



**TransformTO**

Climate Action for a  
Healthy, Equitable, and  
Prosperous Toronto

# 2050 Pathway to a Low-Carbon Toronto

## Report 2: Highlights of the City of Toronto Staff Report

April 2017



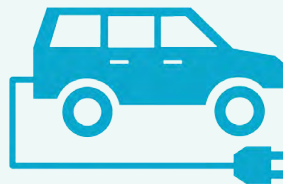
Toronto shares an ambitious goal with international cities such as London, Berlin, and Washington D.C. – reduce greenhouse gas (GHG) emissions by 80% by 2050, compared to 1990 levels. TransformTO shows that Toronto can achieve this target using existing technology while creating many community benefits. But we must take bold action and we need to act quickly. Decisions that the City makes in the next five years will determine Toronto’s carbon emissions for up to a century.

Toronto is already a low-carbon leader on many fronts, including our land use and transit planning, green building standards, and our waste management strategy. However, even with these elements in place, we will still miss our 2050 target by 8.7 million tonnes of GHG emissions our analysis found. To close the gap, we must step up the pace of our current work, starting with the **Report 1 short-term strategies approved by City Council** in 2016. We also need to launch three new acceleration campaigns to mobilize new resources and support broad community benefits:

**“Decisions that the City makes in the next five years will determine Toronto’s carbon emissions for up to a century.”**



**1. Mobilize Low-Carbon  
Neighbourhoods**



**2. Prepare for  
Electric Mobility**



**3. Develop the Workforce for  
High-Performance Buildings**

## A NEW APPROACH

**“Cities that collaborate with other actors are able to deliver twice as many climate actions.”**

– C40 Cities/ARUP

The most successful low-carbon cities take a collaborative approach, driving climate action along with other benefits. That means coordinating efforts internally while partnering with communities, business, and institutions to identify local opportunities and tap expertise and resources. TransformTO proposes that climate actions be designed with and for Toronto’s diverse communities to maximize benefits and mobilize the necessary support to achieve our mutual goals.



# KEY RECOMMENDATIONS

## Set Long-Term Goals

- 65% reduction in community-wide GHG emissions by 2030 from 1990 levels as an interim target.
- 100% of new buildings are built to be near zero GHG emissions by 2030.
- 100% of existing buildings are retrofitted where technically feasible to achieve an average of 40% energy performance improvement by 2050.
- 75% of energy comes from renewable or low-carbon sources by 2050.
- 30% of total floor space across Toronto will be connected to low-carbon heating and cooling energy by 2050.
- 100% of transportation uses low-carbon energy sources and walking and cycling accounts for 75% of trips under 5 km by 2050.
- 95% of waste is diverted away from landfills by 2050.

## Lead by Example

- 100% of new City-owned facilities will be near zero GHG emissions by 2026.
- 100% of existing City-owned buildings will be retrofitted achieving an average 40% energy savings by 2040.
- 24MW installed capacity of renewable energy on City property by 2020.
- 45% of City-owned fleet will be low-carbon vehicles by 2030.
- Net zero waste achieved at all City-owned facilities by 2030.
- 1.5 million gigajoule (GJ) of energy generated from biogas by 2030.
- City of Toronto is designated one of Canada's Top 100 Green Employers by 2020.

