

PARTNERSHIPS DRIVING


reduction
reuse
recycling
recovery



The Regional Municipality of York
2016 Annual Solid Waste Diversion Report




Waste Management Facilities In York Region

 Public Yard Waste Drop-off


 Regional Household Hazardous Waste Depot

 Regional Recycling Depot

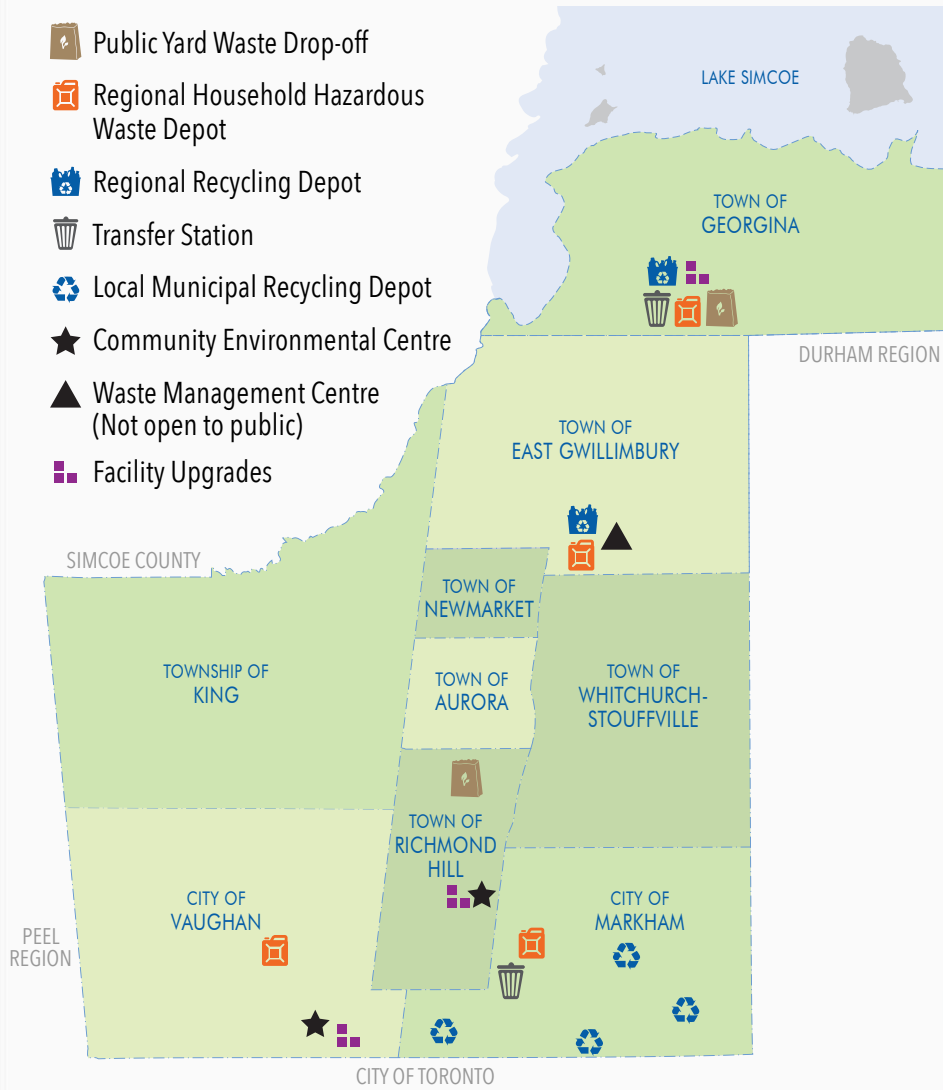
 Transfer Station

 Local Municipal Recycling Depot

 Community Environmental Centre

 Waste Management Centre (Not open to public)

 Facility Upgrades

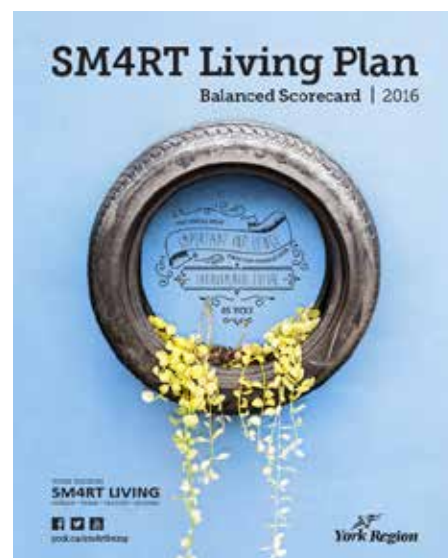


Introduction

The Regional Municipality of York 2016 Annual Solid Waste Diversion Report summarizes York Region's integrated waste management system that delivers sustainable waste diversion programs and infrastructure to our communities. This report is submitted annually to the Ministry of the Environment and Climate Change to satisfy the Durham York Energy Centre Environmental Assessment condition for diversion reporting.

York Region, in partnership with its nine local cities and towns, continues to implement innovative solutions and improve its waste management services to meet the needs of our growing population, nearly 1.2 million residents. Since 1971, York Region's population has increased significantly and an additional 630,000 people are expected to move into York Region by 2041.

York Region has a two-tier municipal governance structure, with curbside waste collection services provided by our cities and towns and waste processing and disposal provided by the Region. There are approximately 368,000 households within nine cities and towns: the Towns of Aurora, East Gwillimbury, Georgina, Newmarket, Richmond Hill, Whitchurch-Stouffville, the Township of King and the Cities of Markham and Vaughan.



Introduced in 2013, the *SM4RT Living Integrated Waste Management Master Plan (SM4RT Living Plan)* sets the course for waste management in the Region for the next 25 to 40 years. The *SM4RT Living Plan* identifies 32 priority initiatives to be launched in the first five years (2014-2018). This innovative and long-term plan implements ongoing enhancements in service and sustainability. The Plan combines traditional waste management approaches with innovative community-driven programs that emphasize reduction, reuse and recycling before recovery.





















Partnerships for Success

Collaboration drives waste reduction and diversion.

York Region and its nine local cities and towns work together to provide integrated waste management services through curbside collection programs, waste processing, public education and outreach as well as various waste reduction initiatives. Through semiannual Strategic Waste Policy Committee and one-to-one meetings the partners discuss policy and program changes, review *SM4RT Living Plan* progress and develop metrics to measure performance. This facilitates greater communication, cooperation and information sharing between the Region and local cities and towns.

