

The Regional Municipality of York

Committee of the Whole
Transportation Services
May 5, 2022

Report of the Commissioner of Public Works

Direct Purchase of Corporate Fleet Electric Pickup Trucks and Cargo Vans

1. Recommendations

1. Council authorize the direct purchase of up to ten electric pickup trucks and up to ten electric cargo vans at a total combined cost of up to \$1.3 million, excluding HST, as replacement vehicles pursuant to the provisions of the Procurement Bylaw from an authorized Ford Motor Company of Canada dealer.
2. Council authorize the use of \$1.3 million from the vehicle replacement reserve, including interim appropriation spending, to complete the purchase.
3. The Commissioner of Public Works be authorized to execute the necessary agreements required to procure the vehicles.

2. Summary

This report seeks Council authorization to direct purchase 10 electric pickup trucks and 10 electric cargo vans as replacements for existing end of life fleet vehicles, without a competitive procurement pursuant to Procurement Bylaw 2021-103. Ford Motor Company of Canada (Ford) is currently the only manufacturer with an electric, work-ready style pickup truck and cargo van available with 2022/2023 deliveries. The purchase will support the Region's emission reduction targets by purchasing new zero emission vehicles when technology and supply is available. Council approval is required as the purchase exceeds \$500,000.

Key Points:

- The Region is moving towards zero emission fleet vehicles as part of its Energy Conservation and Demand Management Plan, Vision 2051 and the Corporate Fleet Electrification Plan
- Pickup truck and cargo van technology has now progressed to the point where life cycle costs for an electric vehicle are expected to be less than a comparable conventional internal combustion engine vehicle

- This direct purchase would allow the Region to gain practical hands-on experience with electric pickup trucks and cargo vans, including the assessment of vehicle performance in various climate conditions, and support the Region’s transition to an emissions-free corporate fleet
- Online reservation is currently the only timely way to secure an electric vehicle purchase due to their high demand
- Ford Motor Company of Canada (Ford) is currently the only manufacturer with an electric, work-ready style pickup truck and cargo van available, with 2022/2023 deliveries
- Staff will continue to monitor electrified vehicle options for future consideration

3. Background

The Region is moving towards zero emission vehicles

To reduce greenhouse gas emissions, the Region has a goal to fully electrify the corporate fleet to produce zero emissions by 2051. In [December 2020](#), Council approved the Corporate Fleet Electrification Plan, including transition of all sedans and sport utility vehicles (SUVs) to electric vehicles by 2030. The remainder of the fleet is to be converted as technology becomes available. The shift to fleet electrification supports emissions reduction targets set out in the Region’s Energy Conservation and Demand Management Plan. Staff previously committed to continue monitoring advancements in technology and associated costs for light, medium and heavy-duty vehicles and reporting to Council when options became available.

In 2021, 13 internal combustion engine cars and sport utility vehicles were replaced with electrified versions and right-sized

In 2021, 13 electrified vehicles were purchased consisting of two electric cars, one plug-in hybrid SUV and 10 hybrid SUVs. Of these, four vehicles were right-sized from pickup trucks to SUVs and four were converted to vehicles best suited for the type of work performed.

Ability to purchase zero emission vehicles has been limited due to limited availability

Low marketplace supply has resulted in the Region’s limited ability to purchase zero emission corporate vehicles. Over the next five to eight years, approximately 125 Regional trucks and vans will reach the end of their lifecycle and are scheduled for replacement. A small percentage of internal combustion engine (ICE) vehicles with an integrated electric option will remain, where appropriate, until electric vehicle performance evaluations are completed.

To date, production and availability of electric work vehicles for purchase has been an obstacle to moving forward with the fleet electrification plan; however, electrified light-duty pickup trucks and cargo vans are now becoming available.

4. Analysis

Gradual deployment of electric pickup trucks and cargo vans would provide practical hands-on experience and inform future fleet and charging requirements

A gradual deployment of electric pickup trucks and cargo vans is proposed. Benefits of this approach include:

- Allow staff to gain experience in using electric pickup trucks and cargo vans
- Cost reductions in operating and maintaining traditional engine, transmission, exhaust and emission systems
- Fleet technician hands-on experience and training
- Identifying necessary future skilled trade requirements, including any certification training
- Understanding current and future charging requirements to support battery electric vehicles

Purchasing and evaluating a small supply would allow staff to build practical hands-on experience and help make informed decisions and recommendations for future fleet and charging requirements, maintenance contracts and greenhouse gas reduction opportunities.

One manufacturer is providing affordable electric work vehicles ahead of the others

As vehicle and battery technology improve, pickup trucks and cargo vans are becoming more available with varying price points and delivery timelines.

In 2021, Ford announced 2022/2023 availability of the F-150 Lightning Pro model, its first electric pickup truck. Other manufacturers are working on availability and pricing. Some only provide a premium or luxury version electric pickup truck, which are not suitable for the Region's needs.

Electric pickup trucks and cargo vans have extended lifecycles and a better return on investment due to reduced energy and maintenance costs

In 2021, Ford announced their electric vehicle line up for light-duty trucks and vans, namely the F-150 Lightning Pro pickup truck and the e-transit electric cargo van. Based on recently released pricing, return on investment for an electric pickup truck is approximately three years. This considers the initial premium purchase cost and savings from reduced energy consumption, maintenance costs and end of life salvage value.