## Make the Shift

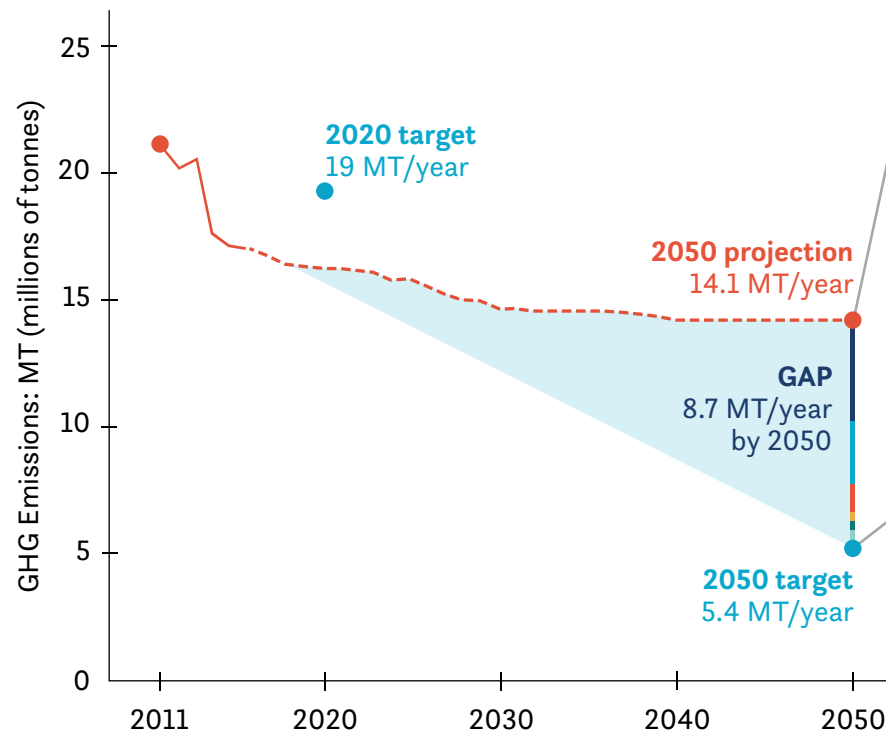
- Adopt a multi-benefit approach considering social equity, affordability, poverty reduction, local jobs, public health and resilient communities and infrastructure.
- Integrate TransformTO long-term goals into Toronto's Resilience Strategy and all other strategy policies and programs and continue partnering with the City's Agencies and Corporations.
- Launch three new acceleration campaigns to maximize the community benefit potential of low-carbon actions.
- Monitor progress and report to City Council through a performance update every two years and a comprehensive project report and implementation plan every four years.
- Explore Consumption-based emissions accounting in the Toronto context to better understand the community's carbon foot print and report back to Council.

Please see the **City of Toronto Staff Report** for the full recommendations.

# BUSINESS-AS-PLANNED WILL MISS THE 2050 TARGET

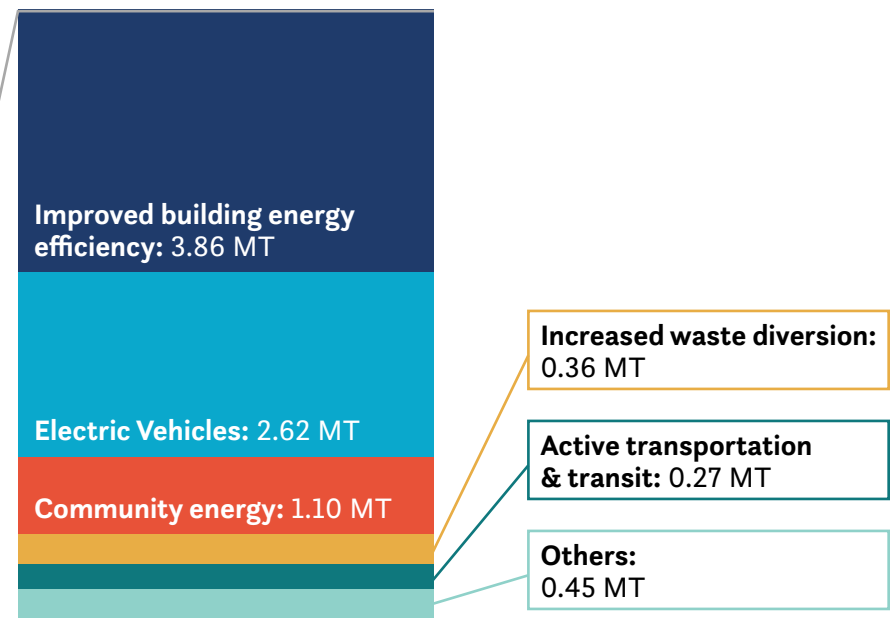
*Toronto will meet its interim target of 30 percent GHG reduction by 2020, but current action won't achieve our 2050 target. In fact we will have a gap of 8.7 million tonnes of GHG emissions under the business-as-planned scenario.*

## Low-carbon actions can close the 8.7 MT gap



## TransformTO Low-Carbon Scenario

We can close the gap and meet our 2050 target by applying a suite of 36 actions, from generating biogas from wastewater, to electrifying transit, to installing electric heat pumps for space heating. It's an integrated model, so we can't achieve the final result by "cherry-picking" just a few actions, but there are several high-impact approaches:



Achieving Toronto's 2050 low-carbon goal requires three things:

- Implementing of existing low-carbon plans and policies;
- Funding of the TransformTO short-term strategies adopted by City Council in 2016;
- Initiating three new acceleration campaigns.

