

Date: 2021-10-26

Subject: **Brampton Sustainable Fleet Strategy**

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Recommendations:

1. That the report titled: **Brampton Sustainable Fleet Strategy** to the Committee of Council meeting of January 19, 2021, be received; and
2. That Council endorse the Brampton Sustainable Fleet Strategy.

Overview:

- **The City of Brampton engaged Richmond Sustainability Initiatives to prepare a structured climate action plan for reducing greenhouse gas emissions for fleet vehicles.**
- **The proposed multi-pronged approach combines best management practices and an electric vehicle phase-in toward achieving 86% tailpipe GHG emissions reduction (from 2019 levels) over the 2021-2035 period.**
- **The City of Brampton requests Council support to pursue the recommended short- to medium-term climate actions.**

Background:

In June 2019, Brampton City Council joined the Government of Canada and more than 400 Canadian municipalities in declaring a climate emergency. In 2020, the transportation sector accounted for approximately 25% of greenhouse gas (GHG) emissions in Canada,

second only to the oil and gas sector. According to corporate GHG emissions data, the City's mobile sources, including the City's vehicle fleet and associated equipment contributed to more than 50% of the City of Brampton's 2016 corporate GHG emissions.

The City of Brampton has three major fleets: Fleet Services (Corporate fleet), Fire & Emergency Services, and Brampton Transit. With the population projected to reach almost 900,000 by 2041, the need for these services will only grow. This in turn will increase the size, requirements, and pressures put on the City's fleet for the provision of services.

The City recognizes that fleet operations impact our environment, particularly through the generation of greenhouse gas (GHG) emissions, and has been implementing sustainable fleet practices for over 20 years. Through the adoption of the Brampton Grow Green Environmental Master Plan, which calls for the development of a Sustainable Fleet Strategy, and the Community Energy & Emissions Reduction Plan, as well as Council's Climate Emergency Declaration, the need for a comprehensive Sustainable Fleet Strategy to guide our fleet operations using an environmental sustainability lens has never been stronger.

In 2020, the City of Brampton retained Richmond Sustainability Initiatives - Fleet Challenge (RSI-FC) to help determine potential pathways to reduce the environmental impact of its fleet and contribute toward achieving the City's GHG emission targets of a 50% reduction by 2040 and 80% reduction by 2050.

In-Scope Fleet

The table below outlines the vehicles/apparatus that were included in the scope of the Sustainable Fleet Strategy:

Sub-Fleet	Vehicle Classification(s)	Unit Count (Owned)	Unit Count (Rental)	Unit Count (Total)
Corporate Fleet	Light-, medium-, and heavy-duty vehicles	422	35	457
Fire & Emergency Services	Light- and medium-duty vehicles, and fire apparatus	107	0	107
Brampton Transit	Light- and medium-duty vehicles (Only non-revenue generating vehicles; does not include buses)	18	43	61
Total		625 vehicles		

Summary of Technical Analysis

Based on the findings of RSI's Sustainable Fleet Strategy: Background Review and Analysis, conducted using one-year of historical data for 625 fleet vehicles, the City of Brampton can strive to reduce 86% of tailpipe GHG emissions by 2035 (compared to 2019 levels).

The Sustainable Fleet's Strategy key objectives include:

1. Data-model all potential fuel-reduction solutions and estimate their impacts (reductions of Operating expenses, Capital expenses, and GHG emissions) relative to the baseline.
2. Create a battery-electric vehicle (BEV) transition plan and estimate the cost impacts and GHG-reduction potential relative to the baseline over a 15-year budget cycle.
3. Estimate additional capital required for electric vehicle supply equipment (EVSE) over a 15- year budget cycle, and recommend solutions for offsetting these charging infrastructure costs through government funding, reduced operating budgets, and fleet reserve
4. Create a sustainable fleet action plan to improve the sustainability performance of the City's fleet including short-term (1-2 years), mid-term (3-5 years), and long-term (5-10+ years).

RSI conducted a baseline and a lifecycle analysis using their Fleet Analytics Review™ software to determine optimal economic lifecycles for vehicle types over a 15-year budget cycle, with consideration for return-on-investment for unit replacements. The technical analyses evaluated operating expenses, capital expenses, and GHG reductions, with electrical vehicle supply equipment (EVSE) cost estimations, a structured low-carbon fleet transition, and the comparison of acquisition methods (purchasing, leasing, renting).

