



TransformTO Net Zero Strategy and Climate Actions Backgrounder



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What is the TransformTO Net Zero Strategy?

TransformTO is Toronto's climate action strategy. It aims to reduce our city's greenhouse gas emissions while improving our health, advancing social equity, growing our economy, and improving climate resilience.

What are greenhouse gases?

Greenhouse gases like carbon dioxide (CO₂) and methane (CH₄) are necessary to keep our planet warm to sustain life. However, in excessive quantities, they block heat from escaping the earth's atmosphere, causing the earth to heat up and creating imbalances in the atmosphere which lead to more unstable and severe weather events.

Getting TO net zero, with no one left behind

In recent years, we've felt the impacts of a warming climate. Toronto's weather is expected to get hotter, wetter and wilder – **and extreme weather events around the world are predicted to become more frequent and more intense** – as climate risks increase due to carbon pollution; Toronto residents and businesses are already experiencing flooding and other severe weather events. We need to act quickly and urgently.



The sooner, the better

In October 2019, City Council voted unanimously to declare a climate emergency in Toronto and accelerate on-going efforts to mitigate and adapt to climate change.

In response, we are realigning the initial TransformTO plan toward an accelerated greenhouse gas emissions reduction target of net zero by 2050 or sooner, and creating a more liveable, prosperous Toronto. This bold Net Zero Strategy will include short-term goals of reducing our greenhouse gas emissions by 65 per cent from 1990 levels by 2030; a key milestone on the path to achieving net zero.

We've got this TO!

Toronto has reduced its greenhouse gas emissions by 40% below 1990 levels.

Bold moves drive net zero

We know that bold moves drive net zero, and getting to net zero requires immediate climate action to meet our 2030 emission reduction goals. Your input during this consultation period will inform the Net Zero Strategy that will be submitted to Toronto City Council this fall.

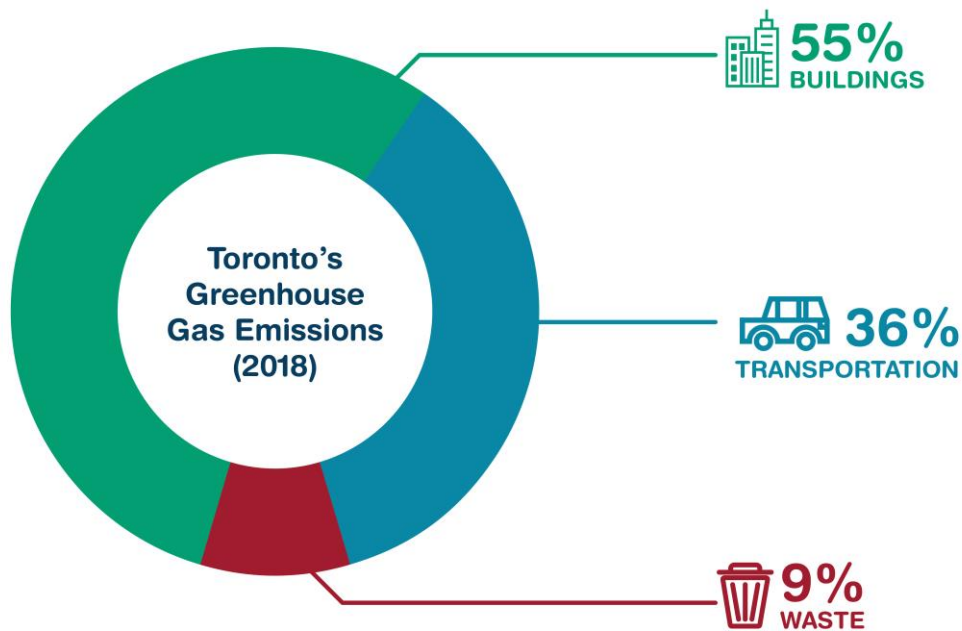


How do we get to net zero?

