



WASTE MANAGEMENT ANNUAL REPORT 2015





OVERVIEW

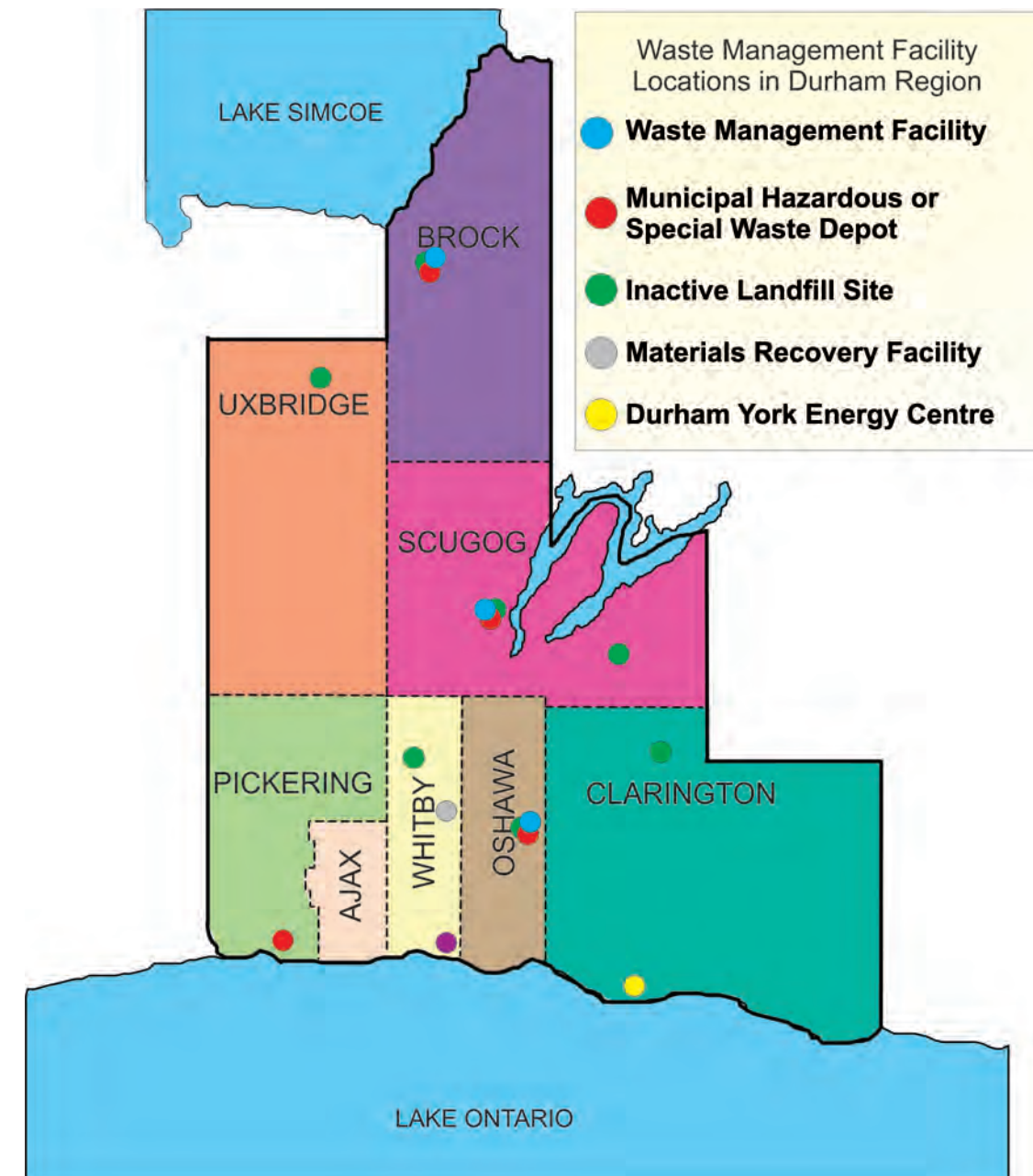
Durham Region borders the City of Toronto to the east within the Greater Toronto Area and encompasses an area of approximately 2,590 square kilometres (1,000 square miles). The area is characterized by a variety of landscapes and communities. A series of major lakeshore urban communities contrast with a variety of small towns, villages, hamlets and farms which lie immediately inland.

