Environment & Energy Division

2017 Annual Report

TORONTO

Live green Toronto

BBP BETTER BUILDINGS PARTNERSHIP

MESSAGE FROM THE DIRECTOR

In July 2017, Toronto City Council unanimously approved TransformTO, Toronto's climate action strategy to reduce carbon emission by 80% by 2050 based on 1990 levels. With that approval, Toronto took its place among leading cities around the world that recognize climate change as the pre-eminent issue of our time and commit to bold action.

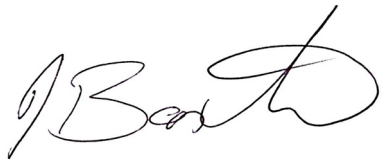
Through discussions with our peers in other cities, it is clear that city governments are taking the lead in developing, and more importantly implementing, strategies to address climate change.

In Toronto, Environment and Energy staff continue to deliver climate change innovation – innovative technology, innovative financing, and innovative thinking. For example, Toronto is now a leader in green roofs, with more green roofs than any other city in North America and we are global leaders in creating partnerships with the private sector in pursuit of our low-carbon vision.

Toronto is also a leader on low-carbon thermal energy networks. The unique partnership that we forged with Enwave to co-develop network opportunities is being studied by other municipal jurisdictions here in Canada and abroad.

Thinking creatively and translating our ideas into transformative action will continue to drive our success as we work with the community to transform Toronto into a low-carbon city, one that's also healthier, more equitable and prosperous.

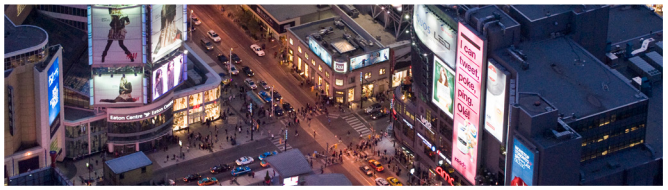
It is my privilege to work with this team, and I look forward to what's next as we work together to build a greener, more sustainable Toronto.



Jim Baxter, Director
Environment & Energy Division

2017 HIGHLIGHTS

TransformTO: Climate Action for a Healthy, Equitable and Prosperous Toronto, approved unanimously by City Council



42 projects completed through Better Buildings Partnership, saving 29,000 eMWh/year and reducing 1,492 tonnes of CO_2 year

36 solar PV rooftop systems installed, generating 10,700 megawatt hours of electricity annually

22 City sites participate in Demand Response, saving 5.5 megawatts of electricity per year

86 green and cool roofs supported through the Eco-Roof Incentive program

89% of waste diverted from City's 11 largest buildings

7,000 residents consulted on Toronto's Pollinator Protection Strategy

193,222 residents engaged in the City's annual spring cleanup

108 community outreach events engaged thousands of residents

5,213 hours of service provided by 1,500 Live Green Volunteers

1,300 eco-pledges made by City staff through the People Power Challenge

35 energy reports completed for City divisions and agencies

5,719 new Live Green Perks members

11,000 twitter followers @LiveGreenTO

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MISSION & VALUES

We lead the development and implementation of innovative environmental and energy policies and programs, and inspire citizens, businesses, organizations, and other stakeholders to work with City staff to make Toronto one of the most environmentally sustainable cities in the world.

Mission

We lead, coordinate and are accountable for the City's environmental and energy sustainability outcomes.

Three Pillars – A Balanced Approach

Long-term environmental sustainability depends on a balanced approach that delivers economic benefits, environmental benefits, and energy resilience. By ensuring that our work supports these three pillars, we continue to build the foundation of a truly sustainable city.

Economic Benefit

- Attract and retain businesses
- Retain energy dollars in the local economy
- Create "green" jobs
- Generate cost savings/revenue through existing City assets

Energy Resilience

- Increase energy security and ensure adequate supply
- Promote electricity conservation and peak demand reductions
- Promote local distributed energy generation and embedded energy solutions

Environmental Benefit

- Reduce greenhouse gas emissions
- Improve air quality
- Reduce the release of harmful emissions to the environment

STRATEGIC PLAN

With the goal of making Toronto one of the most sustainable cities in the world, the EED facilitates the development and implementation of strategic community and corporate-wide environmental and energy policies and programs that advance the City's environmental and energy goals.

Our strategic plan is guided by four key objectives:

energy conservation and demand management

reduce emissions to the environment

energy security and supply

resilient city

residents **businesses** **City operations**

ENERGY CONSERVATION and DEMAND MANAGEMENT

The City's Energy Conservation and Demand Management Plan, created by the EED, helps to facilitate the identification of City-owned buildings with the highest energy savings potential.

The Plan has helped to identify opportunities to save an estimated $17 million in utility costs through infrastructure upgrades and improved energy performance. These upgrades will help to make Toronto a leader in energy efficiency and climate change mitigation.

Highlights:

- 42 projects completed through the Better Buildings Partnership, saving the equivalent of 29,000 eMWh and 1,492 tonnes of GHG emissions per year.
- 22 City sites participated in Demand Response, reducing electrical consumption by 5.5 megawatts (mW) and generating $400,000 in revenue.
- 11 lighting retrofit projects, with estimated $800,000 electricity cost avoidance and reduction of 209 tonnes of GHG emissions per year.
- $2.4 million in Home Energy Loan Program funds disbursed to residential property owners for energy efficiency retrofits to date, with the average homeowner saving $560 per year on their energy bills.

Key Energy Terms

Energy:
In the simplest of terms, energy is a broad measure of the ability to cause something to happen. Energy takes many forms including electrical and thermal.

Energy Consumption:
A measure of how much energy a given building, appliance or geographic area uses to power its operation. Electrical energy consumption is often measured in kilowatt-hours (kWh). In Toronto, where most of our thermal energy comes from the combustion of natural gas, thermal energy is often measured by volume (cubic metres of natural gas).

