2022 ANNUAL WASTE MANAGEMENT REPORT

PARTNERSHIPS DRIVING
Reduction | Reuse | Recycling | Recovery



2022 At-A-Glance



140,768
TONNES
RESIDUAL WASTE
SENT TO ENERGY-FROM-

WASTE FACILITIES



106,001
TONNES
GREEN BIN
ORGANICS
PROCESSED



49,944
TONNES
BLUE BOX
RECYCLING
MARKETED



42,509
TONNES
LEAF &
YARD WASTE
COMPOSTED



1,857
TONNES
DEPOT
DIVERSION
RECYCLED



1,277
TONNES
HOUSEHOLD
HAZARDOUS
WASTE
PROPERLY DISPOSED



919
TONNES
ELECTRONIC
WASTE
RECYCLED



The Regional Municipality of York, in partnership with its local cities and towns, provides an integrated waste management system to its residents. York Region processes waste collected by its local cities and towns and manages waste depots where residents can drop off items for reuse, recycling or disposal. Our leadership in sustainable waste management is guided by the Integrated Waste Management Master Plan (SM4RT Living Plan), a comprehensive long-term plan to reduce waste in York Region by advancing the circular economy. Collaboration and partnerships are key to achieving the SM4RT Living Plan's objectives, resulting in innovative programming and initiatives outlined in this report. Waste management and diversion are one of the Region's and its local cities and

towns' top priorities and they continue to work together to adapt to changing Federal and Provincial legislation. These efforts have resulted in significant success with 94% of

York Region's waste diverted from landfills in 2022.

York Region, in partnership with local cities and towns, continues to implement innovative waste reduction, diversion and disposal programs to meet the evolving needs of our growing communities.



Introduction

This annual Waste Management Report summarizes

York Region's integrated waste management system performance including the quantity of materials collected and processed in 2022. It reports on the Region's progress in meeting the objectives of the SM4RT Living Plan and is submitted annually to the Ontario Ministry of the Environment, Conservation and Parks to satisfy the Durham York Energy Centre Environmental Assessment approval condition for diversion reporting.

In partnership with its local cities and towns, York Region provides waste management services and programs to over 1.2 million residents in almost 400,000 households across the Cities of Markham, Richmond Hill and Vaughan and the Towns of Aurora, East Gwillimbury, Georgina, Newmarket, Whitchurch-Stouffville and the Township of King.

The SM4RT Living Plan, first developed in 2013 and updated in 2020, sets the stage for waste diversion and prevention in York Region to 2059 and beyond with a visionary goal of "a world in which nothing goes to waste". The plan reinforces York Region's continued leadership in waste management with a strong focus on the 4Rs waste hierarchy to:

- **Reduce** the amount of waste generated in the Region
- Reuse items instead of discarding them
- Recycle as many materials as possible into new products
- **Recover** energy from waste that cannot be managed in other ways

York Region works with its cities and towns to advance the SM4RT Living Plan. The Plan's <u>three objectives</u> and 2022 highlights of achievements can be found in Figure 1.



