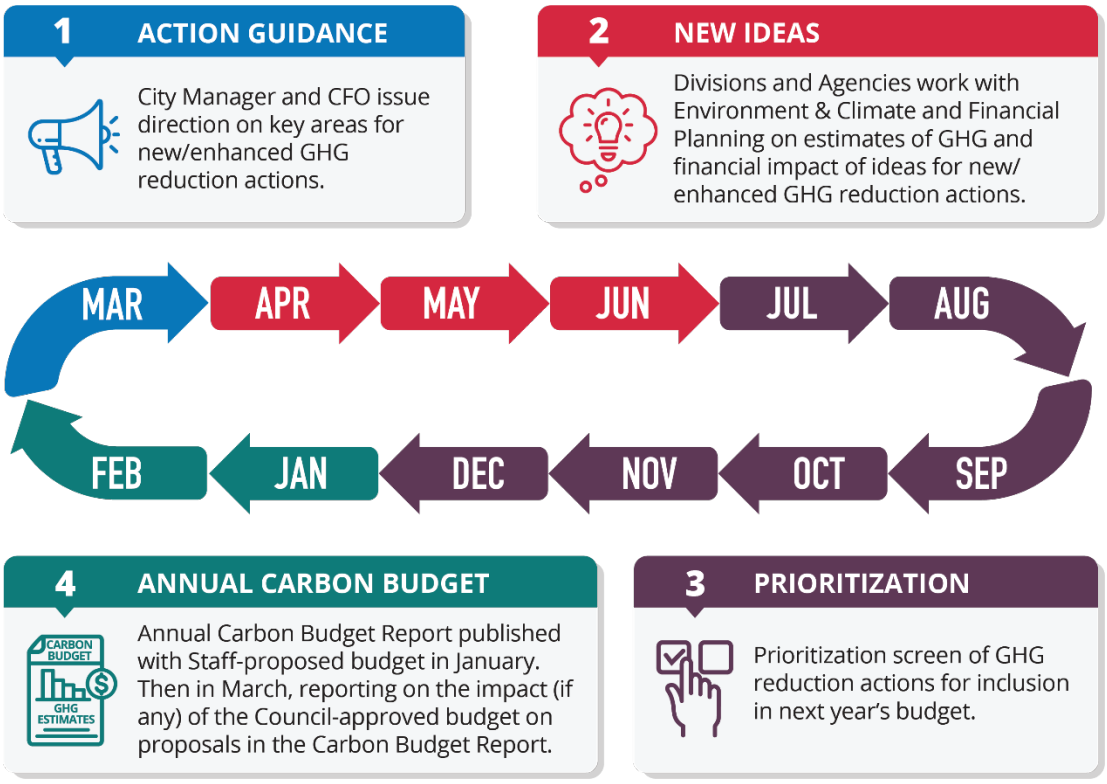
Appendix B – Carbon Budget Prioritization

The Carbon Budget Prioritization is a new process, adopted by Toronto City Council as part of the codified Carbon Budget Accountability system (2023), implemented in 2024. The process is made up of a consistent set of steps and technical guidance used by City Divisions, Agencies and Corporations to identify and prioritize greenhouse gas (GHG) reduction actions for submission to the City's Staff Prepared Budget.

The figure below depicts the annual Carbon Budget cycle:



For 2025 Budget, 16 Divisions, Agencies, and Corporations proposed 112 new or enhanced actions to reduce GHGs, of which 54 were screened in for assessment of GHG reduction potential and financials.[1]

HIGH PRIORITY

Environment, Climate and Forestry (ECF), formerly known as Environment and Climate, assessed 36 proposals as "high priority" based on their importance to the TransformTO Net Zero Strategy, as measured through the presence of a "high" score on at least one of three criteria:

[1] Proposed actions were screened out if they: (i) are already accounted for in a baseline GHG reduction action; or (ii) have no or trivial potential impact on emission reductions and the TransformTO Net Zero Strategy.

i. direct GHG reduction potential (high: 100-1000s t CO_2e annually);

ii. indirect (enabling) GHG reduction potential (high: qualitative assessment); or

iii. contribution to an inclusive and equitable net zero transition (high: qualitative assessment using framework similar to high/medium/low impact in 2024-25 Equity Responsive Budgeting manual, adapted to net zero context).

All screened-in proposals could be advanced for evaluation to the Capital Prioritization Framework. The "high priority" designations for new/enhanced actions in the Carbon Budget process carried through to the climate aspect of the Capital Prioritization Framework, as applicable.

The 36 high priority proposals, if fully implemented, were expected to achieve significant annual GHG reductions of 179,575 t of CO2e, with most reductions coming from corporate sources such as buildings and fleet vehicles.

Ultimately, 31 of the high priority proposals were included in 2025 Budget, with estimated annual GHG reductions in 2025 of 145,138 t of CO2e.

Emission reductions from these new/enhanced actions would be *additional* to those expected from baseline projects and programs the City is already implementing or planning to implement. Therefore, implementation of the high priority projects would represent an important acceleration of progress toward Council's 2030 GHG reduction goals and better position the City for achieving net zero Corporate emissions by 2040. Finally, this pipeline of new/enhanced projects would also support future Green Bond issuances which is a notable financial co-benefit for the City.