The standard lifecycle of a light-duty pickup truck is at least five years or 100,000 km when considering ongoing maintenance costs. Electric vehicle lifecycles may be extended to seven or eight years, based on warranty and expected lower maintenance and energy costs.

Online reservation is currently the only timely way to secure an electric vehicle purchase due to their high demand

Other municipalities and private businesses are seeking the same GHG emissions-reduction in their fleets as the Region, making availability and timely purchase of green vehicles difficult. Reserving through an online order secures vehicles and purchase would allow electrification of the fleet to begin sooner than through the traditional tendering process.

Typically, ICE pickup trucks and cargo vans are purchased from a variety of manufacturers through the competitive tendering process. Like other municipalities, the Region is experiencing a lack of bidding for contracts through the standard procurement process due to current market conditions. In addition, vehicle volume discounts have been suspended due to the current high demand for electric vehicles. It may be some time before vehicle dealers compete through traditional tender processes for these types of vehicles.

Ten Ford F-150 Lightning Pro pickup trucks have been reserved

Ford F-150 Lightning Pro pickup truck and van pricing offers a cost-effective electric alternative to conventional internal combustion engines. In 2021, online reservation to purchase electric vehicles for 2022/2023 delivery dates began. Staff have proactively reserved 10 pickup trucks with Ford, with no obligation or commitment to purchase. Purchase is subject to Council approval.

Relying on vehicle tracking technology, staff will use vehicle data to monitor vehicle performance

As new technology in electric vehicle options evolve, evaluation of the technology is required to ensure its suitability for the services we provide prior to committing to larger orders and full electric conversion. Vehicle use and performance would be monitored and analyzed through GPS/automatic vehicle location data collection and service records. As more manufacturers make electrified options available, similar vehicle performance monitoring would be done on units selected through the tendering process.

Staff will continue to monitor other electrified vehicle options for future consideration

Working groups, including other municipal fleet managers across Canada, share new information, innovations and opportunities while continuing to monitor and evaluate electric vehicles entering the market.

As other manufacturers introduce electrified options, costs and return on investment will be evaluated to determine best value and work suitability. With electric vehicles, cost premiums, battery size, vehicle range and warranty form part of the suitability evaluation.

Initiative supports strategic goal of Vision 2051

The Region's 2051 zero emissions targets can only be achieved by significant additional program investment in fleet electrification. It is anticipated that advances in technology and reductions in costs will serve to close the gap between what the Region can reasonably achieve today and by 2051.

Electric vehicle purchases support Regional strategic plans and documents, including Vision 2051, Corporate Fleet Electrification Plan, York Region Official Plan, Transportation Master Plan and the Energy Conservation and Demand Management Plan.

The Council-endorsed Energy Conservation and Demand Management Plan commits to reducing the Region's greenhouse gas emissions to 47% below 2014 emission levels by 2051.

5. Financial

Corporate vehicle replacements are funded through the vehicle replacement reserve, which is recovered from client departments. There are sufficient funds in the approved 2022 Transportation Services Capital Budget.

Recent federal announcements have indicated new incentives for businesses to encourage purchase of medium and heavy-duty zero-emission vehicles as part of the 2022 budget. Staff will continue to monitor all incentive programs and apply for funding as programs and eligibility become available.

Reduced maintenance and fueling costs could offset increased capital expenditures for electric vehicles

A combined reduction in maintenance costs and fuel savings could offset the estimated \$17,000 increase in capital expenditure over the lifecycle of an electric vehicle. Table 1 compares operation and maintenance costs for electric and ICE pickup trucks. Charging infrastructure costs are not included.

Table 1
Electric vs Internal Combustion Engine Pickup Truck
Lifecycle Operating and Maintenance Costs

Vehicle Type	Approximate Purchase Price (\$)	Fuel/Energy Cost (\$)	Maintenance Cost (\$)	Total Cost Over Lifecycle* (\$)
ICE	43,000	32,088	4,488	81,576
Electric	60,000**	8,680	1,200	69,880
Total estimated savings				\$11,696

*Based on an eight-year vehicle lifecycle

**Based on Manufacturers Suggested Retail Price from \$60,000

The cost to purchase an electric vehicle is approximately 28% higher compared to a gas-powered vehicle. With minimal maintenance, reduced energy and overall operating costs, the premium for electric pickup trucks and vans would be recovered. Lifecycle costs will continue to be assessed on all fleet vehicles on an ongoing basis.

6. Local Impact

Local municipalities would benefit from the reduction in greenhouse gas emissions, zero vehicle idling and noise pollution. This initiative supports the Region’s move towards a reliable, sustainable and emission-free fleet that also supports local municipal greening strategies. Sharing vehicle performance data and other information with local municipal fleet partners will continue.

7. Conclusion

This report seeks Council authorization for the direct purchase of up to 10 electric pickup trucks and 10 electric cargo vans as replacements for existing end of life vehicles, at a total cost of up to \$1.3 million, using funds from the vehicle replacement reserve, including interim appropriation spending, to complete the purchase.

Pending Council approval, the Commissioner of Public Works will execute the necessary purchase agreements.

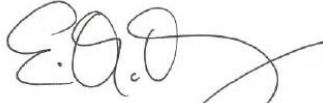
Staff will continue to explore potential funding opportunities that could offset or reduce the Region’s overall contribution towards the purchase of electric pickup trucks and cargo vans.

For more information on this report, please contact Joseph Petrunaro, Director, Roads and Traffic Operations at 1-877-464-9675 ext. 75220. Accessible formats or communication supports are available upon request.

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