



REPORT FOR ACTION

Toronto Green Standard Review and Update

Date: September 28, 2017

To: Planning and Growth Management Committee

From: Acting Chief Planner and Executive Director, City Planning Division

Wards: All

SUMMARY

This report presents the updated Toronto Green Standard Version 3 which proposes a four-tiered framework for development to achieve near-zero greenhouse gas emissions by 2030 in support of Council's adoption of TransformTO and goal to reduce community-wide greenhouse gas emissions by 80% of 1990 levels by 2050.

The Toronto Green Standard is a set of environmental performance measures that facilitate sustainable new development in Toronto and is a key component of the City's commitment to the achievement of a healthy and prosperous City. The Toronto Green Standard plays a critical role in transforming and influencing the market and provincial regulation by consistently raising the bar for performance. It has been responsible for developing capacity amongst developers and demonstrating that the industry can and will build higher performance buildings.

The Toronto Green Standard Version 3 is proposed to come into effect on May 1, 2018. Key changes include:

- new requirements for Tier 1 including an option to use absolute performance targets for energy;
- new core measures for Tier 2 including using absolute performance targets for energy, solar readiness, connection to district energy, stormwater retention and a resilience checklist;
- new Tier 3 performance measures;
- new Tier 4 absolute performance targets for energy; and
- a separate standard for City agency, corporation and division-owned non-residential developments.

The recommended revised and updated Toronto Green Standard reflects consultation with a number of stakeholders. An Advisory Committee and a workshop with energy modellers provided advice with respect to the development of the Zero Emissions Buildings Framework. Industry stakeholders, including the Building Industry and Land Development Association (BILD), provided valuable input into the preparation of the Toronto Green Standard Version 3 through workshops and meetings. The Toronto

Green Standard Version 3 reflects the updated environmental policies of the Official Plan, incorporates improvements resulting from direct experiences in applying the Toronto Green Standard and reflects new and updated City guidelines, policies and regulations.

This report was prepared in consultation with Toronto Building, Environment and Energy, Parks, Forestry and Recreation, Toronto Water, Transportation Services, Solid Waste, Legal Services and Corporate Finance Divisions as well as the Chief Resilience Officer.

RECOMMENDATIONS

The Acting Chief Planner and Executive Director, City Planning Division recommends that:

1. City Council adopt the Toronto Green Standard Version 3 performance measures as shown in Attachment 2: Mid to High-Rise Residential and All Non-Residential; Attachment 3: Low-Rise Residential; and Attachment 4: City Agency, Corporation and Division-Owned Facilities (Non-Residential Uses), to be applied to new development applications under the Planning Act commencing May 1, 2018.

FINANCIAL IMPACT

The Deputy City Manager & Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

On July 4, 5, 6 and 7, 2017 City Council approved the TransformTO report recommending seven long-term goals to realize a low-carbon Toronto in 2050 that achieves an 80 percent reduction in greenhouse gas emissions against 1990 levels, including:

... 100 percent of new buildings are designed and built to be near zero greenhouse gas emissions by 2030; and ... design and build all new City-owned facilities to be near zero greenhouse gas emissions by 2026.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.PE19.4>

On March 28, 2017, City Council directed that the City's agencies, corporations and divisions apply the Toronto Green Standard Tier 2 Core performance measures to all new buildings and additions greater than 100 square metres gross floor area (GFA), where technically practical and financially feasible, commencing in 2018 with the ten year Capital Budget and Plan; and to further aim to achieve a net-zero energy/emissions target for all new buildings and additions greater than 100 square metres GFA where technically practical and financially feasible commencing in 2018, with the ten year capital Budget and Plan within all procurement processes. Council

also requested a report on the current practices and feasibility of applying the Toronto Green Standard for all City capital projects that do not require site plan approval.
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2017.PG18.3>

