



Staff Report

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Report To: General Government Committee

Date of Meeting: December 4, 2023

Report Number: CAO-021-23

Reviewed By: Mary-Anne Dempster, CAO

Resolution#: GG-200-23

File Number:

By-law Number:

Report Subject: Green Fleet and Equipment Policy

Recommendations:

1. That Report CAO-021-23, and any related delegations or communication items, be received;
2. That Resolutions #C-066-20 and #C-022-22 be replaced with the Green Fleet and Equipment Policy (the "Policy") attached to report CAO-021-23, as Attachment 1;
3. That Council approve the Green Fleet and Equipment Policy which will inform future replacement of Fleet and Equipment and inform asset management planning related to the electrification of Municipal Fleet and Equipment.

Report Overview

This Report provides an overview of the proposed Green Fleet and Equipment Policy and Decision-Making Framework (the Policy), which if approved will replace the motion to prioritize using low emissions vehicles in the municipal fleet (Resolution #C-066-20) and the Electric Vehicle Action Plan (EVAP) (Resolution #C-022-22). The Policy is a required course of action to guide staff on how to proactively plan for and prioritize low or zero-emissions Fleet and Equipment purchases to reduce greenhouse gas (GHG) emissions in the Municipality.

A Decision-Making Framework (Attachment 2) has been developed for management and staff to guide asset acquisition based on key considerations, such as infrastructure needs and reliability of the technology. The Framework will be included as an appendix to the Policy.

The Policy is a more flexible approach to support the Municipality's goal to be net-zero GHG emissions by 2050 while balancing the need to be adaptable, cost efficient and responsive to a rapidly changing industry.

1. Background

Context

- 1.1 The 2018 corporate GHG emissions inventory showed that Municipal Fleet vehicles were responsible for 13.8 per cent of the Municipality's GHG emissions.
- 1.2 The Electric Vehicle Action Plan (EVAP) ([PDS-001-22](#)) was created to guide the Municipality's corporate transition to EVs over five years (2022 to 2026). The EVAP maps out the Municipality's annual EV purchases and infrastructure needs and makes recommendations for the timing and locations for EV charging stations.
- 1.3 Based on the targets set in the EVAP, the Municipality should have 19 EVs in the Fleet, as well as installed 22 EV charging stations available for Fleet use and 25 charging stations for public use. To date, the Municipality has purchased 10 EVs and one hybrid vehicle and installed 25 EV charging stations for both public and Fleet use. To date, challenges have been experienced with availability and delivery of vehicles, which has resulted in a backlog of EV requirements.
- 1.4 As the Municipality continues to electrify its fleet and equipment, sufficient charging infrastructure will be required to put electric fleet and equipment into operational use. This will require an enhanced level of inter-departmental coordination to ensure all departments and divisions are appropriately engaged.

Previous Decisions

- 1.5 Since 2016, the Municipality of Clarington staff have participated in the Durham Community Energy Plan (DCEP) and the Durham Community Climate Adaptation Plan (DCCAP) with the Durham Region, other local area municipalities and local utilities. The DCCAP and DCEP contain actions to help the community prepare for climate change, reduce community GHG emissions and increase energy independence while promoting local economic development. Council endorsed the DCEP in 2019 ([Report CAO-014-19](#)).
- 1.6 In February 2020, Council passed a motion to prioritize using low emissions vehicles in the municipal fleet, reducing corporate GHG emissions contributing to climate change. ([Resolution: C-066-20](#)).
- 1.7 On March 2, 2020, the Municipality declared a climate emergency, highlighting its commitment to protecting the community and ecosystems from climate change by reducing greenhouse gas (GHG) emissions that are causing climate change ([Resolution: GG-083-20](#)).
- 1.8 In March 2021, Council endorsed the [Clarington Corporate Climate Action Plan \(PSD-018-21\)](#). The CCCAP sets a target to reduce corporate greenhouse gas emissions to 35% below 2018 baseline levels by 2030 and to achieve net zero emissions by 2050. The CCCAP calls for the creation of a plan to electrify the corporate fleet.
- 1.9 On January 24, 2022, Council approved [Resolution #C-022-22](#), endorsing the 5-year Corporate Electric Vehicle Action Plan (EVAP) to guide the electrification of the Municipal fleet and installation of electric vehicle (EV) charge stations on Municipal properties. Staff were directed to consult the EVAP to inform budget recommendations related to fleet electrification and EV charger installation.