Energy Demand:
A measure of the rate at which a building, appliance or area uses energy. A less energy efficient building creates a larger demand than an efficient one. Electrical demand is often measured in kilowatts (kW).

Peak Load:
The maximum rate at which energy is drawn from the grid by a specific area, appliance, or building, measured in kilowatts (kW). If the electricity grid experiences a peak load that exceeds its capacity, brownouts or energy instability can occur.

Better Buildings Partnership

The Better Buildings Partnership (BBP) works with building owners, managers and developers to improve the energy efficiency of their buildings and reduce greenhouse gas emissions.

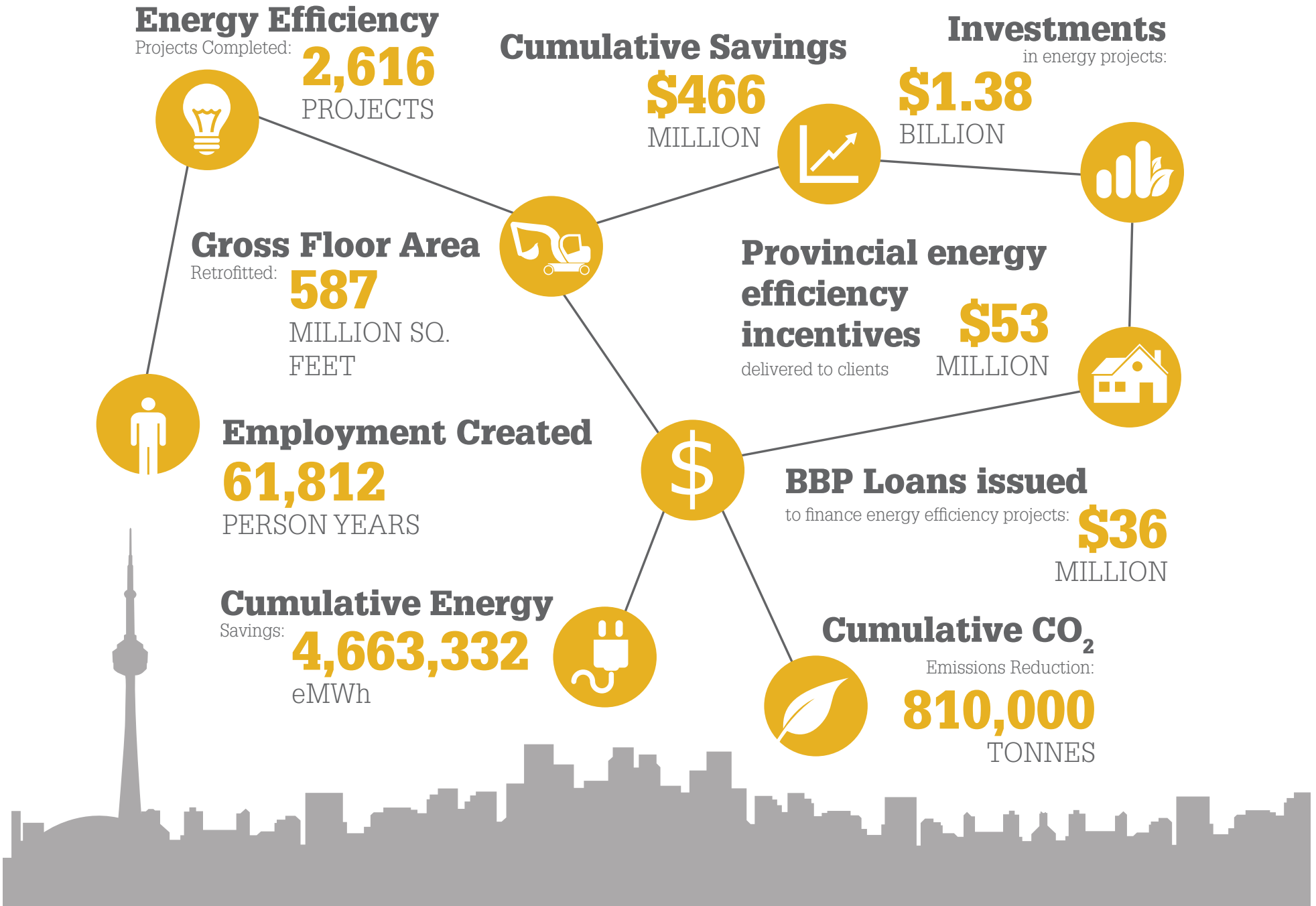
Now in its 21st year, the BBP has partnered on more than 2,600 projects, retrofitting a total of 586 million square feet of floor area and eliminating the equivalent of over 800,000 tonnes of CO_2 emissions.

The BBP also delivers the 'saveONenergy' High Performance New Construction Program in partnership with Toronto Hydro to support the Province of Ontario's Conservation First strategy.

2017 Summary	
Projects Completed	42
Gross Floor Area Retrofitted	20 million square feet
Person Years of Employment	1,068
Energy Cost Reduction	$3.1 million per year
Energy Savings	29,000 eMWh per year
CO_2 Emission Reduction	1,492 tonnes per year
Provincial Incentives Delivered	$4.8 million

Since 1996, the BBP has helped to reduce 800,000 tonnes of $C0_2$ emissions

Better Buildings Partnership 1996 - 2017



Since 2007, the City has avoided $160 million in energy costs through EED-led initiatives, including Demand Response, Energy Retrofits, and Energy Management.

Demand Response

The EED coordinates the City's involvement in the Independent Electricity System Operator's Demand Response Program, which aims to reduce electricity consumption during periods of peak demand so that it does not exceed capacity.

The EED works with City Agencies, Corporations and Divisions to identify opportunities at City sites to reduce electrical consumption during periods of peak demand. Participating in Demand Response generates revenue for the City, optimizes assets, and contributes to Toronto's overall energy security and resilience.

