

# Report to Council



**Date:** February 22, 2021  
**To:** Council  
**From:** City Manager  
**Subject:** **Green Fleet Update and Strategy**  
**Department:** Infrastructure Operations

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## **Recommendation:**

THAT Council receive for information the February 22, 2021 update of the Infrastructure Operations Department regarding green fleet initiatives;

AND THAT Council approve a pledge to West Coast Electric Fleets to "convert 10% of the City of Kelowna's light duty vehicle fleet to Zero Emissions Vehicles by 2023" as required by the CleanBC "Go Electric Fleets" Program;

AND THAT Council directs staff to apply for funding towards a Corporate Green Fleet Strategy and for the installation of infrastructure through the Go Electric Fleets Program;

AND THAT Council supports staff to execute all documents necessary to complete the grant, if successful;

AND THAT the 2021 Financial Plan be amended to include these projects upon grant approval, with the City's share of funding to come from the Fleet Services green initiatives operating budget and the Energy Management reserve.

## **Purpose:**

To update Council on initiatives to reduce Greenhouse Gas (GHG) emissions from the Corporate fleet, and a proposal to apply for funding towards a Green Fleet Strategy and infrastructure upgrades.

## **Background and Progress Update:**

In 2007 the City of Kelowna signed the BC Climate Action Charter which currently requires the City to continue making progress towards becoming carbon neutral. A number of Corporate initiatives are underway to achieve this goal, including efforts to reduce GHG emissions from the Corporate fleet.

Although the Corporate Fleet is estimated to be about 40%<sup>1</sup> of total Corporate emissions, Fleet will likely play a much higher role in reducing overall GHG emissions over the next several years, since Zero Emissions Vehicle (ZEV) technology is becoming more readily available compared to similar technology for zero emissions in buildings. ZEVs are defined as Electric Vehicles (EVs), Plug-in Hybrid Electric Vehicles (PHEVs) or Hydrogen Fuel Cell Electric Vehicles (FCEVs).

The City of Kelowna's fleet currently consists of 594 pieces of equipment (including trailers and attachments) (Table 1):

**Table 1.** Makeup of the current fleet.

<b>Current Fleet Vehicles</b>	<b>No.</b>
Light-Duty	208
Medium-Duty	111
Heavy-Duty	101
Fire Trucks	17
Miscellaneous (trailers, attachments, etc.)	157
<b>Total</b>	<b>594</b>

In recent years, the City has undertaken a number of initiatives aimed at reducing GHG emissions from the Corporate Fleet, including:

- Fleet Services has an existing Corporate Fleet Sustainability Policy (Attachment 1), approved in 2012. Staff are currently utilizing this policy as the basis for reducing GHG emissions. In addition to this policy, the City has an Engine Idling Policy, Fleet Operator Manual, Purchasing Policy, and corporate Equipment training programs to help achieve safe and efficient use of vehicles.
- Automatic Vehicle Location (AVL) technology was installed in fleet vehicles starting in 2012. The AVL system provides immediate driver feedback to help reduce vehicle idling and also can enhance route planning / work management to cut down on emissions.
- In 2018, the City developed a partnership agreement with MODO carshare to supply car share services for City business. This allowed Fleet services to eliminate an under-utilized fleet at City hall, and reduced capital/operating costs. It also helped MODO to get established and provide more car sharing services to Kelowna citizens. Prior to 2018, Kelowna partnered with OGO CarShare as a pilot project in 2013, and this grassroots company amalgamated with MODO in 2018.
- The City of Kelowna is the only BC City outside of Vancouver currently taking (limited) delivery of R100 fuel. R100 is diesel fuel produced from organic feedstock (e.g. used vegetable oil), refined to the same standard as diesel so it can be used undiluted (100%). "Biodiesel" is usually R5, or 5% fuel derived from organic feedstock. During a pilot in 2020, 95,452L of R100 were used, but the City has a contract for supply of up to 200,000L in 2021, which equates to a reduction of approx. 329 tonnes CO<sub>2</sub>e/yr or a 11.3% reduction in Fleet GHG emissions.

<sup>1</sup> As estimated in 2016. Corporate GHG emissions data are currently being updated.