MEDIUM PRIORITY

Environment, Climate and Forestry assessed 12 proposals as "medium priority" based on their importance to the TransformTO Net Zero Strategy, as measured through the presence of a "medium"
score on at least one of three criteria:

i. direct GHG reduction potential (high: 10-100s t CO_2e annually);

ii. indirect (enabling) GHG reduction potential (medium: qualitative assessment); or

iii. contribution to an inclusive and equitable net zero transition (medium: qualitative assessment using framework like high/med/low impact in 2024-25 Equity Responsive Budgeting manual, adapted to net zero context).

The 12 medium priority projects total an estimated annual GHG reduction of 1,216 t CO2e once fully implemented, with budget needs of $28.15 million.

Ultimately, none of the medium priority proposals were included in 2025 Budget.

LOW PRIORITY

Environment, Climate and Forestry assessed 6 proposals as “low priority” based on their importance to the TransformTO Net Zero Strategy, as measured through the presence of a “low” score on at least one of three criteria:

i. direct GHG reduction potential (high: <10 t CO_2e annually);

ii. indirect (enabling) GHG reduction potential (low: qualitative assessment); or

iii. contribution to an inclusive and equitable net zero transition (low: qualitative assessment using framework similar to high/med/low impact in 2024-25 Equity Responsive Budgeting manual, adapted to net zero context).

The 6 low priority projects total an estimated annual GHG reduction of approximately 6 t CO2e once fully implemented, with a capital budget requirement of $31.84 million.

Ultimately, none of the low priority proposals were included in 2025 Budget.

COMMUNITY BUILDINGS

ECF Priority Sort	Project Name	Emissions Sector	Responsible	Included in Staff proposed 2025 Budget?	Capital ($ millions)		Operating ($ millions)	Emissions	
					2025 Capital Budget	Capital Plan 2025 - 2034	2025 Operating Budget	GHG Reduction (est.) (t CO_2e)	Year when GHG reductions start
High	Enhanced Home Energy Loan Program Streams	Buildings	Environment & Climate	Yes	2.50	10.00	-	1,117	2026
High	Scaling adoption for heat pumps through aggregation and bulk procurement – program	Buildings	Environment & Climate	Yes	3.00	20.00	-	1,400	2026

COMMUNITY TRANSPORTATION

ECF Priority Sort	Project Name	Emissions Sector	Responsible	Included in Staff proposed 2025 Budget?	Capital ($ millions)		Operating ($ millions)	Emissions	
					2025 Capital Budget	Capital Plan 2025 - 2034	2025 Operating Budget	GHG Reduction (est.) (t CO_2e)	Year when GHG reductions start
Medium	The Meadoway Multi-use Trail - Pan Am Path to Conlins Rd: Construction	Transportation	Toronto & Region Conservation Authority	No	-	1.00	-	N/A	N/A
Medium	The Meadoway Multi-use Trail - Ellesmere Ravine connection: Design and Construction	Transportation	Toronto & Region Conservation Authority	No	-	4.00	-	N/A	N/A

CORPORATE BUILDINGS

ECF Priority Sort	Project Name	Emissions Sector	Responsible	Included in Staff proposed 2025 Budget?	Capital ($ millions)		Operating ($ millions)	Emissions	
					2025 Capital Budget	Capital Plan 2025 - 2034	2025 Operating Budget	GHG Reduction (est.) (t CO_2e)	Year when GHG reductions start
High	Net-zero feasibility studies at key corporate facilities	Buildings	Corporate Real Estate Management	Yes	0.20	0.20	-	N/A	N/A
High	Net-zero retrofits at Metro Hall, City Hall, North York Civic Centre, Scarborough Civic Centre	Buildings	Corporate Real Estate Management	Yes	0.20	66.20	-	4,088	2028
High	Net-zero retrofits at additional 132 CREM sites over 10-year period	Buildings	Corporate Real Estate Management	Yes	0.40	178.40	-	14,607	2028
High	Net-zero feasibility studies at 15 CREM sites annually	Buildings	Corporate Real Estate Management	Yes	0.50	5.00	-	N/A	N/A

ECF Priority Sort	Project Name	Emissions Sector	Responsible	Included in Staff proposed 2025 Budget?	Capital ($ millions)		Operating ($ millions)	Emissions	
					2025 Capital Budget	Capital Plan 2025 - 2034	2025 Operating Budget	GHG Reduction (est.) (t CO_2e)	Year when GHG reductions start
High	Additional 30 net-zero feasibility studies annually at CREM sites	Buildings	Corporate Real Estate Management	Yes	0.90	14.90	-	N/A	N/A
High	East Animal Shelter Net-zero retrofit	Buildings	Corporate Real Estate Management	Yes	1.25	1.25	-	84	2026
High	West Animal Shelter Net-Zero Retrofit	Buildings	Corporate Real Estate Management	Yes	1.25	1.25	-	74	2026
High	St. Lawrence Market South Net-zero retrofit	Buildings	Corporate Real Estate Management	Yes	1.50	11.50	-	252	2028
High	High Park Greenhouse net-zero retrofit	Buildings	Parks & Recreation	Yes	2.00	5.70	-	737	2027
High	Meridian Hall - Steam to Hot Water conversion + Fuel Switching + Photovoltaic	Buildings	TO Live	Yes	1.08	45.67	-	434	2027
High	Meridian Arts Centre - Fuel switch to heat recovery chiller + Photovoltaic	Buildings	TO Live	Yes	1.88	9.86	-	222	2027
High	Deep Retrofit of the Sparroway Apartment Complex	Buildings	Toronto Housing Corporation	Yes	8.63	14.37	-	517	2026
High	Scarlettwood Deep Retrofit	Buildings	Toronto Housing Corporation	Yes	19.84	30.15	-	497	2027
High	Homelessness Services Capital Infrastructure Strategy -- New Shelter Development	Buildings	Toronto Shelter and Support Services	Yes	70.97	239.59	-	1,673	2026
High	Energy Efficiency Retrofit	Buildings	Toronto Transit Commission	Yes	3.90	25.95	-	350	2026
High	Site-wide generator replacement	Buildings	Toronto Zoo	Yes	0.10	10.20	-	589	2028

