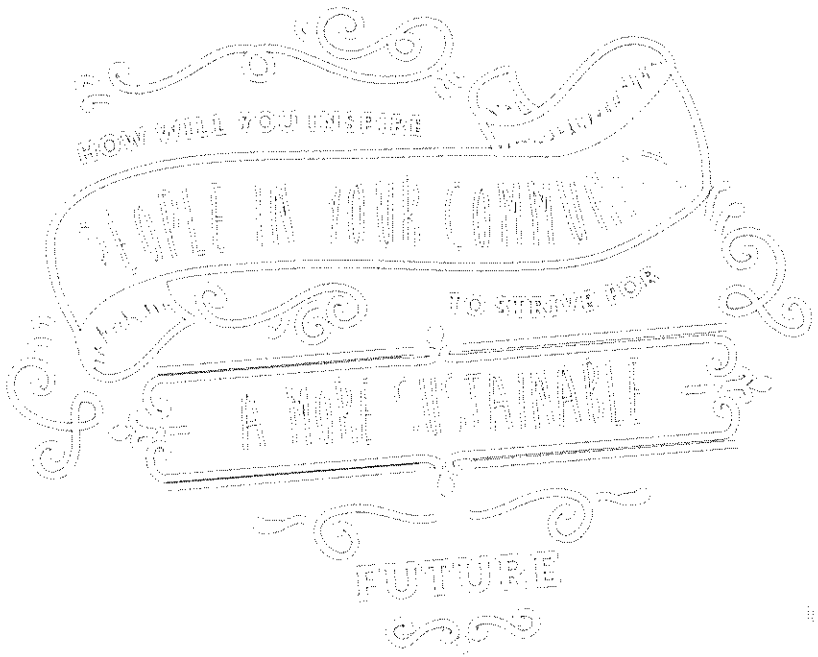
Regional Councillor
Deb Schulte
City of Vaughan

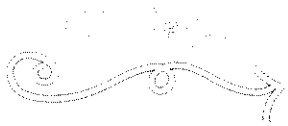
Regional Councillor
John Taylor
Town of Newmarket











Begin within the end in mind – where you can help

Features

Introduction

"The SM4RT Living Plan sets the course for waste management in the Region for the next 25 to 40 years."

In 2012, York Region and our local municipal partners diverted 82 per cent of collected materials from landfill disposal

This report outlines key issues identified during the planning process, recommendations for future operations and programming and projected impacts on waste generation and management in York Region.

The Regional Municipality of York is centrally located in the Greater Toronto Area (GTA), directly north of the City of Toronto, in Ontario, Canada. York Region covers 1,756 square kilometres and is comprised of nine local municipalities.

York Region and its local municipal partners plan and deliver sustainable waste reduction, diversion and disposal programs. Curbside collection of blue box, green bin, yard waste and residual waste is managed by York Region's nine local municipal partners: the Towns of Aurora, East Gwillimbury, Georgina, Newmarket, Richmond Hill, Whitchurch-Stouffville, the City of Markham, the City of Vaughan and the Township of King. All collected materials are delivered to York Region facilities for processing, energy recovery and/or disposal by external contractors. Regional and municipal depots offer additional opportunities for waste diversion. Participation rates in diversion programs are high. In 2012, York Region and its local municipal partners diverted 82 per cent of collected materials from landfill disposal, including material sent to energy from waste facilities.

York Region is one of the fastest growing areas of Canada; its current population of 1.1 million people will increase to 1.5 million by 2031. The Region and its partners must plan now to ensure provision of quality, cost-effective services to this growing population. The SM4RT Living Plan sets the course for waste management in the Region for the next 25 to 40 years.

This innovative, long-term plan drives waste reduction and reuse over the next 25 to 40 years, resulting in reduced costs and sustainable waste management. Full details on recommendations and projections can be found in the strategy documents in Appendix 1.

Shaping Our Future

The SM4RT Living Plan combines traditional approaches and innovative, community-driven programs to maximize long-term benefits.

The 4Rs hierarchy of waste management is shown in Figure 1[1]. Traditionally, municipal waste management focuses on the 3Rs – reduce, reuse, recycle.

However, in York Region, Council has endorsed the fourth R – energy recovery from waste.

1. **Reduction** of waste and improved handling options to prevent waste generation
2. **Reuse** of products and materials
3. **Recycling** of materials
4. **Recovery** of energy and recyclable materials, after all other diversion efforts have been exhausted

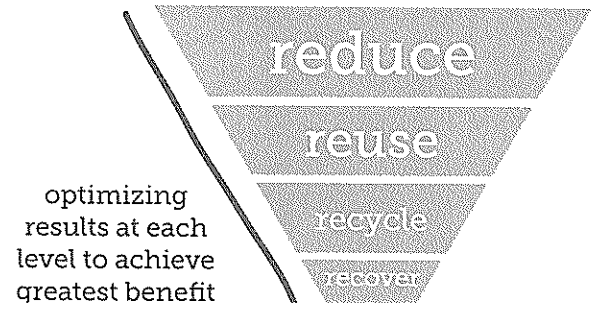
Over the past 30 years, waste management programs emphasized diversion of waste from landfill rather than attempts to prevent generation. A more sustainable waste management system requires a change in the way waste is viewed, focusing first on reduction and reuse to prevent waste generation and encourage resource conservation.

The SM4RT Living Plan explores new methods to extend the life of current waste management infrastructure through waste reduction and reuse initiatives. The backbone of the plan promotes reduction-based solutions that rely on the community to be engaged in making changes.

The "traditional approach" of waste management focuses on technology and infrastructure to manage the challenges created by waste. The SM4RT Living Plan places a heightened focus on behaviour change to avoid unnecessary waste generation while recovering resources through participation in the sustainable hierarchy of waste management programs.

The SM4RT Living Plan strikes a balance between key capital investments in infrastructure and innovative, community-driven programs to maximize long-term benefits.

Figure 1 - 4Rs Hierarchy



[1] January 22, 2009 – Regional Council endorses Report No.1 of the Solid Waste

Supporting a Broader Vision

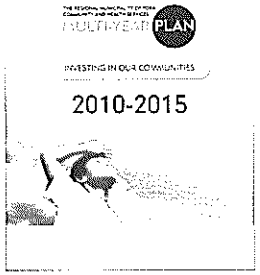
FUN FACT

SM4RT Living is working with the York Region Food Network to promote food awareness + reduction

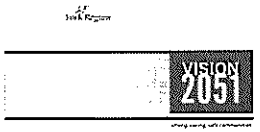
The Region has established a strong vision for a sustainable future with its three major strategic documents: Vision 2051, The York Region Official Plan and The York Region Sustainability Strategy.

The SM4RT Living Plan also has strong connections with other internal strategic documents including the 2011 to 2015 Strategic Plan, Community and Health Services Immigration Settlement and Community Investment Strategy, Nutrition Services and the Food Safety Program. Linkages have also been made with the New Communities Guidelines, Centres and Corridors, Sustainable Development Leadership in Energy and Environmental Design (LEED) and Making Ends Meet Report.