At its July 2013 meeting, City Council adopted the revised Toronto Green Standard Tier 1 and Tier 2 performance measures and directed that minimum Energy Performance standards for Mid-to-High Rise Residential and Non Residential be revised to design building(s) to exceed the energy efficiency requirements of the current OBC by 15 percent for Tier 1 and to achieve at least 25 percent energy efficiency improvement for Tier 2. Council also directed the development of a comprehensive planning approach to address sustainable energy issues posed by development taking into account: ... Council's GHG reduction targets for 2020 and 2050 and global best practices in energy efficiency standards for buildings, including the use of Energy Use Intensity-based targets.
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.PG25.10>

On October 26 and 27, 2009, City Council adopted the two-tier set of performance measures associated with the Toronto Green Standard to be applied to all applications under the Planning Act, with Tier 1 as mandatory and Tier 2 voluntary stretch targets with a 20% development charge refund.
<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2009.PG32.3>

COMMENTS

The Toronto Green Standard was introduced as a voluntary measure in 2006, became mandatory in 2010 and was revised in 2013 (Toronto Green Standard Version 2). The Toronto Green Standard includes Tier 1 performance measures, required through the planning process and a voluntary Tier 2 standard of higher performance measures which is incented through a development charge refund to eligible applicants. Tier 2 is comprised of core and optional performance measures.

The Toronto Green Standard has proven to be an effective tool to ensure new development is more sustainable and resilient and on target to achieve the City's greenhouse gas (GHG) emission reduction targets. Over 1,300 developments have been required to meet Tier 1 and 20 projects have been certified to Tier 2. Collectively these projects could achieve annual GHG emission reductions of an estimated 115,205 tonnes of CO₂e (carbon dioxide equivalent) compared to projects constructed to the Ontario Building Code (OBC).

Perhaps most importantly the Toronto Green Standard has served as an important market transformation tool, leading consecutive progressive changes to the energy efficiency requirements in the OBC over the last 10 years and most recently the basis for many of the proposed changes (as identified in Phase Two Change Proposal for the Next Edition of the Building Code) related to implementation of the Province's Climate Change Action Plan.

Additional information on the Toronto Green Standard and profiled Tier 2 certified projects can be accessed at: www.toronto.ca/greendevlopment.

Changes to the Toronto Green Standard

The proposed Toronto Green Standard Version 3 has been revised and updated to:

- reflect Council's goal of reducing greenhouse gas (GHG) emissions;
- new Official Plan (OP) policies and new and updated City guidelines; and
- regulations and improvements resulting from direct experiences in applying the Standard.

The most significant change in the proposed Toronto Green Standard Version 3 is the restructuring of the Energy and GHG Emissions category to introduce a four- tiered framework to provide a clear path to achieve near zero GHG emissions buildings by 2030. This is supported by providing the option to use the absolute performance targets for energy efficiency in Tier 1; requiring Tier 2 applicants to apply absolute performance targets for energy; and introducing two new tiers, Tier 3 and Tier 4, with absolute performance targets for energy for each tier. Absolute performance targets are Energy Use Intensity (TEUI), Thermal Demand Intensity (TEDI - heating demand) and Greenhouse Gas Intensity (GHGI) and are described in more detail in the section on Zero Emissions Buildings Framework.

The updated Toronto Green Standard is included as the following attachments to this report: Attachment 2 - Mid to High-Rise Residential and All Non-Residential; Attachment 3 - Low-Rise Residential; and Attachment 4 - City agency, corporation and division-owned facilities (Non-Residential Uses). Changes by tier are summarized below:

Proposed Tier 1 Changes

Tier 1 measures are required through the planning process.

Energy and GHG Emissions:

Mid to high rise residential and all non-residential development:

- 15% improvement above the 2017 OBC (enhanced); or
- new option to meet the Tier 1 absolute performance targets by building type, as identified in Table1 of Attachment 2.

Low-rise residential buildings with greater than five dwelling units:

- new requirement to register for the Energy Star for New Homes, version 17.

Air Quality:

- new requirement of 15% reduction of single occupancy trips through multi-modal infrastructure and Transportation Demand Management; and
- new requirement that 20% of parking spaces to be fully charged electric vehicle spaces.