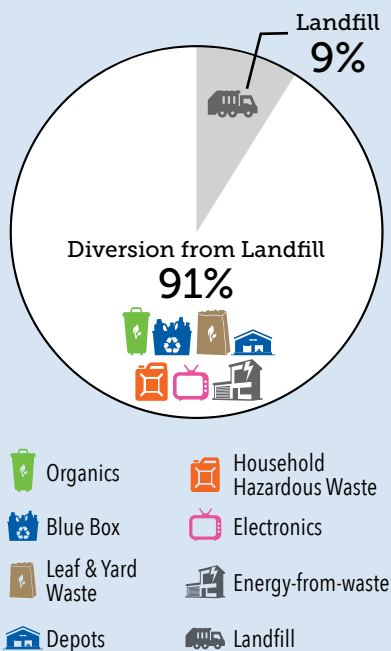
Waste Reduction and Collection Programs Provided by Local Cities and Towns

		Aurora	East Gwillimbury	Georgina	King	Markham	Newmarket	Richmond Hill	Vaughan	Whitchurch-Stouffville
CURBSIDE COLLECTION	Residual Waste 	●	●	●	●	●	●	●	●	●
	Recycling 	●	●	●	●	●	●	●	●	●
	Organics 	●	●	●	●	●	●	●	●	●
	Leaf & Yard Waste 	●	●	●	●	●	●	●	●	●
	White Goods 	●	●	●	●	●	●	●	●	●
	Bulky Items 	●	●	●	●	●	●	●	●	●
SPECIAL EVENTS	Textile Diversion 	●				●				
	Education & Outreach 	●	●	●	●	●	●	●	●	●
MULTI-RESIDENTIAL COLLECTION	Residual Waste 	●		●		●	●	●	●	●
	Recycling 	●		●		●	●	●	●	●
	Organics 			●		●		●		
	E-waste 					●				
	Batteries 					●				
SCHOOL COLLECTION	Recycling 	●		●		●		●		●
	Organics 	●				●				
MUNICIPAL FACILITIES COLLECTION	Recycling 	●	●	●	●	●	●	●	●	●
	Organics 	●		●		●	●	●	●	
	Batteries 					●				

Diversion Achievements

York Region exceeded the Official Plan goal of 90 per cent waste diversion from landfill.

In 2016, York Region achieved 91 per cent waste diversion from landfill, which includes all tonnes collected through curbside and depot diversion programs, and tonnes managed through energy-from-waste.



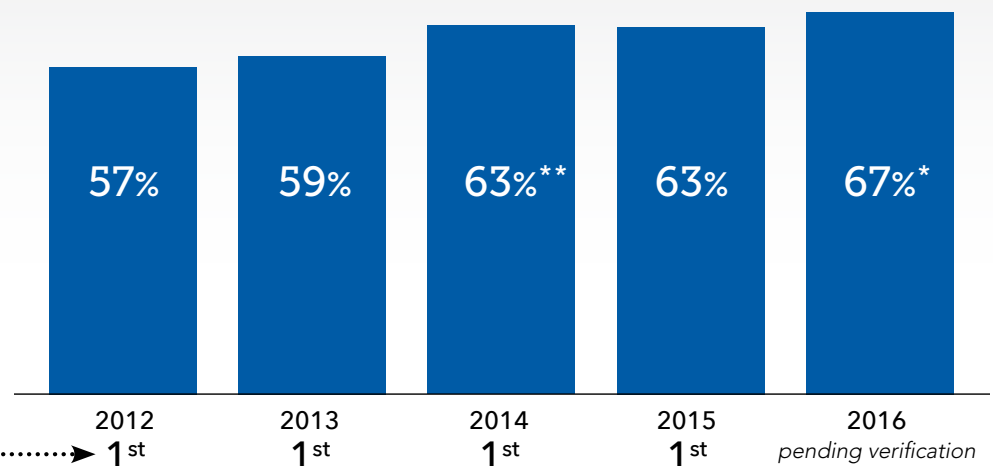
Ranking for Large Urban Municipalities

Total Tonnes Collected

Material	2012	2013	2014	2015	2016
Residual Waste	119,648	120,260	124,011	128,148	130,400
Organics	92,260	94,591	94,700	96,593	97,044
Blue Box	89,488	87,879	87,645	85,335	84,468
Leaf & Yard Waste	43,688	40,486	52,457	44,370	37,407
Other Diversion - Depots	6,657	6,297	4,930	5,944	6,196
Household Hazardous Waste	1,316	1,126	1,203	1,305	1,268
Electronics	1,691	1,503	1,489	1,554	1,460

York Region in partnership with local cities and towns submits an annual data call to the province through the Resource Productivity and Recovery Authority (the Authority), formerly Waste Diversion Ontario. Through the data call process, the Region receives Blue Box funding from producers to assist in the cost of operating the Blue Box Program. The data call produces a municipal ranking publishing diversion rates across the province. York Region continues to be ranked first among large urban municipalities in Ontario.