ECF Priority Sort	Project Name	Emissions Sector	Responsible	Included in Staff proposed 2025 Budget?	Capital ($ millions)		Operating ($ millions)	Emissions	
					2025 Capital Budget	Capital Plan 2025 - 2034	2025 Operating Budget	GHG Reduction (est.) (t CO_2e)	Year when GHG reductions start
High	Equipment replacements	Buildings	Toronto Zoo	Yes	0.40	65.00	-	3,336	2026
High	Decarbonization of Facilities	Buildings	Toronto Transit Commission	No	1.50	9.50	-	940	2025
Low	Africa Pavilion Lighting	Buildings	Toronto Zoo	No	0.40	0.45	-	3	2026
Low	Red Panda habitat refurbishment	Buildings	Toronto Zoo	No	1.00	1.00	-	0.3	2026
Low	Indoor Savanna	Buildings	Toronto Zoo	No	7.55	26.55	-	1	2028
Low	Winter Thermal Imaging Study	Buildings	Toronto Zoo	No	-	-	0.25	2	2028
Low	Space Planning	Buildings	Transportation Services	No	-	-	-	N/A	N/A

CORPORATE TRANSPORTATION

ECF Priority Sort	Project Name	Emissions Sector	Responsible	Included in Staff proposed 2025 Budget?	Capital ($ millions)		Operating ($ millions)	Emissions	
					2025 Capital Budget	Capital Plan 2025 - 2034	2025 Operating Budget	GHG Reduction (est.) (t CO_2e)	Year when GHG reductions start
High	Maximize CNG Fleet	Transportation	Fleet Services	Yes	-	4.08	-	487	2026
High	Convert SWM refuse collection vehicles	Transportation	Fleet Services	Yes	0.50	6.63	0.12	2,017	2026
High	Fleet Transition to ZEV	Transportation	Fleet Services	Yes	-	198.67	-	574	2026
High	Addressing Aging Backlog	Transportation	Fleet Services	Yes	-	50.46	-	84	2025

High	Wheel-Trans Bus – Purchase	Transportation	Toronto Transit Commission	Yes	11.25	18.50	-	3,100	2025
High	Energy Management / Storage System	Transportation	Toronto Transit Commission	Yes	0.77	37.42	-	N/A	N/A
High	eBus Charging Systems – Purchase	Transportation	Toronto Transit Commission	Yes	81.73	182.53	-	N/A	N/A
High	eBus – Purchase	Transportation	Toronto Transit Commission	Yes	454.23	454.23	-	62,100	2025
High	Electric Pumper Fleet Expansion	Transportation	Fire Services	No	-	-	-	54	-
Medium	Hybrid Vehicle Technology	Transportation	Fire Services	No	0.22	1.36	-	55	2025
Medium	Idle Reduction Technology	Transportation	Fire Services	No	1.17	10.60	-	26	2025
Medium	Micromobility pilots and program supports	Transportation	Fleet Services	No	0.350	1.75	0.35	N/A	N/A
Medium	Pilot: Hydrogen Fuel Cell Technology	Transportation	Fleet Services	No	2.00	4.00	0.20	48	2026
Medium	Proof of concept demonstration & promotion for ZEV	Transportation	Fleet Services	No	3.00	3.00	0.15	N/A	N/A
Medium	Reducing Emissions in Construction Sector	Transportation	Toronto & Region Conservation Authority	No	0.09	0.09	0.23	190	2025
Medium	Fleet Transition Accelerator	Transportation	Toronto & Region Conservation Authority	No	-	-	0.39	N/A	N/A
High	Electric WT Charge Systems – Purchase	Transportation	Toronto Transit Commission	No	1.37	41.29	-	N/A	N/A
High	Hybrid Bus – Purchase	Transportation	Toronto Transit Commission	No	5.14	5.14	-	N/A	N/A
Low	Digital Workspace Platform	Transportation	Toronto Transit Commission	No	1.97	3.84	-	N/A	N/A

COMMUNITY / CORPORATE WASTE

ECF Priority Sort	Project Name	Emissions Sector	Responsible	Included in Staff proposed 2025 Budget?	Capital ($ millions)		Operating ($ millions)	Emissions	
					2025 Capital Budget	Capital Plan 2025 - 2034	2025 Operating Budget	GHG Reduction (est.) (t CO_2e)	Year when GHG reductions start
High	Dufferin Organics Processing Facility Improvements	Waste	Solid Waste Management Services	Yes	0.21	18.91	-	2,710	2028