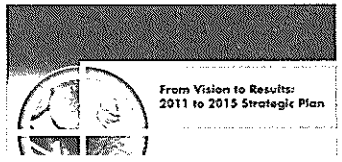
These documents, along with a multitude of other York Region and local municipal plans and policies are reflected in the direction of this master plan.



Multi-Year Plan 2010 to 2015



Vision 2051

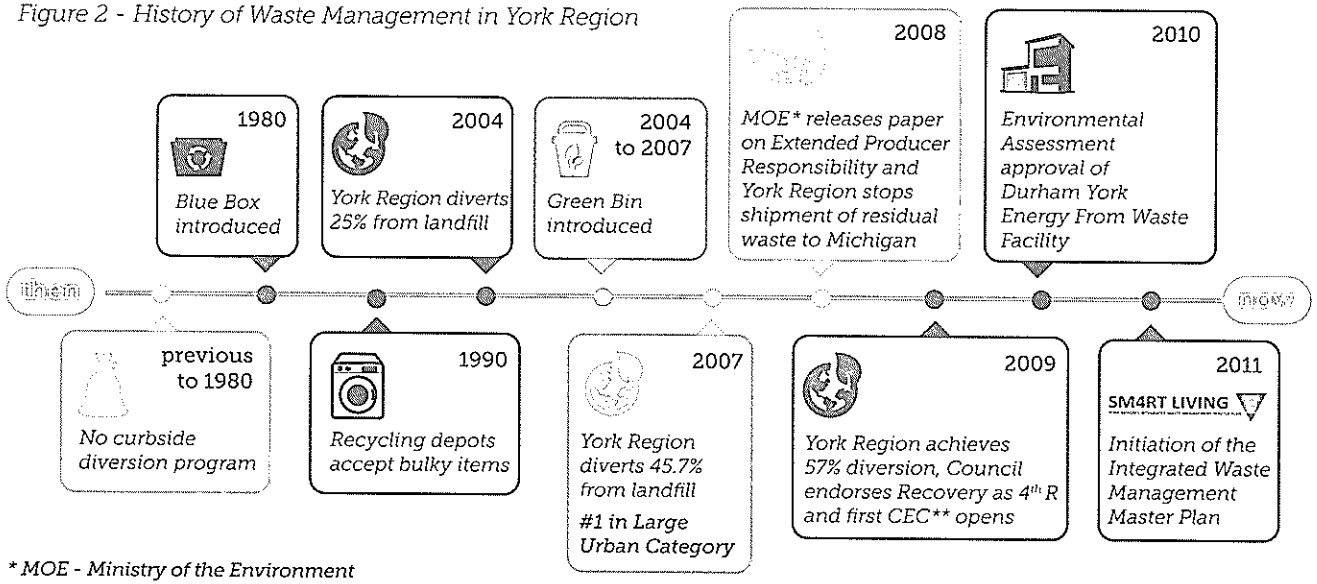


Where We Are Today

In York Region, waste management is delivered in a two-tier system. Curbside collection of blue box, green bin and residual waste is managed by our nine local municipal partners.

York Region and our nine local municipal partners have implemented one of the most comprehensive integrated waste management systems in North America. Over the past 30 years, significant program implementation and facility development has been achieved thanks to the leadership and foresight of Regional and local municipal councils in addressing waste management issues directly with strong leadership positions on all aspects of the waste management hierarchy (Figure 2).

Figure 2 - History of Waste Management in York Region



** MOE - Ministry of the Environment*
*** CEC - Community Environmental Centre*

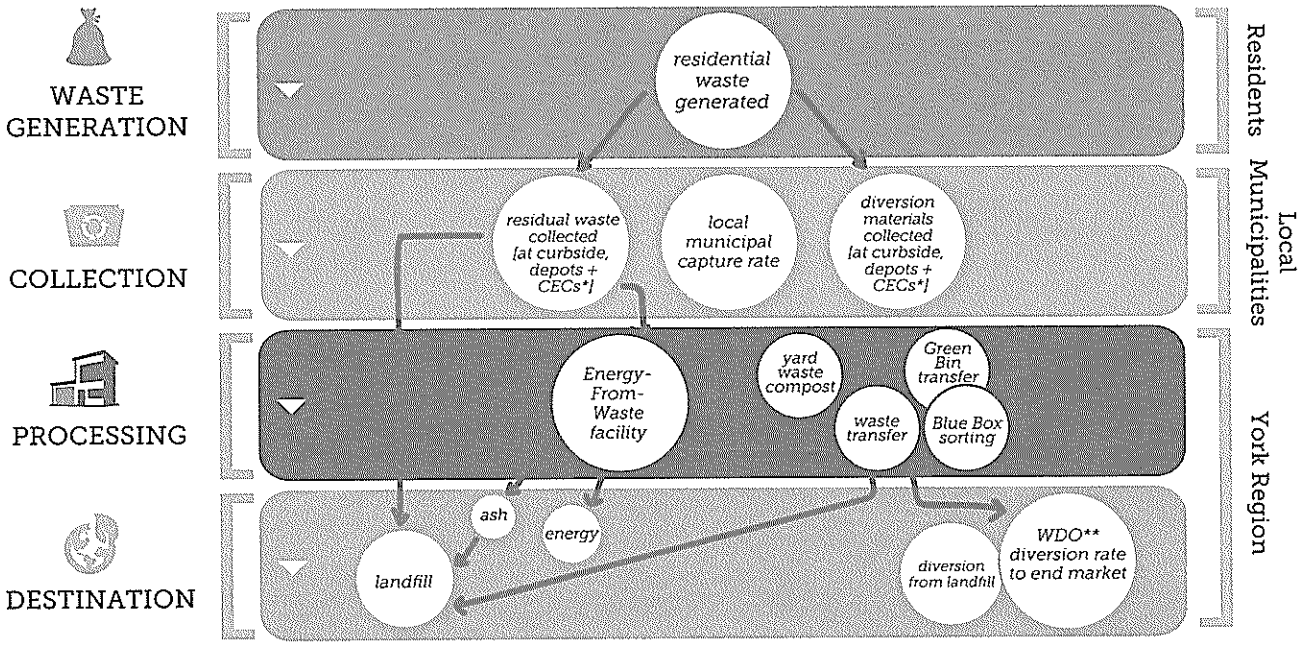
More than 80 per cent of York Region households participate in Green Bin + Blue Box Programs

These diversion programs and facilities have won awards from organizations including as the Federation of Canadian Municipalities, Solid Waste Association of North America and Recycling Council of Ontario.

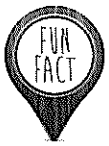
Success of these programs reflects positively on the Region and our local municipalities who implement many of the programs at curbside, the leadership of councils and the dedication and participation of all York Region residents, businesses and community partners. This co-operative approach will continue as master plan implementation moves forward.