2. Transitioning to the Green Fleet and Equipment Policy

Present Status

- 2.1 In the implementation of the Electric Vehicle Action Plan (EVAP), certain limitations were affecting the ability of staff to successfully carry out the Plan:
 - Projected Vehicle Costs: The Projected MSRP for the EV purchases did not account for market changes, inflation, or other contingency costs. This created problems when budgeting for EV purchases.
 - Operational Needs: The locations selected for Fleet EV Chargers in the EVAP do not adequately address the needs of operational needs of different departments and would cause operational inefficiencies.

- **Timelines:** The timelines for purchasing EVs did not account for supply chain disruptions, high demand or other factors that affect vehicle availability. This can lead to delays and increased costs, ultimately affecting the success of the plan.
- **Coordination:** the roles and responsibilities of staff in the implementation of the EVAP were not clearly identified. Further, EV purchases are now included as part of the 20-year Asset Management Plan (AMP) which creates a need for more flexibility.

Development of the Policy and Framework

- 2.2 The original EVAP was prescriptive and limited staff scope in looking for opportunities to support a move to EV's. The recommendation to move to this Policy structure, if approved, will incorporate more flexibility for staff to plan the transition of the Municipality's Fleet and Equipment.
- 2.3 To further support the electrification of our Fleet, staff reviewed the current method of planning for and replacing Fleet. As a result, the Management of Fleet was centralized in September. This allows for a more streamlined process of EV planning as well as all vehicle acquisitions. Public Works, Fleet is now responsible for the oversight and management of corporate fleet. The Climate Change Response Coordinator will support the plan and identify new trends to the team to inform opportunities.
- 2.4 Staff completed benchmarking of other municipalities, specifically the City of Mississauga, had a robust and proactive policy to address this issue. The Policy as presented took that benchmarking into consideration.
- 2.5 In consultation with Public Works, Planning and Infrastructure Services, Financial Services and Community Services, the Policy was adjusted to reflect the needs of the Municipality, the operations, and to confirm the roles and responsibilities of staff.
- 2.6 A Decision-Making Framework also is proposed to guide staff in the planning, identification, and acquisition of EVs. With an evolving industry, new technologies are regularly introduced. This decision framework provides the basis for staff to ensure opportunities to procure EVs versus traditional fossil fuel powered vehicles and equipment are not overlooked, while ensuring considerations are given to the infrastructure and budget requirements.
- 2.7 Staff will implement a Management Directive (MD) (to be approved by the CAO as per the Clarington Policy System (CP-001)). This MD will support the implementation of the Policy by clearly defining the responsibilities of staff and the process to ensure accountability and implementation of the transition of the Municipal Fleet and Equipment.

Benefits of a Flexible Approach

- 2.8 The Policy is a more flexible and proactive approach, which will allow for greater adoption of EVs in the Municipality for the following reasons:
- a. Changing Circumstances: The Policy allows for more adaptability in changing times, such as technology advancements, market fluctuations and evolving regulatory requirements.
 - b. Risk Mitigation: Unforeseen challenges can arise during the implementation of an EV transition plan. This Policy will help mitigate risks by allowing for alternative solutions and strategies when roadblocks are encountered.
 - c. Expansion to Equipment: The Policy is also expanded to Equipment that consume fossil fuels in its operations. Electric/battery-operated Equipment is coming to market and will help the Municipality meet its net-zero goals.

3. Financial Considerations

- 3.1 There are no specific financial impacts resulting from the Recommendations in this report. The policy acts as a framework for decision making on conversion of Fleet and Equipment. Any premiums associated with alternate Fleet and Equipment will be captured through regular capital and operating budget requests and will become part of the Asset Management Plan (AMP).