Curbside collection of Blue Box, Green Bin, leaf and yard waste and residual waste is managed by the Region of Durham in Pickering, Ajax, Clarington, Brock, Scugog and Uxbridge. The Region only collects Blue Box recycling in Whitby and Oshawa, but partners with those municipalities to ensure uniform collection programs Region-wide.

All materials are delivered to Regionally owned or contracted facilities for processing or disposal by the Region of Durham. Regional waste management facilities offer residents additional opportunities for waste diversion.

The Region's waste management portfolio includes:

- Material Recovery Facility to process blue box recyclable material
- Waste Management Facilities in Oshawa, Scugog and Brock
- Municipal Hazardous and Special Waste Depots in Oshawa, Scugog, Brock and Pickering
- Processing of source separated organics (SSO) through private contractors
- Collection, processing and disposal of waste through private contractors
- Perpetual care of inactive landfill sites in Whitby, Oshawa, Clarington, Scugog, Uxbridge and Brock
- Management of special waste events
- Curbside battery collection
- Durham York Energy Centre to process post-diversion waste
- Community outreach programs



YEAR *in* REVIEW



Durham York Energy Centre named project of the year

The Ontario Public Works Association (OPWA) has honoured the Works Department with a Project of the Year award (structures greater than \$50 million category) for the Durham York Energy Centre (DYEC).

This award promotes excellence in the management and administration of public works projects.

Durham Region has been working on the DYEC project for several years with our partner York Region. Being honoured with the Project of the Year Award as we celebrated the commissioning of this facility is a wonderful accomplishment!

The Durham York Energy Centre (DYEC), located in Courtice, is a state-of-the-art energy-from-waste facility that is Durham and York Regions' primary long-term disposal option for waste. The DYEC only processes the household waste remaining after Durham and York Regions' aggressive composting, recycling and reuse programs.

1. Durham York Energy Centre fires up

We've been anticipating the opening of the Durham York Energy Centre (DYEC) for a long time now. The project achieved first fire on Feb. 13, 2015.

Both Durham and York are committed to delivering a world-class energy-from-waste facility which will be a safe and reliable disposal option that produces electricity and steam and contributes to a significantly cleaner environment when compared to landfill disposal.



2. Waste App puts waste management at your fingertips

In 2015, the Region entered into a subscription agreement with ReCollect for a dedicated waste management application for smartphones (iPhones and Androids). The application was officially launched in September 2015.

The easy to navigate mobile application provides residents with instant, mobile, customized access to information about waste collection. You can access a personalized collection day calendar, set up reminder alerts, learn how to properly dispose of household waste, and even report collection issues.

3. Durham celebrates milestone for curbside battery recycling

Durham Region has officially recycled more than 100 metric tonnes of household batteries through its award-winning curbside battery collection program. This milestone was officially reached during the fall collection in early November.

One hundred metric tonnes of batteries have been saved from the waste stream – recovering metal components and keeping mercury, cadmium and other harmful materials from entering the environment. This achievement was made possible by the efforts of our residents, staff and program partners—Raw Materials Company Inc., Stewardship Ontario, Green For Life and Miller Waste.



55%*

Waste Diversion Ontario (WDO) calculates diversion from landfill after processing of materials and does not include Durham Region approved energy-from-waste initiatives.