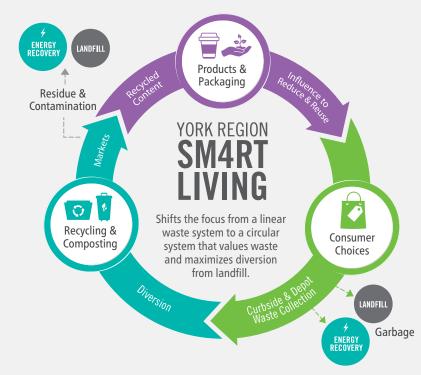


Figure 1: SM4RT Living Plan 2022 Highlights of Achievements

Objective	Objective Objective Description			
Successfully navigate legislative changes	Responding flexibly and using legislative changes to continually improve SM4RT Living.	The Region continues to work toward securing a long-term lease of the Material Recovery Facility in advance of Blue Box Program transition. Waste depot operations aligned with producer responsibility programs to continue collection of household hazardous waste from residents.		
Use resources and infrastructure more strategically to achieve SM4RT Living	Focusing efforts, innovating and improving coordination to create a more seamless, cost-effective system and do more with available resources.	In June 2022, York Regional Council authorized staff to secure long-term contracts to recover energy from residual materials. The Region completed procurement to locally process green bin waste using a state-of-the-art biofuel facility that will produce fertilizer and renewable natural gas.		
Inspire people across the Region to embrace SM4RT Living and advance the circular economy	Valuing partnerships and pioneers in igniting uptake of SM4RT Living and the circular economy across our communities.	York Regional Council endorsed the Circular Economy Roadmap in May 2022. Through the Circular Economy Initiatives Fund, the Region supported six community groups to complete projects to reduce waste and advance the circular economy. The Region launched the Single-Use Innovation Challenge to help businesses reduce reliance on single-use items.		

Going Circular



Advancing the circular economy is a global movement, with municipalities like the Cities of Toronto and Vancouver championing circular approaches and strategies. Organizations around the world, like the Ellen MacArthur Foundation and the World Economic Forum. are committed to working with businesses, academia, policymakers and institutions to activate circular solutions.

Realizing the SM4RT Living Plan Vision by Advancing the Circular Economy

To meet the SM4RT Living Plan's vision of "a world in which nothing goes to waste", advancing the circular economy is essential. The circular economy eliminates waste and pollution, and conserves resources. It shifts the 'make-take-dispose' linear economy model to one that is circular. Through better design, resources are continuously recaptured and reused, allowing natural systems to regenerate. Products will be more durable, reusable, repairable and recyclable and options to share, rent, repair and repurpose will become more common.

Transitioning to a circular economy has global scale benefits, including climate change mitigation and greenhouse gas reduction benefits as a result of cleaner manufacturing and reduced resource extraction. With reduced impacts to the environment, community and environmental health will improve. Potential economic benefits include cost savings, innovation and job creation.



Through guidance and support offered by the <u>Canadian Circular Cities and Regions Initiatives</u>, York Region developed a <u>Circular Economy Roadmap</u> to advance <u>five action areas</u>:



Sustainable Food Systems



Reuse and Sharing



Community Capacity and Connections



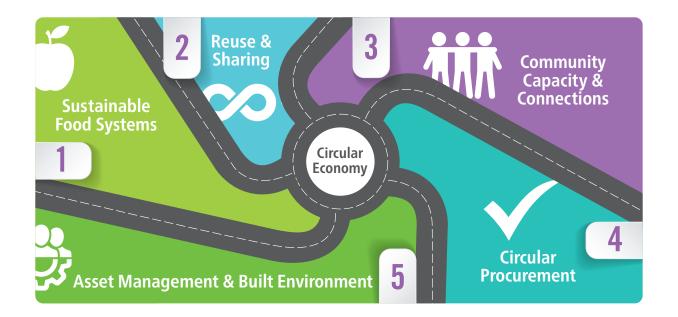
Circular Procurement



Asset Management and Built Environment

Building local capacity to accelerate the circular economy is a key component of York Region's SM4RT Living programming. In 2022, six community groups and organizations completed innovative projects focused on reducing waste and advancing the circular economy through the Circular Economy Initiatives Fund, and seven organizations were selected to receive funding in 2023. The Region also launched the Single-Use Innovation Challenge, a funding program to help successful applicants educate and assist local businesses in reducing their use of single-use items.

Building local capacity to accelerate the circular economy is a key component of York Region's SM4RT Living programming.



Achievements





York Region Continues To Exceed Annual Diversion-FromLandfill Target

York Region is committed to following the 4Rs, with a strong focus on reduction and reuse to minimize waste generation. In 2022, York Region achieved 94% waste diversion from landfill, which includes all tonnes collected through curbside and depot diversion programs (see Table 1) and tonnes managed through energy-from-waste processing. York Region has exceeded its annual target of 90% waste diversion from landfill since 2016.

Year	York Region Diversion from Landfill Rate*
2018	94%
2019	94%
2020	93%
2021	92%
2022	94%

^{*} Includes energy-from-waste

The Resource Productivity and Recovery Authority (RPRA) facilitates an annual Provincial datacall process used to determine the cost of the Blue Box Program and to allocate funding from producers to municipalities to assist with its operational costs.

