

ENVIRONMENT & CLIMATE

PROGRAMS & INITIATIVES

CAC Energy Managers Community of Practice

April 19, 2024



Outline

- Introduction to Environment & Climate Division Existing Buildings Team
- Net Zero Strategy and Existing Buildings Strategy
- Existing Programs & Initiatives
- Q&A



Background: TransformTO

Better Buildings Partnership

TransformTO

TransformTO is Toronto's strategy to reduce local greenhouse gas emissions, improve our health, grow our economy, improve social equity & increase climate resilience. Everyone will have a part to play in transforming Toronto into a low-carbon city.



TransformTO Guiding Principles



Advance social equity



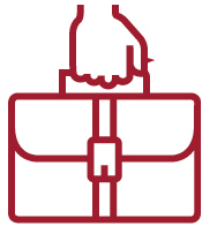
Protect low-income residents



Improve affordability particularly for vulnerable population



Enhance and strengthen the local economy



Maintain and create good quality local jobs



Improve public health



Contribute to poverty reduction



Create resilient communities and infrastructure

Climate Emergency

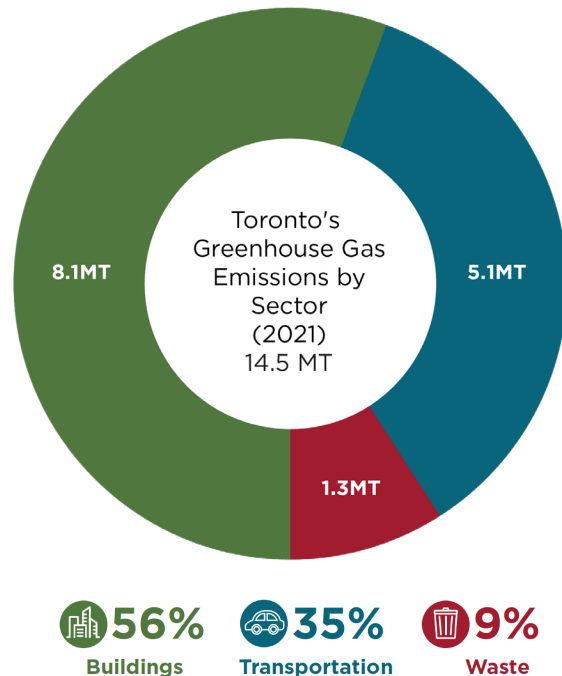
On October 2nd 2019, Toronto City Council unanimously voted to declare a climate emergency and accelerate its efforts to mitigate and adapt to climate change.

TransformTO now aims to achieve net zero emissions by 2040, a decade ahead of the original plan.