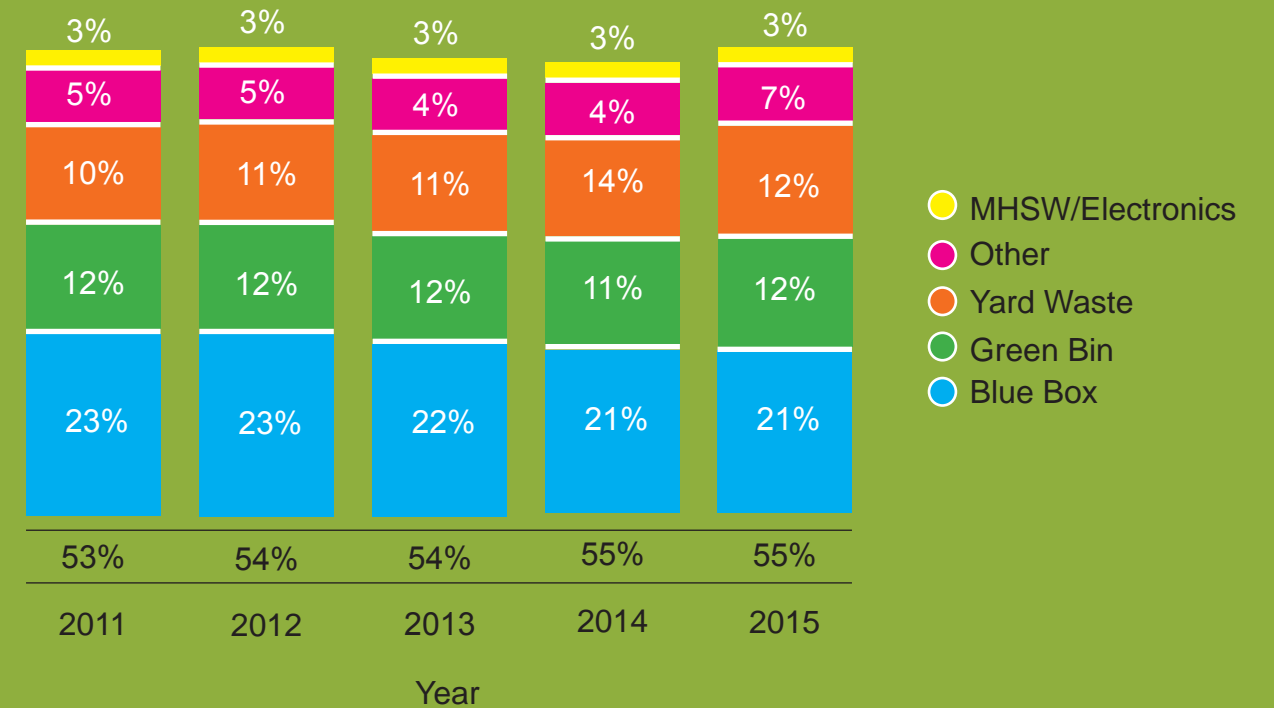
*2015 diversion data presented is unverified by WDO at time of printing.



Quick Facts

In 2015, Durham Region diverted 55* per cent of materials from disposal.

- **658,175 (2015):** Durham Region's population (estimated)
- **195,690:** Durham Region's single family residences
- **24,090** multi-residential residences
- **45,594 tonnes:** Blue Box material collected curbside
- **\$4.9 million:** Revenue generated from sale of blue box recyclables
- **26,796 tonnes:** Green bin material collected curbside
- **92,893 tonnes:** Residual waste collected curbside
- **25,588 tonnes:** Yard waste collected curbside
- **1,117 tonnes:** Municipal hazardous and special waste collected at the Region's waste management facilities and special events
- **5,685 tonnes:** Other diversion programs at the Region's waste management facilities (including tires, drywall, bale wrap, polystyrene, etc.)





REDUCE



Waste reduction or waste prevention is all about reducing waste at the source so it is not created in the first place. Excessive waste is often due to the inefficient use of resources or poor planning.

An example would be, using disposable or single-use products or buying food we don't need on impulse or because there's a special offer, and then wasting it.

Waste minimization reduces the amount of waste we create in the first place. In terms of waste management, reducing is always the best option.



