
2022 OPERATING BUDGET BRIEFING NOTE

Funding for TransformTO Net Zero Short term Actions

Issue/Background:

On January 20, 2022, Budget Committee requested a briefing note to provide further detail regarding funding for implementation of [Toronto's Net Zero Strategy](#) including the set of actions outlined in the [TransformTO Net Zero Strategy Short Term Implementation Plan \(2022 to 2025\)](#).

Key Points:

a. Cost of short term implementation plans

Budget Committee requested a summary of information regarding costs of the short term implementation plan across all 20 divisions (for 2022, and 2023 through 2025).

Relevant divisions were consulted in the development of the Short Term Implementation Plan prior to its presentation to Council in December 2021. The resources to support the Short Term Implementation Plan are included in the 2022 Staff Recommended Operating and Capital Budgets for all relevant Divisions. The staff report, TransformTO Critical Steps for Net Zero by 2040 ([2021.IE26.16](#)), includes a schedule for "new or enhanced" budget asks outlined in the table under "Financial Impact" beginning on p.13 of the report.

In 2022, Environment and Energy (EED) will continue to work with Divisions and Agencies to identify and provide support for additional climate action analysis and corresponding additional budget requirements in order to remain in alignment with the ambition of the Net Zero Strategy. Additional budget requests will be brought using this process.

The full financial impacts of achieving the proposed 2025 greenhouse gas (GHG) reduction target, the 2030 GHG target, and the net zero by 2040 target to the City of Toronto continue to be developed.

Technical modelling estimates that the full investment required by the entire community, including the City, businesses, other levels of government, and residents is \$145 billion over the next thirty years; however, taking early action is expected to provide savings over time so that the net impact is expected to be \$57 billion community-wide. For its part, the City will have to identify appropriate funding models and financial mechanisms

to make these needed investments, which will include partnership with community organizations and businesses and other orders of government.

b. Modifications to the 2022 budget to reflect the Net Zero Strategy

Budget Committee requested details on how the budget has been modified to reflect the increased ambition of the new Net Zero by 2040 short term implementation.

The levels of ambition articulated in the modelled actions of the Net Zero Strategy to the year 2040 are examples of what will be needed to reach our 2040 targets; however, these modelled actions will require more precise analysis to provide more detailed budget asks in successive years.

EED's approach presented to Council was to advance to the 2040 targets through a series of short term action plans. The first plan identifies a set of actions from 2022-2025. For the 2023 to 2025 period, the schedule for the budget year where new or enhanced funding may be required is outlined in the table under "Financial Impact" section beginning on p.13 of the Toronto's Net Zero Strategy. Funding may not necessarily be required for each of the short term actions; existing resources could be reallocated and utilized differently in order to implement these short term actions in an effort to realize the increased ambition of the new Net Zero by 2040 strategy.

Beginning in 2022, EED will provide annual report backs to Council on progress towards our 2025 and 2030 goals. A next package of actions will be presented in 2025 and will include any course correction recommendations that will be required to reach net zero by 2040.

In 2022, EED will continue to work with Divisions and Agencies to identify and support additional analysis, where necessary, in order to identify, with more precision, the actions required to meet the level of ambition articulated in the Net Zero Strategy.

As described above, relevant divisions were consulted in the development of the Net Zero Strategy and resources to support the Short Term Implementation Plan were included as part of the 2022 Staff Recommended Operating and Capital Budgets for all relevant divisions.

[Briefing Note #6 - Greenhouse Gas \(GHG\) Reduction and Climate Resilience Investment Summary](#) submitted as part of this budget process provides details on the investments in the 2022 Capital Budget and 2023-2031 Capital Plan that will reduce GHG emissions and increase climate resilience. The City's 2022 capital budgeting and the 2023-2031 Capital Plan both involve a climate focus and the ability to identify which capital projects have such a component. To support tracking of climate-related investments in the operating budget, and improve this analysis in the capital budget, EED is developing a Climate Lens program that will provide City division, agency, and corporation staff with the necessary tools, training and resources to quantify the greenhouse gas impacts of their initiatives.

Furthermore, EED will be reporting to City Council in Q2 2022 on the structure and function of a Climate Advisory Group that centres the voices of equity-deserving groups, and includes youth, civil society organizations, labour and workers' rights organizations, and academia and work with Indigenous rights holders and urban Indigenous communities to share knowledge and learnings to inform climate action. This will include a terms of reference developed by city staff and the Climate Advisory Group. The Climate Advisory Group will be a critical component in the process of refining actions from now until 2040. Additional resources may be identified in 2023 once this recommendation is implemented.

Staff have already begun rationalizing climate choices in business case development with reference to the Net Zero Strategy. For example, City Council recently adopted [Parks, Forestry & Recreation's \(PFR\) report](#) recommending a shift to fully electrify its ferry fleet in order to support the Net Zero Strategy and in particular, to align with the target of transitioning 20 per cent of the City fleet to zero emissions by 2025 and 50 percent by 2030.

PF&R's report recommends a plan to replace four existing primary ferry vessels over a 15-year period with full electrification of the vessel fleet which will reduce 2,800 tonnes of greenhouse gas (GHG) emissions annually whilst improving air quality and reducing noise pollution.

The City's commitment to TransformTO combined with comparable costing for both vessel types, evolving industry trends and available technologies, fleet replacement approaches being undertaken in other jurisdictions and long-term operational savings (fuel cost savings in particular), all reinforce the upfront transition to fully electric ferries.