In York Region, waste management is delivered in two-tier system. Curbside collection of blue box, green bin and residual waste is managed by our nine local municipal partners. The Region is responsible for receiving, transfer, processing, recovery, marketing and disposal services. Promotion and education is provided at both the local and Regional levels (Figure 3).

Figure 3 - Delivery of Waste Management in York Region



objectives of the plan



Try shopping at a farmers' market. Local food has fewer environmental impacts + helps support local farmers

Municipal master plans are tools to provide long-term visions, infrastructure and service delivery needs for waste management, water, wastewater and transportation.

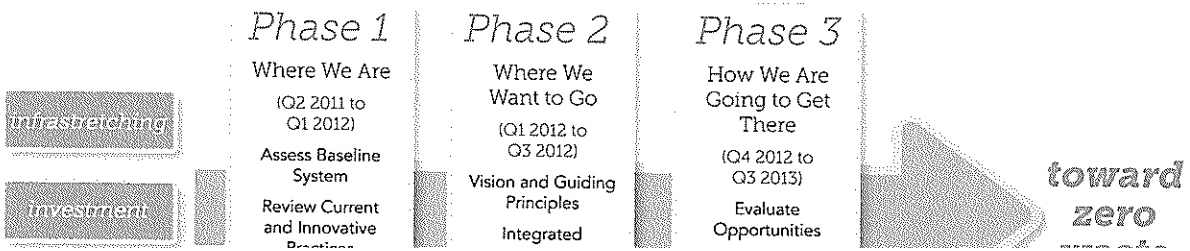
Master plans are based on sustainability. In March 2011, York Region and our local municipal partners initiated the first Integrated Waste Management Master Plan with early objectives to:

- Identify, assess and document a clear picture of roles and responsibilities, expertise and efficiencies
- Prepare for Extended Producer Responsibility
- Schedule/plan for waste management to meet the Region's commitments outlined in the Sustainability Strategy, Regional Official Plan and Strategic Plan as well as other applicable Regional and local policies and plans
- Enable proactive investing in infrastructure, services and systems
- Enable the Region to meet requirements set out in provincial planning documents
- Ensure citizen involvement and establish a transparent decision making approach to waste management

The SM4RT Living Plan guides development of new programs, services, facilities and infrastructure in a co-ordinated manner. It provides an approach to monitor the waste management system, establishes a flexible framework to support continuous improvement and allows for regular updates of the plan as time and circumstances change.

The SM4RT Living Plan is developed in three phases and illustrated in Figure 4.

Figure 4 - Development of Sm4rt Living Plan



Phase 1: Where We Are

Phase one consists of:

- Baseline assessment of current waste management programs and systems in York Region and around the world
- Review of policies and programs influencing waste management in York Region
- Review of current and innovative practices encompassing all aspects of waste management from waste reduction to final disposal
- Engage stakeholders in various forms of consultations to provide input to the SM4RT Living Plan

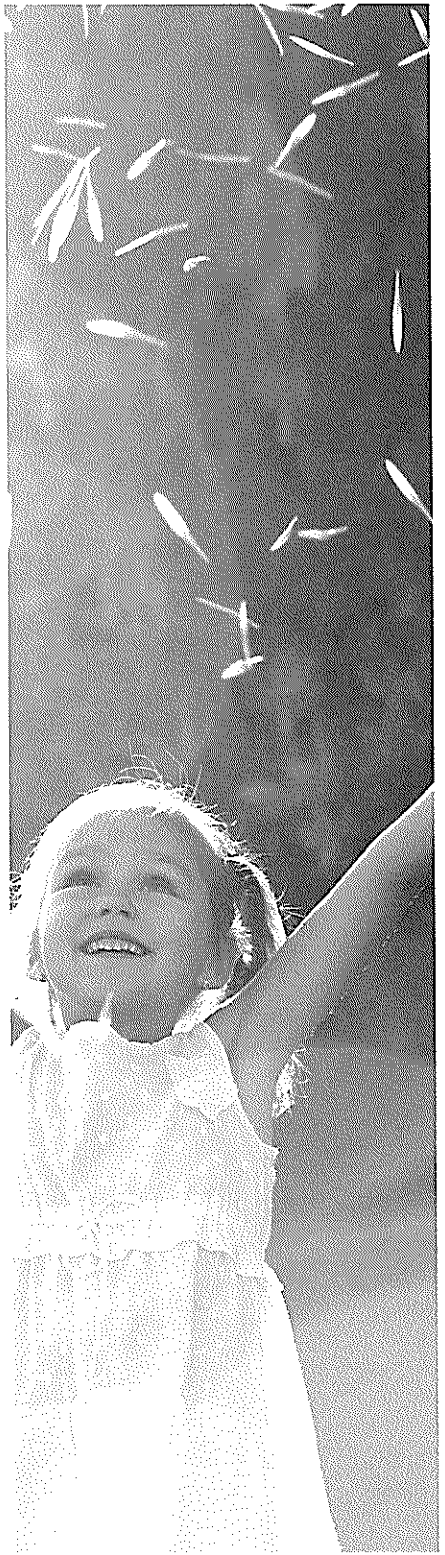
Phase 2: Where We Want to Go

Phase two consists of:

- Developing long-term vision and goals
- Detailed waste management projections and identification of opportunities for innovative program delivery and funding models
- A key outcome of Phase 2 is establishing an integrated partnership model to facilitate greater communication, co-operation and sharing of information among the Region and local municipalities as we jointly provide waste management services to the Region's residents

Phase 3: How We Are Going to Get There

Phase 3 integrates lessons learned from the global assessment of practices with York Region's vision, to create a set of strategies and plans to help York Region and our residents realize the SM4RT Living vision. Strategies are organized into the 4Rs hierarchy, with a strong focus on reduction and reuse.



master plan team

Reduce the amount of 'stuff' you own by renting items you rarely use

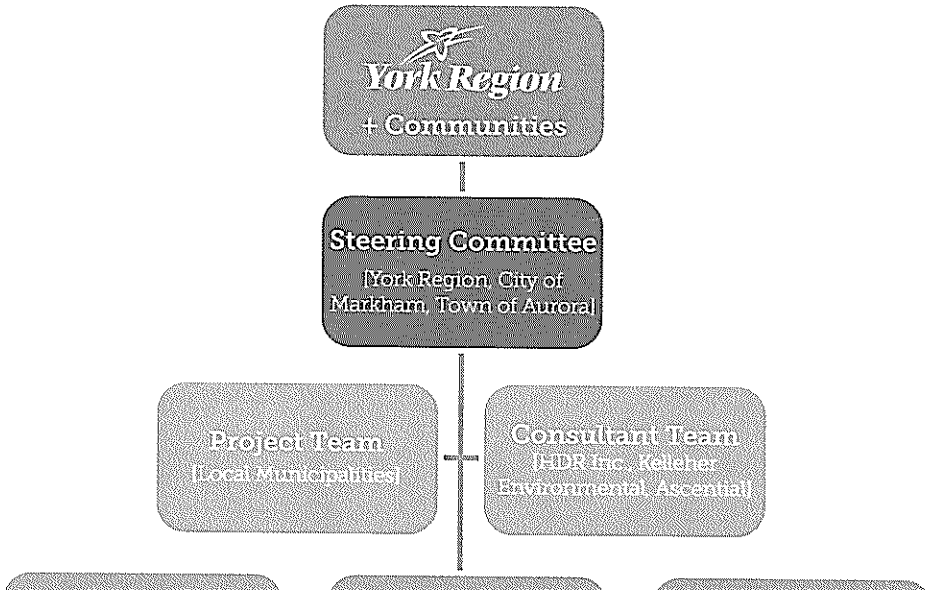
The master plan development was led by York Region's Environmental Services Department with significant input from local municipal partners and other York Region departments.