REUSE



Reuse means using a product more than once. Repairing products, selling them, or donating them to charity/community groups also reduces waste. Reuse, when possible, is preferable to recycling because the item does not need to be reprocessed before it can be used again.



RECYCLE



Recycling is an effective way to manage products and packaging. It prevents these materials from being sent for disposal and allows for their remanufacture into new goods or products.



RECOVER



After we have reduced, reused and recycled (including composting) as much as possible, the remaining waste can be used to generate power. This is known as 'recovery'. By recovering the energy from the waste, we are significantly decreasing our need for landfills while offsetting methane produced by landfills and the consumption of other fuels to produce energy.



Habitat for Humanity®
Durham

ReStore

redurham.com

Recycle

Blue Box

More than 200,000 households in Durham Region participate in the Region's curbside Blue Box recycling program. This includes single family homes and apartment buildings with less than six units (in Whitby and Oshawa 12 units or less), or small businesses receiving municipal garbage collection in local Business Improvement Areas.

The Region of Durham has a two-stream recycling program which requires that containers and paper materials be separated into separate Blue Boxes. Materials set-out at the curb for collection are delivered to the Region's Material Recovery Facility (MRF) in Whitby for sorting and marketing.

Approximately 98 per cent of the material collected for recycling in Durham Region is marketed. The Region's materials are sold to brokers, mills and manufacturers locally and across North America. Materials are manufactured into a wide variety of products, preserving valuable natural resources. Also, revenues from the sale of recyclables offset the net cost of Durham's waste management programs.

In 2015, Durham's Blue Box program recycled 45,594 tonnes of materials. Despite population growth, total tonnes have decreased over the years. This is mainly due to the changing composition of blue box materials. There has been a significant increase in lightweight and high volume materials such as plastic and polycoat containers and a decrease in heavier, dense materials like glass, metal and printed paper.





Recycle

Leaf and Yard Waste

Brush, leaf and yard waste are collected in kraft paper yard waste bags, rigid reusable containers or tied bundles for outdoor windrow composting and as a supplement in the Green Bin organics composting process. Christmas trees are collected separately in each municipality during specified weeks in January and are chipped for various gardening and landscaping uses.

Additionally, residents may drop off yard waste materials at any of the Region’s waste management facilities—disposal rates apply.

Durham does not collect yard waste in plastic bags as the bags are not compostable and create unwanted odour and litter.

In 2015, 27,554 tonnes of yard waste material was collected from curbside programs and Regional waste management facilities.

Recycle

Green Bin

Durham residents separate Green Bin organics from regular garbage and set them out at the curb each week in 47 litre Green Bins. Residents are required to use certified, 100 per cent compostable bags, paper liner bags, or wrap contents in newspaper before putting their organic materials in the Green Bin for collection.

In 2015, the Region collected 26,796 tonnes of Green Bin organic material for composting.

Durham Region contracts composting of its organic materials to two privately-owned facilities; Miller Compost with locations in Pickering and Courtice, Ont. and All Treat Farms Ltd. in Arthur, Ont. These facilities produce the highest grade of compost in Ontario.





Recycle

Multi-Residential Recycling

Over 380 apartment and condominium building and townhouses representing over 24,000 multi-residential units are serviced by the Region of Durham's weekly waste collection programs. Onsite collection services offered in the buildings include recyclables, battery collection and e-waste collection.

In six of the eight municipalities, garbage collection is also managed by the Region. To be eligible for this service, buildings and townhouse complexes must meet the Region's "Technical and Risk Management Guidelines for Waste Collection Services on Private Property" which allows the Region's contracted vehicles to access the properties.

The Region of Durham continued to operate a Waste Electrical and Electronic Equipment (WEEE) recycling program in partnership with Ontario Electronic Stewardship in 51 of the high-rise buildings and townhouse sites that receive Regional waste collection services. This recycling service provides residents with a convenient way to recycle their end-of-life or unwanted electronics in their building free of charge. In 2016, Durham Region will continue to expand the program into additional buildings that receive municipal waste collection services.