- The City's Fleet currently includes 21 Hybrid (gasoline / electric) vehicles, 8 EV cars, 1 PHEV, and 3 low speed EVs (small truck and golf carts), 15 bikes/trikes and 5 electric bikes. The City recently acquired a hybrid dozer at the landfill and are currently investigating an electric front-end loader and an electric street sweeper.
- Fleet Services staff are applying for an E3 Fleet review in 2021. The E3 Fleet program is a national program for measuring performance of public and private fleets against green standards for performance. It is an independent review, offering an analysis of key performance indicators and opportunities for improvement. Kelowna participated in the program in 2011 and has implemented most of those recommendations (Table 2).

## **Current Challenges**

### *ZEV Availability:*

Passenger EVs are becoming easier to purchase. Nearly 9% of light duty vehicle sales in 2019 in BC were ZEV's and the Province has mandated 100% electric vehicle sales by 2040<sup>2</sup>. Pickup trucks and heavy equipment are still not readily available. Costs for most EVs are still higher than conventional internal combustion engine vehicles (even after rebates) but life-cycle costs are still favorable. A few expected changes could change the ZEV market in the coming years:

- One manufacturer (Rivian) is expected to deliver some electric pickup trucks to market starting in June 2021, at a price of approx. \$100,000 CDN.
- Electric Ford F-150 trucks and electric transit vans are expected to be available in 2022.
- Hydrogen Fuel Cell EVs are now available in Canada (Toyota Mirai / Hyundai Nexa), but a Hydrogen fueling station is not yet available in Kelowna (expected sometime this year).

### *Electrical Charging Capacity:*

As the City switches more fleet vehicles to EV technology, we will need to significantly expand our EV charging infrastructure. It's expected that this will require an investment in expanded electrical infrastructure at key City facilities where fleet vehicles are parked.

## **Green Fleet Strategy and Funding:**

Building on the existing Corporate Fleet Sustainability Policy (Attachment 1), staff have been working on a "Green Fleet Strategy" to update the process outlined in the policy and set up a roadmap for eventually converting the entire fleet to ZEV. On February 1, the Province announced a new "CleanBC Go Electric Fleets Program" to provide training, advisory services and financial supports to BC Fleets. The program provides rebates for a ZEV Fleet assessment, facility infrastructure assessments, as well as rebates for the upgrade of electrical infrastructure and installation of charging stations.

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<sup>2</sup> Province of BC, July 2020. [https://archive.news.gov.bc.ca/releases/news\\_releases\\_2017-2021/2020EMPR0031-001416.htm#:~:text=EV%20sales%20in%20B.C.%20made,highest%20sales%20rate%20in%20Canada](https://archive.news.gov.bc.ca/releases/news_releases_2017-2021/2020EMPR0031-001416.htm#:~:text=EV%20sales%20in%20B.C.%20made,highest%20sales%20rate%20in%20Canada).

A key eligibility requirement for this funding is that the City would need to take the West Coast Electric Fleets pledge, to “convert 10% of the City of Kelowna’s light duty vehicle fleet to Zero Emissions Vehicles by 2023”. The pledge is voluntary, and the applicant is allowed to specify that it only applies to “light duty” vehicles since other types of vehicles are not readily available. This pledge would require the City to acquire approximately 10 more light duty ZEVs by 2023. Staff feel that this is attainable, given the planned replacement of cars and trucks over the next few years, and the expectation that EV pickup trucks will be available in 2022.

### **Conclusion:**

Staff are requesting Council approval to proceed with a pledge to West Coast Electric Fleets, and an application for the maximum funding available under the new CleanBC Go Electric Fleets Program, for assessment of the City Fleet (50% of costs, up to \$10,000), assessment of electrical infrastructure (50% of costs, up to \$5,000), upgrades to electrical infrastructure (70% of costs, up to \$30,000), and installation of charging stations (75% of costs, up to \$4,000).

The grant funding and infrastructure investments will be used to complete a new “Green Fleet Strategy”. Staff will report back to Council with the new Green Fleet Strategy later in 2021.

### **Internal Circulation:**

Fleet Services Manager, Fleet Services  
Energy Manager, Building Services  
Budget Supervisor, Financial Services  
Community Energy Specialist, Policy and Planning  
Communications Advisor, Community Communications  
Grants and Special Projects Manager, Business and Entrepreneurial Development  
Purchasing Manager, Purchasing

### **Financial/Budgetary Considerations:**

The City’s portion of the funding for these grants will be drawn from two sources:

- Fleet Services funding for green initiatives (account 7540-1154-516)
- Energy Management Reserve (Ro11)

### **Existing Policy:**

The proposed Strategy would help to fulfill the Corporate goal of reducing GHG emissions 12% below 2007 levels by 2022. It would also help to fulfill some of the commitments of the Community Climate Action Plan<sup>3</sup>, and is in alignment with Council Priority “Greenhouse gas emissions are decreasing”.