Resource Productivity and Recovery Authority Annual Waste Diversion

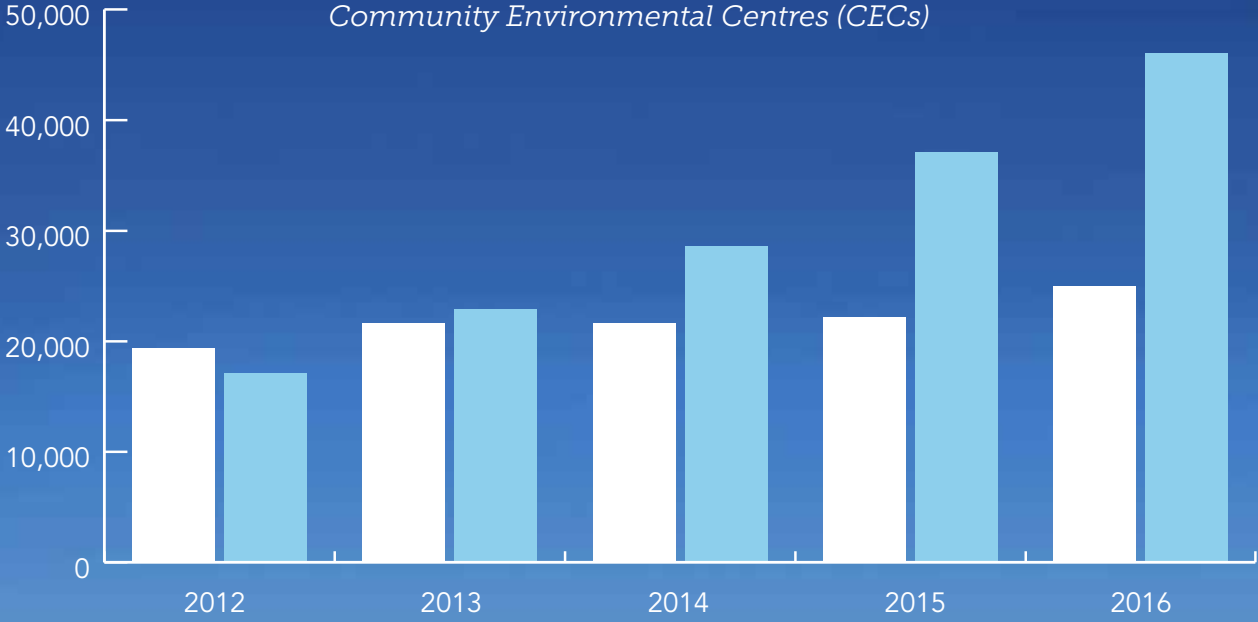


The Authority does not recognize energy-from-waste as diversion.

* 2016 diversion data presented is pending verification by the Authority at the time of printing. Until this method is revised, future York Region Data call submissions and resulting diversion rates will continue to be adjusted.

** Updated to reflect finalized 2014 Waste Diversion Ontario diversion rate.

Visits* to Elgin Mills and McCleary Court Community Environmental Centres (CECs)



■ McCleary Court CEC ■ Elgin Mills CEC

*Paid transactions only (including garbage and mixed loads)



Community Environmental Centres



In 2016, the CECs received over 70,000 paid transactions from residential and small business users.

*** In January 2016, Goodwill Industries unexpectedly ceased operation. As a result, Goodwill Donation Centres at York Region's CECs are closed. Plans are underway to reintegrate reuse at the CECs.*

Convenient access to community recycling programs is essential.

York Region's two Community Environmental Centres (CECs), McCleary Court in the City of Vaughan and Elgin Mills in the Town of Richmond Hill, provide a convenient outlet for York Region residents and small businesses to drop off materials, including bulky recyclables, construction and demolition materials, metal, recyclables and electronics. Items that cannot be diverted are disposed as residual waste.

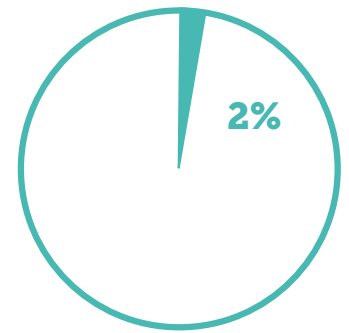
In 2016, 30,930 tonnes of materials were collected at the CECs:

- Blue box, shredded paper, electronics, tires, scrap metal, foam packaging and cooking oil accounted for 2,109 tonnes (seven per cent)
- Construction and demolition materials, including wood, drywall and concrete represented 4,576 tonnes (15 per cent)
- Residual waste was 24,228 tonnes (78 per cent)
- Goodwill Industries collected 17 tonnes** of reuse materials

CECs have been successful both from a usage and waste diversion perspective. However, customers have indicated the current volume-based fees, determined by vehicle type and sizes make it difficult to anticipate cost. In addition, CECs currently do not accept household hazardous waste (HHW). To improve customer experience, the Region began construction at both CECs in fall 2016 to integrate HHW depots and install weigh scales to introduce weight-based fees. Addition of HHW facilities will create one-stop waste depots for York Region residents.



Other Diversion Programs

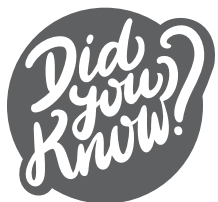


Depot-based recycling programs increase access to diversion beyond curbside collection.

Used Cooking Oil

Collection of used cooking oil started in 2011 at McCleary Court CEC. By 2014, used cooking oil collection was expanded to Georgina Transfer Station, East Gwillimbury HHW and Recycling Depot, Markham and Vaughan HHW Depots and Elgin Mills CEC. In 2016, York Region collected 17,840 kilograms of used cooking oil for recycling that was processed and returned to the market as an ingredient in lubricants and animal feed.

York Region is working together with the public to keep fats, oils and grease out of the wastewater collection system through a Fats, Oils and Grease education campaign. The campaign educates residents and local businesses on the different options to dispose of fats, oils and grease properly and informs residents they can bring used cooking oil to York Region's six drop-off depots.



Fats, oils and grease don't belong in drains, sinks and toilets. Solidified fats, oils and grease can be placed in the green bin. Tip: try cooling or freezing grease before placing it in the green bin.

Construction and Demolition Materials

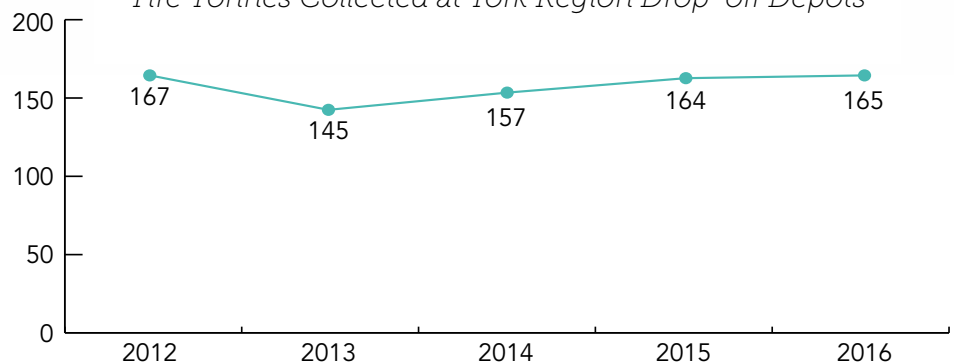
York Region accepts construction and demolition materials including drywall, concrete and untreated wood for recycling at the Elgin Mills and McCleary Court CECs. When CEC upgrades are complete in late 2017, weight-based fees will be introduced to help offset cost of material management and improve cost recovery for high cost recyclables.