# ANALYSIS SHOWS CLEAR CO-BENEFITS

## Accelerated Action is Needed

- After the year 2030, we would have to construct new buildings in a way that drastically reduces their energy need and virtually eliminates their carbon emissions.
- By 2050, all transportation – passenger, transit, and freight, would have to be virtually fossil fuel-free.
- All existing buildings would be candidates for retrofits that would achieve an average of 40% increase in energy efficiency.
- Waste would be dramatically reduced, with only 5% of Toronto's waste ending up in landfills by 2050.

## ... But Will Bring Many Benefits

We know from cities around the world that low-carbon actions have significant potential to drive community benefits. The adoption of electric vehicle technology would drastically reduce the health impacts of air pollution in Toronto. A campaign to improve the energy performance and comfort of Toronto's buildings would create good local jobs. It would also divert billions of dollars in annual out-of-province energy spending back into the local economy. A focus on social housing retrofits would support much-needed renewal in that sector and improve living conditions for some of Toronto's most vulnerable residents. Increased active transportation (walking and cycling) would contribute significantly to the level of daily activity among residents, stemming the growth of chronic health conditions.

**“Improving energy efficiency diverts billions in annual out-of-province spending back into Toronto's economy.”**

Our analysis of low-carbon measures from the perspective of energy-related costs shows that up to 67% of the emissions reduction opportunities create positive economic impacts within the 2050 timeframe. Broader cost-benefit analysis will be needed to more fully understand the impact of proposed actions in areas such as business productivity and competitiveness, public health cost savings, resilience, and quality of life.





## CAMPAIGN 1: MOBILIZE LOW-CARBON NEIGHBOURHOODS

To become a low-carbon city, Toronto needs to engage its neighbourhoods. Crucial actions such as community energy planning, home retrofits, transit expansion and supporting the shift to cycling and walking won't be successful without input and support from our neighbourhoods, since this is where the implementation of the City's climate plan is occurring.

That's why TransformTO proposes to create a campaign that taps into the significant resources and creativity in our diverse neighbourhoods to create flexible, innovative low-carbon solutions that help people address local concerns. This approach will leverage local networks that are critical to Toronto's resilience and equity goals, aligning with the Toronto Strong Neighbourhoods Strategy.

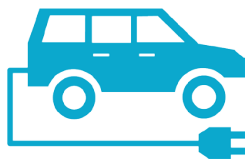
Key proposed objectives\* of this campaign are:

- Advance best practices in neighbourhood-based engagement that tune in to local community concerns and aspirations;
- Cultivate local leaders who can support climate actions that provide benefits to their communities;
- Identify how TransformTO initiatives could improve affordability and support the City's poverty reduction and social development strategies;
- Explore how neighbourhood-scale TransformTO initiatives could enhance community resilience; take action with 3 to 5 quick start projects.

\*Please see the [City of Toronto Staff Report](#) for the full recommendations.







## CAMPAIGN 2: PREPARE FOR ELECTRIC MOBILITY

Switching passenger, freight and transit vehicles from gasoline and diesel to electric and other low-carbon fuels is a central element of the TransformTO low-carbon scenario. It can also significantly reduce local air pollutants that affect the health of Toronto residents according to studies from Toronto Public Health.

However the conversion also represents major challenges to electricity grid management like increased peak demand and the need to upgrade local transmission equipment. It also has the potential to conflict with the goals of affordable access to mobility and integration with public transit. This is why electric vehicle adoption must be managed to ensure maximum community benefit.

Key proposed objectives\* of this campaign are:

- Co-develop, with key stakeholders, an electric vehicle transition strategy for Toronto;
- Develop an electric vehicle charging infrastructure strategy.
- Identify best practices in electric vehicle preparedness planning in major North American cities to ensure equitable outcomes for all residents;
- Prioritize electrical vehicle approaches that maximize the community benefit, for example by connecting neighbourhoods to local transit.
- Launch quick start projects to test the implications of electric vehicle use for the local grid.
- Explore how electric vehicles could enhance community resilience.

