

# Green Fleet Strategy

## 2024 Renewable Diesel Pilot Findings

### BACKGROUND

The City is committed to reduce its greenhouse emissions by 60 per cent by 2030 and achieve net zero emissions by 2050. To support this, Fleet & Inventory is testing and implementing alternative fuels and technology through the Green Fleet Strategy to lower greenhouse gas emissions (GHG) across The City's fleet of vehicles and equipment. This document summarizes a large-scale renewable diesel pilot conducted in 2024.

### PILOT OVERVIEW

#### WHAT

Over 300 diesel-powered vehicles and equipment, including two Transit buses, participated in Phase II of the Renewable Diesel Pilot, using approximately 300,000 litres of renewable diesel. Several heavy-duty test trucks were closely monitored for maintenance and performance tracking.

#### WHEN

Mid-May to mid-September 2024.

#### WHERE

All diesel fuel pumps at Spring Gardens were switched to renewable diesel.

#### HOW

The pilot collected data through maintenance monitoring and visual inspections, performance measurement tests and diagnostics tools, as well as onboard telematics devices and fuel management system reporting. The data was then used to compare the use of renewable diesel to standard diesel in terms of operational, environmental, financial, and maintenance impacts.

*Renewable diesel is produced by the hydrotreating of fat or oil-based feedstock. It can replace petroleum diesel without altering fuel systems or infrastructure. It can also significantly reduce lifecycle greenhouse emissions, particularly for hard-to-electrify units like The City's heavy-duty fleet.*

### RESULTS

- There were no operational impacts on participating units during the transition from standard diesel to renewable diesel.
- Up to 75 per cent reduction in GHG emissions.
- Higher cost per liter for renewable diesel vs. standard diesel, despite significant carbon tax avoidance. These costs were covered by Fleet & Inventory through Green Fleet budget, ensuring there were no extra charges passed on to customers.
- No change in maintenance intervals and tasks.
- No significant change in performance or power delivery of vehicles and equipment.
- Increased mileage-based fuel consumption (by about 12 per cent).
- Reduced mileage-based diesel-exhaust fluid (DEF) consumption.
- Improved diesel particulate filter (DPF) performance.

### NEXT STEPS

After a successful phase II pilot, recommendations included expanding the program over the next few years, including:

- Replacing the B20 program at landfill sites (Spyhill, East Calgary, and Shepard) with the Renewable Diesel Program to eliminate biodiesel compatibility risks with units fueling from landfill locations.
- Expanding the use of renewable diesel to other large operational sites (Manchester and Spring Gardens).
- Evaluating renewable blends such as R30, R50, R50B5, etc., to provide year-round environmental benefits and address potential cost challenges.