With 22 City sites participating in Demand Response in 2017, the City reduced its electrical consumption by 5.5 megawatts and generated an estimated $400,000 in revenue.

Energy Management

Building Automation Systems

Building Automation Systems (BAS) optimize the performance of a building's heating, ventilation, air conditioning (HVAC), refrigeration, and lighting control systems. The EED manages centralized BAS production servers; executes BAS retrofit projects; and provides expertise and support to City Divisions by providing standardized BAS specifications, reviewing HVAC design/specs/drawings, performing diagnostics/troubleshooting, and preparing and administering maintenance contracts.

Energy Tracking and Reporting

The EED tracks, monitors and verifies energy and cost data for over 4,500 utility accounts, and analyzes this information to identify and select buildings for energy retrofits. All retrofit projects are tracked to verify energy savings and avoided costs.

Energy Procurement

EED manages the purchasing and hedging of electricity, natural gas and vehicle fuels to meet the needs of City Divisions, Agencies, and Corporations. In 2017, the EED helped the City to meet approved budgets, mitigate price risks and prevent added costs, such as:

- $28.9M in costs avoided by assigning 57 large electricity accounts to Class A
- $2.6M reduction in natural gas costs achieved through strategic gas purchases
- $2.3M reduction in vehicle fuel expenditures against the budget achieved through fixed price hedging contracts

2017 Highlights:

- Implemented a new system to process 3,500 monthly utility bills for all City divisions, which resulted in faster processing times, a reduction in fees, and easier access to energy consumption and cost data.
- Completed 35 annual energy reports for City divisions and agencies, detailing electricity, natural gas, water, steam, and chilled water costs and consumption, to better direct energy reduction efforts.
- Developed a project prioritization tool to account for energy performance, greenhouse gas (GHG) emissions, and State of Good Repair events to better identify high priority projects with good energy and GHG reduction potential.
- BAS projects completed:
  - St Lawrence Market South, 93 Front Street East
  - Fire Station 141, 4100 Keele Street
  - Metro Hall: Floors 1, 3, 21