\*Please see the [City of Toronto Staff Report](#) for the full recommendations.







## CAMPAIGN 3: DEVELOP THE WORKFORCE FOR HIGH-PERFORMANCE BUILDINGS

Over half of Toronto's GHG emissions come from buildings, so increasing their energy efficiency is key in achieving our 2050 goal. Higher standards for new buildings will be required along with major retrofits for existing buildings. Achieving the scale and pace of retrofit envisioned by the technical model will require significant workforce mobilization and training, generating an estimated 80,000 person years of local employment between now and 2050.

Retrofit activity goes hand-in-hand with social housing renewal and can offer important health benefits by improving indoor environments, while also creating potential jobs for residents.

Key proposed objectives\* of this campaign are:

- Create a buildings energy performance strategy that sets specific targets to progressively improve energy efficiency;
- Develop a workforce strategy in consultation with key stakeholder groups to create a highly skilled workforce to support high-performance buildings while offering opportunities to people who face barriers to employment;
- Support energy retrofit approaches that create multiple community benefits that are City priorities such as social housing renewal;
- Improve the resilience of Toronto's building stock to extreme weather events and power disruptions.

\*Please see the [City of Toronto Staff Report](#) for the full recommendations.





# ADDITIONAL ACTIONS



## Adopting Renewable and Community Energy Approaches



Toronto is a leader in low-carbon energy system innovation, policy, and net-zero community energy planning, but the pace of effort needs to be increased. Proposed accelerated actions\* for this area are:

- Advance, in Q3 2017, a report to Parks and Environment Committee recommending next steps in the development of an energy storage strategy for the City of Toronto.
- Advance, in Q2 2017, a report to update Executive Council on the development of a partnership to design, build and deliver a large-scale district energy system in downtown Toronto.

\*Please see the [City of Toronto Staff Report](#) for the full recommendations.



## Towards Virtual Waste Elimination



Photo by Havard Gould/CBC

In July 2016, City Council adopted a new Long Term Waste Management Strategy with a 70% waste diversion goal for the year 2026, and an aspirational goal of zero waste. A diversion rate of 95% is key in reaching Toronto's 2050 climate goal.

To help out, Solid Waste Management is launching a new Waste Diversion Community Investment Program in 2017 in partnership with Live Green Toronto.

# PICKING UP THE PACE

*From London to Washington D.C., leading cities are pushing for emissions reduction of 80% by 2050 while also driving broad community benefits. Toronto continues to be a leader among its city peers, but now is the time to pick up the pace by:*

1

Implementing planned actions like Toronto's long-term waste reduction strategy.

2

Starting work immediately on approved Report 1 short-term strategies.

3

Investing in three acceleration campaigns while providing a wide range of community benefits.

Reaching Toronto's 2050 target is achievable with the technology we already have. It's now up to the City to work with residents and other stakeholders to get on the pathway to a low-carbon city.

## Financial Implications

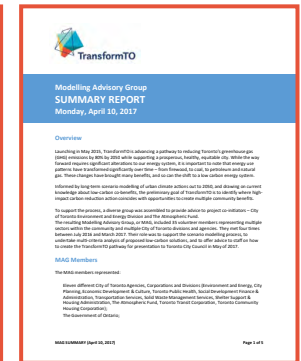
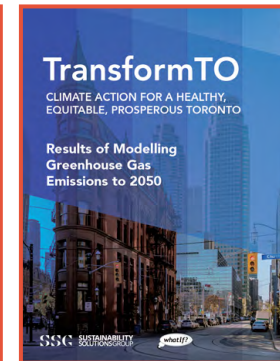
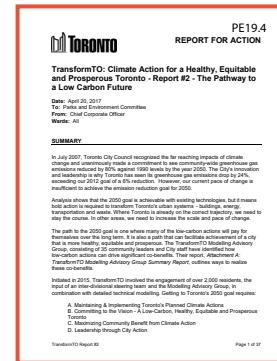
In December 2016 City Council approved immediate strategies for getting Toronto on the path to the 80 x 50 goal. The estimated annual cost for these strategies for 2018 to 2020 is \$8 million. Funding will be considered by City Council as part of the 2018 Budget Process.