Tire Recycling

York Region residents can bring used tires (limit of four per day) to Elgin Mills and McCleary Court CECs, as well as the Georgina Transfer Station. Car and passenger tires, heavy truck tires or farm tractor tires are accepted. These tires are recycled into new products such as rubber mulch and playground surfacing. In 2016, the Region collected 165 tonnes of tires (approximately 13,500 tires) through the CECs and Georgina Transfer Station.

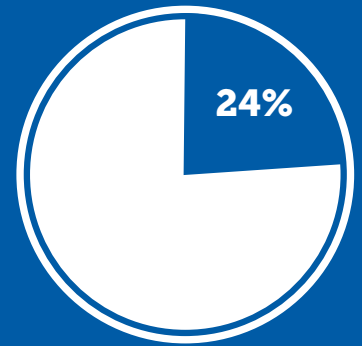


Tire Tonnes Collected at York Region Drop-off Depots





Blue Box



York Region continues to engage with the province and other stakeholders during transition to full producer responsibility.

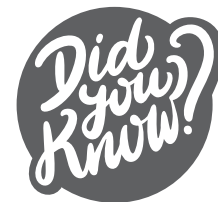
In November 2015, the Minister of the Environment and Climate Change introduced *Bill 151, the Waste-Free Ontario Act*. *Bill 151* received Royal Assent in June 2016 and was proclaimed in November 2016. As part of the *Waste-Free Ontario Act*, the Resource Productivity and Recovery Authority (the Authority) has replaced Waste Diversion Ontario as the new oversight, compliance and enforcement organization of new producer responsibility programs established by the Minister of the Environment and Climate Change.

The *Waste-Free Ontario Act*, serves as a road map to shift Ontario to a circular economy with visionary goals of achieving zero-waste and zero greenhouse gas emissions from the waste sector. A circular economy promotes greater resource productivity through packaging design, in order to reduce waste. Shifting to a waste-free Ontario will be incremental, with estimated transition of the Blue Box Program to full producer responsibility by 2022. Municipalities are working toward an accelerated transition of the Blue Box Program to save Ontario tax payers \$130 million dollars per year.

The legislation aligns with the Region's *SM4RT Living Plan* with elements emphasising reduction and development of a Food and Organic Waste Action Plan. The final strategy remains high-level with details to follow through development of policies and regulations.

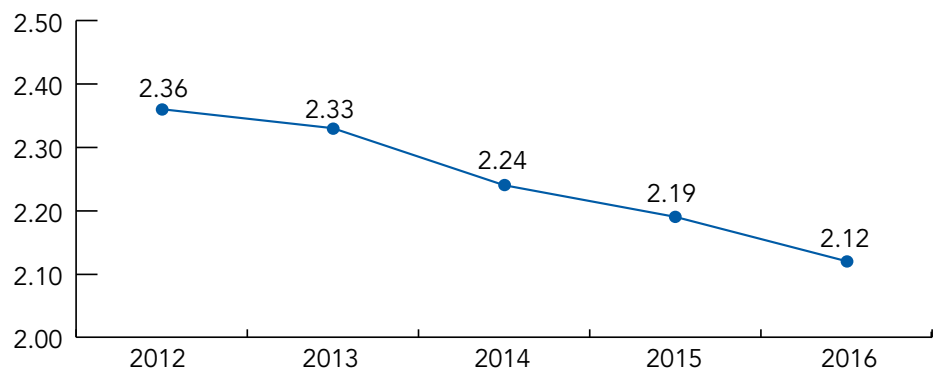
In 2016, blue box recyclables made up 24 per cent of the total materials collected in York Region. Over the past five years, Ontario municipalities including York Region, have seen a downward trend in collected and marketed blue box tonnes due to less printed paper as people access news information online, and more plastics, as consumers buy more single serve prepared food.

Although trends show an increase in plastics marketed, the average amount of blue box tonnes collected per recycling vehicle is decreasing. Light weighting combined with the decrease in paper consumption has resulted in more low density recyclables being delivered to York Region's Waste Management Centre.



The plastic water bottle now weighs about half of what it did 20 years ago.