Considerations not applicable to this report:

*Legal/Statutory Authority:*

*Legal/Statutory Procedural Requirements:*

*External Agency/Public Comments:*

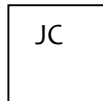
*Communications Comments:*

Submitted by:



I. Wilson, Infrastructure Operations Manager

Approved for inclusion:



J. Creron, Deputy City Manager

**Attachment 1: Corporate Fleet Sustainability Policy (2012)**

**Table 2.** Progress on recommendations from the 2011 E3 Fleet Assessment.

<b>Recommendation</b>	<b>Progress Score</b>	<b>Comments</b>
Investigate & take corrective action for each low efficiency vehicle identified	Complete	Majority of vehicles replaced since 2011
Purchase high efficiency/low emissions vehicles that meet operational needs	Complete	Considered in every purchase
Purchase the best performing vehicle models when replacing vehicles in the same class	Complete	This is part of the current process
Investigate and take corrective actions to improve overall Fleet Median Fuel Efficiency via initiatives such as idling reduction programs, vehicle pooling, trip reduction, route planning, etc.	Underway	AVL system and policies implemented (e.g. Idling Policy). Still working on better route planning
Continue to use alternative/renewable lower carbon fuels such as biodiesel where operationally practical.	Complete	Biodiesel was used for several years, this has now been replaced with EV and renewable diesel
Investigate the use of other alternative fuels where appropriate e.g. CNG, ethanol or propane.	Complete	Investigated, since 2011 staff have determined that better technologies are now available such as hybrid/EV
Consider switching to diesel engines where operationally practical for future vehicle specifications as diesels are generally much more fuel efficient, delivering overall reduced GHG emissions	Complete	This is considered, but doesn't always make sense depending on utilization and cost difference
Apply a carbon charge to user departments placing corporate responsibility for GHG emissions with line departments.	Not implemented	This was considered, but staff are pursuing a process to charge departments for the true cost of fuel (see below) instead
Review vehicles with lower utilization	Complete	On-going, still underway
Collect vehicle utilization data from on board diagnostic (OBD) systems, Automatic Vehicle Location systems (if equipped) or engine hour meters	Complete	AVL and fuel management tracking system implemented
Report vehicle utilization to the City's management team, as this will highlight under-utilized units and help determine if such vehicles are needed.	Complete	Implemented. Next phase will include dashboards for automatic reporting

**Table 2.** Progress on recommendations from the 2011 E3 Fleet Assessment. (continued)

<b>Recommendation</b>	<b>Progress Score</b>	<b>Comments</b>
Review the current vehicle charge-back system to ensure that user departments pay the <i>true</i> cost of vehicle use encouraging fleet right-sizing and ensuring maximum utilization of all vehicles.	Underway	Underway as part of City Works implementation
Implement duty cycles for the fleet based on age, as high utilization applications are most cost effectively served by newer units.	Complete	Done annually
Review current vehicle replacement and retention strategy	Complete	Performed annually and staff also update capital plans
Review fleet uptime. Fleet availability was found to be marginally lower than some peers.	Complete	Fleet Services now has better ability to track this through City Works and AVL systems. Fleet has also implemented two shifts per day to increase the level of service.
Begin by regularly tracking availability/downtime on a go-forward basis, as this information would provide an accurate picture of the business implications of future vehicle replacement.	Complete	Accurate data now available through the City Works system
Once availability data is available, drill down and closely evaluate vehicles with low availability.	Complete	Fleet is looking at vehicles that are not available as candidates for replacement
Track preventative and reactive maintenance costs separately to assess effectiveness of PM programs and levels of intensity required to maintain the highest practical levels of service.	Complete	Weekly reporting through City Works
Review of the thoroughness and frequency of your preventive maintenance inspections.	Complete	Regularly completed
Include cost of maintenance as part of overall bid assessment for new vehicles being considered for purchase.	Underway	Service contracts are part of the bid for some equipment