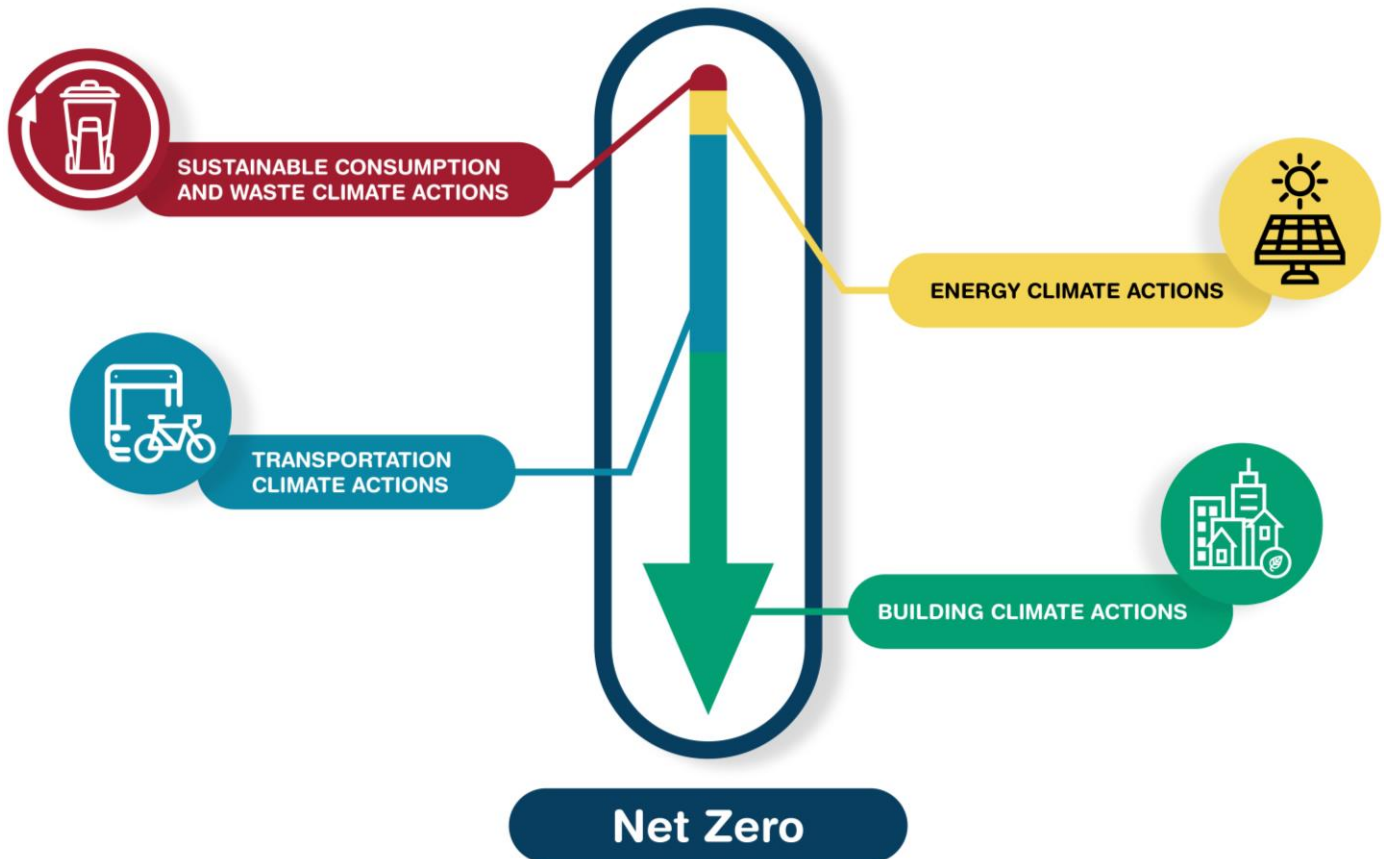
What is net zero?