Engagement of local municipal partners was essential throughout the master plan process to create a fully integrated and comprehensive plan. Local municipal partners provided input through involvement on the project team and in review of all project-related documentation.

The project team actively contributed to the SM4RT Living Plan from Phase 1 through to the identifying of initiatives and developing the implementation plan in Phase 3.

Figure 5 provides an overview of the Master Plan Development Team.

Figure 5 - Master Plan Development Team



Left to Right: Ilmar Simanovskis – Town of Aurora, Courtney Daniels – York

Missing: Brian Jones – Town of Newmarket, Rob Flindall – Township of King,

vision + guiding principles

Vision

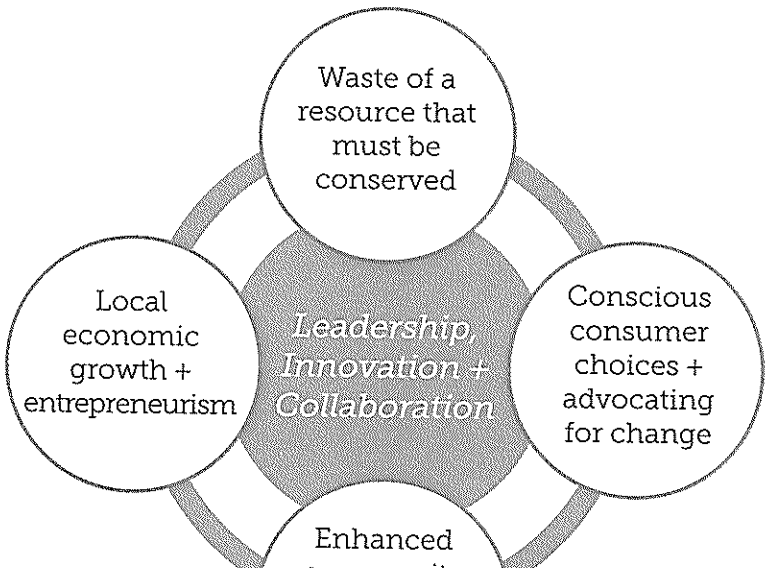
"A waste resource management system that recognizes and conserves the resource value of waste through leadership, innovation and collaboration in identifying and promoting the necessary cultural, societal and industry change required. Leading by example, we are transforming our communities through adaptive, innovative and integrated waste management."

Extensive consultation and community engagement throughout the master planning process presented SM4RT Living concepts to a wide range of stakeholders.

Stakeholder engagement revealed that people across York Region are generally seeking a change toward a more sustainable lifestyle. SM4RT Living Plan public engagement allowed people to explore how they see waste in all aspects of their lives and identified areas of concern including excessive packaging and disposable products, clutter around the house from buying/ storing too much and wasted food.

Considerable effort was spent on identifying, defining and describing the long-term vision for waste management and SM4RT Living in York Region. A vision statement was developed based on input from a diverse cross-section of York Region residents, stakeholders, business representatives and industry. To help realize the vision, nine guiding principles were developed out of this input. These guiding principles are the foundation of the SM4RT Living Plan and provide the framework for decision-making and implementation of the vision for the future.

Figure 6 - Vision + Guiding Principles



Nine Guiding Principles

1. We must re-frame waste as being comprised of resources that are finite and must be conserved.

2. We will lead through action, demonstrations, pilots, innovative education, advocacy, and, proactive policy development.

3. We will make decisions using "integrated systems" thinking - balancing environmental, social and fiscal responsibility.

4. We will demonstrate innovation and leadership through the integrated partnership model, with shared decision making and accountability.

5. We will honour the waste management hierarchy and the 4Rs (Reduce, Reuse, Recycle and Recovery), balancing the wants and needs of our communities.

6. We will nurture and cultivate local economic growth, innovation and entrepreneurism.

7. We will focus on creating vibrant communities through the promotion of enhanced community connections and informed, inspired and engaged citizens.

8. We will strive to change the consumer culture through inspiring conscious decision making and advocating change in communities, governments and industry.

9. We are flexible and resilient, enabling us to anticipate and adapt to

engagement + consultation

"Public Engagement throughout planning included more than 6,000 points of interaction with residents and stakeholders...."

According to Statistics Canada, households throw away up to $1,500 in food each year

A wide range of stakeholders including members of the public, agencies, businesses, associations and York Region and local municipal partner staff explored the concept of SM4RT Living and identified ideas and opportunities for the future.

Successful implementation of the SM4RT Living Plan and the future direction of our communities require not just input, but ongoing involvement of a cross-section of community members.

Public engagement throughout planning included more than 6,000 points of interaction with residents and stakeholders through events like 'Places and Spaces' events, online open house and website, project team meetings and the Stakeholder Advisory Committee (SAC). Figure 7 shows the various aspects of public engagement that contributed to the development of the plan in all three phases.

The overriding outcome from public engagement is confirming support for the SM4RT Living approach with its focus on waste reduction. SM4RT Living puts waste management into a context that people can connect to and become actively involved in. Waste reduction requires a change in beliefs, values, practices and attitudes to ultimately result in behaviour change. Engagement sessions with high school students, the Stakeholder Advisory Committee and the York Region Food Network members generated a lot of interest in the SM4RT Living ideas and produced demonstration project and partnership ideas to support implementation of the

Public input indicates that there is concern about the amount of waste currently generated in our communities and an interest in change. Lack of knowledge and confidence about making more sustainable waste choices was identified in the consultations as barriers to action. Education and understanding are key factors to successfully implement the strategies and initiatives recommended in the plan. This especially holds true when dealing with waste reduction. An educated consumer has the ability to:

- Actively participate in existing and new waste reduction, waste reuse and waste diversion programs, improving the overall effectiveness of these programs
- Contribute to increased diversion of materials from landfill disposal
- Understand the importance of their role in better managing their waste and their resources to make a positive environmental impact

Appendix 2 provides additional information on the consultation process.

Master Plan Consultation

Throughout the construction stages of the Master Plan, public and stakeholder feedback was received through many different avenues:

Figure 7 - Master Plan Consultation

Responding to Change

"At each review point, an opportunity exists to review the successes and challenges of the previous term...."