Water Balance, Quality and Efficiency:

- no changes are proposed; the performance measures may be amended when the Wet Weather Flow Management Guidelines are updated, anticipated in 2018.

Ecology:

- enhanced requirement that planting within natural heritage and ravine areas increase from 50% to 100% native plant material;
- new requirement for a stewardship plan where setbacks are required;
- change formula for provision of soil for tree planting (enhanced);
- enhanced requirements to treat additional areas to avert potential fly-through collisions (i.e. where clear glass corners meet) for birds;
- new requirement that balcony glass for low-rise residential development greater than five dwelling units be bird-friendly; and
- enhanced requirement that exterior lighting fixtures must be 'Dark Sky' compliant, meaning fixtures certified by the International Dark Sky Association to minimize light pollution.

Solid Waste:

- new requirement that all garbage is compacted consistent with the current solid waste guidelines for new development.

Proposed Tier 2 Changes

Tier 2 is a voluntary advanced level of site and buildings performance accompanied by the development charges refund incentive as applicable.

Energy and GHG Emissions:

Mid to high rise residential and all non-residential development:

- new core measure to design the building to meet or exceed the TEUI, TEDI and GHI targets as provided in Table 1 of Attachment 2;
- new core measures include: solar readiness, district energy connection (where available), benchmarking and reporting, best practice commissioning, air tightness testing and the completion of a resilience checklist; and
- new optional measures include: additional back-up power and an increase in the requirement for solar PV or solar thermal for private buildings.

Low rise residential buildings greater than five dwelling units:

- enhanced core measure to certify and label projects to Energy Star for New Homes, version 17 (NRCan) standards.

If and when the proposed Ontario Building Code changes come into effect the following performance measures may be adjusted to reference OBC standards: solar readiness; airtightness testing; building commissioning and sub-metering and electric vehicle charging requirements for multi-unit residential buildings (MURBs).

Air Quality:

- new optional measure for provision of additional publicly accessible bicycle parking spaces or provision of a publicly accessible bicycle parking shelter; and

- new optional measure for enhanced transportation demand management and electric vehicle parking spaces.

Water Balance, Quality and Efficiency:

- new core measure of 10 mm storm water retention (previously an optional measure); and
- enhanced core requirements include increased water efficiency for fixtures from 30% to 40% and increased water efficiency for irrigation from 50% to 60%.

Ecology:

- new optional measures to enhance biodiversity, tree protection and tree growth and support the development of pollinator habitat at-grade and on green roofs.

Solid Waste:

- new core measure for 75% reduction in construction waste to landfill (previously this measure was optional); and
- new core measure for dedicated areas for the collection of household hazardous (was optional in Version 2).

Proposed New Tier 3 Performance Measures

Energy and GHG Emissions:

Mid to high rise residential and all non-residential development:

- design the building to meet or exceed Tier 3 absolute performance targets as set out in Table 2 Attachment 2.

Low-rise residential buildings with greater than 5 dwelling units:

- design and construct the building to be Net Zero ready in accordance with the Canadian Home Builders' Association (CHBA) Net Zero Home Labelling Program.

Water Balance, Quality and Efficiency:

- stormwater runoff retention of 25 mm of rainfall; and
- installation of water efficient fixtures to achieve at least 50% reduction in potable water consumption.

Solid Waste

- at least 95% of construction waste be diverted from landfill.

Proposed New Tier 4 Performance Measures

Energy and GHG Emissions:

Mid to high rise residential and all non-residential development:

- design the building to meet or exceed Tier 4 absolute performance targets as set out in Table 2 Attachment 2.

Low-rise residential buildings with greater than 5 dwelling units:

- design and construct the building in accordance with the CHBA Net Zero Home Labelling Program or Passive House.