With the Blue Box Program transitioning to full producer responsibility, the Provincial datacall process will end. The Region's 2023 datacall submission in 2024 will be its last. Thanks to residents and strong collaboration with its local cities and towns, York Region has been a leader in the large urban municipal category every year since 2012. At the time of this report's publication, the 2022 RPRA unverified diversion rate is 66% (RPRA does not recognize energy-from-waste as diversion).

Resource Productivity and Recovery Authority Annual Waste Diversion Rate

2018	1st for Large Urban Municipalities	<u> </u>	68%
2019	1st for Large Urban Municipalities		66%
2020	1st for Large Urban Municipalities		66%
2021	1st for Large Urban Municipalities		65%
2022	Pending Verification		66%*

All values are rounded. RPRA does not recognize energy-from-waste as diversion.

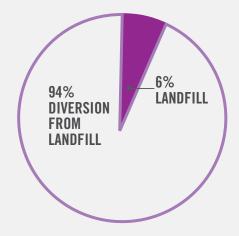
Table 1: Total Tonnes Collected

Tonnes Collected							
Material	2018	2019	2020	2021	2022		
Residual Waste (Garbage)	124,319	129,144	145,464	145,435	137,842		
Green Bin Organics*	99,065	100,874	112,403	114,075	107,917		
Blue Box*	83,526	78,243	79,087	78,417	76,032		
Leaf and Yard Waste	42,287	42,814	44,216	42,029	42,509		
Other Diversion - Depots	2,580	2,659	1,612	1,913	1,857		
Household Hazardous Waste	1,219	1,297	1,459	1,365	1,277		
Electronics	1,124	1,117	1,205	1,085	919		

^{*} Note: total blue box and green bin organics tonnes collected at curbside and depots include contamination

How do we achieve 94% diversion from landfill?

Following the waste hierarchy of reduce, reuse, recycle and recover, most of the material collected is managed through diversion programs such as the blue box, green bin, yard waste and depot programs. Almost all of the residual waste that cannot be diverted is managed at energy-from-waste facilities, with only a small amount sent to landfill.



^{*}The 2022 diversion data presented is pending verification by the RPRA at time of printing.

Waste Generation





Waste Generation Rates Approach Pre-Pandemic Levels

Waste generation rates measure the tonnage of waste per person (kilogram per capita) collected curbside.
York Region uses waste generation rates to track progress made towards waste reduction targets set in the SM4RT Living Plan.

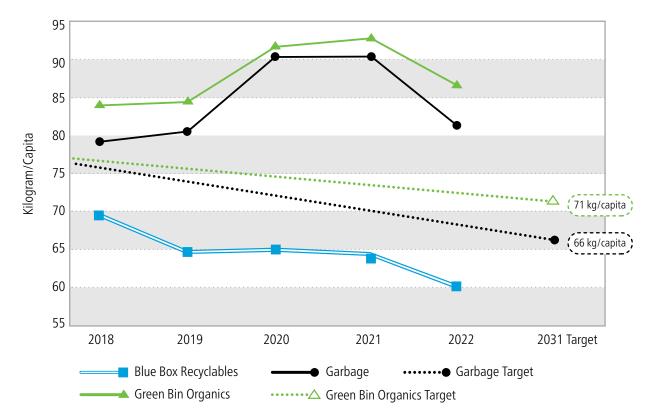
With the move to full producer responsibility for the Blue Box Program, reporting now focuses on two key streams of collected curbside waste – green bin organics and garbage (residual waste) – which will remain as mandated municipal responsibilities. Targets were identified for these streams in the SM4RT Living Plan update approved by York Regional Council in 2020. Yard waste generation rate is not included as this waste stream is the most unpredictable, with yard waste greatly influenced by external factors such as weather.

The Region and its local cities and towns have been agile and resilient in providing waste management services and responding to evolving resident needs. To manage waste generated at home throughout 2020 and 2021, restrictions on garbage bag limits and enforcement were relaxed in some municipalities. In 2022, most public health restrictions were lifted and many residents were spending less time at home.