The recommendations explored in the Sustainable Fleet Strategy balance cost-effectiveness, timeliness, and sustainability goals. The transition away from fossil fuels, optimization of capital towards BEV replacement and charging infrastructure, and deep decarbonization must be achieved whilst maintaining stability in capital budget planning and service delivery¹².

Relative to the 2019 baseline, RSI predicts up to a 35% annual tailpipe GHG reduction percentage for Group A actions (best management practices) and up to 86% Group A and Group B (EV phase-in) collective actions over the 2021-2035 period.

Current Situation:

The Sustainable Fleet Strategy has been developed and is ready for implementation.

The Strategy recommends a multi-pronged approach to reduce GHG emissions for the City of Brampton. A combined effort of data-driven analysis and reporting, best management practices (BMPs) battery-electric vehicle (BEV) transition, expansion of the electric vehicle supply equipment (EVSE), internal and external partnerships and educational outreach is suggested for the short- and medium-term.

These efforts are grouped into two distinct strategies, Group A including the BMPs for immediate short-term implementation, and Group B including the BEV transition and EVSE expansion for short- to medium-term phase-in, building onto Group One actions for the maximum annual tailpipe GHG reduction.

Based on the recommendation of RSI's Sustainable Fleet Strategy to support upcoming BEVs, BDC has been engaged to validate the installation of EV charging stations having 176 charging connector project across 3 different sites with existing parking lots for fleet vehicles located at FCCC, 120 Sandalwood Parkway Garage and WPOC. All these chargers are going to be exclusive to City of Brampton-owned Fleet Vehicles.

Group A includes improving vehicular job suitability (rightsizing, downsizing, and light-weighting enhancements), encouraging fuel-efficient driver behaviors through training and incentive programs, and consider allocating used vehicle auction sales towards a fleet reserve fund to maximize sale proceeds and minimize acquisition and lifecycle operation costs.

Group B includes a short-term pause on purchasing internal combustion engine (ICE) vehicles, awaiting suitable BEV availability where applicable. It also includes implementing technical EV maintenance training, coordinating battery recycling shipments at end-of-lifecycle, assessing existing electrical capacity at charging stations (upgrading as needed), exploring two separate power feeds to garages to mitigate risk of local failure and exploring upcoming solar energy technology for charging stations. Additionally, the majority of fleet capital spending should be allocated towards the BEV transition and the supporting EVSE infrastructure.

Ongoing collaborations should be pursued at the department, municipal, and organizational level. The City of Brampton should also provide educational materials on the benefits of the BEV transition and the operational orientation for new BEV models accompanying the BEV phase-in. Data monitoring for the key performance indicators for fuel consumption, GHG intensity, area ratio, and EVSE costing outlook should be reporting to all fleet users annually and to Council biennially.

Corporate Implications:

Financial Implications:

There are no direct financial implications resulting from the approval of the recommendations of this report. Resources and funding required to implement actions will be identified and brought forward to Council for approval as part of the annual budget process. Council has recently approved \$3.75 million for 2022 and approved in principal additional \$ 3.75 million for 2023 as part of the 2022 capital budget for the installation of 176 EV charging stations across 3 different sites with existing parking lots for fleet vehicles located at FCCC, 120 Sandalwood Parkway Garage and Williams Parkway Operations Centre.

Other Implications:

There are no other implications resulting from the approval of the recommendations of this report.

Term of Council Priorities:

The Sustainable Fleet Strategy supports the “Brampton is a Green City” and the “Brampton is a Well-Run City” Term of Council Directions by improving the City’s sustainability performance, streamlining service delivery, and effectively managing municipal assets.

Conclusion:

The City of Brampton requests Council support to implement the short- to medium-term climate actions recommended by RSI towards achieving the City’s GHG emission reduction targets of 50% reduction by 2040 and 80% reduction by 2050. The multi-pronged approach targets emission reductions through both environmentally-conscious equipment upgrades and fuel-efficient operator practices, in accordance with the Brampton Grow Green Environmental Master Plan, the Community Energy & Emissions Reduction Plan, as well as Council’s Climate Emergency Declaration. Strategic climate action is necessary to amplify and accelerate environmentally, socially, and economically sustainable corporate practices.

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Attachments:

Appendix A – City of Brampton Sustainable Fleet Strategy – Full Report

Appendix B - Sustainable Fleet Strategy Framework and Action Plan Report

Appendix C - Sustainable Fleet Strategy Background Review and Analysis Report