4. Concurrence

This report has been reviewed by the Director of Public Works, the Deputy CAO/Treasurer, and the Director of Community Services who concur with the recommendations.

5. Conclusion

It is respectfully recommended that Council approve the Green Fleet and Equipment Policy, as well as the Decision-Making Framework. The Policy provides staff with a proactive and flexible approach to evaluate the availability of new technology to ensure the Municipality remains adaptable, cost efficient and responsive to a rapidly evolving industry. With Council's approval, the Green Fleet and Equipment Policy will demonstrate the Municipality's commitment to reducing Corporate GHG emissions and will help the Municipality achieve its climate change goals and targets.

Staff Contact: Natalie Ratnasingam, Climate Change Response Coordinator, or nratnasingam@clarington.net or Lee-Ann Reck, Manager, Corporate Performance lreck@claringinton.net.

Attachments:

Attachment 1 – Green Fleet and Equipment Policy

Attachment 2 – Decision-Making Framework

Interested Parties:

There are no interested parties to be notified of Council's decision.



Council Policy

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Number:	CP-00#
Title:	Green Fleet and Equipment Policy
Sub-type:	Click or tap here to enter text.
Owner:	Office of the CAO Corporate Performance Council
Approved By:	
Approval Date:	Click or tap to enter a date.
Effective Date:	Click or tap to enter a date.
Revised Date:	Click or tap to enter a date.
Applicable to:	All Staff, Department or Division

1. Legislative or Administrative Authority:

1.1. Direction from Council

- 1.1.1. On March 2, 2020, Council approved Resolution #GG-083-20, declaring a climate emergency, stressing the need to respond to the threats that climate change presents to the Municipality.
- 1.1.2. On March 1, 2021, Council endorsed the Clarington Corporate Climate Action Plan (CCCAP), setting targets for the Municipality to reduce corporate greenhouse gas (GHG) emissions by 35 per cent by 2030 and net-zero emissions by 2050, based on 2018 levels. The CCCAP calls for the creation of a plan to electrify the corporate fleet.

Alignment with the Region of Durham

- 1.1.3. Fleet electrification is further supported by the Durham Community Energy Plan (DCEP), which was endorsed by Durham Region Council on April 24, 2019. The DCEP was endorsed by Clarington Council on December 9, 2019, through Resolution #GG-551-19 as part of a recommendation of [Report CAO-014-19](#). The DCEP sets goals to support the transition of the transportation sector to electric in Durham.

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2. Purpose:

2.1. This policy:

- 2.1.1. Reinforces the Municipality's commitment to climate action and expands the objective of the Electric Vehicle Action Plan (EVAP) to include municipally owned equipment.
- 2.1.2. Provides direction to management and staff to prioritize investment in low or zero-emission municipal fleet and equipment and reduce GHG emissions.
- 2.1.3. Identifies the roles and responsibilities of staff for the electrification of the Municipality's Fleet and Equipment and the associated infrastructure.

3. Scope:

- 3.1. This policy applies to all departments and to all Municipally owned Fleet and Equipment that produce GHG emissions.

4. Definitions:

- 4.1. **Auxiliary Power Unit (APU)** – a type of Equipment that provides energy for functions other than propulsion to provide electrical, hydraulic, heating, and air-conditioning functions while a vehicle is stationary.
- 4.2. **Electric Vehicle (EV)** – An electric vehicle is powered solely by a large internal battery and electric motor. They can use wall plugs to charge or use fast charging infrastructure to replenish the battery faster. These are also referred to as battery electric vehicles or BEVs.
- 4.3. **Electric Vehicle (EV) Charging Station** – equipment that connects an EV to a source of electricity to charge the battery.
- 4.4. **Equipment** – Includes all municipally owned units including, but not limited to, non-licensed off-road and hand-held equipment (e.g., trimmers, chain saws), riding and push lawn mowers, forklifts, backhoes/loaders, snow blowers, generators, Auxiliary Power Units, and other auxiliary equipment (e.g., pumps, woodchippers, generators, hand tools).