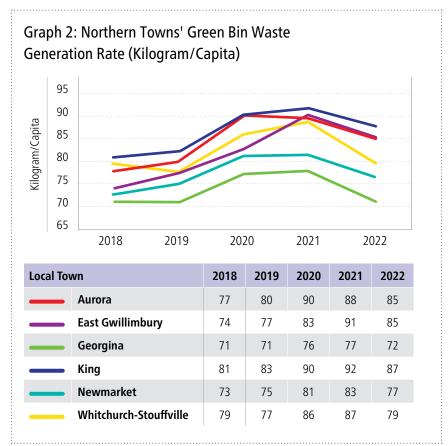
By Fall 2022, community polling showed almost 50% of York Region respondents had returned to workplaces and schools full-time. York Region and its local cities and towns were able to resume most waste diversion programming, including inperson services and some municipalities reinstated garbage bag limits and curbside enforcement.

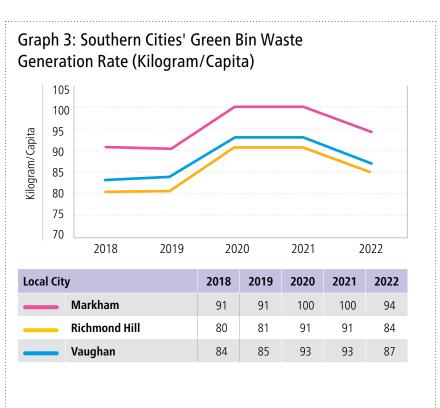
As a result, York Region's residential garbage and green bin waste generation rates have sharply declined, nearing 2019 levels, while blue box generation rates also continue to follow a declining trend since before 2018 (Graph 1). York Region's residential garbage and green bin waste generation rates have sharply declined, nearing 2019 levels.

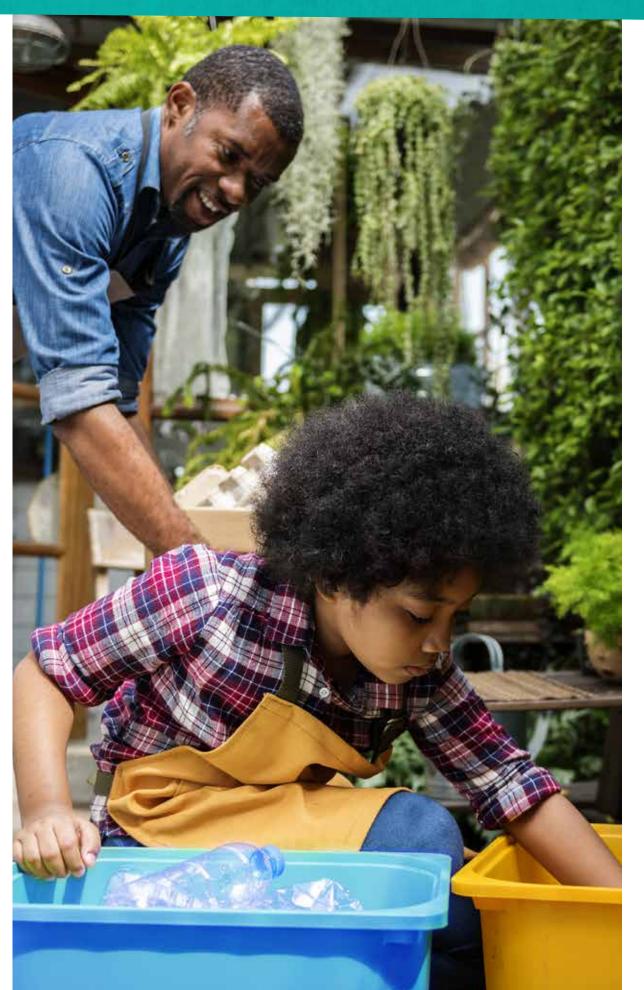
Graph 1: York Region Residential Curbside Waste Generation Rate (Kilogram/Capita)