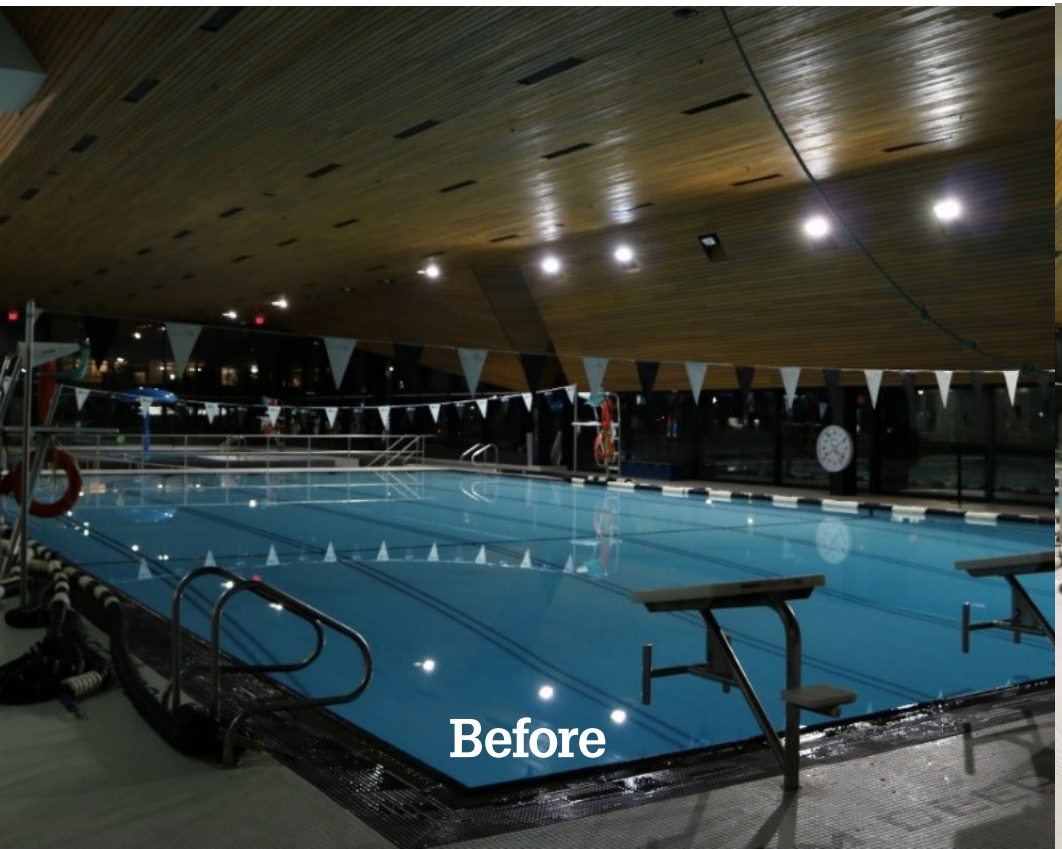
Energy Retrofits

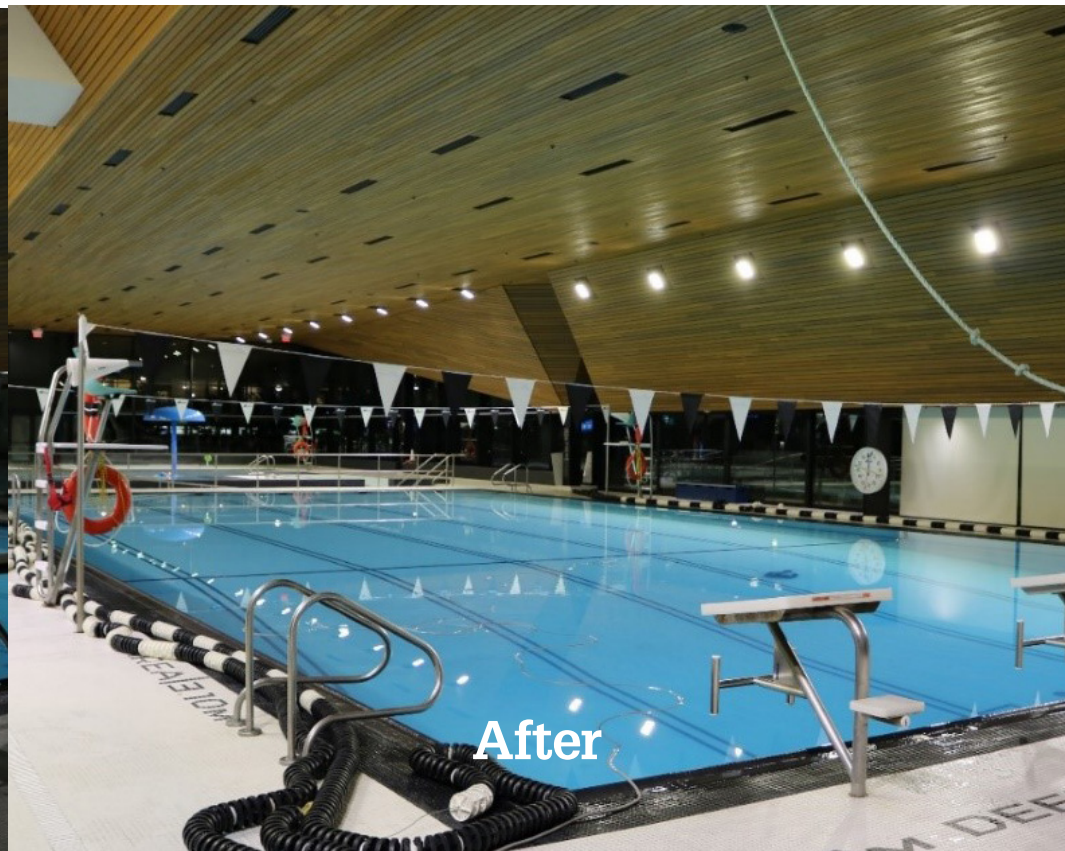
The EED manages energy efficiency retrofits of City buildings, with the savings from these retrofits helping to offset the cost of the investments.

2017 Achievements:

- 16 pools retrofitted with latest LED technology, avoiding $195,000 in electricity cost, 1,290,000 kWh per year, and 104 tonnes of GHG emissions per year.
- 11 lighting retrofit projects completed, with estimated $800,000 electricity cost avoidance and a reduction of 209 tonnes of GHG emissions per year.

Regent Park Aquatic Centre – LED retrofit





Home Energy Loan Program

The Home Energy Loan Program (HELP), developed and managed by the EED, provides low-interest loans to homeowners to improve the energy and water efficiency of their homes. Eligible improvements include energy efficient windows, insulation, heating systems and more.

Homeowners repay the loan over time via installments on their property tax bill, with the savings generated by the improvements helping to offset the cost of the repayment.

In addition to reducing greenhouse gas emissions and improving the energy performance of their homes, property owners are better protected against rising energy costs.

Over $2.4 million in loans were disbursed by December 31, 2017, with an average loan value of $20,258 per home.

On an annual basis, the average savings for homeowners that take advantage of HELP include:

- Gas bill savings: 34%
- Electricity bill savings: 12%
- Annual cost savings: $560 per home

HOME ENERGY LOAN PROGRAM

Homes and buildings generate over half of the greenhouse gas emissions in Toronto today.

ENERGY SECURITY AND SUPPLY

With Toronto's population rising at one of the fastest rates in North America, increasing stress is being placed on our energy grids and resources. By proactively planning to meet future energy needs and exploring new ways to secure our energy supply – through distributed generation, demand response, and strategic resource planning – the EED is working to improve Toronto's overall energy security.

Community Energy Planning

Community Energy Planning considers energy use early in the land use and infrastructure planning process, and identifies opportunities to integrate local, low-carbon, and resilient energy solutions at the building and district-scale.

Key issues addressed by Community Energy Planning:

Growth
New buildings are designed to use less energy, have less demand on energy infrastructure, and catalyze improvements to existing buildings.

Climate Change
Low-carbon solutions at the building and block/district scale, as well as low-carbon transportation choices, help drive deep GHG reductions.

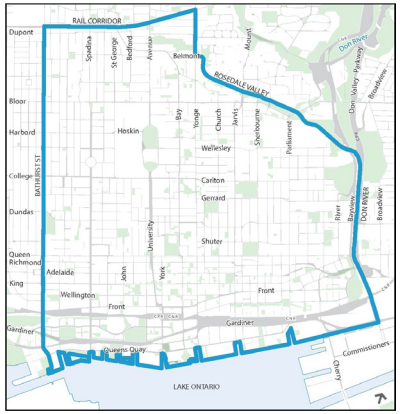
Resilience
Backup power solutions for multi-residential buildings and recreation centres can reduce vulnerability to area-wide power outages.

Economy
Energy conservation and low-carbon energy solutions keep more energy dollars in the community and create local jobs.

2017 Achievements:

- Completed the community energy plan for the Port Lands, the first area in Toronto to have a Net Zero energy and emissions goal.
- Substantially completed Phase 3 of TOcore, the Downtown Energy Plan, which is the largest community energy plan prepared to date.
- Reviewed 53 Energy Strategy reports submitted by developers, which identify opportunities to reduce new building energy use by 55% and GHG emissions by 53,000 tonnes per year, equivalent to taking approximately 11,000 cars off the road.
- Awarded a $375,000 grant from Natural Resources Canada's Energy Innovation Program to prepare Front End Engineering Design Studies for three Net Zero Communities (Port Lands, Westwood Theatre Lands, Liberty Village).