Separate City Agency, Corporation and Division Owned Development Standard

The revised Toronto Green Standard Version 3 includes a separate standard for City agency, corporation and division (ACD)-owned non-residential facilities (see Attachment 4) which consolidates Tier 1 and Tier 2 requirements. In March 2017 Council directed that City (ACD)-owned facilities apply Toronto Green Standard Tier 2 Core performance measures (in addition to Tier 1 measures). Toronto Green Standard Version 3 consolidates the Tier 1 performance measures specific to City (ACD)-owned facilities (renewable energy, green roofs, bird friendly); and Tier 2 Core performance measures into one standard for non-residential City (ACD)-owned facilities. This standard includes the proposed new Tier 2 Core requirements as described above, as well as new measures requiring city facilities to provide additional publicly accessible bicycle parking where within close proximity to transit, cool roofs on roof areas where a green roof is not provided, biodiverse green roofs to support pollinators and 72-hour back up power generation. New City ACDs residential development will follow the Tier 1 and Tier 2 Core requirements set out in the applicable residential standard (Attachments 2 and 3).

Given their wide diversity of form, use and specific energy use characteristics (from childcare centers, recreation centres, data centres, police, fire and ambulance stations) a set of TEUI, TEDI and GHGI targets will be developed by the Chief Corporate Officer in consultation with City Planning and appropriate City agencies, corporations and divisions to assist in delivering on Council's direction to design and build all new City-owned facilities to be near zero greenhouse gas emissions by 2026.

Review and Consultation for Toronto Green Standard Version 3

In preparation of the proposed Toronto Green Standard Version 3, studies were undertaken on Global Best Practices, a Zero Emissions Buildings Framework and a comparison of the Toronto Green Standard to LEED v4.

Global Best Practices in Energy Efficiency Standards

A review of global best practices in energy efficiency standards for buildings was undertaken in response to the 2013 Council direction to undertake a comprehensive approach to sustainable energy issues posed by development. The review involved a detailed assessment of twelve mandatory and seven voluntary standards, policies or programs from across Europe, North America and Canada. The selected best practices and their qualities that lend to improving energy efficiency standards in Toronto are outlined in the Global Best Practices in Energy Efficiency Policy study report.

<https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Developing%20Toronto/Files/pdf/TGS/Global%20Best%20Practices%20in%20Energy%20Efficiency%20Policy%20July%2016%202015.pdf>

Zero Emissions Buildings Framework

Building on the Global Best Practices Review the Zero Emissions Buildings Framework study was undertaken in partnership with The Atmospheric Fund (TAF). The Framework identifies a pathway to near-zero emissions building construction by 2030 in order to

help the City meet its 2050 GHG reduction goals and provide the development industry with a clear understanding of future requirements. A 'near zero emissions' building is one where all measures have been taken to significantly decrease energy loads, apply passive design principles, improve efficiency of mechanical systems and connect to low carbon fuel sources.

Development of the Zero Emissions Buildings Framework involved the use of modelling and analysis to devise building performance targets for the five most common building types being constructed in Toronto including: high rise multi-family residential; mid-rise residential; commercial office; commercial retail and mixed use residential high rise.

The study recommended a shift to the application of absolute performance targets using Energy Use Intensity (TEUI), Thermal Demand Intensity (TEDI - heating demand) and Greenhouse Gas Intensity (GHGI) targets by building type. These performance targets help to reduce the gap between building design and actual energy use and GHG emissions in operations. The TEUI, TEDI and GHGI absolute performance targets proposed for Tier 2+ developments is a change from the current Toronto Green Standard approach of submitting an energy model demonstrating performance in relation to a 'reference building' (for example, Tier 2 as 25% above OBC).

To get to near-zero emissions a four-tier set of targets was proposed. What this means is that in 2022 Tier 2 will become the required Tier 1, in 2026 Tier 3 will become Tier 1 and in 2030 Tier 4 will become Tier 1 to provide a clear and transparent pathway for the buildings industry to achieve the 'near zero emissions' goal by 2030. This would be dependent upon Council approval of an updated Toronto Green Standard every 4 years and would apply to applications submitted after the respective implementation date.