Lastly, planned to start in 2025, Toronto's Carbon Budget, a carbon and fiscal accountability tool, will provide details on the greenhouse gas reduction impact of City-led actions in order to forecast whether Toronto is on track to achieve annual greenhouse gas emissions limits on an annual basis. It is expected that the actions and investments required to meet the 2040 targets will change over time, specifically for the time period covering 2025 and 2040 due to technology improvements, innovative ways of working, new partnerships and as achievements are realized. The Carbon Budget will identify and propose refined actions and investments that will link the 2040 targets in the Net Zero Strategy more directly with commensurate program budget requests in five year increments starting in 2025.

c. Financial models in the Net Zero Strategy Technical Report

Budget Committee requested details regarding the current year of the Net Zero plan compared to the financial models in the Net Zero Strategy Technical Report.

[Attachment C: TransformTO Net Zero Framework Technical Report](#) estimates that the full investment required by the entire community, including the City, businesses, other levels of government, and residents, is \$145 billion over the next thirty years. It also

notes that taking early action is expected to provide savings over time and the net impact is expected to be \$57 billion community-wide. In addition to the savings anticipated over this time period, Toronto residents will enjoy health benefits from increased physical activity, improvements in indoor and outdoor air quality, reduced noise, healthier natural habitats and increased transit service.

Together, the City, private sector partners, community organizations and other levels of government will have to identify appropriate funding models and financial mechanisms to make these needed investments, both for corporate and community-wide initiatives.

Additional analysis will be required to separate already existing base budget allocation for climate spending from new and enhanced spending in order to determine where we are in terms of spending in the Net Zero Strategy versus the modeled estimates that appear in the Net Zero Strategy Technical Report.

The process of identifying and tagging climate components in the capital budget is ongoing through a collaboration between EED and FPD using specific climate-related questions and indicators in the City's Capital and Operating financial software.

EED will explore the opportunities to better understand direct and indirect carbon impacts related to annual budget enhancements.

d. Discount rates and impacts

Budget Committee also requested details of discount rates in Net Zero project planning across the City's corporate financial models and plans, including accounting, asset management, and investments;

According to the [Centre for Climate Change and Energy Solutions](#), discount rates as applied to future climate mitigation, tell us how high future benefits of climate action need to be set at in order to justify spending a dollar today. While there is considerable debate regarding the appropriate discount rate to apply to any cost-benefit analysis conducted across generations, most climate models choose one rate (between 2-7 per cent is common) and hold it constant over the time horizon of any model in use.

The discount rate used for Net Zero technical modelling was 3 per cent.

[Attachment C: TransformTO Net Zero Framework Technical Report](#) demonstrates that taking early action now saves money in the long run. The net present value of achieving Net Zero by 2040 is \$135 million less than that of achieving Net Zero by 2050, a difference of 1%. In other words, achieving net zero by 2040 ends up costing less than achieving net zero by 2050.

The modelling also shows that reducing emissions more quickly means that the city can collect the financial benefits of avoided carbon costs and avoided energy costs sooner. In the model, early investments required for Net Zero 2040 total just 5% of Toronto's

annual GDP for the first ten years but decline to zero and then begin generating net annual savings by 2040.

e. Investments in public transit to meet the Net Zero 2040 target

Budget Committee requested details, in consultation with Toronto Transit Commission, on what improvements in public transit are necessary by 2030 to meet the net zero by 2040 target and what investments are needed in the 2022-2031 Capital Budget and Plan to achieve the current net zero 2040 plan, 1,000 more buses, 6 new garages, 40 additional streetcars, new streetcar yard, and a 3-minute subway headway.

Related to the above question, through the Transform Net Zero Strategy ([2021 IE26.16](#)), City Council requested the City Manager, in consultation with the Chief Executive Officer, Toronto Transit Commission, to outline in the 2022 Budget proposal options to increase spending on surface vehicles and hiring additional operators aimed at increasing ridership to get us on the path to achieving the TransformTO goals.

TTC's 5-Year Service Plan & 10-Year Outlook, approved by the TTC Board in December 2019, included increases in transit service levels commensurate with increases in customer demand based on population and employment growth projections. The TTC 2022 Operating Budget proposes operating 100% of pre-pandemic service levels with further increases in service levels to be included in future operating budgets. The TTC 2022-2031 Capital Investment Plan (CIP) includes funding requirements to acquire new vehicle and electric charging systems to meet the service level needs outlined in the 5-Year Service Plan and to transition the TTC's fleet to zero-emissions by the 2040 target. These capital investments, although not fully funded, address all fleet electrification and growth requirements for TTC to undertake the actions articulated TransformTO Critical Steps for Net Zero by 2040 Staff Report. For more details on current investments, please refer to [Briefing Note #6 - Greenhouse Gas \(GHG\) Reduction and Climate Resilience Investment Summary](#).

The TransformTO Net Zero Framework Technical Report includes additional modelling scenarios which may be required to achieve net zero by 2040. While analysis and consultation with TTC is required to validate the assumptions of these models, these scenarios currently identify the need for additional investments to support a greater modal shift toward transit vehicles than currently identified through the TransformTO Critical Next Steps Staff Report and therefore, the TTC's 5-Year Service Plan and Capital Investment Plan.

The modelling used to derive the recommendations in the Net Zero Strategy will need to undergo more precise analysis in consultation with TTC staff to confirm what (if any) net increase in service is required beyond the identified targets under the TransformTO Net Zero Strategy Staff Report.

Furthermore, technology and the transit landscape have changed dramatically over the last decade, and is expected to undergo continued change. The Net Zero Framework

Technical Report provides examples for what transit investments may be needed to achieve net zero by 2040 based on currently available data. Recognizing that the complex systems that drive emissions will continue to evolve, planning and budgeting will need to respond accordingly.

This work will be undertaken as a priority in order to have any resulting modal shift scenarios presented through the TTC's 2023 budget process.

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