TransformTO: Climate Action for a Healthy, Equitable,



TOcore: Downtown Plan

The TOcore Downtown Plan is the largest energy plan prepared to date. The area accounts for a significant amount of energy use and GHG emissions, and the population is expected to continue growing rapidly.

Ensuring that this area grows in alignment with TransformTO goals will require transformative actions, including the expansion and development of Low-Carbon Thermal Energy Networks and near-zero emissions new construction backup power for resilience to extreme weather and climate change.

Low-Carbon Thermal Energy Networks (District Energy)

A thermal energy network is an energy distribution strategy for multiple buildings that delivers the economies of scale necessary to cost-effectively utilize local sources of low-carbon thermal energy. Low-carbon thermal energy sources include deep lake water cooling; sewer heat recovery; biomass; geo-exchange; biogas and heat recovery from waste water treatment plants; and geothermal fields augmented with solar thermal collectors.

2017 Achievements:

- The Exhibition Place District Energy System started providing heating and cooling to Hotel X Toronto.
- Construction started for the installation of pipe crossings for the Westwood Theatre Lands district energy system.
- Awarded up to $1.3 million Canada 150 grant to partly fund Combined Heat and Power (CHP) installations at two community centres with pools.
- Site work began for installation of CHP units at the Etobicoke Olympium and Agincourt Community Centre, which will serve as Emergency Reception Centres during power outages.

Canada 150 funding announcement at the Etobicoke Olympium

The Government of Canada Community Infrastructure Program provided up to $1.3 million to partially fund Combined Heat and Power (CHP) units at the Agincourt Community Centre and Etobicoke Olympium.

Under normal conditions these units provide and power to the buildings, reducing energy costs. During area-wide power outages they will remain operational so that the buildings can serve as Emergency Reception Centres for displaced individuals.

Net-Zero Community: Port Lands

The Port Lands waterfront area is expected to undergo regeneration and renewal over the coming decades, which present an opportunity to plan for a net zero community. Net zero involves significantly reducing energy use and meeting the remaining energy needs with local, low-carbon energy sources. Efficient buildings and low-carbon thermal energy networks are key to achieving net zero.

Efficient Buildings

New buildings with passive design elements and high performance mechanical systems can reduce energy consumption by at least 30%, helping move towards the net zero objective.

Low-Carbon Thermal Energy Networks

Low-carbon thermal energy networks co-located with local, large-scale renewable energy sources (e.g. lake water or sewer heat) can cost-effectively contribute over 50% of the energy supply required to achieve net zero.

Implementation

EED staff is working with its partners to implement the Port Lands net zero energy plan by preparing an engineering design study that will include low-carbon buildings and preliminary design for a low-carbon thermal energy network.

Rendering of the Port Lands' Villiers Island Precinct, which will include efficient buildings and a low-carbon thermal energy network (Source: Waterfront Toronto)

Renewable Energy

Renewable energy delivers economic and environmental benefits, and improves energy security. Through a variety of programs, the EED supports the City's mandate to install renewable energy systems on all City buildings, where feasible, by 2020.

Feed-in Tariff (FIT)

In 2017, the City's solar PV portfolio continued to expand with the installation of an additional 36 rooftop projects. Collectively, all three phases of this program will generate approximately 10,700 MWh of electricity annually, and earn over $2.7 million in revenue each year through the sale of electricity. The installations contribute to the City's TransformTO goals by reducing greenhouse gas emissions by 1,800 tonnes per year, equivalent to removing 391 cars from the roads.

MicroFIT

In 2017, sixteen MicroFIT projects, up to 10kW in size, were constructed and commissioned on City Fire Halls, EMS Stations, Public Libraries, Child Care Centres, Community Centres, and Senior Centres. With a total of 41 MicroFIT projects now installed, these systems will collectively produce 448 MWh of electricity and generate over $135,000 in revenue for the City each year. They will also avoid 76 tonnes of greenhouse gas emissions annually, the equivalent of taking 17 vehicles off the road.

Solar Developer of the Year Award

In recognition of its leadership and achievements, the City of Toronto received the "Solar Developer of the Year" Award in 2017 from the Canadian Solar Industry Association.

FIT - Mitchell Field Community Centre

Net Metering

With the end of the FIT program in 2017, the City will continue to identify and implement solar PV opportunities that will generate electricity in City-owned buildings and reduce energy costs. Net metering and Load displacement programs are available to customers who generate electricity for their own use from a renewable energy source.

Deep retrofits

In 2017, the EED completed feasibility studies on three City buildings with the greatest potential for deep retrofits. These retrofits, which will reduce energy use by over 40% and carbon emissions by an average of 60%, support the achievement of the City's TransformTO climate action goals.

REDUCE EMISSIONS to the ENVIRONMENT

Working in conjunction with City Divisions, Agencies, Corporations, and a variety of external community partners, the EED delivers innovative programs, research and initiatives to keep the City on track to meet its greenhouse gas emissions reduction targets.

2017 Highlights:

- TransformTO: Toronto's new and ambitious climate action strategy, was unanimously approved by City Council
- 7,000 people participated in public consultations to help shape Toronto's Pollinator Protection Strategy
- 5,719 residents joined Live Green Perks
- 335,000 employees/commuters took part in Smart Commute Toronto
- 1,300 sustainability pledges made by City staff during the People Power Challenge
- 11,000 twitter followers @livegreenTO
- 193,222 residents participated during Clean Toronto Together, the City's spring cleanup weekend

Mayor Tory, Councillor Perruzza, and Mike Clemons, joined students of St. Wilfrid Catholic School for a tree planting during the Clean Toronto Together campaign on April 21, 2017.