This direction aligns with the efforts and commitments of the City of Vancouver, which has recently implemented their Zero Emissions Buildings Plan and the Province of British Columbia which has adopted the BC Energy Step Code. It also aligns with the Canada Green Building Council Zero Carbon Building Standard released in June 2017. These and other actions being taken across the country contribute to a cross-Canadian movement to improve building codes and performance standards using similar metrics. These performance metrics have been shown to be successful in Europe and in recent updates to North American codes in reducing building energy use and greenhouse gas emissions.

The Zero Emissions Buildings Framework study undertook a capital cost analysis for achieving the recommended performance targets summarized in Table 1. Commercial retail construction cost premiums are higher because cost per floor area is typically the lowest among building types resulting in performance measures having a higher impact on overall construction costs.

Table 1. Construction cost premiums for proposed Tier 1-Tier 4 energy targets

Performance level	Overall % change in Construction costs over OBC (SB-10 2017)	
	Residential and commercial office	Commercial retail
Tier 1	0.5- 2.3%	0.7%
Tier 2	2.1-3.5%*	6.5%
Tier 3	3.0-6.0%	8.2%
Tier 4	3.6-4.9%	16.9%.

Buildings Resilience

As part of the work on the Zero Emissions Building Framework, the four proposed tiers were modelled for their impact on resilience to power interruptions under winter conditions during a 72 hour black-out and a 2 week prolonged power outage during summer or winter. The outputs demonstrated that buildings constructed with improved envelope performance are able to allow people to shelter in place for longer periods of time than in conventional buildings. For example, a multi-unit residential building built to the proposed Toronto Green Standard Version 3 Tier 2 would maintain a temperature of 7.6 degrees C over the 2 week period compared to a temperature of 1 degree C of a building built to the 2017 OBC, or 18.3 degrees for Tier 4.

This work is presented in the following study report Zero Emissions Buildings Framework available at:

<https://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Developing%20Toronto/Files/pdf/TGS/Zero%20Emissions%20Buildings%20Framework%20Report.pdf>

Toronto Green Standard LEED v4 Comparison

A comparison of the Toronto Green Standard V2 to LEED v4 was undertaken in order to align the Toronto Green Standard with the most recent LEED green building standard. The review included comparison to the new Canada Green Building Council Zero Carbon Standard, Toronto Zero Emissions Buildings Framework, the Well Building Standard and the Living Building Challenge. Suggested revisions have been incorporated in the revised performance measures. The work also involved development of a new Toronto LEED supplement which sets out equivalent Toronto Green Standard/LEED performance measures where appropriate, making it easier for Tier 2+ projects to meet LEED certification.

Consultation

Phase 1

Initial consultation focussed on the Energy and GHG Emissions performance measures to address Council's GHG reduction targets. This involved internal and external advisory committees and industry consultation.

The external Advisory Committee included a cross section of industry experts shown on Attachment 1. The Committee provided input on the development of the Zero Emissions Buildings Framework and vetted the modelling and cost scenarios and proposals. In addition, two workshops were held with consultants and designers to provide technical advice and feedback on the buildings modelling.

Further consultation held with the Toronto energy modelling association (IBPSA-Canada-GTHA) and the Canada Green Building Council informed technical revisions to the Framework.

Overall the response from these groups on the Framework was well received and supported on the basis that it provides clarity and transparency on the long-term direction that the City is taking and will improve building design and performance. However, it was strongly noted that the higher tiers of energy performance may need financial incentives in order to be reachable and achievable in the short term. Consultation on the Framework results were also held with the Ministry of Municipal Affairs to inform OBC proposed changes.

Phase 2

The second phase of consultation focussed on the Toronto Green Standard non-energy categories. Expert stakeholders (identified in Attachment 1) provided feedback on the efficacy of Toronto Green Standard Version 2 standards as well as generating ideas for future directions.

Consultation meetings with (BILD) were held in the spring to review the results of the Zero Emissions Buildings Framework study and in late summer to review the proposed new Toronto Green Standard performance measures. Members' comments focused on the updated performance measures for the voluntary Tier 2 standard and a need for an 'incentive package' to support the voluntary higher performance standards of Tier 3 and Tier 4. Currently Tier 2 applicants are eligible to receive a refund of development charges which is intended to entice 'leading edge' developers to raise the bar and deliver higher performance buildings. The development charge refund assists in mitigating the cost for industry leaders in addressing more challenging performance measures. BILD also suggested the need for a longer lead time for application of the Toronto Green Standard and this request has been addressed in the proposed implementation date of May 1, 2018.