'Net zero' is achieved when we decarbonize our city meaning we change how we move, build, generate energy, and dispose of our waste so that the greenhouse gases we produce are as close to zero as possible.

We can get Toronto to net zero by 2050 or sooner if we act urgently. We need to implement climate actions that target the major greenhouse gas sources in our city. Reaching our 2030 greenhouse gas emissions reduction target will set us on the right path to net zero.



Our TransformTO Net Zero Strategy will include climate actions that will help us meet our 2030 goals and set us on the path to net zero. With previous input from Torontonians, we've identified key climate actions for reducing emissions from each of the biggest sources of greenhouse gases in Toronto.



The above graphic shows the relative emissions reduction potential of key sectors in Toronto. Considering that buildings and transportation make up the majority of emissions in the city, these sectors have the greatest potential for reduction; however, climate actions in energy, consumption/waste, as well as in equitable engagement and decision-making are also essential. When all actions are implemented, greenhouse gas emissions in our city will reach **near-zero**. Fully achieving **net zero** will require action on the part of all levels of government, to ensure a low-carbon energy grid and reduced reliance on natural gas.



What are the benefits of getting to net zero?

Reducing our greenhouse gas emissions and getting to net zero will contribute to the global effort to protect our climate and create a more climate resilient Toronto – this means creating a city that is prepared for, and can withstand, the stress and shocks of future heatwaves, flooding and ice storms.

Reducing emissions to net zero also creates benefits beyond a greener, low-carbon Toronto, such as advancing social equity. This includes actions that address the issues of equity, prosperity and health, and that don't unfairly impact any specific communities in Toronto.

Our climate action modelling shows that getting on a net zero path will improve our overall health and create many new job opportunities between 2020 and 2050. This is important as we look to community health and economic recovery from the COVID-19 pandemic.

Our modelling also shows us that by implementing climate actions that reduce greenhouse gas emissions, households could save approximately \$1,500 every year in energy costs. So, while we're creating a healthier low-carbon Toronto, we're saving money too!

The net zero climate actions

The TransformTO Net Zero Strategy will include bold climate actions focused on the largest sources of local greenhouse gas emissions. It also includes actions for enhancing greenspaces and other initiatives to promote a liveable, low-carbon city.

Buildings

According to our most recent [Greenhouse Gas Inventory](#), 55 per cent of local greenhouse gas emissions come from the energy used in our buildings; they emit greenhouse gases when using fossil fuels as an energy source, and during manufacturing and construction. Natural gas consumption to heat buildings continues to be the largest source of emissions community-wide, accounting for approximately 50 per cent of all emissions in Toronto.

To meet our 2030 reduction targets and achieve net zero by 2050 or sooner, we need to focus on ensuring new construction has near-zero emissions and uses low-carbon materials. We also need to retrofit existing buildings to reduce energy consumption and switch to low-carbon energy sources.



The actions we need to take to reduce our buildings' greenhouse gas emissions are:



For new buildings...

Action: Continue to implement the Toronto Green Standard sustainable design requirements for new developments and require net zero ready private buildings by 2030 or sooner.

Action: Require net zero emissions for construction of City-owned buildings.

Action: Support building owners to use low-carbon materials for new construction.

For existing buildings...

Action: Set requirements to report on and limit greenhouse gas emissions from homes and buildings.

Action: Support early action to make retrofits that improve efficiency, comfort and the switch off fossil fuel heating easier and more affordable for home and building owners.

Action: Support the creation of jobs in the building sector and build industry capacity to enable rapid market transformation to scale up zero emission retrofits for existing buildings.



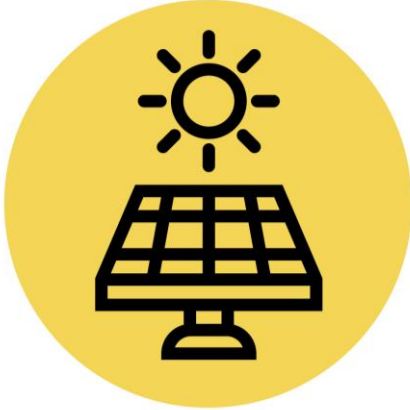
Energy

As a city, we use a lot of energy – particularly in our buildings (see above). But we currently generate very little of our own energy in Toronto, as most energy comes from the provincial electricity grid.