TransformTO: Climate Action for a Healthy, Equitable, Prosperous Toronto

Toronto's new and ambitious climate action strategy will reduce local greenhouse gas emissions, improve our health, grow our local economy and improve social equity. The importance of TransformTO to the future of Toronto was recognized by the Canadian Urban Institute when it awarded Josie Scioli, Toronto's Deputy City Manager responsible for the Environment and Energy Division, the David Crombie Leadership Award for the guiding the development the TransformTO strategy.

With adoption of TransformTO, City Council put in place a set of goals that when achieved will transform Toronto into a low-carbon city that has virtually eliminated the emission of locally generated greenhouse gas emissions. Achieving the TransformTO goals will require transformational changes in how we live, work, travel and build.

TransformTO Long-Term Goals

30% of total floor space uses **low-carbon thermal energy** by 2050

65% reduction in **GHG emissions** by 2030 as an interim target

100% of **new buildings** are near **zero GHG emissions** by 2030

100% of **transportation uses low or zero carbon energy** by 2050

75% of **trips** under 5km are **walked or biked** by 2050

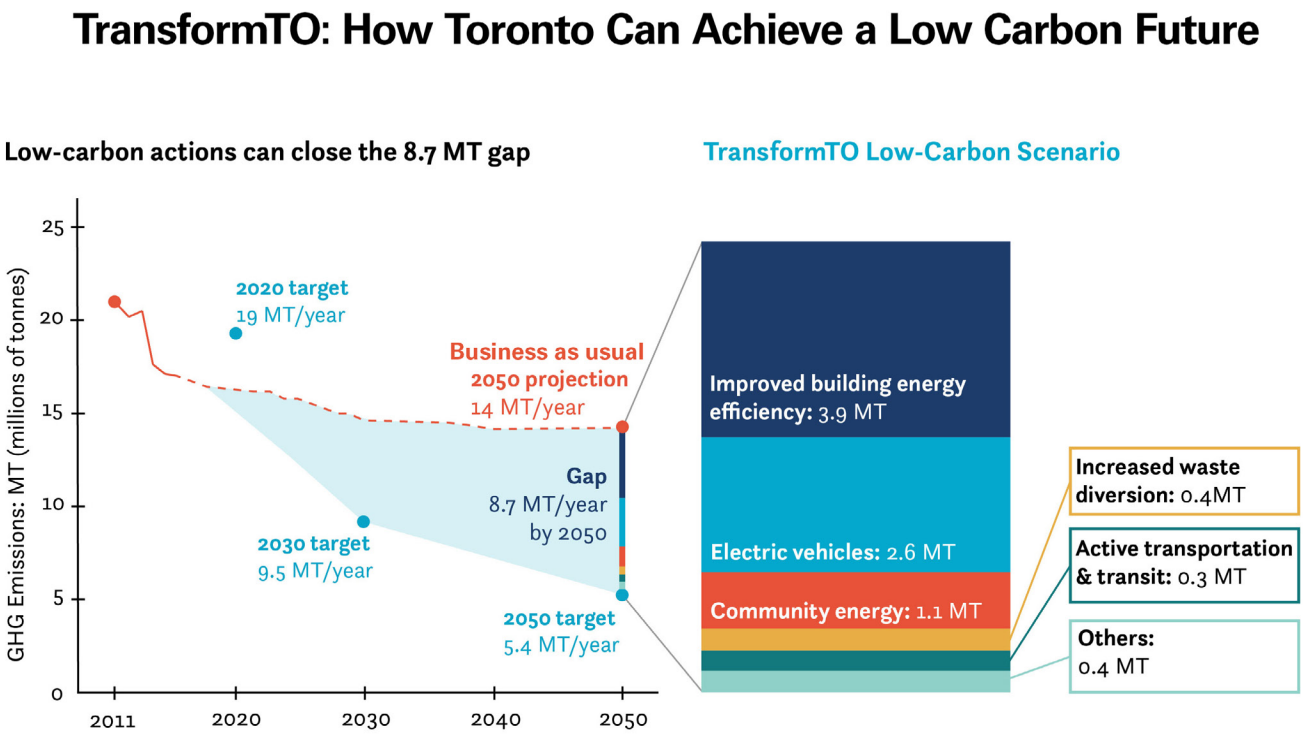
100% of existing **buildlings are retrofitted** by 2050

75% of energy use from **renewable or low-carbon sources** by 2050

95% of **waste is diverted** in all sectors by 2050

2017 Achievements:

- City Council unanimously adopted TransformTO in July 2017.
- The TransformTO strategy was developed over two years through the engagement of thousands of residents; the work of a multi-sectoral volunteer advisory group; and comprehensive technical modelling of the strategies that could get Toronto to a low-carbon future.
- The innovative and comprehensive approach to the development of TransformTO is recognized through receipt of the David Crombie Award in Urban Leadership.
- Six new positions were established to focus on:
  - Mobilizing private and public financing in support of implementing the TransformTO goals;
  - Working with the 35,000 people who make up the Toronto Public Service in taking the steps needed to shift their daily commute to sustainable transportation choices; and
  - Expanding the City's program offerings for facilitating energy efficiency retrofits in existing buildings.



Smart Commute Toronto

The Smart Commute program, delivered by the EED in partnership with Metrolinx, works with local businesses and organizations to promote sustainable commuting (e.g. carpooling, cycling, and public transit) to their employees. With the goal of reducing single-occupant vehicle trips, Smart Commute helps to ease gridlock, improve air quality and reduce greenhouse gas emissions.

2017 Achievements:

- 82 client organizations, representing over 335,000 employees/commuters;
- 74% of the employees at client organizations walk, cycle, take transit or carpool to work (versus 42.5% of Torontonians overall, based on 2016 Census data);
- Delivered 4 major campaigns: Carpool Week, Bike to Work Day, Bike Month, and Smart Commute Week;
- Delivered 21 workshops and clinics;
- Created and launched a Smart Commute Champions Network for the Toronto Public Service, recruiting over 50 members at 27 City buildings to further support and engage City employees in sustainable commuting through infrastructure improvements, programs, campaigns, and peer-led initiatives.