CROSS-SECTOR

ECF Priority Sort	Project Name	Emissions Sector	Responsible	Included in Staff proposed 2025 Budget?	Capital ($ millions)		Operating ($ millions)	Emissions	
					2025 Capital Budget	Capital Plan 2025 - 2034	2025 Operating Budget	GHG Reduction (est.) (t CO_2e)	Year when GHG reductions start
High	Establishment of the Toronto Green Industry Cluster Alliance	-	Economic Development & Culture	Yes	-	-	0.03	N/A	N/A
High	Implementation of the Green Job Strategy	-	Economic Development & Culture	Yes	-	-	0.24	N/A	N/A
High	Climate Change Mitigation & Adaptation Studies	-	Toronto Transit Commission	Yes	23.59	23.59	-	N/A	N/A
Medium	Decarbonizing the Public Realm: study and toolkit	-	City Planning	No	0.25	0.35	-	N/A	N/A
High	Black-Led Climate Action Grants	-	Environment & Climate	No	-	-	0.30	N/A	N/A
Medium	Plant Forward Program	-	Toronto Shelter and Support Services	No	0.20	2.00	-	897	2025
Medium	Toronto Climate Leaders Program	-	Toronto & Region Conservation Authority	No	-	-	0.14	N/A	N/A

FURTHER DETAIL

COMMUNITY BUILDINGS

PROJECT/PROGRAM PROPOSAL:

Enhanced Home Energy Loan Program Streams

***ACTION**: Home Energy Loan Program (HELP)*

Description: A $10M allocation of new capital is requested to capitalize a new program stream, alongside support for staffing. Funding would support program enhancements for modest income homeowners, through enhanced support for retrofits in low-rise and low-rise multi-unit residential buildings.

GHG Reduction Commentary

- Estimate based on projected retrofits in future once Enhanced HELP stream is operational.

PROJECT/PROGRAM PROPOSAL:

Scaling adoption for heat pumps through aggregation and bulk procurement – program

***ACTION**: Home Energy Loan Program (HELP)*

Description: A residential heat pump program aimed at supporting low to modest income homeowners in their efforts to decarbonize their homes. This initiative offers low-cost installations made possible through bulk purchasing of equipment and streamlined installation processes with approved contractors and delivery partners. The program aims to make sustainable energy solutions more accessible and affordable for homeowners, reduce complexity of installations, while deploying such technologies at scale.

GHG Reduction Commentary

- Estimate based on projected retrofits in future once bulk buy program is operational.

COMMUNITY TRANSPORTATION

PROJECT/PROGRAM PROPOSAL:

The Meadoway Multi-use Trail - Pan Am Path to Conlins Rd: Construction

***ACTION**: Enabler - Community Transportation*

Description: The Meadoway is transforming a hydro corridor in Scarborough into a vibrant 16-kilometre stretch of urban greenspace and meadow lands that will become one of Canada's largest linear urban parks.

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

PROJECT/PROGRAM PROPOSAL:

The Meadoway Multi-use Trail - Ellesmere Ravine connection: Design and Construction

***ACTION**: Enabler - Community Transportation*

Description: The Meadoway is transforming a hydro corridor in Scarborough into a vibrant 16-kilometre stretch of urban greenspace and meadow lands that will become one of Canada's largest linear urban parks.

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

CORPORATE BUILDINGS

PROJECT/PROGRAM PROPOSAL:

Scarlettwood Deep Retrofit

***ACTION**: TCHC - Energy Efficiency Action Plan*

Description: Deep retrofit and renewal of a townhouse complex, piloting use of pre-fabricated exterior insulated cladding combined with heat pumps and ERVs, using an Integrated Project Delivery framework. Targeting 94% reduction in GHG emissions and significant resilience benefits including elimination of resident exposure to extreme heat.

GHG Reduction Commentary

- Estimated GHG reductions of 497 t CO_2e will be achieved once project is completed in 2027.

PROJECT/PROGRAM PROPOSAL:

Deep Retrofit of the Sparroway Apartment Complex

***ACTION**: TCHC - Energy Efficiency Action Plan*

Description: The is an ongoing retrofit and renewal of a 175-unit townhouse complex consisting of lighting retrofit, and heat pump and ERV installations at the Sparroway development. This funding would add Domestic Hot Water (DHW) upgrades, solar photovoltaics (PV), mansard insulation improvements, and high-performance window replacement. The project will result in removal of all natural gas-fired equipment using the existing Integrated Project Delivery framework. The total project is targeting 87% and 56% reduction in GHG emissions and energy consumption respectively, and significant resilience benefits including elimination of resident exposure to extreme heat.

GHG Reduction Commentary

- Estimated GHG reductions of 517 t CO_2e will be achieved once project is completed in 2026.

PROJECT/PROGRAM PROPOSAL:

Net-zero feasibility studies at key corporate facilities

***ACTION**: Enabler - Corporate Buildings*

Description: Net zero feasibility study to evaluate the cost and suitability of emission reducing measures at Metro Hall, City Hall, North York Civic Centre, and Scarborough Civic Centre.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

PROJECT/PROGRAM PROPOSAL:

East Animal Shelter Net-zero retrofit

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: The Corporate Real Estate Management (CREM) division has planned the net-zero retrofit at 821 Progress Avenue that will include the following measures: air-source heat pumps installation; electrification of domestic hot water; LED lighting retrofit; heat recovery; BAS installation; envelope upgrades; and roof-mounted and carport solar photovoltaics.

GHG Reduction Commentary

- Estimated GHG reductions of 84 t CO_2e will be achieved once project is complete.
- Construction will run from Q3 2024 to late 2025.

PROJECT/PROGRAM PROPOSAL:

West Animal Shelter Net-Zero Retrofit

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: The CREM division has planned the net-zero retrofit at 146 The East Mall that will include the following measures: air-source heat pumps installation; electrification of domestic hot water; LED lighting retrofit; heat recovery; BAS installation; envelope upgrades; and roof-mounted and carport solar photovoltaics.

