
2022 CAPITAL BUDGET BRIEFING NOTE

Greenhouse Gas (GHG) Reduction and Climate Resilience Investment Summary

Key Points:

- This briefing note presents information on investment in capital projects in the 2022 Capital Budget and 2023-2031 Capital Plan with components dedicated to increasing climate resilience efforts and/or reducing GHG emissions in Toronto. As the transition to Net Zero requires transforming a significant amount of infrastructure, the majority of the City's climate-related spending will be reflected in the City's capital program for significant positive impact on the City's targets and desired outcomes.
- The City's 2022 Capital Budgeting process has involved a climate focus as part of the decision making process on infrastructure investment at relevant Divisions, Agencies and Corporations. Planned investment in capital projects with components dedicated to increasing climate resilience efforts and/or reducing GHG emissions total \$1.501 billion in 2022 and \$15.466 billion over the 2022-2031 planning period. This reflects total investments, including spending on components of projects that do not have a climate impact.
- These investments are expected to deliver positive environmental outcomes in alignment with the corporate strategic priorities and the Council-approved Net Zero Strategy. Climate investments are expected to generate long-term financial savings in energy and operational costs for net zero buildings and electrified fleets across City Divisions, Agencies and Corporations. Conversely, the consequences of inaction to address GHG emissions and climate resilience will generate risks of financial, economic, social, and environmental costs for the City and its residents.
- More details on climate-related investments are provided in "Appendix A: Breakdown of Divisions/Agencies with Climate-Related Investments in the Capital Budget."
- To support future tracking of climate-related investments in the budget, Environment & Energy Division (EED) is developing a Climate Lens program that will provide City, Agency and Corporate staff with necessary tools, training and resources for quantifying the greenhouse gas impacts of their initiatives (including projects, programs and policies) and more structured consideration of climate risk impacts, prior to decision-making. Tools for the Climate Lens program will begin to be implemented in 2022. The objectives of Climate Lens program include increased

climate accountability and enhanced transparency through improved reporting. The Climate Lens program will enable greater precision in identifying the City's investments that are contributing to meeting the City's climate goals.

- In addition to this analysis on capital projects, an exploratory exercise was undertaken to identify the type and quality of information that could be collected on climate related investments in the Operating Budget. The results of this exercise will inform future approaches toward capturing and reporting on this spending.
- On December 15, 2021, Toronto City Council adopted [TransformTO: Critical Steps for Net Zero by 2040](#). Recommendation #39 of that report requests that all actions outlined in the Net Zero Strategy Implementation be addressed through the 2022 Budget. Relevant Divisions were consulted in the development of the Short Term Strategy Implementation Plan prior to its presentation to Council. The resources to support the Short Term Strategy Implementation Plan are included as part of the 2022 Operating and Capital Budgets for all relevant Divisions. The schedule for "new or enhanced" budget asks are outlined in the table under "Financial Impact" beginning on p.13 of the report. The 2023 budget will address 2023 priorities.

Highlights of Capital Investments to Reduce GHG Emissions

- City Council recently adopted the target of net zero GHG emissions by 2040. This requires rapid and deep emission reductions across key sectors.
- Highlights of a number of the most impactful capital projects that will support GHG emissions reductions which are planned and underway are outlined below. Individual Divisions, Agencies and Corporations can provide the full list of projects flagged as having components dedicated to reducing GHG emissions in their budget submissions and many have included further highlights of such projects in their Budget Presentations and/or Budget Notes.
- Toronto's [latest annual GHG inventory](#) shows the sources of community emissions as buildings (57%), transportation (36%) and waste (7%). The sources of City of Toronto corporate emissions are transportation (49%), buildings (46%) and waste (5%). The City's 2022 capital plans include investments in projects aimed at reducing emissions in each of these key sectors.