EED staff celebrate Bike to Work Day, May 2017

Mayor Tory, Bike to Work Day 2017

Waste Diversion at City Facilities

With the goal of ensuring that City operations meet or exceed the City's 70 per cent waste diversion target, the EED educates, engages and helps City staff to navigate the changing waste management landscape.

Staff education and engagement initiatives include outreach events, Lunch 'N Learn sessions, flyers, newsletter articles, Earth Week and Waste Reduction Week initiatives, and setting up Green Teams.

In addition to reducing, reusing and recycling standard office items, City staff also divert fluorescent lamps, laser cartridges, cell phones, wooden skids, polystyrene packaging and electronic waste.

The City's TransformTO Climate Action Strategy includes a goal to lead by example and achieve net zero waste status at all City-owned facilities by 2030.

89% of waste is diverted in the City's major corporate buildings, up from 70% in 2004.

Live Green Toronto

Live Green Toronto provides a suite of programs, resources, tools and events to engage Toronto residents and businesses in greening our city. With a strong focus social media and attending community events across the city, Live Green Toronto raises awareness, generates connections, and contributes to actions that make Toronto a healthier and more resilient city.

Community Engagement

In 2017, EED staff and volunteers attended over 100 community festivals, trade shows and other public events and engaged thousands of residents on a range of environmental subjects including cycling, recycling, locally grown foods, and reducing greenhouse gas (GHG) emissions.

Social media - expanding our reach:

- 11,000 Twitter followers
- 2,000 Instagram followers
- 4,000 Facebook followers

2017 Highlights:

- 26 community events attended in April
- 213 hours engaging visitors at the CNE
- 44 Community Environment Days
- 200+ community volunteers attend the Earl Bales Park Cleanup

Live Green Toronto's outreach helps to inform, educate and inspire Torontonians.

Live Green Perks

In 2017, the Live Green Card program was upgraded to a new app-based rewards program called Live Green Perks. Live Green Perks gives members exclusive access to discounts and deals at hundreds local businesses, and invitations to special events and contests.

Anyone can join by downloading the free app and showing it at the time of purchase to claim the perks offered by participating businesses. As an added bonus, Live Green Toronto will plant a tree for every 20 deals an individual claims with the app.

2017 Highlights:

- 5,719 new Live Green Perks members
- 4,693 new app downloads
- 3,100 sign-ups for the Live Green Toronto newsletter
- 450 participating businesses

"The Live Green Perks program makes it easier for people to make eco-friendly choices and support local businesses, which is a win for the city and the environment."

Councillor Mary-Margaret McMahon

Live Green Toronto Volunteers

In 2017, a group of 1,500 dedicated Live Green Toronto volunteers, who together speak more than 110 languages, engaged more than 100,000 residents at events across the city.

Volunteers receive extensive training on a wide range of topics including: climate change; waste; water and energy efficiency; water and soil pollution; air quality; sustainable transportation; green buildings and development; environmental bylaws; local food; pollinators and more.

2017 Achievements:

- 5,213 hours of volunteer service
- 102 tradeshows and community events
- 23 training sessions

"Volunteering with Live Green Toronto has taught me so much about the City's many sustainability initiatives. As a Toronto resident, I've been able to take what I've learned and make positive changes in my own life."

Annia, Live Green Volunteer

People Power Challenge

In 2017, the City of Toronto participated in the People Power Challenge – an annual corporate sustainability competition for employers in the Greater Toronto Hamilton Area, hosted by the Toronto and Region Conservation Authority.

The City's participation in the Challenge, led by the EED, required the City to engage staff and compete against 14 other organizations, including the Toronto Zoo, Toronto Airport Authority, Canadian Tire, and Region of Peel.

The City won first place in the large employer category. Through the Challenge, more than 1,300 City staff made sustainability pledges and submitted over 270 suggestions to green City workplaces.

The $6,500.00 People Power Challenge prize was donated to the City's United Way Campaign.

Live Green Summer Tour

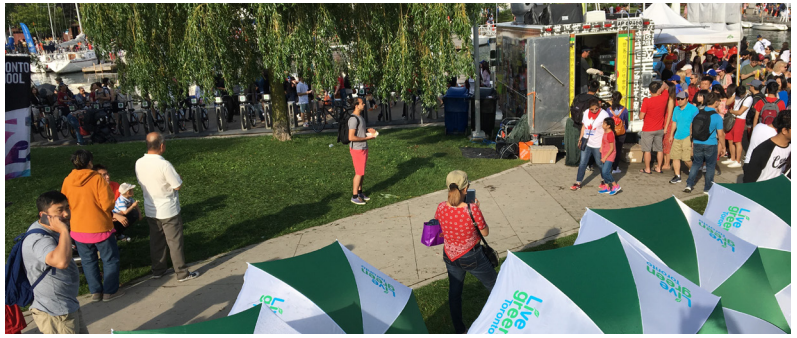
From June to September 2017, Live Green Toronto embarked on its most ambitious outreach campaign to date, exhibiting at 46 unique events, totalling more than 70 event days. The Family Fun Zone and other outreach activities were a huge hit for thousands of festival and event visitors.