GHG Reduction Commentary

- Estimated GHG reductions of 74 t CO_2e will be achieved once project is complete.
- Construction will run from Q3 2024 to late 2025.

PROJECT/PROGRAM PROPOSAL:

Net-zero feasibility studies at 15 CREM sites annually

***ACTION**: Enabler - Corporate Buildings*

Description: Sites to be prioritized based on greenhouse gas emissions and SOGR backlog.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

PROJECT/PROGRAM PROPOSAL:

High Park Greenhouse net-zero retrofit

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: Net-zero retrofit at the High Park Greenhouse complex, which includes electrical upgrades, air-source heat pump and electric heater installation, envelope upgrades, and carport solar photovoltaics installation.

GHG Reduction Commentary

- Estimated GHG reductions of 737 t CO_2e will be achieved once project is complete.

PROJECT/PROGRAM PROPOSAL:

Decarbonization of Facilities

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: This program will include activities and projects to reduce GHG emissions from Toronto Transit Commission (TTC) buildings. Major opportunities to reduce emissions from buildings include increasing electrification and greater energy efficiency using “intelligent efficiency” technologies and removing and sequestering emissions by industrial or natural techniques.

GHG Reduction Commentary

- Estimate based on annual average of the 10-year cumulative GHG emission difference between the completed project actions and the current baseline.
- The electricity consumption estimate of future fully electrified buildings is calculated by the volume of natural gas currently consumed by these buildings and converting it into its energy equivalent.
- A reduction factor of 15% is applied to represent the efficiency gain from this retrofit. Note that this reduction may not fully capture the potential emissions savings, as it is based on a generalized efficiency gain.

PROJECT/PROGRAM PROPOSAL:

Site-wide generator replacement

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: Replacing diesel and natural gas-powered generators used across the Zoo site with sustainable energy sources.

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

PROJECT/PROGRAM PROPOSAL:

St. Lawrence Market South Net-zero retrofit

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: This action is the net-zero retrofit at St. Lawrence Market South, which includes window replacement, significant Heating, ventilation, and air conditioning (HVAC) upgrades, envelope upgrades, LED lighting, and fuel-switching. It has yet to be determined whether air-source or ground-source heat pumps will be utilized as this is dependent upon the securement of a location for the geo-field. Net-zero retrofit is multi-year and fuel-switching will be completed last.

GHG Reduction Commentary

- Estimated GHG reductions will be achieved once project is complete.

PROJECT/PROGRAM PROPOSAL:

Additional 30 net-zero feasibility studies annually at CREM sites

***ACTION**: Enabler - Corporate Buildings*

Description: Sites to be prioritized based on greenhouse gas emissions and SOGR backlog. Additional resources for net-zero technologies, energy modeling, and construction design will be required to accelerate net-zero feasibility studies and subsequent design.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

PROJECT/PROGRAM PROPOSAL:

Energy Efficiency Retrofit

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: This program is seeking to upgrade energy-consuming systems in TTC buildings or equipment/tools to be more energy efficient and move away from fossil fuels. These retrofits may include but are not limited to upgrading lighting fixtures to LED, upgrading sensors and adjusting set points, increasing efficiencies of mechanical equipment, and installing energy monitoring capabilities.

GHG Reduction Commentary

- Estimate based on annual average of the 10-year cumulative GHG emission difference between the completed project actions and the current baseline.
- A reduction factor of 15%, representing the efficiency gain, is applied to estimate the electricity consumption of future fully electrified buildings. Note that this reduction may not fully capture the potential emissions savings, as it is based on a generalized efficiency gain.

PROJECT/PROGRAM PROPOSAL:

Equipment replacements

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: Replacement of water heaters, boilers, etc. in buildings across the Zoo site.

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

PROJECT/PROGRAM PROPOSAL:

Net-zero retrofits at Metro Hall, City Hall, North York Civic Centre, Scarborough Civic Centre

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: The scope of work is to be determined based on results of feasibility studies but would include the following measures: fuel-switching; envelope upgrades; energy efficiency measures; and renewable energy use.

GHG Reduction Commentary

- Estimated GHG reductions of 4,088 t CO_2e will be achieved once project is complete.
- The division assumed an average reduction of 65% compared to the 2023 emissions based on the 80% reduction from the analysis done in the Corporate Real Estate Management (CREM) net zero carbon plan and given the size and complexity of the buildings.

PROJECT/PROGRAM PROPOSAL:

Net-zero retrofits at additional 132 Corporate Real Estate Management (CREM) sites over 10-year period

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: Sites and scopes of work are to be determined based on the results of net-zero feasibility studies. The number of sites is variable depending on staffing resources. Capital funds will likely be offset by sustainable energy plan financing funding.

GHG Reduction Commentary

- Estimated GHG reductions will be achieved once project is complete.
- The division assumed an average reduction of the 80% reduction from the analysis done in the CREM net zero carbon plan.

PROJECT/PROGRAM PROPOSAL:

Homelessness Services Capital Infrastructure Strategy -- New Shelter Development

***ACTION**: Net Zero Carbon Plan - Toronto Green Standard (TGS) - Corporate*
Description: This action includes the acquisition and the fit-up of 20 new permanent shelter sites to replace existing temporary sites. Sites will be retrofitted to ensure net-zero compliance through actions such as electrifying new and existing systems that use natural gas.