Buildings Sector

Corporate Real Estate Management (CREM)

- CREM developed the [Net Zero Carbon Plan](#) which provides a road map to achieve net zero emissions in City-owned buildings through a variety of initiatives. The Plan focuses on making the right investments in City buildings in order to meet the targets set out by Council. CREM will begin to implement the plan in 2022, collaborating with City Divisions, Agencies and Corporations to adopt the principles of the plan and the initiatives that lead the City down the path to net zero emissions.

Investments CREM is making through the 2022 Capital Budget and 2023 to 2031 Capital Plan (including carry forward from 2021) include:

- Investments in deep energy retrofits through Energy Services Companies (ESCOs) at four municipal facilities, which will significantly reduce GHG emissions in these facilities (\$11 million);
- Energy Conservation and Demand Management (ECDM) as well as Building Automation Systems (BAS) investments across a variety of City facilities to improve the efficiency of energy use at City facilities (\$56 million);
- The ModernTO Workplace Modernization Program, which will rationalize and optimize the use of office space across the City, reducing the City's footprint and investing in modern, efficient building systems and technologies in the City's core Civic Centres and office facilities (over \$218 million); and
- CREM is delivering new build projects such as the new Fleet garage at 1050 Ellesmere (\$48 million), St. Lawrence Market North (\$56 million), and the new Etobicoke Civic Centre (\$415 million, excluding Community Centre and Library portions) to support programs in their efforts to reduce GHG emissions or meet net zero standards.

Paramedic Services

- Paramedic Services has \$46.3 million in its 10-year Capital Plan for the construction of two net zero facilities: multi-function station #2 at 300 Progress and multi-function station #4 at a future location.

Parks, Forestry & Recreation (PF&R)

- All new PF&R community recreation centres will be net zero buildings.
- PF&R's first net zero building (North East Scarborough Community Centre) will award a contract and start construction in 2022.
- PF&R's Capital Plan includes a number of community centre projects where development applications for the highest tier of the Toronto Green Standard (consistent with net zero goals) are in various stages of progress:
 - North East Scarborough Community Centre
 - Western North York Community Centre
 - Etobicoke Civic Centre Community Centre
 - Lawrence Heights Community Centre
 - Wabash Community Centre
 - Don Mills Community Centre

Toronto Community Housing Corporation (TCHC)

- TCHC has a target of reducing energy consumption in its buildings by 25% by 2028, based on weather normalized energy consumption when compared to a baseline average from 2013 to 2017.
- The City of Toronto's annual \$160 million capital subsidy to TCHC contributes (alongside federal subsidies) to funding envelopes totalling \$851.7 million over 2022-2031, for projects that include components that will reduce GHG emissions, such as:¹
 - *Holistic Building Retrofit Program* (\$338 million over 2022-2027): Primarily targeting the deep retrofit of high rises, this program consolidates many energy conservation measures into a single project in order to capitalize on energy savings. Buildings under this program will undergo envelope and mechanical systems overhaul resulting in higher performance and significant energy savings. The program will also run a number of pilot fuel-switching projects.
 - *Building envelope* (\$207 million over 2022-2031): Includes exterior restoration work, overcladding and window replacements.
 - *Roofing* (\$90 million over 2022-2031): Includes roof replacement projects that add insulation to limit heat loss and bolster building performance.
 - *In-Suite LED lighting and E Renewable Program* (\$19 million over 2022-2027): Includes installation of energy efficient LED lights and solar PV equipment.

Shelter, Support and Housing Administration (SSHA)

- SSHA's George Street Revitalization project (\$488 million over the 10-year capital plan) involves creating a new facility providing specialized care for vulnerable populations, including a long-term care home, a transitional shelter, an emergency shelter, affordable housing, and a community hub serving residents of both the site and the local neighbourhood. It is expected that the contract for facility construction will require the satisfaction of standards equivalent to the highest tier of the Toronto Green Standard (consistent with net zero goals). CREM is assisting with delivery of this project, in furtherance of the City's Net Zero Carbon Plan.