Find new uses for old 'stuff'. Many websites provide fun, family-friendly craft and reuse ideas for various household items

The SM4RT Living Plan is intended to be dynamic and flexible in its implementation to allow the 10 municipal partners to respond to the dynamic environment of waste management in Ontario, Canada and the world.

The SM4RT Living Plan has been prepared recognizing it is a "living document," meaning when changes are required, processes and mechanisms are in place to support co-ordinated decision-making in alignment with the overall vision of the plan.

Consistent with other infrastructure master plans that have been developed in York Region, the SM4RT Living Plan will have regular and comprehensive updates. The SM4RT Living Plan has a four year review cycle to coincide with terms of Regional Council. At each review point, an opportunity exists to review the successes and challenges of the previous term and the ability to recalibrate the direction based on any new information or industry trends and changes.

Considerable work has been done to identify opportunities for more co-ordinated and collaborative decision-making between the municipal partners around waste management system changes. The result of this work is the concept of the Integrated Partnership Model, which aims to provide more co-ordinated decisions and planning processes, greater consistency in programs where appropriate and sharing of information and lessons learned to help continuously improve overall waste management system in York Region. As part of the Integrated Partnership Model, each partner still retains autonomy of their areas of responsibility to reflect their own community's specific needs, while all the partners work together to achieve a common vision.

"All partners work collaboratively on provision of seamless and cost-effective integrated waste management services."

Reduce waste by repairing or fixing items yourself. There are many websites available to help you with your next do-it-yourself project, including:

- *diynetwork.com*
- *hgtv.ca/renosdiy*
- *fixitclub.com*
- *familyhandyman.com*
- *doityourself.com*

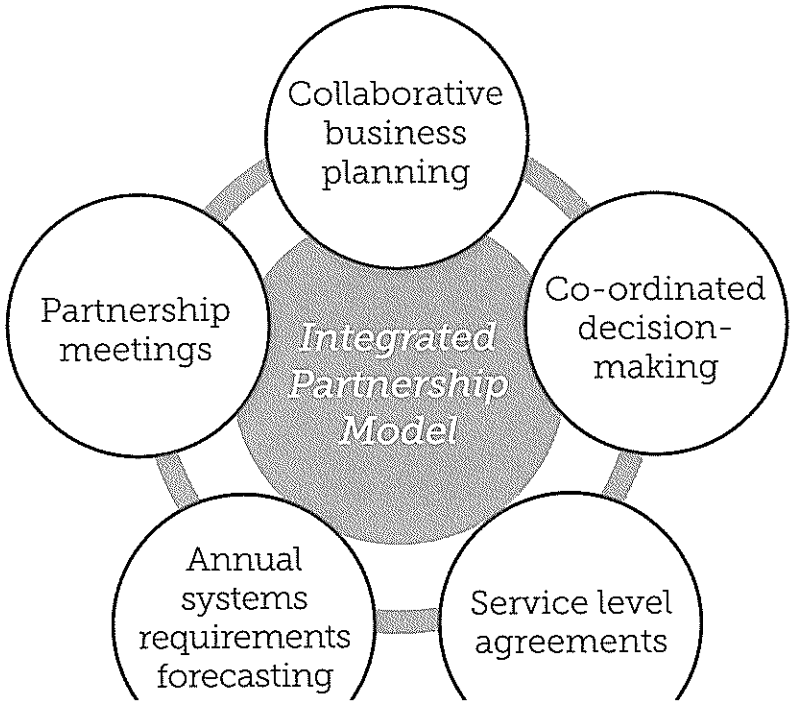
In support of this partnership approach, the partners have developed a Decision-Making Framework to help structure:

- When decisions are needed
- How decisions are made
- Who should be involved in decision-making
- What criteria should be considered in making the decision

Ultimately, decisions will be made that reflect a "one-taxpayer" approach where all partners work collaboratively on provision of seamless and cost-effective integrated waste management services. The Integrated Partnership model allows municipalities the flexibility to customize initiatives based on community needs and economic considerations while facilitating knowledge-sharing amongst the partners.

Appendix 3 provides additional information on the integrated partnership and decision making framework.

Figure 8 - Integrated Partnership Model



Where We Want To Go

"180 per cent growth is projected in multi-residential development in York Region over the next 40 years."

FUN FACT

Donating your fashion textiles, rather than throwing them out, allows them to be transformed into insulation or upholstery stuffing

Waste streams in the Region have changed dramatically over the past 25 years during the evolution of residential recycling and organic diversion programs. They will continue to evolve.

Changing demographics in the Region will have an impact on the waste stream. The most anticipated changes include:

- Aging Canadians - we are living longer
- Aging Baby Boomer generation (those who were born between 1948 and 1963) is shaping consumer trends
- Families are changing – smaller households with fewer children and multi-generational households are becoming increasingly common
- More urban dwellers and one person households
- More multi-residential households
- Ethnically diverse households with different patterns of consumption

The Region will continue to experience rapid population growth reaching close to 1.5 million by 2031. At the same time, the Region will also experience an increase in density and an overall urban intensification. With this projected population growth comes a projected increase in waste. Figure 9 shows a projection of potential quantities of waste to be managed between now and 2031.

The housing mix in York Region is changing drastically and a new focus must be placed on providing waste management services to multi-residential and mixed-use (commercial and residential) buildings. 180 per cent growth is projected in multi-residential development in York Region over the next 40 years (Figure 10). This offers a unique opportunity to build a successful waste management program with stakeholders before this development occurs.