Proposed Changes to Ontario Building Code

On July 14, 2017 the Province issued 'Potential Changes to the Ontario's Building Code' for consultation. The consultation documents identify that the proposed changes provide an opportunity to build on provincial leadership in energy efficiency standards, GHG emissions reductions from the building sector and assist with implementation of the province's Climate Change Action Plan commitments. The proposed OBC changes include: long-term energy efficiency targets for new net zero carbon emissions for small buildings that will come into effect by 2030; increasing the use of electric vehicles by requiring that all new houses and workplaces are equipped with electric vehicle

charging infrastructure; and the technical standards related to municipal bylaws for green standards.

Many of the performance measures recommended in the Zero Emissions Buildings Framework study served as the basis for the proposed changes to the OBC related to implementation of the Province's Climate Change Action Plan, including envelope performance, air tightness, thermal bridging and solar PV.

The Chief Building Official's report on the City's response to the proposed changes to the OBC will be presented in a separate report at the October 12, 2017 Planning and Growth Management Committee. That report notes that the province is only proposing to include technical standards for green and reflective roofs in the OBC at this time. The report recommends that the City request the Province continue to expand the list of items to include incremental energy efficiency provisions (ie. stepped energy performance requirements) to achieve energy efficient buildings beyond the province's base Building Code. This would support both the Province's and the City's GHG emissions targets. City Planning supports this recommendation.

The proposed Toronto Green Standard Version 3 performance measures in Attachments 2, 3 and 4 are aligned with proposed changes to the Ontario Building Code.

TransformTO: Climate Action of a Healthy, Equitable and Prosperous Toronto - the Pathway to a Low Carbon Future

Adopted by Council in July 2017, TransformTO provides a comprehensive approach to achieving Toronto's goal of reducing greenhouse gas emissions by 80% of 1990 levels by 2050. The report is clear that bold action is required to transform the City's urban systems - buildings, energy, transportation and waste - to meet the 2050 target. The report sets out specific goals and timelines based on the results of detailed technical modeling of 36 actions and their relative impact. The modelling work noted that without immediate action the City can expect to fall short of its 2050 GHG reduction goal by 8.7 million tonnes.

The TransformTO modelling identified that 53% of GHG emissions in Toronto can be attributed to buildings. The TransformTO modelling assumptions for buildings was based on the Zero Emissions Buildings Framework work undertaken by the City Planning Division.

Implementation

Currently the City supports and invests in higher performance buildings through the Tier 2 incentive program and staff consultation and advice.

The Tier 2 development charge refund program, in place since 2010, is intended to incent leading edge developments achieving higher standards of environmental performance. The program has been successful and many of these developments

perform above the Tier 2 performance measure. On average, the completed and certified Tier 2 projects have achieved the following performance:

- 85% of the site at-grade treated to reduce urban heat island;
- 40% energy efficiency above the applicable building code;
- 39% reduction in potable water from fixtures;
- 62% reduction in water use for irrigation; and
- minimum of 75% reduction in construction waste going to landfill.

Tier 1 and Tier 2 Toronto Green Standard energy performance requirements are supported through review and consultation with the Environment and Energy Division (EED). EED provides advice to developers and information on additional financial tools such as the saveONenergy High Performance New Construction Program (a utility incentive program administered by the City's Better Buildings Partnership New Construction Team). To support the transition to a target-based approach to energy efficiency, new Energy Modelling Guidelines have been developed.

To achieve near-zero emissions buildings and supplement and transform the market, it is important that financing for early adopters, demonstration (pilot) projects, education and training for designers, energy modellers and builders be provided. To this end, the City will undertake a comprehensive review of potential incentives in order to support the Tier 3 and Tier 4 energy performance measures. Partnerships with utilities (including Enbridge), the Ontario Green Fund (2018, 2019 program), which distributes proceeds collected through the Ontario Cap and Trade market and the Carbon Impact Initiative, an industry lead consortium will be explored.