Since 2013 the Region has expanded its multi-residential battery program and now offers this program at 96 buildings. Collection of batteries is undertaken in partnership with Raw Materials Company (RMC). Drums and pails are available to the buildings and residents are able to drop off used batteries for collection in a convenient location. Once full, the pails or drums are shipped to RMC in Port Colborne, Ontario, for recycling at no charge to the residents or the Region. Expansion of this program is planned again for 2016 to additional eligible properties.

A total of 2,086 tonnes of blue box recyclables, 14 tonnes of electronic waste, and one tonne of batteries were collected in 2015 from Durham's multi-residential recycling programs.

Recycle

Curbside Battery Collection

Durham's curbside battery collection program continues to maximize the capture of batteries, while keeping mercury, cadmium, and other heavy metals out of the waste stream. Household batteries are actively managed in Ontario and recycled responsibly through proper processing and conservation of valuable resources.

Durham's battery processing vendor, Raw Materials Company (RMC), located in Port Colborne, Ontario, recovers the steel, zinc and manganese from each battery giving these materials another chance to be reused. They provide feedstock to the local steel industry and micro-nutrients to the local agricultural industry for biofuel crop production. RMC's battery technology is capable of recycling and recovering up to 92 per cent of components found in spent household batteries.

The production and distribution of customized special purpose battery collection bags proved to be logistically and economically unsustainable, increasing costs significantly. This collection challenge was addressed by providing bright orange stickers in the annual waste management calendars that residents peel and stick to their own sealable, transparent bags for collection, as well as printable online labels via durham.ca/battery.

Since the first battery collection in November 2012, Durham Region has diverted more than 100,000 kilograms (220,462 pounds) of household batteries from the waste stream. It has also served as a catalyst for curbside battery recycling throughout Ontario with over 60 municipalities starting or considering their own programs. Durham Region is proud to have pioneered this successful diversion initiative. Waste staff continue to engage, educate and promote the curbside battery program with Durham residents, including its enhanced partnership and messaging timed with the local Fire Departments check smoke detector/change battery campaign in order to keep the program momentum trending upwards.

Year	Season	Collection period	Net weight (Tonnes)	Net weight (Kilograms)	Total tonnes collected to date
2012	Fall	Nov. 12 to 16	22.46	22,462	22.46
2013	Spring	Mar. 18 to 22	13.71	13,709	36.17
2013	Fall	Nov. 4 to 8	10.19	10,191	46.36
2014	Spring	Apr. 21 to 25	14.04	14,037	60.40
2014	Fall	Nov. 3 to 7	18.04	18,040	78.44
2015	Spring	April 20 to 24	16.40	16,400	94.84
2015	Fall	Nov. 2 to 6	17.34	17,340	112.18





Recycle

Porcelain Program

In February 2012, the Region tested the residential curbside collection of porcelain bathroom fixtures as part of an expanded curbside recycling pilot. The porcelain program is now permanent and is offered in Pickering, Ajax, Clarington, Brock, Scugog and Uxbridge, and well as the Region's Waste Management Facilities (WMF) in Oshawa, Port Perry and Brock.

This program diverted 333 tonnes of material from landfill in 2015, comprised of 146 tonnes collected through the curbside collection and an additional 187 tonnes collected at the WMFs.



Recycle

Electronic and Electrical Waste

Unwanted electronic and electrical equipment is classified as waste electronic and electrical equipment (WEEE). While electronic materials can contain harmful substances such as mercury, lead and cadmium, which require special handling, there are also valuable and scarce resources in electronics, such as copper, aluminum and other precious metals; recycling these materials helps reduce the need for new raw materials. One tonne of cell phones can yield up to 30 times more gold than one tone of ore (UrbanMining.org, "Striking Gold in Cell Phones", article, June 3, 2010)

Durham Region provides residents with a network of drop off facilities for waste electronics, including Oshawa, Scugog and Brock Waste Management Facilities.