Average Tonnes Per Inbound Recycling Collection Vehicle

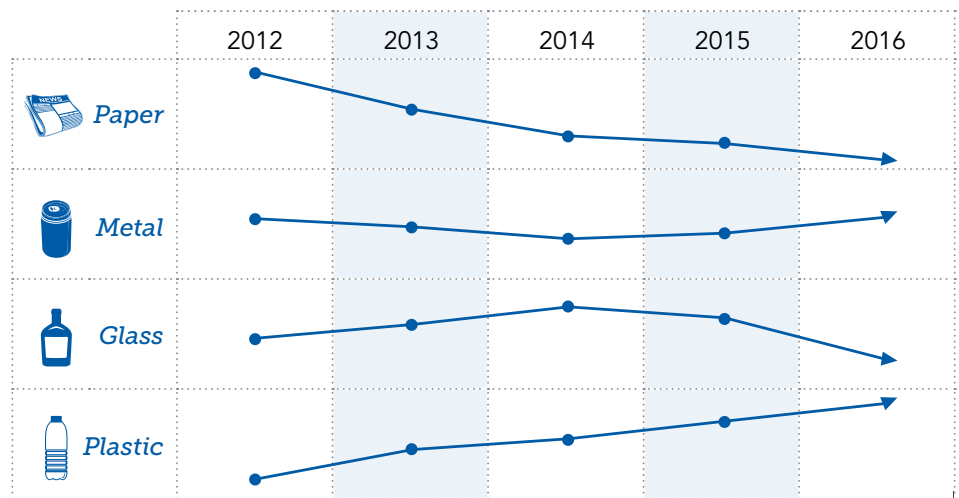




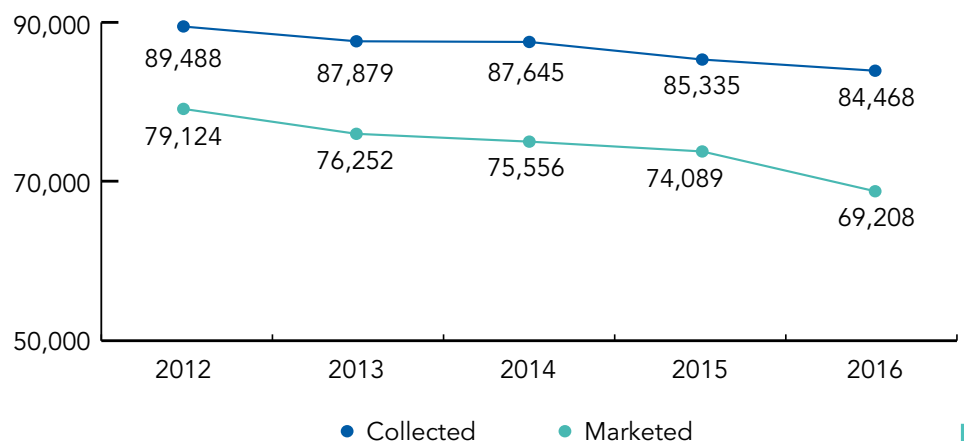
York Region's marketed blue box tonnes declined from 2015 to 2016 due to an increase in non-recyclable packaging in the blue box and adverse changes to end markets. Declining marketed tonnes in 2016 are the result of changing end markets that stopped accepting black plastic containers (e.g. the bottom of many take-out containers). Once the Blue Box Program transitions to full producer responsibility, producers will be responsible for end-of-life management of all packaging which should result in better packaging design and more stable end markets.

A glass clean-up system, installed at York Region's Waste Management Centre in December 2015, has decreased glass contamination from over 40 per cent to less than 15 per cent. The system has increased the recovery of various misdirected recyclable materials from the residue stream. As well, material that was previously being marketed as glass is now being properly directed to residue.

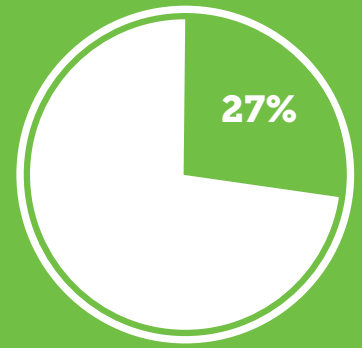
Trend of Marketed Blue Box Tonnes



Blue Box Tonnes Collected and Marketed



Organic Waste



Continued composting of organic materials is vital to environmental protection.

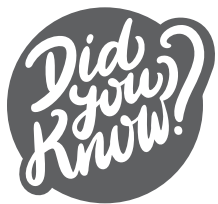
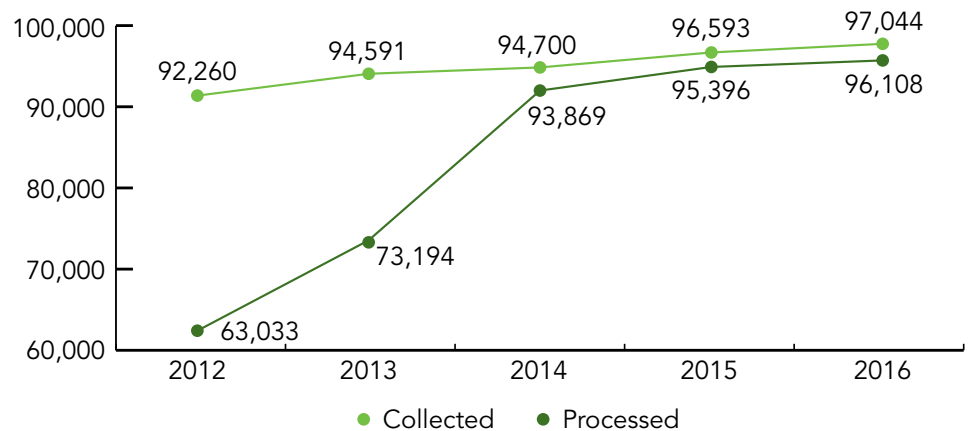
Part of *Ontario's Strategy for a Waste-Free Ontario* includes developing a Food and Organic Waste Action Plan to reduce the volume of food and organic wastes going to landfill. This supports York Region's Food Waste Reduction Strategy approved under the *SM4RT Living Plan* that targets 15 per cent reduction of food waste in the green bin by 2031.

Processing of organic waste into compost currently represents one third of the Region's overall diversion achievement. In 2012 and 2013 operational and contractual challenges impacted available organics processing options. In 2016, York Region residents generated approximately 97,044 tonnes of source separated organics. The Region shipped

55,071 tonnes of source separated organic material to Orgaworld in London, 39,741 tonnes to Lafèche in Moose Creek and 33 tonnes (trial load) to Bio-En Power Inc. in Elmira, Ontario for processing. Since 2013, York Region has continued to secure reliable compost processing capacity for nearly all collected

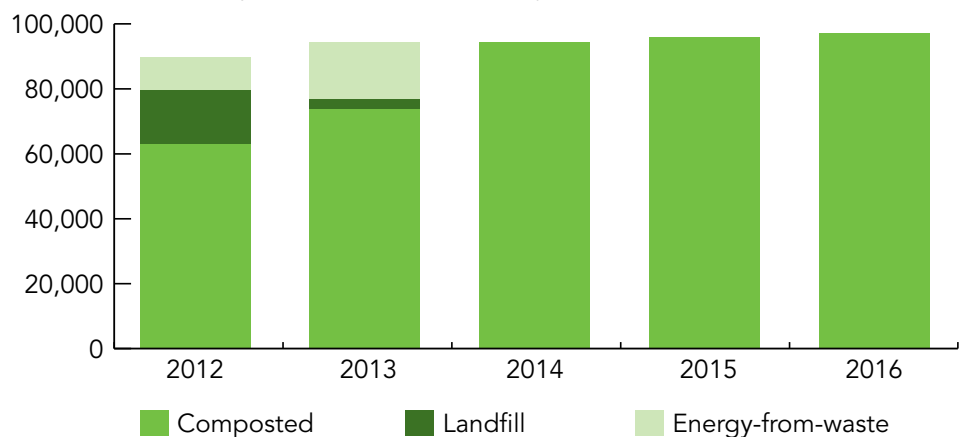
organic material. The remaining tonnes represent leachate (liquid produced from the decomposition of waste) and evaporation. In 2016, there was 1,263 tonnes of leachate managed through approved treatment facilities in Ontario and 936 tonnes were lost to evaporation.