GHG Emissions in Toronto

2021 Sector-Based Emissions Inventory



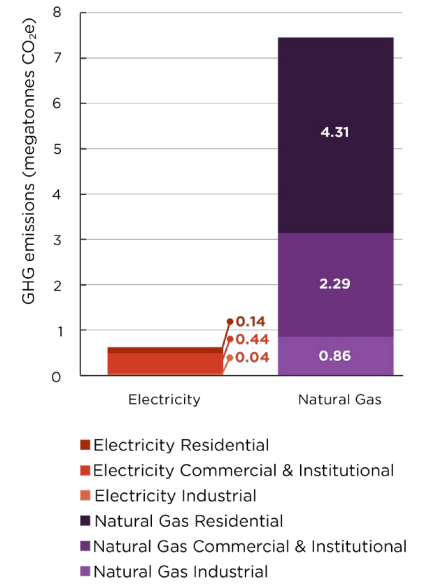
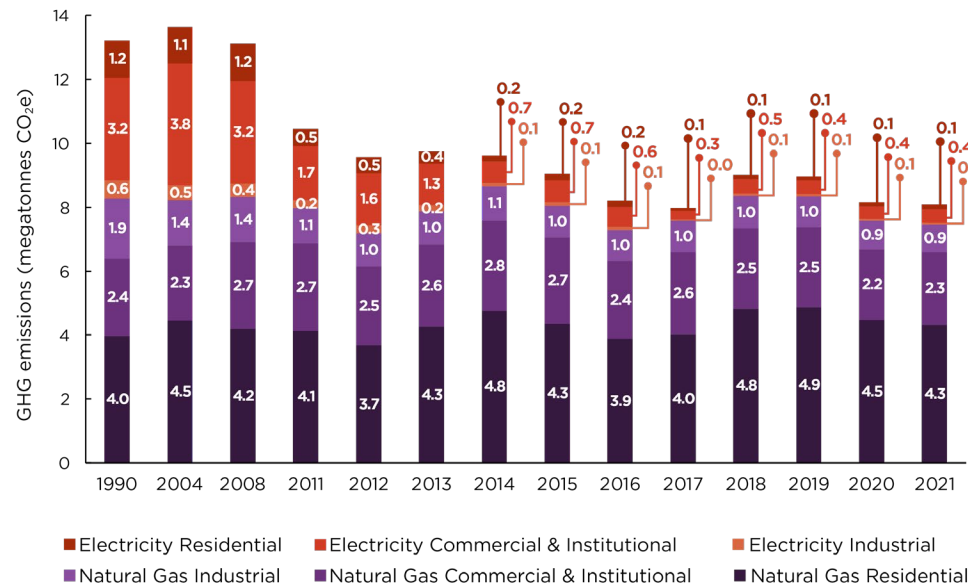
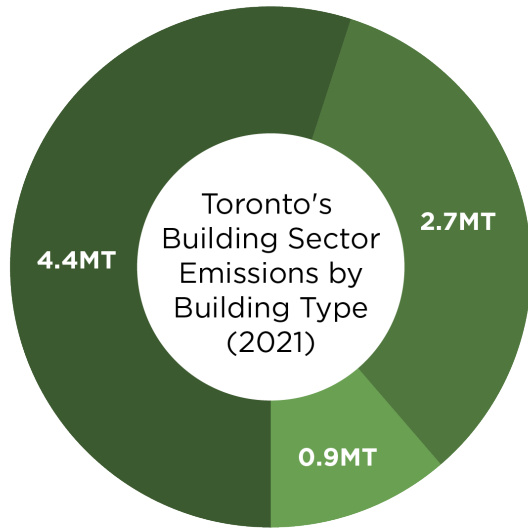
Key Findings

- Total community-wide emissions were 14.5 MT CO₂e, 41% lower than 1990 levels, but still a four per cent increase over the 14 MT CO₂e emitted in 2020.
- Upward trend in emissions is expected to continue in 2022 with a full resumption of pre-pandemic activity.
- Toronto must continue to scale up its GHG reduction efforts to reach its interim targets and net zero by 2040. Toronto's next target is a 45% reduction by 2025 from 1990 levels and is at risk if the upward trend in GHG emissions continues.

[Toronto's 2021 Sector-based Greenhouse Gas Emissions Inventory - City of Toronto](#)

GHG Emissions in Toronto Buildings

2021 Sector-Based Emissions Inventory



Implementing the Net Zero Strategy

As part of the implementation of TransformTO, the City launched the enhanced BBP by developing new retrofit programming to drive emissions reductions in all buildings across the city.