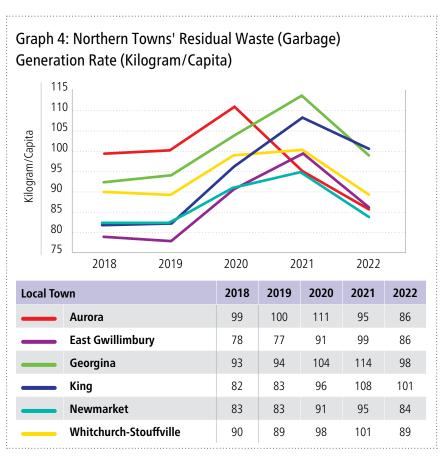


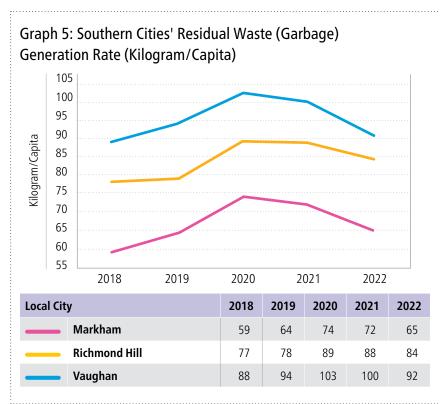
Consistent with the overall Regional trend, all nine local cities and towns saw declines in garbage and green bin waste generation rates (see Graphs 2 to 5), likely due to residents returning to workplaces and schools full-time. In the northern six towns, declines in the garbage generation rate may have also been influenced by garbage bag tag program changes made in the Towns of Aurora, East Gwillimbury and Georgina.





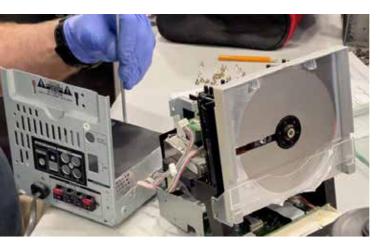






Partnerships









Local Municipalities and Community Partners Help the Region Deliver Innovative Programs and Extend Reach Into the Community

York Region and its nine local cities and towns continue to collaborate to provide integrated waste management services and programs focusing on reduction, reuse and recycling initiatives. Together, we deliver innovative programming to our communities including <u>curbside giveaway days</u>, battery, electronic waste and textile diversion programs and regular curbside collection.

Various community partners also work with the Region on innovative programs that combine waste prevention efforts with community building such as <u>Good Food</u>, the <u>Lendery</u> and <u>Repair Cafés</u>. See the Engagement section of this report for more information.

Building community capacity and fostering collaborative partnerships are key to achieving SM4RT Living Plan objectives. Waste Reduction and Collection Programs Provided by Local Cities and Towns

Collection Type	Waste Type	Aurora	East Gwillimbury	Georgina	King	Markham	Newmarket	Richmond Hill	Vaughan	Whitchurch-Stouffville
Curbside Collection	Garbage, Recycling, Green Bin Organics, Leaf and Yard Waste	•	•	•	•	•	•	•	•	•
carbine concention	White Goods (Appliances)	•	•	•	•	•	•	•	•	•
	Bulky Items	•	•	•	•	•	•	•	•	•
	Education and Outreach	•	•	•	•	•	•	•	•	•
Special Programs	Textile Diversion	•	•	•	•	•	•		•	•
Special Programs	Electronic Waste	•			•	•	•			•
	Batteries	•	•		•	•	•	•		•
Multi-Residential	Garbage and Recycling	•		•		•	•	•	•	•
Collection	Green Bin Organics			•		•		•	•	
Public Spaces	Garbage	•	•	•	•	•	•	•	•	•
	Recycling	•	•			•	•	•	•	
Municipal Facilities	Green Bin Organics	•	•	•		•	•	•		
	Recycling	•	•	•	•	•	•	•	•	•



245
MUNICIPAL
COLLECTION BINS

748
TONNES
COLLECTED



50

COMMUNITY EVENT DAYS







Everything placed in the blue box needs to be empty, clean, free of food and loose (not inside plastic bags or other containers). For more information about what goes in the blue box, check out york.ca/bluebox

