



County of Huron

Green Fleet Strategy

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Introduction

The County of Huron is committed to taking action against climate change. This includes efforts to adapt to the impacts of climate change, while mitigating greenhouse gas emissions. The County's Corporate Climate Change Adaptation Plan outlines actions to address these goals, including the development of a Green Fleet Strategy.

The Green Fleet Strategy outlines environmental considerations to be made when purchasing and replacing corporate fleet vehicles. This strategy ensures that the County is taking action to reduce greenhouse gas emissions. In 2018, the County's fleet represented 42% of corporate emissions. In addition to environmental benefits, there are also economic and social benefits to supporting a green transition of the County's fleet. This includes reduced fuel and maintenance costs over the lifecycle of a vehicle, improved air quality due to emissions reductions, and the potential for accelerated electric vehicle adoption due to the County's leadership.

The Government of Canada has set a goal for 100% of vehicle sales to be zero-emission vehicles (ZEVs) by 2035. As vehicle manufacturers respond to this goal, it is anticipated that the vehicle market will shift significantly in coming years. The Green Fleet Strategy will ensure that the County is ready to transition corporate fleet vehicles as more options become readily available. The County of Huron is already taking steps to support this transition by increasing electric vehicle charging infrastructure for the corporation and local community.

Purpose

The Green Fleet Strategy outlines a set of criteria to prioritize low carbon, fuel-efficient, and sustainable purchasing practices for the County's corporate fleet vehicles.

The purpose of the Green Fleet Strategy is to:

- Ensure that environmental sustainability is considered in all new vehicle purchases,
- Evaluate the most fuel-efficient, low carbon, and economically feasible options as vehicles are in need of replacement or as upgrades allow,
- Reduce corporate greenhouse gas emissions and lifecycle operating costs, while maintaining operational suitability and levels of service, and
- Show leadership by being ready to transition the County's fleet as the market shifts and ZEVs become more readily available.

Scope

This strategy applies to all County of Huron fleet vehicles, including those managed by Public Works, Emergency Services, and Social and Property Services. The Green Fleet Strategy will be considered as vehicles are in need of replacement or as upgrades to existing fleet vehicles are financially feasible. In alignment with the County's Procurement Policy, it is the responsibility of the departments that manage the County's fleet to implement the objectives of the Green Fleet Strategy.

Green Fleet Strategy

Vehicle Considerations

During the replacement of fleet vehicles, the County will look for opportunities to purchase low carbon and fuel-efficient vehicles. This will include evaluating the financial and operational suitability of available ZEVs, including electric and hybrid options. There are currently many vehicles available in electric and hybrid configurations, including vehicles that are expected to be available in coming years. When considering vehicles to purchase, the County will reference knowledge shared by other municipalities, as well as information provided in the [Electric Vehicle Knowledge Guide](#) (MCCAC, 2021).

If an internal combustion engine (ICE) vehicle is purchased either to meet operational demands or due to a lack of zero-emission options, the County will consider alternative ways to reduce vehicle emissions and improve fuel efficiency. This may include using biofuels or purchasing electric or hybrid conversion systems. ICE vehicles may make operational sense in instances where range requirements cannot be met by a ZEV, or the class of vehicle needed is not available in a low carbon configuration.

In addition the County will also prioritize right-sizing. This means that corporate vehicles will be purchased based on the average anticipated use of the vehicle. This can lead to emissions reductions and cost savings, by allowing the County to purchase smaller vehicles that meet operational needs, while decommissioning underutilized assets. Occasional operations that exceed a vehicle's typical use and capacity could be accommodated by vehicle sharing or renting.

Lifecycle Costs

Lifecycle costs will be evaluated when considering green fleet purchases. This will include assessing capital and operational costs, as well as considering available financial incentives for new vehicles. Evaluating lifecycle costs will help the County determine the financial suitability of green vehicle purchases, while striving to minimize costs and increase financial savings.

ZEVs often have higher capital costs compared to ICE vehicles, however they lead to operational savings from reduced fuel and maintenance costs. In Ontario, electric vehicles (EVs) result in an approximately 73% reduction in fuel costs and 48% reduction in maintenance costs compared to ICE vehicles (Logtenberg et al., 2018). These savings can help offset the higher initial purchase price of ZEVs (MCCAC, 2021).

When feasible, greenhouse gas emissions will also be evaluated as part of the lifecycle assessment. This will help quantify the environmental benefits of this transition, while also highlighting the potential for additional financial savings as the price of carbon increases. EVs produce less than 50% of the greenhouse gas emissions that ICE vehicles emit during their lifecycle (MCCAC, 2021; Nealer et al., 2015).

Several tools exist to help determine lifecycle costs and greenhouse gas emissions for ZEVs, including the [Electric Vehicles Savings Calculator](#) by the Municipal Climate Change Action Centre (MCCAC) and the [Fuel Consumption Ratings Search Tool](#) by Natural Resources Canada (NRCan).

The County will also consider financial incentives and funding opportunities for green fleet vehicles. This may include NRCan's Incentives for Zero-Emission Vehicles Program, offering up to \$5,000 towards the purchase of a ZEV, as well as tax rebates for businesses. The County will also explore opportunities to pilot EVs through the Federation of Canadian Municipalities Green Municipal Fund.