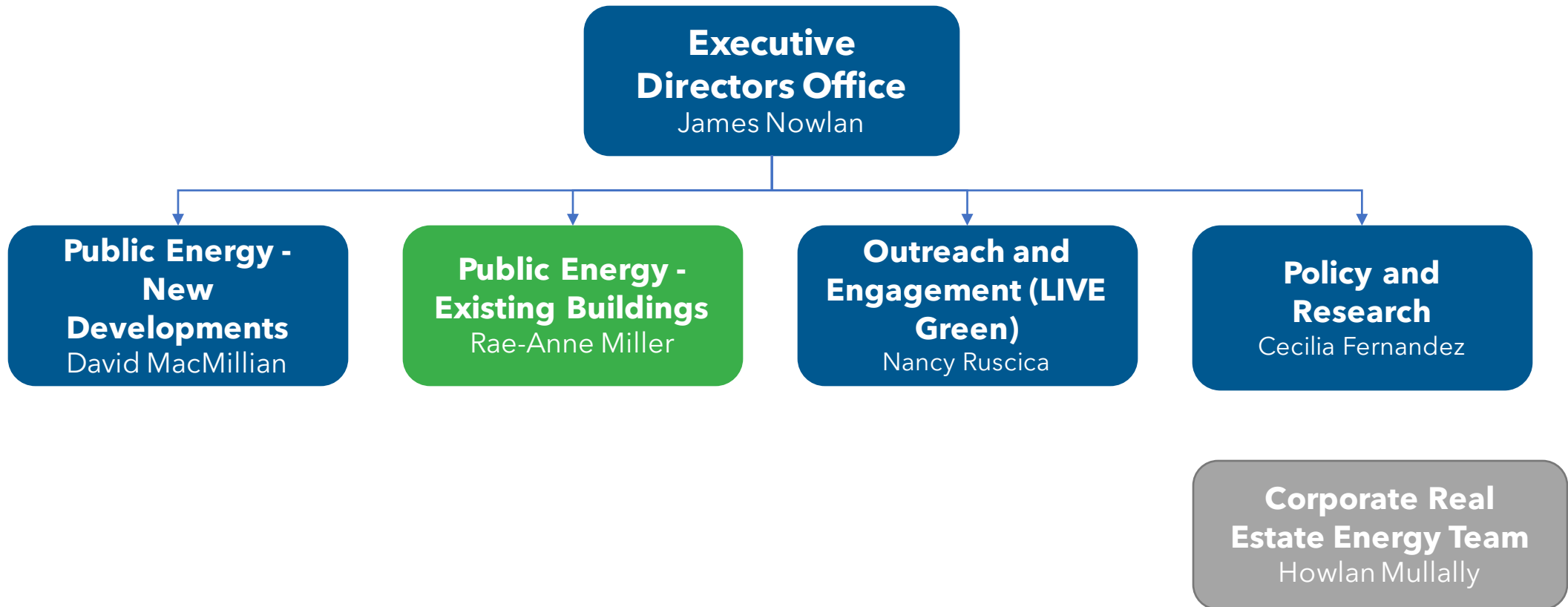
To date multiple programs and initiatives have been developed for existing buildings resulting in:

- Over \$70 million in approved and active loan applications for energy projects
- 4,500+ buildings and over 320 million ft² of floor space participating in the Green Will Initiative
- Successfully assisted over 80 building portfolios with technical guidance, incentives/grants, and project implementation support for GHG reduction projects. Over \$1,000,000 in funding and grants secured for buildings
- Over \$5.9 million in approved loans, retrofitting over 232 single family homes



**BETTER
BUILDINGS
PARTNERSHIP**

Environment & Climate Division





Net Zero Existing Buildings (ExB) Strategy

Comprehensive strategy for achieving net zero emissions in all existing buildings across Toronto, in alignment with the City's Climate Emergency Declaration of October 2019.

The Existing Buildings Emissions Strategy will:

- Achieve deep emissions reductions across the building sector
- Support the building industry in making the transition to a low-carbon sector
- Support the realization of multiple co-benefits in social equity, economic impact, resilience and health

[Net Zero Homes & Buildings - City of Toronto](#)

ExB Strategy - Recommended Actions

Purpose	Category of Policy/Actions
Set requirements to assess building performance and create a path to net zero	<ol style="list-style-type: none"> 1. Require annual emissions performance reporting and public disclosure for all existing buildings 2. Establish emissions performance targets 3. Require energy and emissions audits and tune-ups
Provide support and resources to make retrofits easier and more affordable	<ol style="list-style-type: none"> 4. Provide integrated retrofit support 5. Expand and enhance retrofit financing 6. Support permitting and approvals process for deep retrofits
Advocate and partner with other levels of government	<ol style="list-style-type: none"> 7. Build awareness and capacity of home and building owners for emissions reductions strategies and supports 8. Support workforce development and training 9. Advocate for action at other levels of government

Toronto's Energy & Water Reporting By-law

Building owners must submit data to the City annually

Information to be reported:

- Energy use:
 - Electricity
 - Natural gas & other fossil fuels
 - District energy
- Water use
- Building information:
 - Property Address
 - Assessment Roll Number
 - Property use type(s), etc.