To see if a specific item can be recycled, use Bindicator at vork.ca/bindicator

Transitioning Blue Box **Responsibility to Producers**

In 2019, the Ontario Ministry of the Environment, Conservation and Parks announced the Blue Box Program would transition to full producer responsibility. This shift in responsibility is expected to standardize the Blue Box Program so items acceptable for recycling will be expanded and consistent across the province. Transition start dates are staggered across the province with the first municipalities transitioning on July 1, 2023. York Region and its local cities and towns continue to navigate the transition process (including decisions around collection contracts) and ensure a seamless changeover scheduled for December 31, 2025.

Transition Dates for Some Urban **Regional Municipalities**



Peel Region Durham

Region

York Region Halton Region

2025

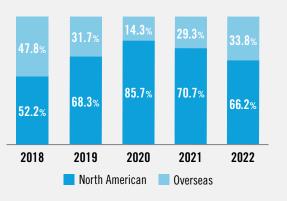


Blue Box Materials are Sorted at York Region's Material Recovery Facility and Sold to be Turned Into **New Products**

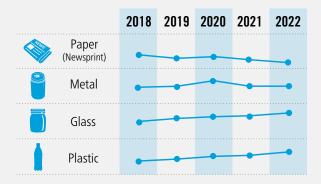
York Region's local cities and towns collect recyclables curbside from households, multi-residential buildings and some businesses and schools. After collection, recyclables are sorted at the Region's Material Recovery Facility located in the Town of East Gwillimbury, where they are baled and sold to end markets (recycling companies) to be recycled into new products. In 2022, 76,032 tonnes of blue box recyclables were collected and processed at the Material Recovery Facility.

The Region uses a combination of North American and overseas markets for all materials to help ensure the maximum amount of material gets recycled. Graphs 6 and 7 show the end market destination and composition of recyclables respectively over the last five years. End market destinations fluctuate over time depending on the changing composition of the blue box materials or the market itself; this could include variables like supply chain issues, consumer spending habits or quality standards. In 2022, 66.2% of the marketed recyclables were sold to North American companies.

Graph 6: End Market of York Region Blue Box Material



Graph 7: Trend of Marketed Blue Box Tonnes









Biogas is a type of biofuel and a source of energy, made from organic, living matter like plants, food waste or animal waste. Biofuels are better for the environment because they produce less greenhouse gas emissions than traditional fuels like oil or gasoline and are renewable when they are made from resources that nature can replace.

Cutlery labelled "compostable" should not go in the green bin. These materials do not break down in the Region's composting facilities. To learn more about what is accepted, see york.ca/greenbin

The Green Bin Program Reduces Greenhouse Gas Emissions and Captures Valuable Resources from Food and Organic Waste

In 2022, 107,917 tonnes of green bin organics (source separated organics) were collected from York Region residents. Of that amount, 104,614 tonnes were transferred to contracted composting facilities to be turned into renewable biogas (for electricity and heat), compost and fertilizer. The remaining 3,303 tonnes consisted of 1,916 tonnes lost to evaporation and 1,387 tonnes of liquid (or leachate) managed through approved treatment facilities.

In 2022, York Region completed procurement for a sustainable, long-term solution for its green bin waste. In January 2023, York Regional Council awarded a 20-year contract to process its green bin waste in a new state-of-the-art biofuel facility that will help York Region achieve its climate change action plan outcomes, including the Region's own corporate goal to achieve net-zero carbon by 2050 as guided by the Energy Conservation and Demand Management Plan.

This new biofuel facility is estimated to reduce our greenhouse gas emissions by 15,000 tonnes of carbon dioxide equivalent per year.



Converting Garbage into Energy: The Fourth R, "Recover", Allows the Region to Turn Garbage Into a Valuable Resource

After reducing, reusing, recycling and composting, the remaining waste stream is garbage. Also known as residual waste, this stream includes contaminated materials placed in the blue box that could not be recycled. Most residual waste is sent to energy-from-waste (EFW) facilities to recover energy and metals. This is a key strategy to lower greenhouse gas emissions and reduced volumes going to landfill, an important consideration as landfill capacity in Ontario is limited¹.