Figure 10 - Projected Housing Growth in York Region from 2011 to 2031

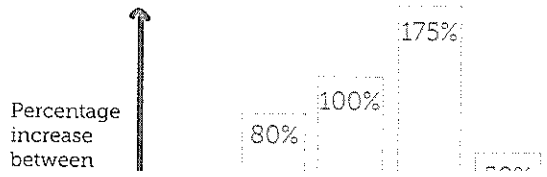
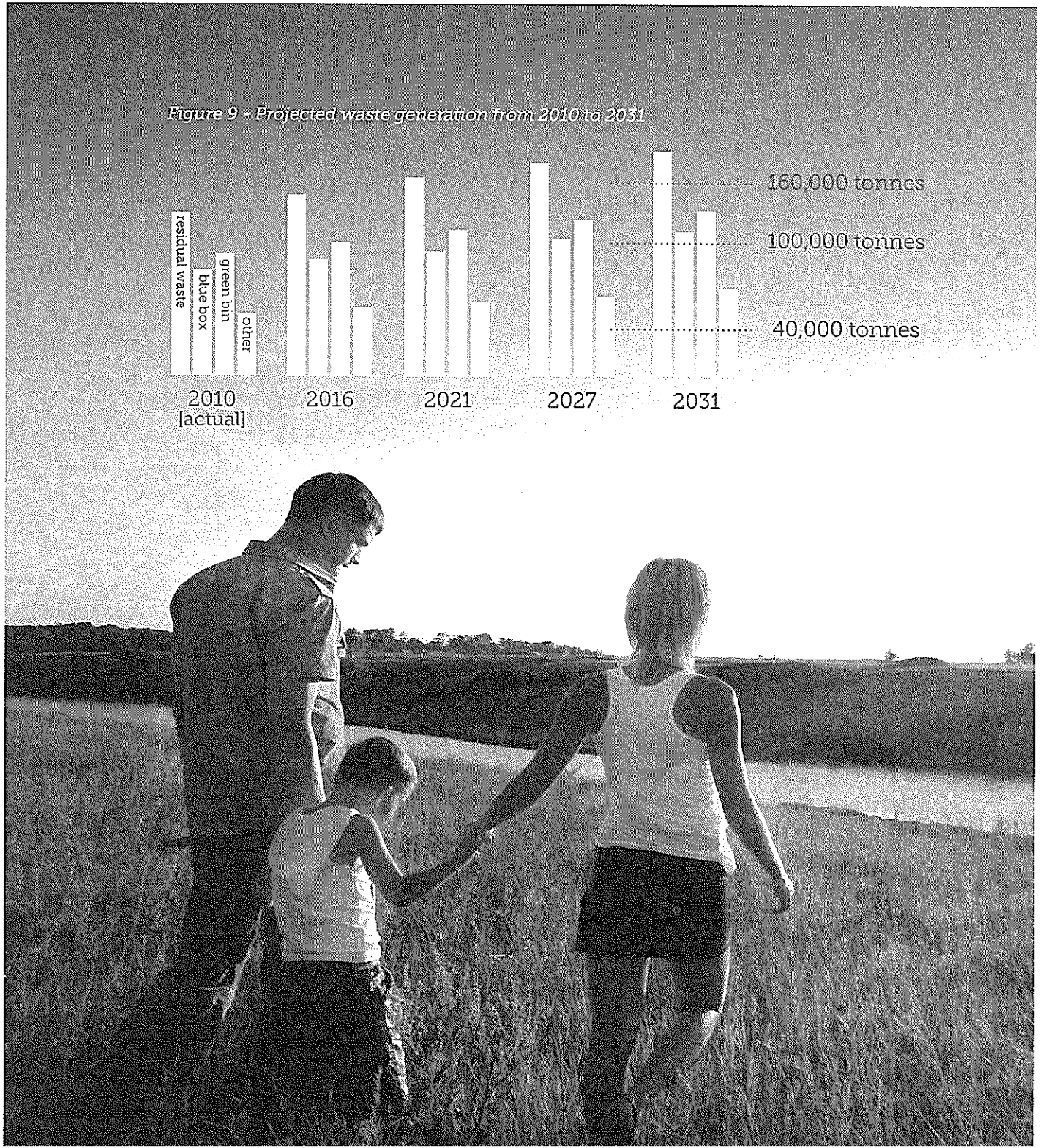


Figure 9 - Projected waste generation from 2010 to 2031



How We Are Going To Get There

Throughout the master plan development process, a diverse range of ideas, opportunities, program suggestions and changes for the future were identified.

Phase 3 took the project team into the evaluation phase of the identified opportunities.

Opportunities from all 17 strategies were streamlined into 69 initiatives that were evaluated and used to develop the five-year implementation plan.

An extensive ranking exercise was undertaken to evaluate the potential impact of each initiative.

Life cycle benefits were ranked high, medium or low based on:

- Environmental Impacts - Energy requirements, non-renewable resource consumption, life-cycle environmental benefits (air, land, water)
- Social Impacts - Community physical benefits, complexity and potential for confusion by residents, level of effort placed on waste generator, community involvement
- Economic Impacts - Capital costs required, operating costs required, budget implications, local economic growth and innovation opportunity

Broader system impacts were also assessed along with life-cycle benefits including:

- Consistency with overall plan Vision and Guiding Principles
- Emphasis placed on waste reduction and reuse
- Flexibility to accommodate change

For each strategy, a separate overview and implementation document has been prepared that provides additional detail including:

- Background analysis and trend information
- Case studies from other jurisdictions where applicable
- Environmental, social and financial implications
- Partnership opportunities
- Resources required to implement
- Targets and performance metrics

The following sub-sections provide an overview of how the master plan and its supporting strategies address each of the 4Rs and plan for the future of waste management in York Region. Details are provided for the first five years of implementation.

REDUCE:
reducing waste generation

"Encourage and educate consumers to consider waste reduction."

Waste reduction offers substantial environmental benefits and should be considered first in any waste management system.

REDUCE:
identifying key initiatives

To reduce the amount of waste requiring management, a number of key initiatives have been identified:

Food waste reduction

It is estimated that approximately 40 per cent of all the food produced and sold in Canada is wasted between the time of production and disposal by the consumer.

Of this, slightly more than 50 per cent of food wastage occurs in the home. There is significant opportunity to reduce the amount of food waste being generated which will:

- Reduce waste management costs particularly for the Green Bin Program
- Reduce consumer cost of buying food
- Reduce environmental footprint associated with food production, processing and distribution

The greatest opportunity to reduce food waste is influencing consumer behaviour through education and providing residents with information to make good decisions at home and while shopping. This strategy also includes pilots and initiatives linking

A number of community partners and not-for-profit agencies, such as York Region Food Network, have already expressed interest in supporting this initiative.

The food waste strategy is projected to offer the following key benefits by 2031:

- Reduction of more than 13,845 tonnes of material each year, when compared to the baseline projection
- Reduction in costs to manage waste by approximately $5.7 million* each year ($4.2 million in Regional savings; $1.5 million in local savings), assuming a projected decrease of 15 per cent by 2031
- Reduction in green bin materials generated to a point where no additional processing capacity may be needed

On-site composting

Availability of contracted capacity to process municipal green bin and yard waste is reaching its limits within Ontario. Managing organic materials with alternatives to curbside collection programs is an effective way to reduce the environmental impact of green bin collection and transport, ease the stress on Regional organics processing capacity and provide a cost-effective organics management option.

Two initiatives have been recommended for early implementation in the strategy and include:

- A pilot study renewing emphasis on backyard composting and assessing the feasibility of new technologies such as counter-top composters for those without access to outdoor space.
- A pilot study working with multi-residential buildings, industrial or commercial establishments or schools to assess medium scale composting technologies

Through the Stakeholder Advisory Committee, both school boards in York Region have expressed interest in participating in composting pilot programs to support their waste management education for students.