To meet our 2030 reduction targets and achieve net zero by 2050 or sooner, we need to focus on expanding local renewable energy generation and encouraging climate-informed decision making. We also need to advocate for low-carbon provincial energy policies.



The actions we need to take to reduce our energy-related greenhouse gas emissions are:



Action: Produce renewable natural gas from waste.

Action: Increase installation of rooftop and ground mount solar panels.

Action: Support district energy system owners and developers with the implementation of low-carbon energy solutions.

Action: Accelerate investment in energy storage.

Action: Work with other levels of government to ensure low-carbon and resilient energy policies to enable local solutions.

Transportation

Transportation methods and activities account for 36 per cent of local greenhouse gas emissions; burning fossil fuels for our cars, trucks, ships, trains and planes creates greenhouse gases. 73 per cent of transportation emissions come from personal vehicles.

To meet our 2030 reduction targets and achieve net zero by 2050 or sooner, we need to focus on facilitating rapid uptake of electric vehicles while encouraging active transportation and public transit use.

The actions we need to take to reduce our transportation greenhouse gas emissions are:

Action: Increase uptake of electric vehicles through incentives.

Action: Increase electric vehicle charging in public spaces and on private property.

Action: Expand usage of and support for low-emissions freight and last mile delivery strategies to move goods.

Action: Expand bike and pedestrian infrastructure and priority zones.

Action: Expand public transit and accelerate implementation of bus rapid transit.

Action: Continue electrification of the TTC fleet.



Sustainable consumption and waste

Waste accounts for 9 per cent of local greenhouse gas emissions. Most greenhouse gas emissions from waste come from landfills, with a small portion from wastewater treatment processes.

To meet our 2030 reduction targets and achieve net zero by 2050 or sooner, we need to focus on advancing toward a zero-waste, circular economy. A circular economy will focus on product longevity, renewability, reuse and repair instead of just taking a resource, making a product and then throwing that product away.

The actions we need to take to reduce our waste greenhouse gas emissions are:



Action: Conduct a city-wide consumption-based emissions inventory and set a reduction target.

Action: Reduce city-wide material consumption and increase circularity (i.e., efficient re-use and recovery of resources).

Action: Continue outreach and engagement on city-wide waste reduction and diversion, with a focus on food and organic waste.

Greenspace

Getting to net zero also requires consideration of opportunities to remove carbon from the atmosphere. Greenspaces, including trees, parks and ravines, provide natural carbon removal and help create a liveable and healthy city.

To meet our 2030 reduction targets and achieve net zero by 2050 or sooner, we need to also implement the following nature-based solutions:

Action: Increase tree canopy cover, biodiversity and enhance greenspaces.

Action: Achieve equitable distribution of the urban forest, increasing tree canopy where it is most needed.



Decision-making and equitable engagement

Getting to net zero needs informed decision-making and community-wide involvement. In addition to targeting the largest sources of greenhouse gas emissions and enhancing greenspaces in our city, we need to focus on making climate informed decisions and engaging with our local community – including with Indigenous communities, equity-seeking groups and youth.

The actions we need to take include:



Action: Corporate-wide adoption of a climate lens for all new City operating programs and capital projects to incorporate climate considerations in the municipal decision-making process.

Action: Focus outreach on equity-seeking groups to lead and implement local climate action.

Action: Work with Indigenous communities to share knowledge.

Action: Focus on youth engagement and leadership.

Action: Establish a Climate Advisory Group.

Help us get to net zero!