The Region currently manages residual waste at the <u>Durham York Energy Centre</u> (DYEC), an EFW facility it coowns with Durham Region, and through other contracted, privately-owned EFW facilities and landfills (see Table 2).

In 2022, York Regional Council authorized staff to secure long-term energy-from-waste processing capacity, ensuring the Region's position long-term as a leader in waste diversion in Ontario.

York Region is committed to recovering energy from non-recyclable residual waste. Having multiple energy-from-waste processing contracts provides flexibility, minimizes potential service disruptions, and adds resiliency to meet the Region's needs. Take a virtual tour of the Durham York Energy Centre.

Most residual waste is sent to energy-from-waste (EFW) facilities to recover energy and metals.

Table 2: Residual Waste Shipments

Destination		Tonnes	% of Total EFW
Energy-From-Waste		140,768	
	DYEC (Clarington, ON)	29,881	21%
	Emerald Energy (Brampton, ON)	43,757	31%
	Covanta Niagara (Niagara, New York)	67,130	48%
Landfill		21,781	
Year-End Carry Over*		255	
Total Residual Waste		162,804	

^{*} Change in transfer station inventory January 1, 2022 and December 31, 2022.

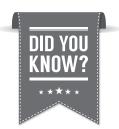


¹ <u>State of Waste in Ontario: Landfill Report</u>, Ontario Waste Management Association, January 2021.



Depot Collection





Before making a trip to the Georgina Transfer Station, visitors can check out the onsite camera feed for up-todate traffic conditions. You can find more information about York Region's waste depots and materials accepted by visiting york.ca/wastedepots

Having waste depots allows York Region to respond quickly to emergency needs. In May 2022, waste depots were quickly leveraged to accept free drop-off of vard waste after a severe windstorm tore through York Region.

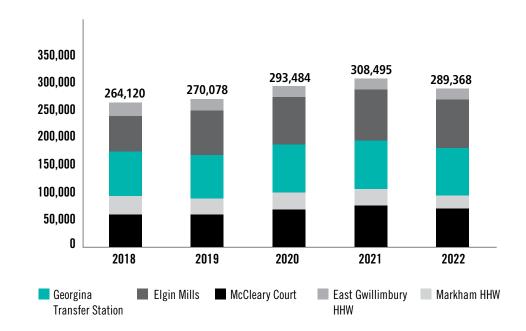
of depot users surveyed in 2022 said they were very satisfied with the quality of depot service.

Depots Provide Convenient Access to Additional Diversion Programs

York Region operates five waste depots in the Cities of Markham, Richmond Hill and Vaughan and the Towns of East Gwillimbury and Georgina. In 2022, these depots collected 4,053 tonnes of divertible items not accepted at the curb, including concrete, cooking oil, drywall, electronic waste, household hazardous waste (HHW), refrigerated appliances, scrap metal, shredded paper, textiles, tires, wood and others. Depot use has grown since 2019 (as

seen in Graph 8), demonstrating the value these sites bring to the community. They also provide opportunities to promote reuse: textile collection was added to East Gwillimbury Household Hazardous Waste Depot and a bike recovery and reuse pilot program was offered at McCleary Court Community Environmental Centre (CEC) in the City of Vaughan with Clean Air Partnership's Markham and Newmarket Cycles community bicycle hubs. This program will continue into 2023.

Graph 8: Total Visits to York Regions Waste Depots



DEPOT VISITORS



Georgina Transfer Station 85,117

Elgin Mills CEC 89,397

McCleary Court CEC 70,195



East Gwillimbury HHW 19,554

Markham HHW 25,105

Total Site Visits:

289,368

HHW COLLECTED



Paint (latex and alkyd) 505,030 kg



Motor Oil (bulked) 150,394 kg



Batteries (single-use/ rechargable)

59,163 kg



Propane Tanks and Cylinders

53,108 kg



Aerosol Containers 29,723 kg



Other Materials:

480,023 kg

Total HHW kg Collected:

1,277,441 kg

Engagement



Partnerships and Innovation Help Region Reach Residents in 2022

York Region actively promotes waste reduction, reuse and diversion through public communication and education programs in collaboration with its local cities and towns and community partners. With information and education, residents are empowered to become waste reduction ambassadors. Interest in waste reduction and diversion grew in 2022 as residents interacted more across the Region's social media platforms. As well, in-person community engagement activities resumed and some targeted community consultation activities took place.

