

## **Status Update of Biodiesel Strategy for the City of Toronto**

**Date:** August 30, 2021

**To:** Infrastructure and Environment Committee

**From:** Acting General Manager, Fleet Services Division

**Wards:** All

### **SUMMARY**

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The purpose of this report is to provide an update to the Infrastructure and Environment Committee on the implementation of the switch to biodiesel including the impact on vehicles, the cost implications, and the reduction in Greenhouse Gasses in the City's Fleet operations, as requested by [the City Council on February 18, 2021](#).

### **RECOMMENDATIONS**

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The General Manager, Fleet Services recommends that:

1. The Infrastructure and Environment committee receive this report for information.

### **FINANCIAL IMPACT**

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There is no immediate financial impact to the City resulting from this report.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

### **DECISION HISTORY**

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At its meeting on February 18, 2021, City Council requested the General Manager Fleet Services to report to the Infrastructure and Environment Committee on the implementation of the switch to biodiesel including the impact on vehicles, the cost implications and the reduction in Greenhouse Gasses.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.EX21.2>

At its meeting on November 26 and 27, 2019, City Council authorized an award of Negotiable Request for Proposal number 6907-19-0145 to Canada Clean Fuels Inc. for the supply of various fuels and services.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.GL9.17>

At its meeting on April 2, 2019, the Infrastructure and Environment Committee was provided an update on biodiesel strategy for the City of Toronto.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.IE3.1>

## COMMENTS

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City of Toronto Fleets' strategies and actions in addressing climate mitigation and adaptation are key contributing factors to the City's overall environmental achievements. Our Sustainable Fleets Plan has been recognized for its successes and an example of effective local leadership on climate mitigation. As a result, City Fleets achieved 38% reduction in GHG emissions as of the end of 2020, well over the City's 2020 target of 30% (compared to 1990 levels).

The scope of the City of Toronto Fleets includes more than 10,000 City owned motor vehicles and equipment, managed and/or operated by: Fleet Services Division (Centrally-Managed Fleet), Toronto Transit Commission (TTC), Toronto Police Service, Toronto Fire Services, and Toronto Paramedic Services, Toronto Community Housing, Exhibition Place, Toronto Zoo, Toronto Parking Authority, and Toronto Public Library.

City Fleets transition to sustainable, climate resilient, and carbon-neutral operations will continue to utilize different low and zero-emission vehicle technologies and fuels, including renewable energy sources, and efficient fleet management practices. They are designed to ensure that City Fleets are fully optimized, utilized and maintained efficiently, while remaining cost effective, resilient, and sustainable for decades to come.

As part of our continuous review of available green technologies and alternative fuels, the University of Toronto conducted a biodiesel feasibility study to identify and balance benefits versus risks of increased use of biodiesel blends in City Fleet operations. The study's final recommendation was to implement biodiesel blend B5 use in winter months, higher blends such as B10 in spring and fall, and B20 in summer. Consequently, the Strategic Sourcing approach led to a contract award for the supply of various fuels and services, commencing January 1, 2020, which included the supply of biodiesel blends B5, B10, and B20 during the defined seasons.

### **Impact of higher biodiesel blends on City vehicles**

Based on the 2020 data, seasonal use of higher blends of biodiesel has not resulted in increased vehicle maintenance costs or warranty issues, which is in line with the University of Toronto study. We are continuing to monitor impacts of higher blends on vehicle maintenance costs, especially on heavy-duty vehicles that remain warranted by the manufacturer only to B5 biodiesel blend use.

## Fuel volumes

The COVID-19 pandemic had significant impacts on City services, including City Fleets. With number of services being scaled back or paused, City Fleets' total diesel fuel consumption was significantly reduced during 2020, the first year of the new fuel supply contract, to approximately 78 million litres compared to 94 million litres in 2019, a 17% reduction. With the current pace and scale of the Provincial reopening, it is estimated that 2021 City Fleets' diesel consumption will recover to approximately 88 million litres. The following table indicates estimated annual volumes based on the recommended biodiesel blend seasonal use.