The City will also explore a potential partnership with Evergreen to develop curriculum and training for professionals at the planned Future Cities Centre located at Evergreen Brickworks. The 'Future Cities Centre' is intended to serve as a year-round hub supporting a nation-wide network to accelerate new innovations, practices and policies that create inclusive, low carbon cities of the future. To help accelerate change and drive market transformation, it will develop a training program 'The Institute for Climate Change Education' targeting building operators, urban designers, policy makers, planners and engineers and others on designing and operating low carbon buildings. The Centre will provide a living lab that helps to advance TransformTO and zero emissions buildings objectives.

In response to the Council direction to report on the current practices and feasibility of applying the Toronto Green Standard for all City capital projects that do not require site plan approval, the Chief Corporate Officer in consultation with City Planning and Parks, Forestry and Recreation, is developing a protocol for implementation of Toronto Green Standard when site plan does not apply.

Conclusion

The Toronto Green Standard is a key component of the City's commitment to sustainable development and the achievement of a healthy, equitable and prosperous City. The updated Toronto Green Standard introduces a clear pathway for

developments to achieve near zero emissions buildings by 2030. New or enhanced Tier 1 requirements and Tier 2 core measure aim to strengthen the performance of new development to reduce the impact on municipal infrastructure and to support more resilient buildings. In addition, new Tier 3 performance measures for new construction and a Tier 4 energy performance target have been introduced to the standard. The updated performance measures directly support the goals of the TransformTO and the 100 Resilient Cities initiatives and reflects the objectives of the proposed changes to the OBC and the Provincial Climate Change Action Plan.

CONTACT

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SIGNATURE

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ATTACHMENTS

Attachment 1: List of Stakeholders Consulted on Toronto Green Standard Version 3
Attachment 2: Mid to High-Rise Residential and All Non-Residential
Attachment 3: Low-Rise Residential
Attachment 4: City Agency, Corporation and Division-Owned Facilities (Non-Residential Uses)

Attachment 1: List of Stakeholders Consulted on Toronto Green Standard Version 3

Phase 1: Zero Emissions Building Framework

Advisory Committee

Integral Group
Minto Urban Communities
Daniels Corporation
Tridel
WSP Canada Inc.
Sustainable Buildings Canada
Building Land and Development Association (BILD)
RDH Building Science
Diamond & Schmitt Architects
BuildGreen Solutions, the Ministry of Municipal Affairs
The Ministry of the Environment & Climate Change
Waterfront Toronto
The Atmospheric Fund
REALpac
EnerQuality Corporation
Ryerson University Building Sciences, Department of Architecture

Other Industry Experts

MCW
Provident Energy Management, now EQ Building
Morrison Hershfield Inc.
Cricket Energy
Footprint
2030 District
Quadrangle Architects
RWDI Consulting Engineers & Scientists
MMM Group
University of Toronto, ALD
Canada Green Building Council (CaGBC) local Chapter
CaGBC National
BC MMA (Building Code)
Pembina Institute
IBPSA-CANADA-GTHA (energy modelling association)
Ministry of Municipal Affairs

Phase 2: Toronto Green Standard Version 3

Building Land and Development Association (BILD)
Janet Rosenberg & Studio
NAK Design Strategies
Scot Torrance Landscape Architect/FORREC
Quadrangle Architects
ZAS Architects

EQ Building Performance
Aquafor Beech Limited
WSP Canada
The Municipal Infrastructure Group
RV Anderson Associates Limited
Toronto and Region Conservation Authority
RWDI Inc
City of Vancouver
City of Edmonton
Minto Group
FLAP
University of Toronto
Muhlenberg College

City Divisions

Toronto Buildings
Toronto Water
Parks Forestry and Recreation
Environment and Energy
Solid Waste
Transportation Services