Organic Waste Tonnes Collected and Processed

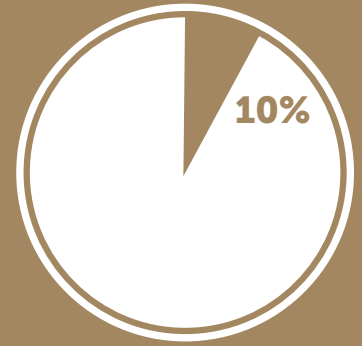


About \$31 billion of food is wasted in Canada annually. Households are responsible for approximately 47 per cent of this food waste. The remaining 53 per cent is generated along the supply chain where food is grown, processed, transported and sold.

Organic Waste Tonnes by Destination (Outbound)



Leaf and Yard Waste



Leaf and yard waste compost improves soil condition and helps plants grow.

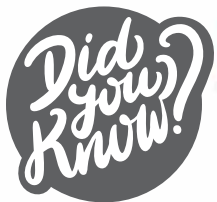
York Region's local cities and towns offer residents seasonal curbside collection of leaf and yard waste. Collection starts in spring and ends in fall, with between 17 and 25 collections per year, depending on the municipality. Additionally, residents may drop off leaf and yard waste at two facilities in York Region – the Georgina Transfer Station and

the Bloomington Yard Waste Depot in the Town of Richmond Hill. All yard waste collected in the Region continues to be processed at the Bloomington Yard Waste Depot where it is turned into compost.

The Leaf and Yard Waste Program is the oldest formal diversion program in York Region and contributed 10 per cent of the Region's total materials collected and processed in 2016. York Region residents generated 37,407 tonnes of yard waste in 2016. Leaf and yard waste tonnages can fluctuate significantly from year to year due to changes in weather conditions. The summer of 2016 was one of the driest growing seasons on record and as a result yard waste tonnages declined by almost 7,000 tonnes over 2015.

Emerald Ash Borer

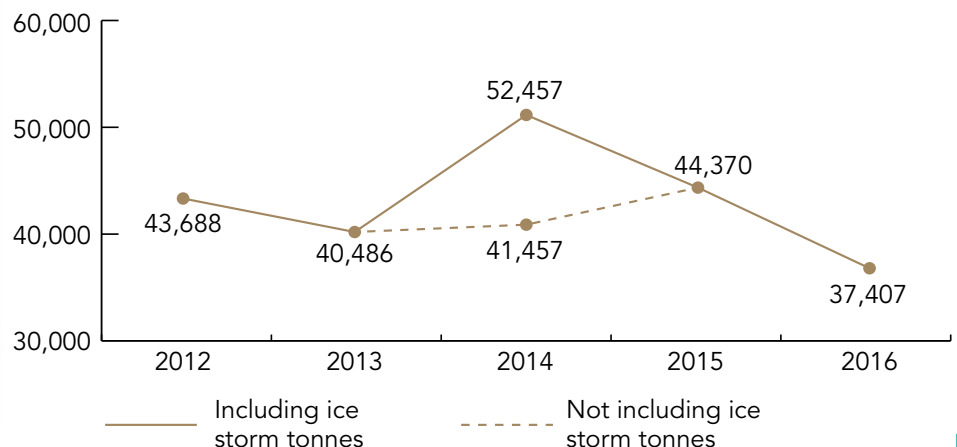
The Emerald Ash Borer was discovered in York Region in 2008. This invasive insect poses no risk to human health but kills all North American species of ash trees, posing a significant threat to our forests and street trees. This will impact yard waste tonnage as older trees die off and are replaced by younger trees that produce little yard waste. York Region Forestry has confirmed infestations in all Regional municipalities and is working with local cities and towns, conservation authorities, the Canadian Food Inspection Agency and the Ontario Ministry of Natural Resources and Forestry to coordinate efforts to monitor and manage the Emerald Ash Borer's impacts in the Region.



More than half of our local cities and towns hosted free compost and mulch giveaway events in their communities in 2016.



Total Leaf and Yard Waste Tonnes Collected



Household Hazardous Waste

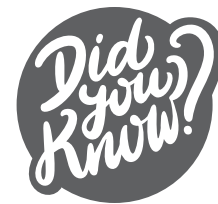


Safely managing and diverting household hazardous waste protects the environment.

York Region provides a network of facilities where residents can drop off municipal Household Hazardous Waste (HHW). Drop-off facilities include Georgina Transfer Station, East Gwillimbury HHW and Recycling Depot and Markham and Vaughan HHW Depots. The Region is currently working on integrating Vaughan HHW Depot operations into the McCleary Court CEC and introducing a new HHW depot into the Elgin Mills CEC operation. Through specialized contracted services at these locations, hazardous materials are recycled or treated and disposed of in an environmentally responsible manner.

Household Hazardous Waste is the most costly stream to manage. In 2016, the budgeted cost to York Region for HHW was \$300 per tonne. York Region collected 1,268 tonnes of HHW materials at Regional depots. Municipal depots ensure materials are safely managed to end-of-life and divert harmful substances from landfill, waterways and forests. In addition, many HHW items contain materials that can be recovered, refined and reused in manufacturing new products, reducing the need for virgin resources.

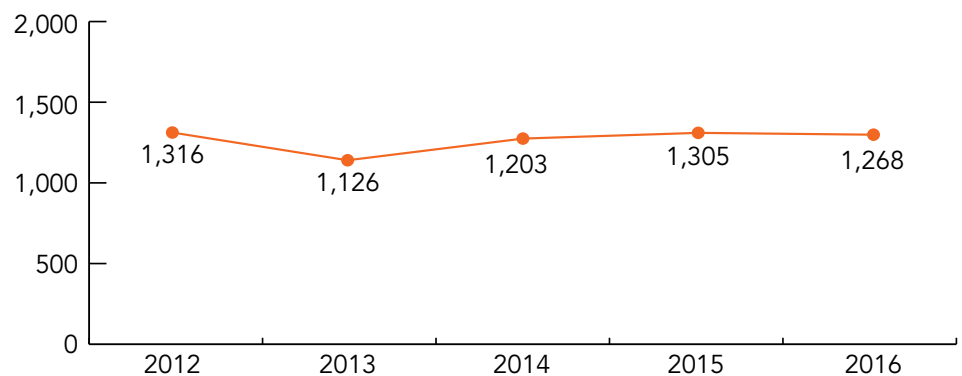
The Municipal Hazardous or Special Waste (MHSW) program has been designated under the previous *Waste Diversion Act*. As a result, collection, processing and disposal of this material is funded by brand owners and first importers of these products. Previous steward representation that resided with Stewardship Ontario has been transitioned to Product Care Association which is now responsible for the entire supply chain and funding for paints, coatings, pesticides, solvents and fertilizers. Product Care Association will continue operations under the *Waste Diversion Transition Act* until the MHSW program is transitioned to full producer responsibility under the *Waste-Free Ontario Act*. There have been no financial or operational impacts to York Region as a result of the changing steward representation.