In February 2012, the Region implemented a standardized call-in curbside collection program for waste electronics in Pickering, Ajax, Scugog, Uxbridge, Brock and Clarington.

In 2015, 489 tonnes of WEEE materials were collected at Durham Region waste management facilities and 35 tonnes through the call-in curbside program.



Recycle Tires and Scrap Metal Recycling

Tire Recycling

The Used Tires program, launched on Sept. 1, 2009, is operated by the Ontario Tire Stewardship, and is funded by the tire industry. The program covers the collection, transportation and recycling of all used tires including those of cars, commercial trucks and off-road vehicles.

All used or scrap tires can be disposed of at the Region's waste management facilities. Dedicated loads of tires are exempt from fees if delivered separately from regular garbage.

In 2015, the Region diverted 318 tonnes of tires.

Scrap Metal Recycling

Durham Region residents can bring their scrap metal including appliances for recycling to any one of the Region's waste management facilities.

Metal goods are also collected at the curb by appointment only in Ajax, Pickering, Clarington, Scugog, Uxbridge and Brock.

Recycle Sign Recycling

Sign Recycling

This program recycles all temporary signs made of corrugated plastic, plastic film and paperboard to help keep these materials out of landfill. All signs are accepted, including election and real estate signs made from these materials. Wooden stakes and wire mounts are also recycled. Signs may be dropped off free of charge at any Durham Region waste management facility if delivered separately from other waste.

The recycling process involves shredding plastic signs before the plastic is turned into pellets. The pellets are sold to manufacturers who make paint trays, totes, drainage pipe, and other products.



Recycle

Drywall, Mercury and Polystyrene

Drywall Recycling

The Region's drywall recycling program recycles all clean drywall including offcut material. In 2015, this program diverted almost 272 tonnes of material from disposal.

Drywall, also known as gypsum wallboard, is recycled in a closed-loop process where gypsum material is returned to the drywall manufacturer to re-enter the manufacturing process.

The paper removed from the gypsum wallboard is processed and recycled in a variety of applications including shipment to farms for use as animal bedding.

Acceptable material may be dropped off at any of Durham Region's waste management facilities.

Mercury Recovery Program

The Mercury Recovery Program pilot was launched in October 2012 to divert items that contain mercury from the residential waste stream. Mercury containing items have always been accepted as part of the Region's Municipal Hazardous or Special Waste Program (MHSW). The focus of the pilot program was to increase awareness of this hazardous substance and to divert more liquid mercury from disposal.

Polystyrene Collection Program

In January 2012, the Region executed a five-year agreement with Grace Canada Inc. (Grace) to expand the polystyrene (EPS) recycling program to all three waste management facilities (WMF).

The EPS recycling program includes white expanded polystyrene foam packing only. Loads containing this foam cushion packaging are accepted at all Durham WMFs free of charge.

Grace, based in the Town of Ajax, collects the material from the Region and recycles it to produce fire-resistant commercial insulation products.

Through this program, a total of 187 tonnes of polystyrene was diverted from disposal in 2015.





Recycle Special Events

In 2015, four municipal hazardous and special waste (MHSW) collection events, eight compost give-aways and nine Waste Electrical and Electronic Equipment (WEEE) collection events were hosted across the Region.

The MHSW collection events diverted 24 tonnes of household hazardous waste while the WEEE collection events diverted 29 tonnes of end-of-life electronics for recycling. Together, 53 tonnes of diversion waste was received from 1,932 vehicles.

The compost give-away events are held in combination with blue box, green bin, and backyard composter sales and exchanges. These events allow Durham Region to provide high quality compost made from its Green Bin and Leaf and Yard Waste programs to Durham residents. Any remaining compost is shared with local area municipalities to use on public gardens and parks.