Transportation Sector

Toronto Transit Commission (TTC)

- The TTC has a target for 20% of its bus fleet to be zero emission vehicles (ZEVs) by 2025-26 and 50% by 2030. This is aligned with the City's TransformTO Net Zero Strategy.
- To advance toward these targets the TTC's 10-Year Capital Plan includes \$293.5 million for the planned purchase of 460 electric buses by 2025 as well as \$68.9 million for electric bus charging systems, and \$313.9 million for the purchase of hybrid buses.

¹ Numbers are projected budget values and subject to adjustment and change.

Fleet Services

- As of the end of 2020, ZEVs represented 2.3% of the total vehicles among City-owned vehicles, including City division fleets, TTC, Police and other services. As set out in [TransformTO Net Zero Strategy - A Climate Action Pathway to 2030 and Beyond](#), Fleet Services is targeting that 20% of fleet will be ZEVs by 2025, and 50% by 2030. Starting in 2022, for any light duty vehicle being purchased by the City, the City will select only the electric version of this vehicle where operationally feasible.
- Fleet Services is undertaking a major expansion of City's corporate electric vehicle (EV) charging infrastructure to enable and support accelerated transition of City fleets to EVs, and help with broader promotion and adoption of EVs in Toronto, and the Greater Toronto and Hamilton region. The primary user group of the corporate charging network will be City-owned EVs but the public will also have access to some chargers where feasible (e.g. at publically accessible locations).
- The expanded City of Toronto corporate EV charging station network is expected to have 350 charge ports available by the end of 2022, and 1,200 charge ports available by 2025 at more than 100 City locations.
- Fleet Services' 10-year Capital Plan includes investments of \$806.9 million with components that support the City's climate goals, which breaks down as:
 - \$779.2 million for fleet replacement across Parks, Forestry & Recreation; Purchasing & Materials Management; Municipal Licensing & Standards; Solid Waste Management Services; Engineering & Construction Services; Transportation Services; Toronto Paramedic Services; Toronto Fire Services; Exhibition Place; Fleet Services; Corporate Real Estate Management; Toronto Water; Shelter, Support & Housing Administration; and Toronto Community Housing Corporation;
 - \$2.1 million for Green Fleet Plan implementation;
 - \$0.7 million for the FleetShare program that promotes more efficient use of City fleet vehicles, and therefore reduces fuel use;
 - \$16.6 million for EV Fleet Replacement; and
 - \$8.3 million for EV Charging Infrastructure.

Transit Expansion Office

- The 10-year Capital Plan includes \$1.5 billion for the delivery of five SmartTrack stations, leveraging existing transit infrastructure to expand transit access for Toronto residents travelling within and beyond the city.

Transportation Services

- To achieve the TransformTO target that 75% of all trips under 5 kilometres be taken by active and healthy transportation modes, Transportation Services' capital program encourages walking, cycling and transit use through investing more than \$270 million over ten years in the growth, renewal and connection of citywide cycling and pedestrian infrastructure and around \$80 million in transit priority infrastructure,

all supported by more than \$141 million over 10 years to implement Vision Zero road safety improvements.

Waste

Solid Waste Management Services

- Solid Waste Management Services' 10-year Capital Plan includes:
 - \$62.6 million for Landfill Gas Control & Utilization from Green Lane & Keele Valley Landfills. Annual GHG reductions are estimated at 81,461 tonnes CO₂ equivalent per year in 2026 once the projects are in service.
 - \$128.6 million for a third Organics Processing Facility (OPF) estimated to come on-line in 2028. Annual GHG reductions from OPFs producing renewable natural gas from organic waste are estimated at 5,656 tonnes CO₂ equivalent per year in 2021, rising to 26,313 tonnes CO₂ equivalent per year once all three OPFs are in service.