Fuel and Charging Infrastructure

For ICE and hybrid vehicles, the County will strive to reduce greenhouse gas emissions through low carbon fuels (ie. bio-diesel) whenever feasible.

For vehicles that require charging infrastructure, the County is already taking steps to plan for and support this transition. This includes receiving funding and participating in partnerships to install EV chargers in Huron County, including those designated for corporate use. Through the County's High Performance Building Standard, the County also strives to include considerations for electrical capacity and placement for EV chargers in new facilities and retrofits. The County will continue to explore

opportunities to expand charging infrastructure to ensure we are prepared as more ZEVs become available.

As the County begins purchasing green fleet vehicles, considerations may include strategically locating vehicles within departments that already have access to charging infrastructure. During purchasing, the County will also consider criteria to include charging infrastructure with the purchase of a ZEV.

Innovative Technology

The County already incorporates innovative technology in corporate fleet vehicles to reduce fuel use, improve efficiency, and minimize greenhouse gas emissions. This includes automatic vehicle location (AVL) systems that monitor vehicle and fuel use, as well as anti-idling technology in County ambulances. These technologies have improved the environmental performance of the County's fleet.

As low carbon and fuel-efficient technologies advance, the County will continue to explore industry trends and incorporate environmental innovations in fleet vehicles whenever feasible.

Operational Considerations

There are also operational considerations that can improve fuel efficiency and reduce greenhouse gas emissions. The County's fleet vehicles should be operated with the following considerations:

- Vehicle idling should be avoided at all times, unless operationally required (ie. EMS vehicles)
- If vehicle idling is required, anti-idling technologies should be installed to minimize idle times and maximize fuel efficiency
- All vehicles should be monitored using AVL technology to track vehicle use and fuel consumption, as well as identify and mitigate inefficiencies
- The smallest and/or most efficient vehicle should be used to complete operational demands when possible
- Vehicle sharing is encouraged among departments to meet occasional needs that exceed the average use of a vehicle
- When needed, education and awareness should be provided to County staff to ensure vehicle efficiency is maximized and new technologies are operated effectively

Vehicle Maintenance

ZEVs tend to require less maintenance than ICE vehicles, as they do not require regular oil changes and have less moving parts. As mentioned, this will result in cost savings over the lifecycle of a vehicle (MCCAC, 2021; NRCan, 2018).

When ZEVs require maintenance, they may need to be serviced by mechanics with specialized training. As the County considers green fleet purchases, the availability of local service technicians will be assessed to ensure vehicles can be serviced in an efficient and timely manner. As the County transitions to low carbon vehicles, the County may consider specialized training for in-house mechanics (NRCan, 2018).

Disposal & Recycling

There may be additional concerns when ZEVs reach the end of their useful life, due to battery disposal. On average, EV batteries last longer than the life expectancy of a vehicle; however, EV batteries may be retired and replaced if capacity is no longer meeting demands.

Vehicle manufacturers recognize concerns with battery disposal and as the ZEV market increases, the demand for battery recycling follows. There are several ways to reuse and recycle EV batteries, including using batteries for secondary purposes, such as renewable energy storage. At the end of their lifecycle, batteries are recycled to extract reusable components and minimize the amount of waste going to landfill (MCCAC, 2021).

When ZEVs are disposed of and/or batteries are replaced, the County will strive to ensure that batteries are recycled in an environmentally responsible manner.

Additional Procedures

The Green Fleet Strategy is intended to be a starting point for the County to consider environmental criteria in fleet purchasing and operations. As the market for ZEVs expands and more options become available, the County will continue to show leadership by supporting a transition to low carbon and fuel-efficient vehicles. Additional procedures may be developed to support this transition for the County, including policies to encourage implementation, plans for future charging infrastructure, and a replacement forecast for ZEVs.

References

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Acronyms & Glossary

AVL: Automatic vehicle locating systems

EV: Electric vehicle

GHG: Greenhouse gas

ICE: Internal combustion engine

MCCAC: Municipal Climate Change Action Centre

NRCan: Natural Resources Canada

ZEV: Zero-emission vehicle

Electrical vehicle: A vehicle that operates using an electric motor powered by batteries.

Fleet right sizing: A process where fleet size is reduced to ensure that the quantity, type, and capacity of vehicles meet operational demands.

Greenhouse gas emissions: Gases emit from a natural or anthropogenic source that absorb heat in the atmosphere. Carbon dioxide, methane, and water vapour are examples of greenhouse gases.

Hybrid vehicle: A vehicle that combines an internal combustion engine with an electric motor that is powered by energy stored in batteries.

Internal combustion engine vehicle: A vehicle that operates using an internal combustion engine powered by fossil fuel burning.

Lifecycle costs: Refers to the total cost of owning and operating an asset, including purchase price, maintenance, operating costs, and disposal.

Zero-emission vehicle: A broad term referring to a vehicle that does not emit tailpipe emissions. Electric vehicles are examples of zero-emission vehicles.