Recycle Municipal Hazardous or Special Waste

The Region provides residents with a network of facilities and special events where residents can drop off municipal hazardous and special waste (MHSW). Through specialized contract services at these locations, MHSW is recycled, or treated and disposed of in an environmentally secure fashion.

Collection, processing and disposal of MHSW is partially funded by brand owners and first importers of these products.

Current MHSW drop-off locations include the waste management facilities in Oshawa, Port Perry and Brock. The Region also has an MHSW depot operated in co-operation with Miller Waste at 1220 Squires Beach Rd. in Pickering.



DURHAM YORK
ENERGY CENTRE

Thursday, Oct 1, 2015 02:21PM
COMPRESSION EMERGENCY MONITORING (CEM) DATA

EMERGENCY	UNIT	BOILER 1	BOILER 2
NO2	ppm/ft ³	0	0
NOx	ppm/ft ³	7	7
SO ₂	ppm/ft ³	118	113
CO	ppm/ft ³	13	14
OPACITY @ 10m	%	0	0
OPACITY @ 30m	%	0	0
TEMPERATURE	+1000°C	1100	1000
PH	ppH	0	7
TEMP	°C/A	7	6
WINDSPEED	MPH/A	10	10
WIND	MPH/A	0	0
WIND	MPH/A	0	11

am York Energy Centre



Landfill Perpetual Care Programs

Brock Landfill

The Brock Landfill was closed in 2014. Regular inspections of the final cover are conducted on a regular basis since the site was capped in September of 2014. In 2015, a gabion stone drainage swale was constructed along the southeast slope to minimize soil erosion. The leachate collection system was in operation during the spring to control seep discharges along the south east slope. As required under the site's Environmental Compliance Approval, an annual surface and groundwater monitoring report was submitted in June to the Ministry of Environment and Climate Change.

The Brock Waste Management Facility continues to accept recyclable and residual waste from Brock residents for processing at the Material Recovery Facility and the DYEC, respectively.

Oshawa Landfill

A post-closure care and monitoring plan was completed for the Oshawa Landfill site in 2013. The report's findings and recommendations are being used to plan maintenance activities and capital projects in 2016.

Erosion and slope stability issues have historically occurred in the northern end of the landfill. In 2015, a slope stabilization project involved re-alignment of the adjacent creek, re-grading of the underlying soils and placement of a sand filter layer to reduce the severity of the slope. The area was then covered with "Filtersox" media - long tubes of fine mesh filled with compost and native seed mixture - to act as a final cover and introduce vegetation to reduce erosion. The "Filtersox" was used in this area to test the effectiveness of this product before being used in other areas of the site.

The Region will perform a detailed stream evaluation in the near future to identify impacts from surrounding creeks and surface water flow causing erosion around the landfill and prioritize the areas of concern and the appropriate solutions.

In 2014/15 an old active gas collection system was tested to see if it was still capturing and venting landfill gas. This test determined that the system is no longer functioning and should be decommissioned. The decommissioning work is planned for 2016.

Other Landfill Perpetual Care Activities

The Region maintains six other closed landfill sites. All sites are monitored regularly and inspected at least twice per year and maintained as needed. Maintenance often includes installing or replacing monitoring wells and re-grading the landfill covers.

All of these sites have individual environmental monitoring programs that are tailored to each specific site. Monitoring includes sampling for surface and groundwater and landfill gas.





Community Outreach

The Region actively promotes its waste diversion programs through an extensive communication and education program. Key objectives include:

- Promoting participation in waste diversion programs.
- Encouraging an understanding of correct participation in programs.
- Promoting compliance with Regional waste management policies and by-laws.

Durham Region participated in over 30 different events and activities in 2015 :

- Eight spring compost events, one in each municipality.
- Eight special Waste Electrical and Electronic Equipment drop-off events and four municipal hazardous and special waste drop-off events.
- Promotion of waste diversion programs during National Public Works Week.
- In August 2015, the Region held its fourth community Waste Fair in the City of Pickering. Approximately 400 residents attended and the feedback received was very positive. The Waste Fair is a one-day free, family friendly event which is held in a different Durham Region community every year. It focuses on educating the public about responsible waste management and services provided by the Region.