One of the keys to success will be to use community organizations and businesses (i.e., food co-operatives, community gardens, food retailers and neighborhood associations) to help deliver the message about the benefits of on-site organics management opportunities. Collaboration and partnerships with organizations like the York Region Food Network leverage local resources to promote and implement programs on a Region-wide scale. Some of the key benefits that will be further quantified in these pilot studies include:

- Reduction in overall waste management system costs
- Reduced reliance on the existing organics management infrastructure
- Opportunity to participate in an integrated waste management system that serves as a model for other

Leading by example through green procurement

Green procurement has proven to be one of the most powerful tools to encourage waste diversion behavior. This practice requires suppliers of goods and services to meet specific waste management criteria to win business and contracts. The municipal partners have significant purchasing power, which can be used to encourage reduction and reuse at all municipal facilities through vendor performance requirements (e.g. reusable packaging; recycled content paper, energy efficient and recyclable computers, etc.). In 2013, the Region adopted a Sustainable Purchasing Policy to formalize its commitment to green procurement. By continuing to assess additional green procurement policies, York Region and the municipal partners will influence the industry of the importance of "green" choices and provide leadership and guidance for others to implement similar policies.

REUSE:
maximizing the use of products and goods

"In the SWARM Living Plan, the term 'reuse' is applied as an umbrella term encompassing reuse, repair and re-purpose."

'A variety of opportunities exist to increase trade and export in all sectors in the country. Portugal particularly based on its long maritime and geographical tradition is a trading entrepôt.'

REUSE:
identifying key initiatives

To support and further explore the significant waste reduction opportunities through reuse activities, a number of key initiatives have been identified:

Understanding the amount of reuse and its impact

To clearly understand the potential impact of reuse, as well as the current activities already underway, a comprehensive survey of residents' perceptions and usage patterns is recommended.

Maximizing "gently used" clothing and textiles donation in multi-residential developments and at the curb

Textiles currently represent a significant portion of the material going out in the garbage. As part of plan implementation, additional emphasis will be placed on working with charitable organizations to help support them in the collection and reuse of these materials through partner-driven curbside collection pilots.

A pilot program with the multi-residential sector will explore how best to redirect textiles from the waste

Swapping and selling events

Curbside swap events, garage sales, "Mom-to-Mom" sales, etc., have become increasingly popular. These types of sales have the potential to result in significant waste reuse and reduction. For 2015, pilots are recommended at a larger scale to measure the actual impact of these events and identify long-term waste reuse and reduction potential.

Share tools

Establishing a tool share library demonstration project at a library or community centre (similar to Toronto's Tool Share Library) is recommended for further study. Although not anticipated to have significant overall waste reduction implications in the short term, this type of initiative can help to foster the necessary social and cultural change that can lead to waste quantity reductions. As part of this exploration, the role of the Region and/or local municipality should be reviewed and consideration to community partners as initiative leaders should be given.

The following provides a summary of key benefits of the above identified initiatives:

- Annual reduction of approximately 8,700 tonnes through reuse of materials by 2031 and an annual savings of approximately $2.8 million* (assumed that material would be otherwise managed as residual waste) by 2031
- Reduction of residual waste quantities requiring processing which will mitigate the need for additional processing capacity over what is currently required
- Significant reductions in environmental burden associated with material production, transportation, and wasted material collection and processing
- Increased awareness among residents around reuse, repair and re-purposing activities
- Community building opportunities through engagement, partnerships, sharing and lending
- Social benefits realized

RECYCLE: maximizing resources at the curb

Continuous monitoring of waste streams, particularly the blue box, and advocacy with industry and other levels of government will continue to remain a focus of waste management into the future.

Major components of a waste management system include infrastructure to process and manage waste

Staying engaged on extended producer responsibility

RECYCLE: identifying key initiatives

"The Region is poised to experience significant growth over the coming decades across all sectors."

The average beer bottle is refilled 15 times before being recycled into new glass

To support continuous improvement in York Region's waste diversion programs, a number of important initiatives have been identified:

Advocating for change

Advocacy is an important part of implementing the SM4RT Living Plan. A successful advocacy strategy depends on early and consistent engagement as well as effective partnerships with a range of multi-stakeholder, governmental, municipal, interest-based and industry organizations. York Region will continue to strengthen its relationship with organizations and associations which share similar policy positions and/or offer the greatest opportunity to exert influence on issues related to the delivery of waste management services.

Planning for growth

The Region is poised to experience significant growth over the coming decades across all sectors. The SM4RT Living Plan ensures future growth planning and policy development will reflect good waste management practices and incorporate these into the design, construction, and operation of all new developments.

Understanding the multi-residential community

More effective performance monitoring of waste management systems in the multi-residential sector is required in order to track successes and address challenges. Additional engagement and outreach efforts to building owners, operators and residents are also recommended.

Review of external funding for the Blue Box Program

The funding formula used to disperse funding from the stewards through Stewardship Ontario and Waste Diversion Ontario has become increasingly complex and hard to follow. With the proposed Waste Reduction Act, 2013, the mechanism for funding for municipal costs related to the Blue Box program is likely to change and possibly be more complex if the Act receives royal assent. For York Region, millions of dollars per

Understanding the value of York Region's recycling facility

A blue box prediction model will be developed to provide annual forecasts of blue box quantity and composition to the Region for program and infrastructure planning. This model will help to better predict impacts to the recycling facility from changing quantities and composition and better prepare the Region for future infrastructure investments.
A valuation of the current Regional blue box infrastructure is recommended in response to potential expanded extended producer responsibility programming proposed through the draft Waste Reduction Act (Bill 91).

Planning for new source separated organics capacity

The Region continues to have challenges with securing long-term, stable source separated organics processing capacity. A strategy for evaluating long-term source separated organics processing options including a recommended approach, criteria and baseline technology review is included in the plan. Continued partnership with Dufferin County for a joint organics processing facility is recommended.

Continuing to deliver successful leaf and yard waste program

This successful program is well known and received by residents and is recommended for continuation throughout the implementation of the beneficial. Investigating the feasibility of enhanced programming/policies to encourage all residents to leave grass clippings on the lawn rather than collecting them as yard waste is also recommended.

Maximizing Community Environmental Centres

As findings of the master plan are implemented, the Region will determine the feasibility of using these sites as pilot locations for new diversion initiatives or product re-purposing workshop locations. This initiative is being recommended as it has the ability to attract new users as well as maximize the value of these assets.

Addressing the need for additional Community Environmental Centres

Detailed monitoring and analysis of the existing network, as well as service needs and drive-times will move forward the business case for any new facilities based on principles and service model developed as part of the CEC strategy. The design of new CECs will not include reuse facilities onsite. Strategies will place greater emphasis on the existing framework of multiple reuse options available within the community.

The following provides a summary of key benefits of this strategy:

- An additional 2,000 tonne increase in recyclable material collected by 2031 over baseline projections
- Key advocacy targets and positions to further support the current system and changes proposed in the future
- A comprehensive approach to address current and future changes to the waste management system as a result of extended producer responsibility
- A long-term plan to secure sustainable source separated organics processing capacity
- Targeted efforts to facilitate greater 4Rs practices in areas outside Regional jurisdiction
- Strategy to address future Community Environmental Centre and depot needs

RECOVER: recognizing the value of waste

York Region took a leadership position and embarked on new opportunities

When faced with the provincial landfill objective to divert residual waste by 2010, the Region was one of the first Greater Toronto Area municipalities to start looking outside the box for alternative ways to manage residual waste and recover additional resources.