Marquee events:

- Pride Toronto, Jun 23 – 25 (250,000 guests)
- Red Path Waterfront Festival, Jul 1- 3 (750,000 guests)
- CNE, Aug 18 – Sep 4 (1.3 million guests)

Summer Tour highlights:

- 70 event days
- 500+ hours spent engaging the community
- 348 Live Green Volunteers helped provide 1,392 hours of service



Clean Toronto Together

Led by the EED, the City's annual spring cleanup attracted a record number of residents, businesses and schools in 2017:

- 193,222 participants
- 1,092 cleanup events, up 21% over 2015
- 333 community cleanups with 10,028 residents
- 521 schools leading the way to a greener Toronto!
- 300,000 twitter impressions #cleantoronto

Toronto's Climate Leadership

Cities play a critical role in tackling climate change. As consumers of over two-thirds of the world's energy that account for more than 70% of global carbon dioxide equivalent (CO_{2e}) of emissions, cities are where policy is translated into action. The Global Covenant of Mayors for Climate and Energy, previously known as the Compact of Mayors, is the world's largest coalition of city leaders addressing climate change. Members pledge to reduce greenhouse gas emissions, enhance resilience against climate change, and track progress transparently. Commitments to the Covenant are set to deliver half of the global urban potential GHG emissions reductions available by 2020.

In 2015, the City of Toronto became a signatory to the Compact of Mayors at the Conference of Parties twenty-first session (COP21). In doing so, the City commits to comply with GHG reporting requirements through the Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories (GPC), the world's most widely-endorsed GHG accounting and reporting standard for cities. A city's ability to take effective action in mitigating climate change and monitoring progress depends on access to quality GHG emissions data.

Regulatory Reporting of Emissions

The EED coordinates the mandatory reporting of emissions to land, air and water from all City operations to federal, provincial and municipal authorities each year, including:

- National Pollutant Release Inventory (NPRI)
- Federal Greenhouse Gas Reporting
- Airborne Contaminant Discharge and Monitoring and Reporting (O. Reg.127/01)
- Ontario Greenhouse Gas Reporting (O. Reg. 452/09)
- Toronto's Environmental Reporting and Disclosure Bylaw (ChemTRAC)

RESILIENT CITY

Following Toronto's invitation to join the 100 Resilient Cities (100RC) initiative in December 2016, EED supported the development of the 100RC relationship and the process to hire the City's first Chief Resilience Officer.

EED continues to advance actions arising from its work on High Level Risk Assessments (HLRA), in particular, work to better understand the challenges posed by urban flooding. EED also partnered with Toronto Public Health to initiate a high-level climate change vulnerability assessment of Toronto's food system.

EED contributed its expertise to a C40 report, alongside the cities of Amsterdam, Melbourne, Johannesburg and Bogota, entitled

Eco-Roof Incentive Program

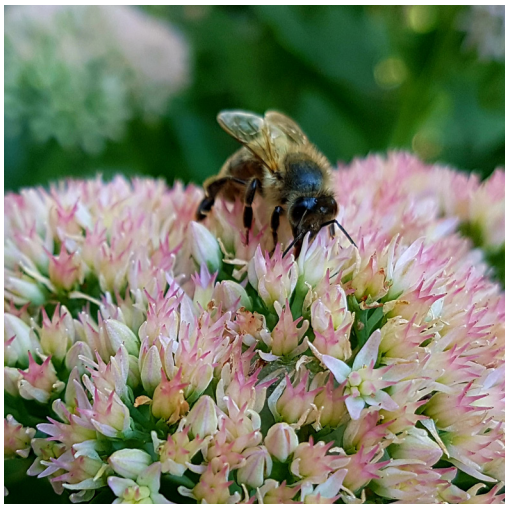
EED delivers the City's Eco-Roof Incentive program, which since 2009 has supported 336 projects with 653,000 square metres of roof space (equivalent to about 79 football fields). Each year, these roofs reduce energy consumption by 1,000 megawatt-hours (MWh), avoid 220 tonnes of greenhouse gas emissions, and divert over 11 million litres of storm water.

The program supports eco-roofs on residential, industrial, commercial and institutional buildings, and is fully funded by developers who pay cash-in-lieu of constructing a green roof required by the Green Roof By-law.

2017 Highlights:

- 86 projects approved (66,511 square metres of eco-roof)
- 55 projects completed: 49 cool roofs, 6 green roofs
- 134 megawatt-hours (MWh) per year of energy saved
- 25 tonnes of GHG emissions reduced per year
- 1,043,000 litres of storm water diverted

Pollinator Strategy



0ver 7,000 people participated in public consultations to help shape Toronto's Pollinator Protection Strategy

In partnership with expert stakeholders and the engagement of 7,000 residents the EED developed Toronto's first Pollinator Protection Strategy, with the goal of protecting the more than 360 species of bees and more than 100 species of butterflies and other pollinators that live in Toronto. The comprehensive strategy brings together existing City initiatives,creates new opportunities partnerships, and identifies 30 actions that can be taken by the City and the community to support pollinators in six priority areas: creating habitat, connecting green spaces, building partnerships, incentivizing action, education, and recognizing achievements.

NEW INITIATIVES FOR 2018

Toronto's Greenest Neighbourhoods

In 2018, the EED will launch a project to encourage homeowners in three Toronto neighbourhoods to take advantage of the rebates, incentives, and programs available to make their homes more energy efficient. The project will also promote the City's Home Energy Loan Program.

Three community organizations will partner with the City to raise awareness about home energy efficiency and engage residents right in their own neighbourhoods.

Toronto's Greenest Neighbourhoods will be funded by the Province through its Partners in Climate Action grant program.

Waste Reduction Community Grants

In January 2018, the EED in partnership with Solid Waste Management will begin to accept grant applications of up to $25,000 for innovative community-based projects that reduce residential waste and increase participation in the City's waste diversion programs.

Up to $150,000 in grant funding will be invested per year in 2018, 2019 and 2020. A priority will be placed on investing in actions that address waste reduction in multi-residential buildings, multi-lingual communities, and Neighbourhood Improvement Areas.

WHO WE ARE

We are a diverse group of environment and energy professionals dedicated to delivering value to the City and the community through our skills, expertise and passion for a cleaner, greener, more sustainable Toronto.

For more information visit: www.toronto.ca/eed