First reporting deadline: July 2, 2024

Reporting tool: Energy Star Portfolio Manager



Who needs to report?

Building sizes:

Gross floor area	First reporting deadline	Number of buildings	Number of building owners
≥ 50,000 ft²	July 2, 2024	7,500	2,100
≥ 10,000 ft²	July 2, 2025	16,100	5,800

All building types, but most affected are:

- Commercial
- Industrial
- Institutional
- Multi-Unit Residential

For full details, see the by-law text:

[Municipal Code Chapter 367, Building Emissions Performance](#)

Partners in Implementation



We want to:

- Help enable or improve projects
- Build knowledge and capacity in the industry.
- Ready the market for upcoming municipal policy changes
- Demonstrate project effectiveness



Programs and Initiatives

Better Buildings Partnership

City Programs for Net Zero Buildings

Support, Guidance & Enablement

- Navigation & Support Services
- Renewable Energy
- Sustainable Towers Engaging People (STEP)
- Green Will Initiative (GWI)
- Renewable Energy Assessment



Financing & Incentives

- Energy Retrofit Loans (ERL)
- Home Energy Loan Program (HELP)
- High-Rise Retrofit Improvement Support Program (Hi-RIS)
- Deep Retrofit Challenge (DRC)
- Eco-Roof Incentive Program



Policy

- Net Zero Existing Buildings Strategy
- Toronto Green Standard (TGS)
- Energy & Water Reporting and Benchmarking (EWRB - Province of Ontario & City of Toronto)



Navigation & Support Services



The Navigation & Support Services Program helps building owners navigate both City and external programs and resources to accelerate key actions aimed at achieving net zero emissions.

Key actions include:

- Reporting
- Audits
- Re-commissioning
- Retrofits

Eligibility

All existing building types located in the City of Toronto are eligible

Green Will Initiative (GWI)



The Green Will Initiative invites Toronto building portfolio owners to partner with the City of Toronto to accelerate the reduction of greenhouse gas emissions (GHG) from buildings, which are the largest source of GHG emissions in Toronto.

Through the GWI, building owners will be supported in their efforts to reduce their building's GHG emissions to net zero. City staff will support building owners in achieving targets and creating a plan to accelerate emissions reductions through three program pillars: Recognition, Pathway to Net Zero and Collaboration.

Green Will Initiative (GWI)

Recognition Pillar

- Highlight accomplishments and GHG emission strategies leaders are pursuing
- Showcase best practices and new low carbon solutions

Pathway to Net Zero Pillar

- Getting building portfolios started prioritizing NZ in their planning
- Strategic Energy Management workshops focused on addressing local challenges

Collaboration Pillar

- Events to establish relationships and a forum for information exchange and open discussion
- Knowledge sharing to drive best practices, innovation, strategic alignments and more

Energy Retrofit Loans (ERL)



The City's Energy Retrofit Loan program offers fixed, long term, low-interest financing to enable building owners to invest in low carbon, energy efficient capital improvements.

Energy Retrofit Loan Advantages

- Funds are advanced at project start
- Financing available for up to 100% of project cost
- Unsecured loans may be available for qualified applicants
- Up to 1 year interest free and payment free
- Support in accessing utility incentives/Federal grant programs

Terms

Fixed low rates for a term of up to 30 years
Sample rates ~ 4-4.5% (actual rate determined at time of agreement)

Eligibility

All building types located in the City of Toronto are eligible to apply
Feasibility Study
3 years audited financial Statements

Energy Retrofit Loans (ERL)



Recent Project Examples:

Heat Pumps, BAS replacement/upgrades
Window and envelope upgrades
Solar storage energy project

Application Process



Deep Retrofit Challenge (DRC)

Competition that supports deep energy retrofit projects across the city to deliver significant energy and GHG reductions and will serve as case studies to accelerate market adoption.