GHG Reduction Commentary

- Estimated GHG reductions will be achieved once project is complete.
- The division estimated that the target size of new shelters is about 20,000 sq ft to 15,000 sq ft on the low end, and about 30,000 feet on the high end.
- The total GHG reduction of this action is the sum between the total floor area of the 20 new shelters and the average GHG reduction per floor area of the building retrofitted.
- The emission reduction estimated should be considered as the upper bound of the potential GHG reduction once project is complete.

PROJECT/PROGRAM PROPOSAL:

Meridian Hall - Steam to Hot Water (HW) conversion + Fuel Switching + Photovoltaic

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: Fuel switch of steam to Hot Water conversion and wastewater energy exchange, install solar panels, install energy efficient chillers.

GHG Reduction Commentary

- GHG reductions estimates of 434 t $C0_2e$ is estimated to start in 2028.

PROJECT/PROGRAM PROPOSAL:

Meridian Arts Centre - Fuel switch to heat recovery chiller + Photovoltaic (PV)

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: Fuel switch to heat recovery chillers w energy efficient chillers, install solar panels and PV façade (25% new roofing required and full façade replacement).

GHG Reduction Commentary

- GHG reduction estimates of 222 t CO_2e is estimated to start in 2027.

PROJECT/PROGRAM PROPOSAL:

Africa Pavilion Lighting

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: Replacement of existing lighting in Africa pavilion with LED lighting

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

PROJECT/PROGRAM PROPOSAL:

Red Panda habitat refurbishment

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: Enhancement to red panda habitat upgrades to meet net zero emissions standard.

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

PROJECT/PROGRAM PROPOSAL:

Indoor Savanna

***ACTION**: Net Zero Carbon Plan - Fuel switching + Efficiency retrofits*

Description: Enhancements to new Indoor Savanna animal holding and viewing facility to meet net zero emission standard.

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

PROJECT/PROGRAM PROPOSAL:

Winter Thermal Imaging Study

***ACTION**: Enabler - Corporate Buildings*

Description: Conduct thermal imaging analysis in winter months to determine where we need to improve building envelopes for energy efficiencies.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

PROJECT/PROGRAM PROPOSAL:

Space Planning

***ACTION**: Enabler - Corporate Buildings*

Description: Reconfigure existing Transportation Services office spaces from dedicated seating to shared seating.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

CORPORATE TRANSPORTATION

PROJECT/PROGRAM PROPOSAL:

Hybrid Bus – Purchase

***ACTION**: Green Bus Program*

Description: Hybrid bus with less fuel consumption/reduced GHG emissions

GHG Reduction Commentary

- This action enables the Green Bus program so reductions are seen in the action, eBus – Purchase.

PROJECT/PROGRAM PROPOSAL:

Energy Management / Storage System

***ACTION**: Green Bus Program*

Description: Energy Storage System (ESS) can contribute to meeting electricity demand during peak times, when electricity is more expensive. The system gives the TTC the option to buy electricity during off-peak times and use it during peak times. Energy storage also helps provide resilience in extreme weather conditions since it can serve as a backup energy supply during power disruptions.

GHG Reduction Commentary

- This action enables the Green Bus program so reductions are seen in the action, eBus – Purchase.

PROJECT/PROGRAM PROPOSAL:

Wheel-Trans Bus – Purchase

***ACTION**: Green Bus Program*

Description: This action is a procurement strategy to transition the TTC para-transit bus fleet to become zero-emissions. It includes the procurement of e-buses to replace the current fleet running on diesel.

GHG Reduction Commentary

- Estimate based on annual average of the 10-year cumulative GHG emission difference between Green Bus fleet vehicles and diesel bus fleet vehicles completing the same kilometers. Actual annual emission reductions will be larger in future years as a result of rising share of Green Bus fleet vehicles.
- The emission reduction may potentially be an over/underestimate based on the variation in fuel efficiency of the buses being replaced by the new e-buses.

PROJECT/PROGRAM PROPOSAL:

eBus Charging Systems – Purchase

***ACTION**: Green Bus Program*

Description: Electric vehicle charging system

GHG Reduction Commentary

- This action enables the Green Bus program so reductions are seen in the action, eBus – Purchase.

PROJECT/PROGRAM PROPOSAL:

eBus – Purchase

***ACTION**: Green Bus Program*

Description: The Green Bus Program is a procurement strategy to transition the TTC bus fleet to become zero-emissions by 2037. It includes the procurement of hybrid buses or complete electric buses (e-bus) to replace the current fleet running on diesel.

GHG Reduction Commentary

- Estimate based on annual average of the 10-year cumulative GHG emission difference between Green Bus fleet vehicles and diesel bus fleet vehicles completing the same kilometers. Actual annual emission reductions will be larger in future years as a result of rising share of Green Bus fleet vehicles.
- The emission reduction may potentially be an over/underestimate based on the variation in fuel efficiency of the buses being replaced by the new e-buses.

PROJECT/PROGRAM PROPOSAL:

Electric Pumper Fleet Expansion

***ACTION**: Sustainable City Fleets*

Description: Evaluate new electric pumper trucks and expand the deployment of electric pumper trucks within Toronto Fire Services' heavy fleet.

GHG Reduction Commentary

- This action involves 22 light-duty vehicles being replaced by electric vehicles.

PROJECT/PROGRAM PROPOSAL:

Maximize CNG Fleet

***ACTION**: Sustainable City Fleets*

Description: This action involves conducting a comprehensive analysis of existing fleet to identify vehicles suitable for conversion to compressed natural gas (CNG) to maximize CNG fleet. The division estimated that CNG will yield 30% reductions in emissions compared to diesel.