- Durham Region celebrated “Waste Reduction Week” in October promoting waste reduction and diversion options for residents.
- Eight reuse drop-off events were held from March to October, partnering with local charities.
- In 2015, the Region officially launched the Durham Region Waste App. The easy to navigate mobile application provides residents with instant and customized access to information about the various waste programs and includes multi language capabilities.
- Articles written by Waste staff on the Green Bin, Blue Box programs, curbside battery collection, programs offered at the Waste Management Facilities and updates on the Durham York Energy Centre (DYEC) were included in “Durham Works”, the Works Department’s external newsletter that is distributed twice yearly to 210,000 households in the Region.
- The outreach program, in collaboration with the school boards, addresses curriculum based education that relates to waste management and the environment. Students have the opportunity to be educated on the Region’s waste management programs through the Region’s association with the school boards.

REGION OF DURHAM TONNES OF RESIDENTIAL WASTE MANAGED (2015)												
Descriptions	Curbside Garbage	Apartment Garbage	Bulky/Other Goods	Curbside Recycling	Apartment Recycling	Food Composting	Leaf & Yard Composting	Composter Credits	Grasscycling Credits	Other Diversion Programs	Total Waste	Waste Diversion
1 Curbside & multi-residential wastes												
sub-totals	77,602	13,492	1,798	45,594	2,086	26,796	25,588	5,844	3,838	332	202,971	54%
		92,893		47,680		52,383		9,682				
2 Regional waste disposal sites												
Oshawa	0	0	12,467	352	0	0	1,305	0	196	4,677	18,997	34%
Scugog	0	0	3,911	173	0	0	491	0	74	1,379	6,028	35%
Pickering	0	0	0	0	0	0	0	0	0	227	227	100%
Brock	0	0	1,227	48	0	0	169	0	25	520	1,989	38%
MRF	0	0	0	0	0	0	0	0	0	26	26	100%
sub-total	0	0	17,605	574	0	0	1,966	0	295	6,828	27,268	35%
3 Special Events												
HHW	0	0	0	0	0	0	0	0	0	24	24	100%
E-Waste	0	0	0	0	0	0	0	0	0	29	29	100%
Re-use	0	0	0	0	0	0	0	0	0	18	18	100%
sub-total	0	0	0	0	0	0	0	0	0	71	71	100%
4 Summary												
municipal residents	77,602	13,492	1,798	45,594	2,086	26,796	25,588	5,844	3,838	332	202,971	54%
Regional waste sites	0	0	17,605	574	0	0	1,966	0	295	6,828	26,973	35%
Special Events	0	0	0	0	0	0	0	0	0	71	71	100%
sub-total	77,602	13,492	19,403	46,168	2,086	26,796	27,554	5,844	4,133	7,232	230,014	
Total Tonnes, with credits		110,498		48,254		54,349		9,977		7,232	230,309	
Total Tonnes, managed		110,498		48,254		54,349				7,232	220,333	
Percentages of Total	34%	6%	8%	20%	1%	12%	12%	3%	2%	3%	100%	
Waste diversion rate	52%											

* It must be noted that, while the waste reported in this Table derives a 52 percent diversion rate, Waste Diversion Ontario, the agency which officially tracks and reports on municipal waste diversion rates in Ontario, adjusts municipally reported waste tonnages to account for deposit return, home composting, grass cycling and other re-use activities across Ontario. In 2015, these adjustments increased Durham's overall waste diversion rate to 55 percent.

If you need more information about any of the Region of Durham's waste management programs or services, contact us:

Tel: 905-579-5264 or 1-800-667-5671

Email: waste@durham.ca

Website: durham.ca/waste

Reduce, Reuse, Recycle, Recover

Connect with the Region of Durham:



If this information is required in an accessible format, please contact 1-800-667-5671.