<b>Annual Biodiesel Volumes (litres)</b>	<b>2020 (actual)</b>	<b>2021 (projected)</b>	<b>2022 (projected)</b>	<b>2023 (projected)</b>	<b>2024 (projected)</b>
B5	75,036,369	66,933,334	45,149,867	43,434,172	41,783,673
B10	1,861,949	13,401,333	22,800,683	21,934,257	21,100,755
B20	1,627,520	7,665,333	17,269,824	16,613,571	15,982,255
Total	78,525,838	88,000,000	85,220,374	81,982,000	78,866,683

The projected decline in total diesel fuel usage by City Fleets continues the current trend resulting from the ongoing transition to low and zero-emission vehicles and fuels, including TTC to hybrid-electric and all-electric buses, and transition of a segment of the City's heavy-duty vehicles to natural gas.

## Cost implications of the new fuel contract

City-wide financial impacts associated with the projected biodiesel consumptions are shown in the following table. They are based on the current contract price difference between B5 and, B10 and B20 respectively, and for the current contract term.

<b>Financial Impacts</b>	<b>2020 (actual)</b>	<b>2021 (projected)</b>	<b>2022 (projected)</b>	<b>2023 (projected)</b>	<b>2024 (projected)</b>
Reduced Cost from Seasonal B10 & B20 Use	\$149,923	\$758,727	\$1,467,354	\$1,411,595	\$1,357,954

## Greenhouse gas reduction impacts

The following table shows the associated environmental impacts of the projected biodiesel volumes with the recommended seasonal biodiesel blends.

<b>Environmental Impacts (CO2e tonnes)</b>	<b>2020 (actual)</b>	<b>2021 (projected)</b>	<b>2022 (projected)</b>	<b>2023 (projected)</b>	<b>2024 (projected)</b>
GHG Reduction from Seasonal B10 & B20 Use	893	4,821	8,434	8,113	7,805

Environmental benefits of biofuels in City Fleets are projected to decline with the decline in the overall consumption of biofuels, as we accelerate the transition to low and zero-emission vehicles.

**Drive to Net-Zero**

Biofuels, a relatively simple and obvious alternative to traditional fossil fuels can definitely provide some environmental benefits and serve as one of the provisional steps in transitioning City Fleets to sustainable, resilient, and carbon-neutral operations.

However, in order to achieve the City's Vision, "Toronto is a clean, green and sustainable city", and City's net-zero target, we must invest in and accelerate high priority emission reduction areas identified in the Sustainable City Fleets Plan and TransformTO. This y means significantly reducing and ultimately eliminating our consumption of fossil fuels, including various biofuel blends, by transitioning City Fleets to zero-emission vehicles.

To support this transition, City Fleets have several initiatives and projects underway:

- TTC currently has 60 all-electric buses, as part of its initial testing that will inform future procurements of all-electric buses, with the plan for the bus fleet to be 50% zero-emission by 2030, and 100% by 2040.
- TTC is working with Ontario Power Generation (OPG) and Toronto Hydro-Electric System Ltd. to ensure on-time upgrade of the local grid distribution system and implementation of required infrastructure at TTC sites.
- TTC is also continuing to replace standard diesel buses as they are retired with low-emission hybrid electric buses.
- Fleet Services Division is leading a major expansion of the City's corporate electric vehicle charging infrastructure that will enable and support accelerated transition of City Fleets to electric vehicles, and help with broader promotion and adoption of electric vehicles in Toronto, and Greater Toronto and Hamilton region.
- Phase 1 of this project is planned to be completed by August 2022, at which point we will have 160 charge points available at 70 different City locations. With phase 2 of this project scheduled to be completed by Q3 2023 (full funding sources yet to be identified), our capacity will increase to 370 charge points at 100 different City locations. This represents a significant increase to our existing capacity of 30 charge points at 12 City locations.

At the same time, as part of the provisional steps in transitioning City Fleets to sustainable, resilient, and carbon-neutral operations, we will continue to focus on the use of renewable and sustainable fuels that alleviate or balance environmental and [Status Update of Biodiesel Strategy for the City of Toronto]

economic concerns throughout the production, distribution, and consumption process, including direct and indirect land-use impacts of biofuels production.

As the largest municipal Fleet in Canada, and one of the largest in North America, City of Toronto Fleets will continue to demonstrate leadership in advancing technologies that aim to significantly reduce environmental, social and economic impacts, improve vehicle efficiency, reliability, and safety, while reducing life-cycle cost and associated impacts. City Fleets will continue to demonstrate leadership to ensure the transition of our Fleets to sustainable, climate resilient, carbon-neutral City operations and to significantly contribute to achieving City's net-zero goal.

## **CONTACT**

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## **SIGNATURE**

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