GHG Reduction Commentary

- Note for this action, the maximum potential reductions that might be enabled in future by this analysis is 487 t CO_2e, assuming all potential for maximizing CNG is utilized.

PROJECT/PROGRAM PROPOSAL:

Convert SWM refuse collection vehicles

***ACTION**: Sustainable City Fleets*

Description: The objective is to support a pilot solution on Solid Waste Management collection vehicles to reduce emissions from City's heavy-duty refuse collection vehicles through a hybrid electric system application.

GHG Reduction Commentary

- The GHG reduction estimate is based on the hybrid electric vehicles reducing about 30% their GHG emissions compared to the current collection vehicles.
- The emission reduction may potentially be an over/underestimate based on the variation in the number of vehicles that will be purchased in 2025.

PROJECT/PROGRAM PROPOSAL:

Electric WT Charge Systems – Purchase

***ACTION**: Sustainable City Fleets*

Description: Implement an electrification infrastructure to support the transition of the Wheel-Trans bus fleet to zero-emissions by the year 2040, as outlined in TTC's Green Bus Technology Plan.

GHG Reduction Commentary

- This action enables the Wheel-Trans purchase program so reductions are seen in the action, Wheel-Trans Bus – Purchase.

PROJECT/PROGRAM PROPOSAL:

Addressing Aging Backlog

***ACTION**: Sustainable City Fleets*

Description: This action aims to replace the aging fleet of vehicles that contribute disproportionately to GHG emissions, as they rely on outdated technology that no longer meets current standards.

GHG Reduction Commentary

- The emission reduction may potentially be an over/underestimate based on the on the number of vehicles that will be replaced in 2025 and variation om specification of the new vehicles.

PROJECT/PROGRAM PROPOSAL:

Fleet Transition to Zero Emission Vehicles (ZEVs)

***ACTION**: Sustainable City Fleets*

Description: This action aims to accelerate ZEV replacements based on available technology and feasibility to achieve a total of 41% of all vehicles converted to ZEVs in 2030.

GHG Reduction Commentary

- Note that total cumulative emissions from 2024-2025 is 1,682 t CO_2e.
- The emission reduction may potentially be an over/underestimate based on the variation in electricity efficiency of new electric vehicles.

PROJECT/PROGRAM PROPOSAL:

Hybrid Vehicle Technology

***ACTION**: Sustainable City Fleets*

Description: Transition to hybrid vehicle technology all District Chief emergency response vehicles and other light vehicle fleet to improve fuel efficiency and emissions reduction.

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

PROJECT/PROGRAM PROPOSAL:

Idle Reduction Technology

***ACTION**: Sustainable City Fleets*

Description: All new and replacement fire trucks going forward will include idle reduction technology as a specification requirement which minimizes engine idling to save fuel, reduce emissions, and lower maintenance costs.

GHG Reduction Commentary

- In 2025, 18 fire trucks will be equipped with idle reduction technology which is estimated to reduce fuel consumption by 8%.

PROJECT/PROGRAM PROPOSAL:

Proof of concept demonstration & promotion for ZEV

***ACTION**: Sustainable City Fleets*

Description: Provide initial proof of concept ZEV to divisions on a test-basis to determine operating impact and efficiency, and overall value to the operations. Collect end-user feedback and ZEV performance data to inform data-driven business decisions regarding bulk procurement.

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

PROJECT/PROGRAM PROPOSAL:

Pilot: Hydrogen Fuel Cell Technology

***ACTION**: Sustainable City Fleets*

Description: Pilot one hydrogen fuel cell unit within a building energy site to test operational feasibility and the concept of alternatives to traditional internal combustion engines and battery-electric vehicles.

GHG Reduction Commentary

- The GHG reduction is calculated using the average fuel consumption across the entire fleet and the vehicles being replaced by hydrogen-powered ones.
- The emission reduction may potentially be an over/underestimate based on the variation in fuel consumption among vehicles.

PROJECT/PROGRAM PROPOSAL:

Reducing Emissions in Construction Sector

***ACTION**: Enabler - Corporate Transportation*

Description: The Reducing Emissions in the Construction Sector project tests the use of renewable diesel in Toronto Region Conservation Authority construction vehicles working in the City of Toronto.

GHG Reduction Commentary

- The GHG reduction is calculated using the annual diesel consumption of off-road fleet and running it on renewable biodiesel.
- The emission reduction may potentially be an over/underestimate based on the variation in the number of vehicles that will run on renewable biodiesel in 2025.

PROJECT/PROGRAM PROPOSAL:

Micromobility pilots and program supports

***ACTION**: Sustainable City Fleets*

Description: Assessing and supporting implementation of micromobility options (bikes, LSVs) to replace trips/vehicles in relevant operations

GHG Reduction Commentary

- Estimated GHG reductions not available at this time.

PROJECT/PROGRAM PROPOSAL:

Fleet Transition Accelerator

***ACTION**: Enabler - Corporate Transportation*

Description: This program aims to facilitate fleet transition towards low-and-zero-emission technologies, through training programs and tools that aid in informed decision-making and strategy development.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

PROJECT/PROGRAM PROPOSAL:
Digital Workspace Platform

***ACTION**: Enabler - Corporate Transportation*

Description: Allow more flexibility for staff to work from home and thus avoid commuting.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

COMMUNITY / CORPORATE WASTE

PROJECT/PROGRAM PROPOSAL:

Dufferin Organics Processing Facility Improvements

***ACTION**: Green Bin Organics Program; Biogas gas capture for beneficial use (RNG) and reduced methane flaring*

Description: This action involves making improvements to the facility to increase the amount of organic waste that can be diverted from landfill and the amount of renewable natural gas that can be generated.