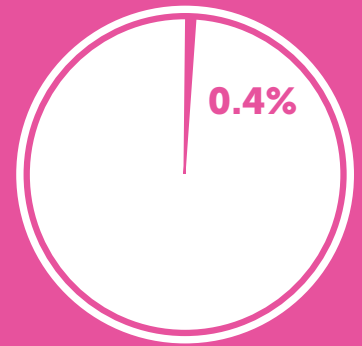
The I Don't Flush Campaign, Ontario Medications Return and Ontario Sharps Collection Programs promote the safe disposal of unused medication and sharps at participating local pharmacies. To find out more, please visit healthsteward.ca.



Household Hazardous Waste Tonnes Collected



Waste Electronics



York Region's network of drop-off depots supports reuse and recycling of waste electronics.

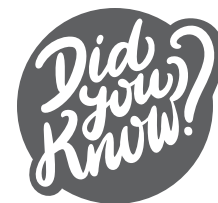
York Region provides residents with a network of drop-off facilities for waste electronics, including Georgina Transfer Station, East Gwillimbury HHW and Recycling Depot, Markham HHW Depot, Vaughan HHW Depot, as well as McCleary Court and Elgin Mills CECs. In 2016, 1,460 tonnes of electronic waste was collected at Regional depots. Additionally, local cities and towns organized 34 electronic recycling special events in 2016. These special recycling events combined with York Region's drop-off depots provide residents with convenient options for the safe recycling of electronic materials. In addition, the Ontario Electronic

Stewardship (OES) provides numerous drop-off locations for obsolete electronics.

Waste Diversion Ontario in co-operation with OES developed the Waste Electrical and Electronic Equipment (WEEE) program in 2009. WEEE material was designated under the *Waste Diversion Act*, and collection, processing and disposal of this material is funded by brand owners and first importers of these products. In 2016, as part of the new *Waste-Free Ontario Act*, the Resource Productivity and Recovery Authority has replaced Waste Diversion Ontario as the new oversight, compliance and enforcement organization. OES will continue operations under the *Waste Diversion Transition Act* until the WEEE program undergoes

transition to full producer responsibility under the *Waste-Free Ontario Act*.

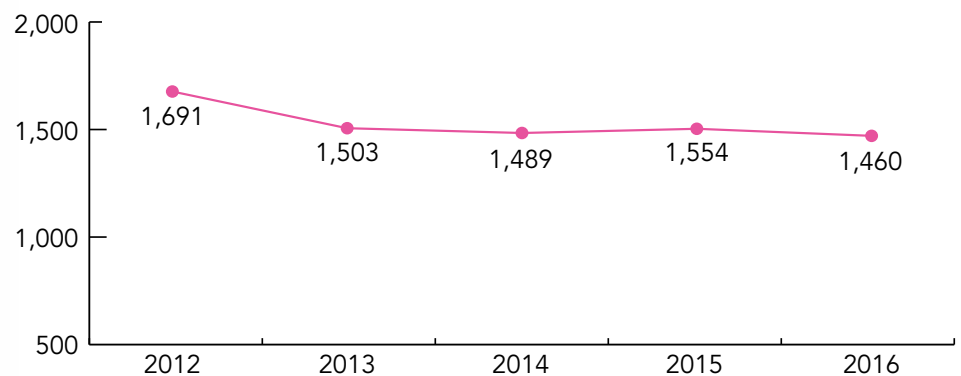
Electronic materials collected at Regional depots are sent to Global Electric and Electronic Processing (GEEP) for recycling. GEEP recovers raw materials through environmentally responsible demanufacturing of electronics and uses sustainable business practices and a non-export policy in order to achieve a near zero-landfill goal.



Electronic devices are getting smaller, thinner and lighter over time, resulting in fewer tonnes collected each year.

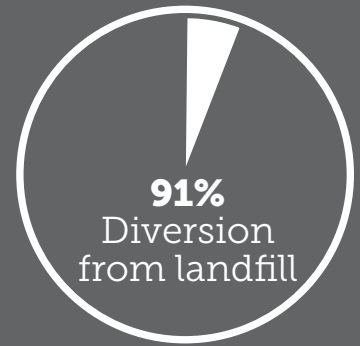


Waste Electrical and Electronic Equipment Tonnes Collected





Residual Waste



Providing sustainable residual waste management through energy recovery.

York Region manages its residual waste primarily through energy-from-waste recovery after reduction, reuse and recycling diversion efforts have been maximized. Energy-from-waste captures the energy content of residual waste, lowers greenhouse gas emissions, recovers metals and reduces the volume of waste going to landfill.

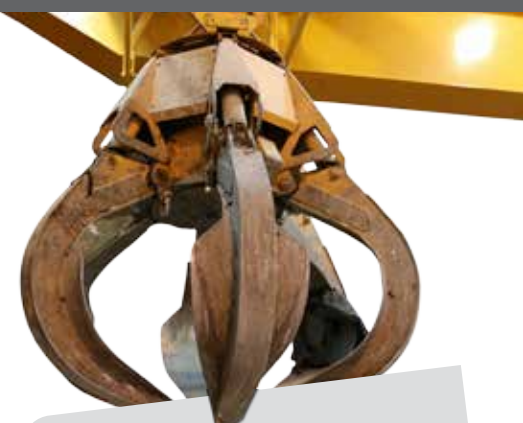
In 2016, the Region shipped 111,849 tonnes of residual waste for energy recovery, with 48,910 tonnes processed at Covanta Niagara in New York State and 30,737 tonnes processed at Emerald Energy in Brampton, Ontario. The remaining 32,202 tonnes were sent to the Durham York Energy Centre.