# NEXT STEPS

Read the complete findings and recommendations in the staff report and associated background reports [here](#):

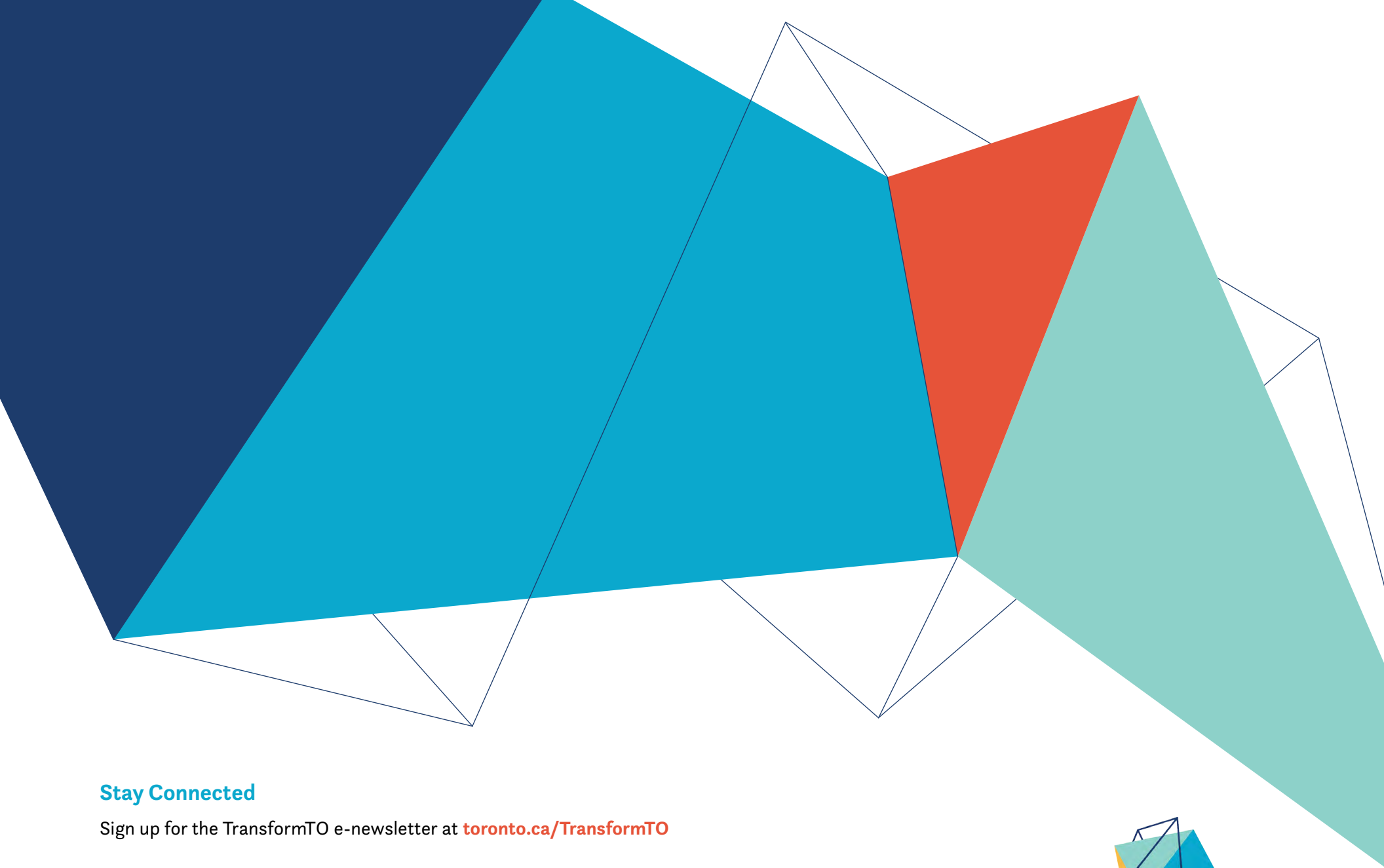


MAY  
4

The City of Toronto Parks and Environment Committee unanimously approved the TransformTO recommendations on Thursday, May 4, with minor amendments – see [meeting minutes](#).

JULY  
4

Toronto City Council unanimously adopted the TransformTO Climate Action for a Healthy, Equitable, Prosperous Toronto on Tuesday, July 4 - see [meeting minutes](#).



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