GHG Reduction Commentary

- The estimated emission reductions resulting from diverting additional waste from landfill are 914 t CO2e per year.
- The estimated additional emission reductions from generating and capturing additional biogas for beneficial use versus flaring it are estimated at 1,796 t CO2e per year.

CROSS-SECTOR

PROJECT/PROGRAM PROPOSAL:

Climate Change Mitigation & Adaptation Studies

***ACTION**: Enabler - TransformTO*

Description: Conducts benchmarking for sustainable performance of Toronto Transit Commission (TTC) assets including buildings, civil infrastructure, and vehicles for the purpose of identifying measures to improve performance. Sustainable performance includes but is not limited to climate mitigation, climate adaptation, ecological impacts, water and resource consumption.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

PROJECT/PROGRAM PROPOSAL:

Establishment of the Toronto Green Industry Cluster Alliance

***ACTION**: Enabler - TransformTO*

Description: This action follows Council direction of the Action Plan for Growing Toronto's Green Industry – the establishment of the Toronto Green Industry Cluster Alliance which is a public-private collaboration model for working on joint initiatives. This is an important enabler of actions to support the implementation of the TransformTO Net Zero Strategy (NZS) and reduce GHG emissions across the City but may not have a direct or immediately measurable impact. Important examples include the mandate of stimulating the growth of the local industry to be able to install the volume of green solutions to meet NZS targets, and supporting greater collaboration between industry, the City, and academia to speed innovation and the development of effective and efficient policies and programs.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

PROJECT/PROGRAM PROPOSAL:

Implementation of the Green Job Strategy

***ACTION**: Enabler - TransformTO*

Description: This action follows Council direction of the Action Plan for Growing Toronto's Green Industry – the implementation of initiatives that will support the growth of green jobs in Toronto – both in the community and in the City. These are important enablers of actions to support the implementation of the TransformTO Net Zero Strategy and reduce GHG emissions across the City but may not have a direct or immediately measurable impact. Important examples include the formation of an internal green jobs action group; a green jobs workshop and summit; a workforce attraction campaign, supporting the development of green skill profiles, a study of a green industry innovation park, and collaboration between City, industry and academia. Many of these actions will be transitioned to the Toronto Green Industry Cluster Alliance once it is fully established.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

PROJECT/PROGRAM PROPOSAL:

Black-Led Climate Action Grants

***ACTION**: Enabler - TransformTO*

Description: The development and implementation of a Black-led Climate Action program that will providing support and funding for climate action projects in Black Communities. The program will require a dedicated 1.0 FTE to administer and oversee the program (including community outreach and educational campaigns) as well as a dedicated budget to provide funding to the projects proposed by Black-led groups. The goal of the program is to provide financial support and other in-kind project support to local, Black-led climate action projects in an accessible manner. This will both support Black communities and the critical actions that will assist Toronto in reaching its climate goal of net zero by 2040.

GHG Reduction Commentary

- Enabler actions are important parts of any city's climate action plan but are not suitable for quantified GHG reduction estimates.

PROJECT/PROGRAM PROPOSAL:

Decarbonizing the Public Realm: study and toolkit

***ACTION**: Enabler - TransformTO*

Description: Develop a baseline assessment of the embodied carbon and carbon sequestration associated with construction, maintenance and operations including parks and open spaces and city ROWs. Identify opportunities for carbon reduction from baseline through design and material selection and identification of a performance measure for various types of public realm infrastructure.

GHG Reduction Commentary

- This collaborative project with Environment, Climate & Forestry, Transportation Services, Parks & Recreation, and Engineering & Construction Services will contribute to the update of TGS Version 5, Park Climate Design Guidelines, Growing Green Streets, Transform TO Net Zero Strategy and to help ensure alignment with municipal embodied carbon reduction target setting.

PROJECT/PROGRAM PROPOSAL:

Plant Forward Program

***ACTION**: Cool Food Pledge*

Description: Plant Forward pledge with Humane Society, with the aim of increasing plant-based menu items at City-owned shelters. By serving less meat and more plant-based menu items, TSSS can significantly reduce food-related GHG emissions. The City has determined that one approach to reduce GHG emissions would be to reduce amount of beef purchased and has identified it as the largest contributor to the City's food-related emissions.

GHG Reduction Commentary

- The estimated GHG emission reductions resulting from reducing the amount of beef purchased are 897 t CO_2e per year.

PROJECT/PROGRAM PROPOSAL:

Toronto Climate Leaders Program

***ACTION**: Enabler - TransformTO*

Description: Delivered by TRCA's Partners in Project Green, the Toronto Climate Leaders Program (TCLP) is designed to empower local private sector leaders in significantly curbing their greenhouse gas (GHG) emissions. This initiative offers a comprehensive package of support, including identifying opportunities and providing implementation assistance. Each year, the program aims to conduct GHG Emissions and Climate Resiliency Site Assessments for 10 facilities, with the potential to expand based on allocated funding.

GHG Reduction Commentary

- Enabler actions are important parts of any city’s climate action plan but are not suitable for quantified GHG reduction estimates.