RECOVER:
identifying key initiatives

"The Durham York Energy Centre will generate electricity that can be sold to the electrical grid for distribution...."

Electricity produced by the Durham York Energy Centre, operating at design capacity, is sufficient to power about 10,000 homes

York Region has a continued focus on improving waste recovery. The Durham York Energy Centre and contracted energy from waste facilities will further the fourth "R" in York Region by:

Recovering energy

The Durham York Energy Centre will generate electricity that can be sold to the electrical grid for distribution at annual revenue of over $8 million (total shared between Durham and York Region).

Recovering additional materials

The Durham York Energy Centre will recover 80 per cent of the ferrous metal and 60 per cent of the non-ferrous metal remaining in residual waste to be recycled (split between Durham and York Region).

Reducing the environmental burden

The Durham York Energy Centre and contracted energy from waste facilities will significantly reduce the potential for environmental impacts, in particular greenhouse gas emissions, when compared to landfill alternatives.

Reducing the amount of material to landfill

The Durham York Energy Centre will reduce the volume of waste currently being landfilled by up to 90 per cent, significantly reducing the Region's reliance on landfill disposal.

Exploring Alternative Funding Opportunities

The total waste management system in York Region costs approximately $71 million per year to operate ($41 million per year net operating costs at the Regional level and $30 million per year at the local level).

Based on system costs as of July 2013, the total waste management system in York Region costs approximately $71 million per year to operate ($41 million per year net operating costs at the Regional level and $30 million per year at the local level).

The local portion of waste management costs is approximately $30 million/year, primarily for curbside waste collection and promotion and education services. These costs will increase as population growth necessitates additional capacity for collection and processing of materials. Master plan initiatives extend the life of processing capacity and facilities by reducing waste generation, however additional capital investments are still needed to provide residents with programs and services in the long term.

The York Region 10-year capital forecast is approximately $177 million to support waste services and includes:

- Approximately $65 million (or 37 per cent of the 10-year plan) for funding of a source separated organics processing facility
- $30 million to increase diversion capacity
- $20 million for expansion of the Community Environmental Centre network
- $8 million to upgrade waste management facilities

With these future costs, a new mechanism is required to support the funding of waste management programs, services and facilities. For this reason, preliminary discussions on the concept of alternative financing options for the waste management system was explored as part of the SM4RT Living Plan as it could fund future large capital works required for the waste management system without compromising Regional Council's commitment to a tax rate increase of two per cent or lower.

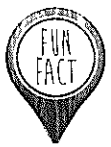
Options being explored include:

- Consideration of moving waste management costs from the Regional levy to a Regional waste charge
- Consideration of separate financing of waste through user charges which would eliminate cross-subsidy of residential waste management by Industrial, Commercial and Institutional sector taxes

To address these long-term financial concerns, the strategy outlines the process to determine the feasibility of alternative financing options. Additional study is required to continue this preliminary work and to identify a model that best meets the needs of all partners in the future.

How We Measure + Report on Success

"As part of the master plan, a new "Balanced Scorecard" has been developed to better understand the performance of the waste management system as a whole."



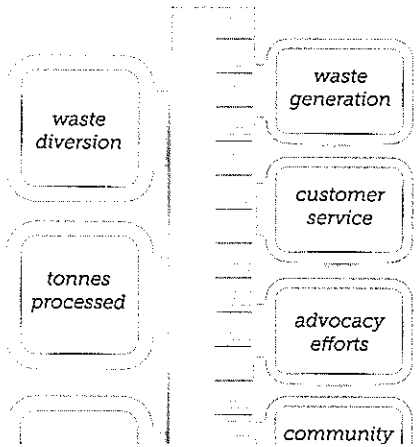
In 2011 + 2012, York Region Community Environmental Centres (CECs) diverted approximately 311 tonnes from landfill by using partnership programs such as Goodwill + Habitat for Humanity

Performance measures have been identified for component strategies of the master plan.

The performance measures that have been identified are designed to be specific, measurable, achievable, relevant and timely. As part of the master plan, a new "Balanced Scorecard" has been developed to better understand the performance of the waste management system as a whole. Traditional measures of waste diversion and waste tonnes managed do not always reflect the ongoing changes in the industry. To address this reality, the master plan identifies a new form of system measurement which looks at a range of performance metrics to evaluate overall program success. Customer service, partnership development, advocacy efforts, waste generation and cost per household are included in the new model to capture community satisfaction.

Through the monitoring of system performance, additional opportunities for enhancement will be easier to identify and will result in an even more effective and efficient waste management system in the future. (See Figure 13).

Figure 13 - Setting New Measures of Success



Going beyond waste diversion to measure program success and value to

Keeping it Current

Plan Updates + Revisions

"By focusing on reduction and reuse, the amount of material managed by the Region and local municipalities can go down...."

Backyard composters can reduce household waste by 30 per cent + eliminate the need for chemical fertilizers

Municipal master plans generally include a review timeline and methodology to address the need for regular updates and adjustments to the plan.

It is conventional to apply a five-year review timeline with the first year of the master plan implementation representing year one. Most municipal capital budget plans also apply a five and/or ten-year timeline for capital budget planning.

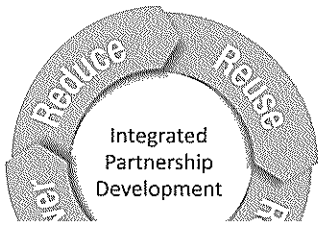
In order for a plan to serve as a 'living' document, it requires continuous and regular engagement of council. Co-ordinating a formal review of the master plan with the municipal election cycle provides an opportunity to educate and inform new councillors regarding the master plan and engage the new council in implementation. Given the current municipal election schedule, an appropriate review/update time-frame would be the spring of 2019, 2023 and 2027. These review points provide an opportunity to seek authority for any major adjustments to the master plan that may be warranted.

Benefits of Realizing the Vision

in the past, focuses on the 4Rs and places emphasis on the first two Rs – Reduce and Reuse. By focusing on reduction and reuse, the amount of material managed by the Region and local municipalities can go down, as is demonstrated by this master plan.

The first five years of implementation focus on piloting new programs and technologies to assess feasibility and results. The projections for 2031 will be revisited during the first review of the plan and re-calibrated based on the success and challenges from those pilots.

Figure 14 - Priority Initiatives to Drive Long-Term Performance



impact + success
by 2031

166,000

estimated tonnes of waste reduced in the first 18 years of the plan

62,000

estimated tonnes of waste reused in the first 18 years of the plan

9.0%

Overall reduction in the total amount of waste requiring management

$62m*

Approximate net savings [$40 million Regional net savings + $22 million local municipal net savings]

$22*

Approximate net savings per household in year 2031 when compared to current baseline projection

* Based on system costs as of July 2013 and planned Durham York Energy Centre expansion by 2027

For more information about this report please contact:
Laura McDowell, Director