



Subject: Electric Vehicle Viability
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Department: Operational Services
Date: June 19, 2018

In accordance with the Procedure By-law, any Member of Council may request that this Information Report be placed on an upcoming General Committee or Council meeting agenda for discussion.

Executive Summary

The purpose of this report is to provide the Council with information on the viability of Electric Vehicles (EV) in the Town of Aurora's Fleet and provide an analysis of the advantages and challenges:

- Green fleet related initiatives undertaken to date in the Town of Aurora
- Commercial fleet vehicle requirements not currently available in Canadian marketplace
- Building a sustainable green fleet for the future

Background

In 2010 the Corporate Environmental Action Plan (CEAP) was developed and adopted by Council. The following objective and action item were identified within the CEAP relating to the Fleet Division.

A1 Objective: Air Quality

- Reduce the Town's vehicle emissions and support the reduction of greenhouse gas emissions by Town staff and at Town facilities.

Action 2.1.3: Develop a Green Fleet Plan

- To develop a Corporate Green Fleet Plan that addresses new green fleet procurement and replacement to reduce the greenhouse gas emissions. The

plan should consider alternative fuels, higher efficiency vehicle, hybrid and electric options that meet the required need.

While a formal policy has not been drafted to date, staff has moved forward with some green initiatives in Fleet.

Analysis

Green fleet related initiatives undertaken to date in the Town of Aurora

In 2008 Aurora ventured into the Green Fleet market with the purchase of a 2008 Smart Car, and several 2010 “hybrid” pickup trucks.

The Smart Car was part of the By-law Services fleet and, after a couple years of use, the vehicle was seldom utilized by staff as they required larger vehicles to perform their duties in the field. This was a result of not understanding the needs of the department. In an effort to support By-law Services needs, the Facilities Division switched one (1) of their trucks with the Smart Car and Facilities staff have been driving this vehicle since, though it is not an ideal situation. In 2019, the Smart Car is due for renewal and staff will be looking to replace it with an electric vehicle as there are SUV models that may support the business needs.

The hybrid pickup trucks were simply regular pickup trucks able to use E85 fuel (gasoline with up to 15% of ethanol content). All gasoline available today, commercially and publicly, contains ethanol so to say those vehicles are hybrid is misleading by today's standards.

Additionally, a limited number of public access EV charging stations have been installed at Town Hall and the Joint Operations Centre for use.

Commercial fleet vehicle requirements not currently available in Canadian marketplace

Three (3) types of Electric Vehicles (EV) are currently available in Canada and while each has advantages and disadvantages, they all save on fuel and emit fewer greenhouse gases than vehicles that burn fossil fuel only. All recharge their batteries through regenerative braking, where the vehicle's electric motor assists in slowing the vehicle recovering some of the energy, normally converted to heat by the brakes.

- Battery Electric Vehicle (BEV)
- Plug-In Hybrid Electric Vehicle (PHAV) and Hybrid Electric Vehicle (HAV)
- Fuel-Cell Electric Vehicle (PCEV)

Select manufacturers have green infrastructure available in Canada. The EV vehicles available include: BMW (i3), Chevrolet (Volt), Ford (Focus Electric, Fusion Energi and C-Max Energi), Kia (Soul), Mitsubishi (i-MiEV), Nissan (Leaf) and Tesla (S). As well, McLaren and Porsche have an assortment of high end luxury and performance vehicles. All these vehicles have the consumer in mind and are not designed to support the commercial vehicle needs required in Aurora's fleet.

Town of Aurora's fleet consists of a variety of medium to regular sized pickup trucks, cargo vans, one (1) ton, two (2) ton and six (6) ton trucks for the various operational departments. The current Canadian marketplace does not offer any vehicles, hybrid or electric, that can serve as replacement vehicles. Many manufacturers are designing and developing commercial use vehicles but at this time there are very few on the market. Of the vehicles available there is very little data on reliability, maintenance needs as they have not been in use for any significant amount of time.

Building a sustainable green fleet for the future

An analysis of each department's vehicle business requirements could result in the implementation of electric vehicles but would have to be the result of discussions with each Division Manager or Department Head. Providing vehicles that satisfy each business case with the potential toward greening of the fleet has been difficult, considering the limitations of available vehicles from the established Canadian auto manufacturers at this time.

Drafting a Green Fleet Plan, as recommended in the CEAP, would assist in providing a guideline, as advancements are made in the industry and EV's for commercial use become more mainstream. This strategy would entail purchasing, funding resources, maintenance requirements and infrastructure required to support the initiative in order to build a green fleet.

As EV vehicles are an emerging technology, and through our experimental learning, the Fleet Division will need to be strategic in our approach to pilot testing and adapting more environmentally friendly technologies. We will strive to invest in only those that are operationally required, sustainable and economically viable.

Advisory Committee Review

None.

Legal Considerations

None.

Financial Implications

None.

Communications Considerations

There is no external communication required.

Link to Strategic Plan

Investigating the viability of Electric Vehicles (EV) in the Town of Aurora's Fleet supports the Strategic Plan Goal of **Investing in Sustainable Infrastructure** by maintaining infrastructure to support forecasted population growth through technology, waste management, roads, emergency services and accessibility.

Alternative(s) to the Recommendation

None.

Conclusions

Staff will continue to monitor the advancement and availability of potential EV commercial vehicles for the Town of Aurora's Fleet while working on the development of a Green Fleet Plan to support greening initiatives.

Attachments

None.

Previous Reports

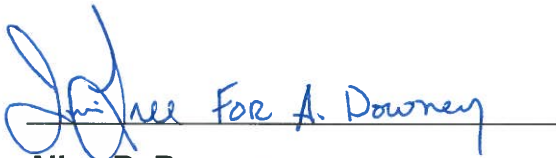
None.

Pre-submission Review

Agenda Management Team review on May 31, 2018

Departmental Approval

Approved for Agenda



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