Feedback received at these in-person and online engagements provided vital input to enhance programming and guide future SM4RT Living Plan initiatives.

A return to in-person services also allowed for some SM4RT Living programs to resume and expand:

- York Region partnered with NewMakelt to offer Repair Cafés that connected residents with volunteer fixers to repair broken items
- A third <u>Lendery</u>, a library of things, was launched at Vaughan Public Libraries' Pierre Berton Resource branch in September 2022; a Lendery enables residents to borrow a variety of household items instead of buying new; this launch follows the success of the Markham Public Library's Milliken Mills branch Lendery that opened July 2019 and the Newmarket Public Library Lendery that opened February 2020

COMMUNITY * ENGAGEMENTS

1,202 ATTENDEE **INTERACTIONS**



Accessibility organizations participated in consultations to reduce single-use items



college and high school students engaged to reduce single-use items



Circular Economy Working Group (CEWG) meetings took place



CEWG members representing a variety of community organizations and businesses

WASTE WEDNESDAY SOCIAL MEDIA

Total metrics across Facebook, Twitter and Stories

159 TOTAL POSTS

REACH*

IMPRESSIONS** 210,391 282,599

OUR CONTENT WAS SHARED 319 TIMES

OUR LINKS WERE CLICKED 974 TIMES

Viewers were polled about proper waste sorting...

voted correctly 23.6%

voted incorrectly 3.66%

improvement from 2021

- * Reach is the total number of people who saw your content from your post at least once and is reported on Facebook posts and stories and Instagram stories. Twitter does not report on reach.
- **Impressions is the total number of times your content is displayed on a screen, no matter if it was clicked or not. In most cases, impressions will be higher than reach. It's reported on Twitter and Instagram stories.

Social Media Is A Powerful Tool

Social media is an effective way to engage and communicate with York Region residents and communities. How campaigns perform provides insight to what matters most to the people we serve. Social media metrics reported here show that knowledge is improving; interest in waste is greatest around reuse programs like <u>Curbside Giveaway Days</u> and textile donation, as well as learning about how to respond to critical issues (such as how to dispose batteries safely to prevent fires).

Social Media **Campaign Highlights:**

Best overall performing posts on Facebook and Twitter:

Curbside Giveaway Days 346 ENGAGEMENTS **75 LINK CLICKS**

Best performing stories on Facebook and Instagram:

Textile Campaign 21,944 VIEWERS 1,965 VOTES

Most shared post on Twitter: **Safe Battery Disposal** 10,079 IMPRESSIONS 24 RETWEETS*

*Shared by residents, local cities and towns and fire departments.



We're Active in the Community and Engaging with Residents











COMPOSTER SALE

"It was very easy to order my composter on the York site.

The website is easy to use and navigate." ~ Resident

1,009 composters sold in 10 days

101 TONNES of organics diverted

GOOD FOOD CHALLENGE

"I loved that I could do this at my own pace. Life can't be scheduled and I am grateful to learn something new and to help my family learn healthier eating habits." ~ Challenge Participant

650 people participated

d wasted le

"It's been years since I used the library and I am happily surprised by the resources available... including the Lendery. What a brilliant idea." ~ Lendery Participant

241

1,504

Lendery items

check-outs/renewals

REPAIR CAFÉ

"The volunteers are very nice and friendly. Their patience and kindness are much appreciated, on top of their expertise. This kind of community work is highly valued! Thank you." ~ Repair Café Participant

3

48

event attendees

items fixed

MARKHAM CYCLES & NEWMARKET CYCLES

"This is a great program!" ~ Recipient of refurbished bike

bikes collected from McCleary
Court Environmental Centre

Thank You for Supporting the Circular Economy in York Region



























































york.ca/waste

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