We need your help to prioritize which climate actions should be implemented in the short-term to make sure we meet our 2030 goals and beyond. Effectively reducing our emissions and reaching net zero means leaving nobody behind—so while you're considering which climate actions should be implemented first, also give some thought to what these actions might look like in your community while we travel the path to net zero together.

Complete the survey at [TransformTO.ca](https://www.toronto.ca/transformto) or host your own climate conversation using the questions and materials provided in the Discussion Guide.



Proposed TransformTO Net Zero Strategy actions - summary

Buildings

- Continue to implement the Toronto Green Standard sustainable design requirements for new developments and require net zero ready private buildings by 2030 or sooner.
- Require net zero emissions for construction of City-owned buildings.
- Support building owners to use low-carbon materials for new construction.
- Set requirements to report on and limit greenhouse gas emissions from homes and buildings.
- Support early action to make retrofits that improve efficiency, comfort and the switch off fossil fuel heating easier and more affordable for home and building owners.
- Support the creation of jobs in the building sector and build industry capacity to enable rapid market transformation to scale up zero emission retrofits for existing buildings.

Energy

- Produce renewable natural gas from waste.
- Increase installation of rooftop and ground mount solar panels.
- Support district energy system owners and developers with the implementation of low-carbon energy solutions.
- Accelerate investment in energy storage.
- Work with other levels of government to ensure low-carbon and resilient energy policies to enable local solutions.

Transportation

- Increase uptake of electric vehicles through incentives.
- Increase electric vehicle charging in public spaces and on private property.
- Expand usage of and support for low-emissions freight and last mile delivery strategies to move goods.
- Expand bike and pedestrian infrastructure and priority zones.
- Expand public transit and accelerate implementation of bus rapid transit.
- Continue electrification of the TTC fleet.

Sustainable consumption and waste

- Conduct a city-wide consumption-based emissions inventory and set a reduction target.
- Reduce city-wide material consumption and increase circularity (i.e., efficient re-use and recovery of resources).
- Continue outreach and engagement on city-wide waste reduction and diversion, with a focus on food and organic waste.

Greenspace

- Increase tree canopy cover, biodiversity and enhance greenspaces.
- Achieve equitable distribution of the urban forest, increasing tree canopy where it is most needed.

Decision-making and equitable engagement

- Corporate-wide adoption of a climate lens for all new City operating programs and capital projects to incorporate climate considerations in the municipal decision-making process.
- Focus outreach on equity-seeking groups to lead and implement local climate action.
- Work with Indigenous communities to share knowledge.
- Focus on youth engagement and leadership.
- Establish a Climate Advisory Group.



Terminology and definitions

Climate advisory group – This group would include individuals from a range of backgrounds to advise on the TransformTO strategy and ensure that the City's actions are equitable and reflect the priorities and interests of residents.

Climate lens – A 'climate lens' would incorporate considerations of climate impacts into all major City of Toronto decisions, including financial decisions. This would help ensure City investments, policies and programs are supporting our climate change goals.

Consumption-based emissions inventory – The City would study and set a limit for the greenhouse gas emissions from the consumption of goods and services that are produced elsewhere, shipped, then used and disposed of by Torontonians.

District energy – A low-carbon district energy system uses energy from renewable sources, such as heat recovery, geo-exchange and solar thermal, to heat and cool multiple buildings in an area to reduce emissions and increase efficiency.

Energy storage – Provides the ability to store renewable energy and use it when needed.

Low-carbon materials – Studies show that emissions embodied in construction materials can account for up to 80 per cent of a large buildings' total emissions from extraction to decommissioning. Using low-carbon materials and construction practices can have a big impact.

Toronto Green Standard (TGS) – Toronto's sustainable design requirements for new private and city-owned developments.

Zero emission retrofits – Making changes to existing buildings to reduce greenhouse gas emissions. We will support workforce development and training to ensure a strong and sufficiently numbered workforce is ready to meet the new demand for deep emissions retrofits. Partner with trades unions, training organizations, industry associations to enhance existing trainings and support development of new ones.