Bulky materials like sofas and mattresses, which are typically not appropriate for energy recovery, are managed through landfill contracts with Walker South Landfill in

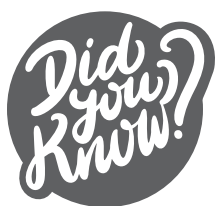
Thorold, Ontario, City of Toronto's Green Lane Landfill in St. Thomas, Ontario and the Twin Creeks Landfill in Watford, Ontario. York Region landfilled 32,266 tonnes of residual waste in 2016. Residual waste shipments for 2016 are summarized below:

Destination	Tonnes
Energy-from-waste	111,849
Landfill	32,266
Year-end carry over*	421
Total Residual Waste	144,536

*Inventory remaining on tip floor

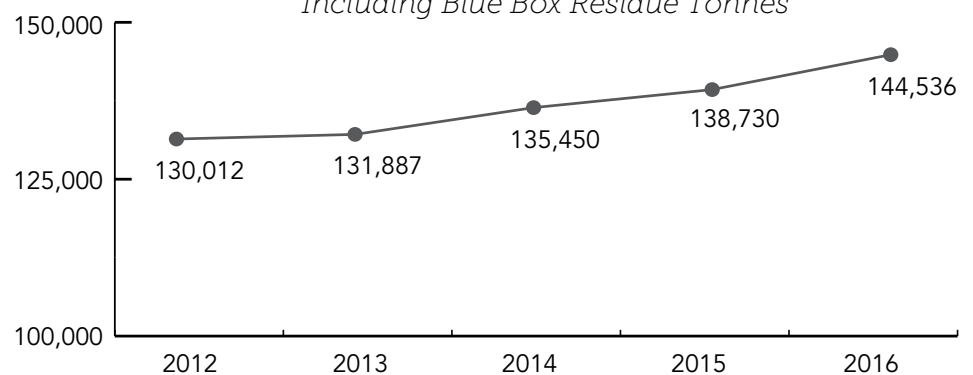


In 2016, York Region achieved 91 per cent diversion from landfill (including energy-from-waste) exceeding the 90 per cent target established in the Region's Official Plan. York Region's focus on sustainable waste management through recovery derives a beneficial use of residual waste.



The Durham York Energy Centre generates enough electricity to power 10,000 homes every year.

Residual Waste Collection Including Blue Box Residue Tonnes



Over the past five years, an upward trend in residual waste tonnage, can be attributed to population growth as well as an increase in residual waste disposal at the CECs.

Waste Promotion and Education

Promotion and outreach activities increase community participation and drive waste reduction and diversion.

York Region actively promotes waste reduction and diversion through extensive public communication and education programs. Objectives of these programs are to:

- Educate and promote participation in waste reduction and diversion programs
- Ensure compliance with municipal and Regional waste management policies

Local cities and towns also provide broad education and information through their own initiatives, including annual local waste collection calendars distributed to all York Region residents. York Region communicates regularly with our local cities and towns, recognizing the importance of consistent messaging to minimize public confusion and to leverage economies of scale wherever possible.

In 2016, York Region's Waste Management communication campaigns included:

- *Better Blue Starts With You* - multi-year blue box contamination campaign educating residents on items that do not belong in the blue box

- Bindicator – *Cut the Clutter* campaign promoting the use of our online waste directory
- Community Environmental Centres and Georgina Transfer Station upgrades – informing customers of upcoming construction projects to enhance these facilities
- Door-to-Door Clutter Collection – promoting textile and household goods collection pilot with the Town of Aurora
- Fall yard waste campaign – encouraging residents to place fall decorations (straw, corn stalks and pumpkins) in yard waste, not the green bin
- *Good Food* program – promoting food waste reducing behaviours which focus on local foods and a Flavours of Fall recipe contest
- *Greener Garden* Composting Challenge – promoting a backyard composting pilot with the Towns of Aurora and Richmond Hill
- *Trash Blasters* – promoting a waste reduction education pilot program at two elementary schools in York Region

York Region's *Good Food* program focuses on making good food purchasing and cooking choices to improve health, reduce stress and allow more family time. Working in partnership with York Region's Community and Health Services Department, the *Good Food* program regularly adds fresh content and useful tools to reinforce desired behaviours to reduce food waste, such as meal planning, shopping with a list, safe food storage and best-before-date education. Food waste reduction is also a benefit to implementing these activities.



Summary

York Region and our nine local cities and towns have implemented one of the most comprehensive integrated waste management systems in North America.

Implementation of innovative waste reuse, reduction, recycling and recovery programs and facilities has been achieved through leadership of Regional and local municipal councils encouraging a more proactive and sustainable approach in managing waste. Since implementation of the *SMART Living Plan*, our programs and facilities have won awards from 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 cities and towns. This success is due to the dedication of residents, businesses and community partners throughout the Region.

As seen in the *2016 Annual Solid Waste Diversion Report*, the Region's programs have demonstrated the following:

- 91 per cent diversion from landfill
- 66.7 per cent Resource Productivity and Recovery Authority diversion rate; ranking #1 in the large urban category since 2012

- Convenient access to depot diversion programs with over 70,000 visits recorded through paid transactions collecting more than 30,000 tonnes of waste materials
- Ensuring the safe and responsible recycling and disposal of over 2,500 tonnes of household hazardous waste and waste electronic materials
- Processing over 100,000 tonnes of residual waste through energy-from-waste recovery generating enough electricity to power 10,000 homes every year
- Delivering multiple promotion and education programs focused reuse, reduction and recycling initiatives

Continued environmental leadership is a priority for York Region, local cities and towns and other stakeholders to advance the municipal perspective on issues related to the *Waste-Free Ontario Act*. York Region's *SMART Living Plan* aligns with the goals and principles of the new provincial waste management framework legislation. As the Strategy for a Waste-Free Ontario continues to unfold and the province transitions to full producer responsibility, staff will monitor and report on potential impacts to the Blue Box Program and other designated materials. Staff will maintain collaborative efforts with the province and waste management stakeholders to further advance waste reduction opportunities.



Success of York Region's waste reduction and diversion programs is due to our residents and their continued commitment to building sustainable communities.

Thank you!



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For more information about this document please contact:
Environmental Promotion and Protection, Environmental Services Department
Access York: 1-866-665-6752