- Minimum 50% reduction in GHGs and total energy use intensity
- Payback period of 20 years or better
- Up to \$500,000 available in incentives
- Funded by NRCan (\$5 million)

14 applications received and 7 selected projects underway currently



Renewable Energy



The City offers no cost consultation for residents and business interested in Solar PV, Geothermal/Geo-exchange, and Energy Storage, for example:

- Detailed online solar site assessment for properties
- Zoning verification and conceptual layout/system sizing and budgetary estimates
- Assistance with completing the preliminary Toronto Hydro Distributed Energy Resource (DER) Pre-Assessment Application

Federal Tax Incentives

- [Accelerated Capital Cost Allowance \(CCA\) program and the Canadian Renewable and Conservation Expense \(CRCE\)](#) to fully expense clean energy generation projects
- [Clean Technology Investment Tax Credit](#) up to refundable tax 30% of the cost of capital investment in projects that generate clean electricity

For more information, check out [SolarTO's website](#).

Renewable Energy

SolarTO Map

The City has developed an interactive online mapping tool to help businesses and residents to estimate the rooftop solar potential of their properties.

The user simply enters the address, and the map generates solar energy production potential including environmental and financial benefits.

Solar Potential

System size: 5 kw

Annual electricity generation: 5640 kwh

Roof size suitable for solar: 1,470 sq ft

Financial Benefits

System cost: \$14,714

First Year Bill Savings: \$883

25 Year Bill Savings: \$39,336

Payback period: 9.4 years

Environment Benefits

Annual greenhouse gases reduction: 395 kg CO2e

Total greenhouse gases reduction over 25 years: 9,870 kg CO2e

Number of Trees grown for 10 years: 165

Number of Cars off the road: 3

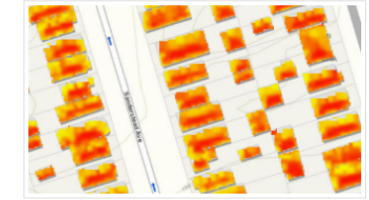
Note: The above data pertains to Net Metered projects only.

Estimated Solar PV System


 **\$14,714**


Estimated Savings over 25 years

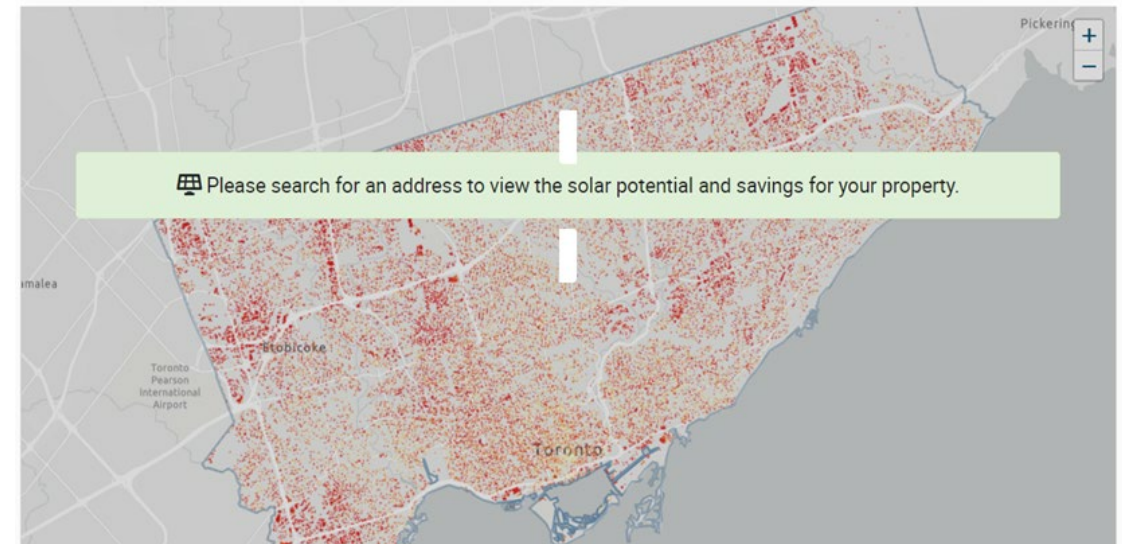
 **\$39,336**



Search by address

 Search by address

 Find Location



Home Energy Loan Program (HELP)