Highlights of Capital Investments to Improve Climate Resilience

- Highlights of a number of the most impactful capital projects that will improve Toronto's climate resilience which are planned and underway are outlined below. Individual Divisions, Agencies and Corporations can provide the full list of projects flagged as having components dedicated to increasing climate resilience in their budget submissions and many have included further highlights of such projects in their Budget Presentations and/or Budget Notes.
- Highlights of capital investments to improve climate resilience include:
 - Toronto Water's investments in carrying out the Basement Flooding Protection Program, Wet Weather Flow Master Plan, and stream restoration and erosion control activities;
 - Waterfront Revitalization investments in the Port Lands Flood Protection project;
 - Toronto and Region Conservation Authority's investments in management and control of erosion, watershed improvements and waterfront development work; and
 - Parks, Forestry and Recreation Division's investments in park development, providing new and improved green space for recreational and natural purposes.

Policy & Community Support

- Beyond capital investments, the City's Environment & Energy Division (EED) facilitates the development and implementation of strategic community and corporate-wide environment and energy policies and programs. EED innovates and

delivers first-of-a-kind projects that can be delivered and invested in at scale within divisions, agencies, corporations, institutions, and the community.

EED Energy work

- SolarTO is providing a free of charge solar assessments program for residents, businesses, and institutions. Over 700 assessments are completed per year. An automated self-serve solar potential map and business case calculator have been launched. EED staff work to ensure continuous streamlining of the process for building permits and grid connection, to significantly increase adoption of roof-top-solar across Toronto.
- Toronto's first raw wastewater (sewer) energy project, the largest in the world, will decarbonize UHN Toronto Western Hospital by 90%. EED was the lead to negotiate an energy transfer agreement. The City allows connection to the sewer for a fee, at no cost or risk to the City.
- Toronto's [Wastewater Energy Transfer Program](#) report was approved by Council and committee in December 2021. The program launches in Q1 2022 with the potential for 20 large projects. Once in operation it will reduce 200,000 tonnes of GHGs per year.
- EED staff are working to advance implementation of the [Net Zero Existing Buildings Strategy](#), adopted by City Council in July 2021. As part of that effort staff are focused on leveraging existing initiatives (e.g. Better Buildings Partnership, Green Will Initiative, Energy Retrofit Loan program, Home Energy Loan Program (HELP)) and building out new programs to encourage investment in building retrofitting. Part of that effort includes securing external funding (e.g. \$14.7M from the Federation of Canadian Municipalities for HELP), but also exploring additional financing programs and partnerships to drive decarbonisation at scale.
- Through the City's Energy Retrofit Loan (ERL) program staff are actively engaging building owners to further their decarbonisation objectives, and through ERL have been able to leverage building owner and City investments to undertake more substantial decarbonisation projects than would ordinarily be possible. Scaling programs like ERL, and others, as well as coordination with the Toronto Atmospheric Fund (TAF), Toronto Hydro, as well as other partners and funders will be key to expanding the scope and capacity of decarbonisation efforts city-wide.

EED Carbon Budget Research

- EED staff are leading research into a city-wide annual Carbon Budget process and report. As described in [TransformTO: Critical Steps for Net Zero by 2040](#), a Carbon Budget system would provide information on both the effectiveness and financial implications of City initiatives aimed at reducing emissions across the community and the corporation, within the context of an annual stocktaking on the City's progress toward its ambitious greenhouse gas reduction targets. A Q4 2022 report to Council on design and implementation options for a Toronto Carbon Budget will include recommendations to improve climate investment tracking.

Background

- Through the 2022 Budget Process the climate focus on infrastructure investment decisions continues to expand, ensuring decisions on facility, fleet and other investments identify opportunities to advance climate goals through the City's capital investments.
- Again in 2022, a set of Climate Lens questions have been used to capture climate-related investments in the budget process. The first effort to capture cross-corporate information on climate-related investments occurred for the 2021 Budget process. This first effort took a voluntary approach and treated the process as a learning opportunity for Divisions and Agencies.
- It should therefore be noted that the total investment numbers in this briefing note do not necessarily reflect increased investment on climate-related projects as compared to 2021. Improvements in the process for capturing climate-related investments in the City's budget led to greater identification of climate-related projects, some of which would have existed but were not captured in 2021. This limits comparability between the climate investment numbers reported in the 2021 and 2022 Budgets.
- For the 2022 Budget, staff across City Divisions and Agencies were provided with training and a list of qualitative criteria from EED, so that they could better identify project components that increase the City's climate resilience and/or reduce GHG emissions. Financial Planning Division staff tracked the data and worked with EED staff who reviewed a portion of the projects flagged, requested supporting rationales for a limited number of projects, and removed a subset of those projects from the totals.