- Home Energy Loan Program (HELP) provides low-interest loans of up to \$125,000 to Toronto homeowners to undergo energy-efficient and net zero renovations.

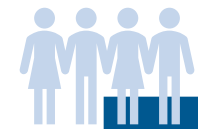
Eligibility

- Property must be in Toronto (postal code must start with an M)
- Detached, semi-detached, or town/row houses, including laneway houses
- Duplex and triplex apartments, or any buildings to a maximum of three stories and 6 apartment units
- Rooming houses or group homes classified as single-family homes



Low-rise Residential Buildings

- The City provides information and education to homeowners and design-build professionals to support pathways to net zero.



Engagement

- Brochures & Advertising
- Webinars
- Case studies
- Videos
- Awards & recognitions
- Homeowner engagement



Capacity Building

- Net zero training
- Trades Engagement
- Partnerships

Sustainable Towers Engaging People (STEP)



Helps building operators contextualize their building's performance
+
Follow up supports

The STEP program helps property owners and managers reduce operating costs, improve building value and improve the quality of life for residents.

- Free program: offers a holistic assessment of the building across six key areas
- Benchmarks a building's energy, water and waste against ~400 similar buildings
- Results in an easy-to-read Action Report to support improvements which lower GHGs and operating costs

Eligibility

Multi-Residential 8 storeys or higher and built before 1990

High-Rise Retrofit Improvement Support Program (Hi-RIS)



**Low Financing
Rates
Longer Payoff
Terms**

The Hi-RIS program helps apartment building owners undertake energy efficiency and water conservation improvements

- Financing of up to 10% of a building's CVA with payment terms of 5 to 20 years
- Fixed rates between 2.05% and 5.26%, no penalty for early repayment
- Loan is attached to the property, not the owner
- **Savings pay off debt!**

Eligibility

- Residential rental apartment building of 3 storeys or more
- The property is required to pay property taxes to the City
- Consent from all property owners and mortgage lenders (if applicable)
- All payment obligations (property tax, utility, etc.) to the City in good standing for past 5 years

Eco-Roof Incentive Program

The Eco-Roof Incentive Program provides incentives to support the installation of green roofs and cool roofs on Toronto homes and buildings. Green roofs and cool roofs – known collectively as ‘eco-roofs’ – help make Toronto more resilient and better adapted to climate change.



Eligibility

All existing buildings & some new buildings

Incentives

Green Roofs: \$100 / sq. m

Cool Roofs: \$2-5 / sq. m

Structural Assessment Grant: up to \$1000
(green roofs only)

Eco-Roof Incentive Program

Program Results

Successfully supported **614 eco-roofs**:

506 cool roofs completed

108 green roofs completed

In doing so, this program has helped to:

establish **over 1.12 million square metres of eco-roof space** (~ 137 Canadian football fields)

divert **18 million litres** of stormwater annually

save over **2,200 megawatt hours** per year

reduce GHG emissions by **416 tonnes** per year





Links and Resources

TransformTO

[TransformTO - City of Toronto](#)

BBP@Toronto.ca

Better Buildings Partnership

[Better Buildings Partnership - City of Toronto](#)

City of Toronto Energy & Water Reporting for Buildings
[Reporting for Buildings](#)

SolarTO

[SolarTO - City of Toronto](#)

Navigation & Support Services Application Form

[Navigation Application Form](#)

Energy Retrofit Loans Application

[Loan Expression of Interest](#)