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APPENDIX A: Breakdown of Divisions/Agencies with Climate-Related Investments in the Capital Budget (\$ millions)

	All Climate-Related Project Investments		Projects that Reduce GHG Only		Projects that reduce GHG and Climate Resilience		Projects that Increase Climate Resilience Only	
	2022	2022-2031	2022	2022-2031	2022	2022-2031	2022	2022-2031
Tax Supported Programs	1,107.280	10,394.039	430.670	2,918.035	466.367	6,314.000	210.243	1,063.803
Community and Social Services	301.172	3,967.490	11.972	95.522	270.874	3,830.834	18.326	41.134
Children's Services	3.600	21.098	0	0	0	0	3.600	21.098
Economic Development and Culture	2.232	5.382	0	0	2.192	5.342	0.040	0.040
Parks, Forestry & Recreation	119.462	1,800.715	10.302	93.852	94.474	1,686.867	14.686	19.996
Shelter, Support & Housing Administration	11.966	488.738	0.500	0.500	11.466	488.238	0	0
Toronto Housing Corporation	160.000	1,600.000	0	0	160.000	1,600.000	0	0
Toronto Paramedic Services	3.912	51.557	1.170	1.170	2.742	50.387	0	0
Infrastructure and Development Services	234.886	3,241.937	70.248	2,048.323	4.245	467.703	160.393	725.911
Fire Services	3.030	15.032					3.030	15.032
IDS Transit Expansion	0	1,463.000	0	1,463.000	0	0	0	0
Transportation Services	135.843	1,638.892	70.248	585.323	4.245	467.703	61.350	585.866
Waterfront Revitalization Initiative	96.013	125.013	0	0	0	0	96.013	125.013
Corporate Services	170.314	2,010.694	0.018	0.707	170.296	1,982.987	0	27.000
Corporate Real Estate Management	105.834	853.558	0	0	105.834	853.558	0	0

	All Climate-Related Project Investments		Projects that Reduce GHG Only		Projects that reduce GHG and Climate Resilience		Projects that Increase Climate Resilience Only	
	2022	2022-2031	2022	2022-2031	2022	2022-2031	2022	2022-2031
Environment and Energy	42.736	350.219	0	0	42.736	323.219	0	27.000
Fleet Services	21.743	806.917	0.018	0.707	21.725	806.210	0	0
Agencies	400.908	1,174.718	348.432	773.483	20.952	131.476	31.524	269.758
TO Live	4.584	6.806	0	0	4.584	6.806	0	0
Toronto & Region Conservation Authority	24.261	213.059	0	0	1.976	19.764	22.285	193.295
Toronto Public Library	1.505	31.628	0	0	1.505	31.628	0	0
Toronto Zoo	12.085	68.629	0	0	12.085	68.629	0	0
Toronto Transit Commission	358.473	854.595	348.432	773.483	0.802	4.649	9.239	76.463
Rate Supported Programs	393.971	5,070.861	5.276	101.638	45.166	865.464	343.529	4,103.759
Solid Waste Management	15.272	293.150	5.276	101.638	3.191	169.973	6.805	21.539
Toronto Parking Authority	2.874	31.645	0	0	2.874	31.645	0	0
Toronto Water	375.825	4,746.066	0	0	39.101	663.846	336.724	4,082.220
Grand Total	1,501.251	15,465.700	435.946	3,019.673	511.533	7,278.464	553.772	5,167.562