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- 4.5. **Fleet** – includes all municipally owned or operated on-road licensed light, medium and heavy-duty vehicles, including but not limited to cars, trucks, and fire vehicles.
- 4.6. **Greenhouse Gases (GHGs)** – a set of gases created by burning fossil fuels that stop heat energy from escaping Earth’s atmosphere, resulting in global warming. Water vapour, carbon dioxide, nitrous oxide, methane, and ozone are the primary GHGs in the Earth’s atmosphere.
- 4.7. **Infrastructure** – items required to support low, or zero-emissions Fleet and/or Equipment, including vehicle charging stations, electrical infrastructure, information technology (IT) infrastructure, networks and management software, or other charging devices.
- 4.8. **Internal Combustion Engine (ICE)** – an engine that is powered solely by the burning of gasoline, diesel, or other fossil fuels.
- 4.9. **Low Emissions Vehicle (LEV)** – a vehicle that emits relatively low amounts of tailpipe emissions, including mild hybrid vehicles (with no plug-in capabilities) and alternative fuel vehicles which have combustion engines that run on lower emission fuels, such as compressed natural gas or biodiesel.
- 4.10. **Municipality** – the Municipality of Clarington.
- 4.11. **Zero Emissions Vehicle (ZEV)** – a vehicle that has the potential to produce no greenhouse gas emissions during its operation. Battery electric vehicles (BEVs) and hydrogen fuel cell vehicles are considered to be zero-emissions vehicles.

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5. Policy Requirements:

Guiding Principles

- 5.1. The Municipality's guiding principles for the Green Fleet and Equipment Policy are to:
 - 5.1.1. Work towards becoming a leader in climate action, with the long-term goal of being a net-zero corporation.
 - 5.1.2. Coordinate decision-making across departments to meet operational goals while reducing emissions from Fleet and Equipment.
 - 5.1.3. Ensure decisions are made within a consistent framework and are informed through discussion with all relevant internal stakeholders.

Objectives

- 5.2. The following objectives support the Green Fleet and Equipment Policy:
 - 5.2.1. Reduce GHGs by investing in low-carbon and fuel-efficient Fleet, Equipment, and Infrastructure.
 - 5.2.2. Prioritize and optimize the electrification of all Municipal Fleet and Equipment, ensuring it is sustainable, market-ready and meets operational requirements.
 - 5.2.3. Fully transition to zero and low-emission Fleet and Equipment.
 - 5.2.4. Establish roles and responsibilities of staff to support the electrification of Fleet and Equipment.
 - 5.2.5. Document decision-making and outline implications of deferral or items where choosing conventional technology is the only option, on the corporate climate targets.

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6. Roles and Responsibilities:

6.1. Council is responsible for:

- 6.1.1. Approving the Green Fleet and Equipment Policy and the supporting Decision-Making Framework.
- 6.1.2. Ensuring the Green Fleet and Equipment Policy is supported through approval of the appropriate budget and resources.

6.2. Chief Administrative Officer (CAO) is responsible for:

- 6.2.1. Ensuring applicable staff in leadership positions are aware of, and trained on, this policy and any related policies including subsequent revisions, and ensuring departments are complying with this policy.

6.3. Directors / Managers are responsible for the following within their scope of authority:

- 6.3.1. Ensuring applicable Managers/Supervisors are aware of, and trained on, this policy and related Directives including subsequent revisions.
- 6.3.2. Fostering and supporting the objectives of this policy wherever possible.
- 6.3.3. Facilitating decision-making that favours electrification opportunities for the Municipality's Fleet and Equipment.
- 6.3.4. Ensuring resource and budget requirements for electrification of the municipal fleet are included in the multi-year budget preparation for consideration.
- 6.3.5. Ensuring resources and budgets are available to support the implementation of this policy and implementation of planned projects on schedule.

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6.4. All Staff are responsible for:

6.4.1. Identifying opportunities for GHG reduction during day-to-day operations (i.e., route optimization, anti-idling, etc.) and/or when planning for procurement and following the process outlined in the associated Directive.

7. Related Documents:

7.1. The Green Fleet and Equipment Decision-Making Framework is attached as Appendix A.

8. Inquiries:

8.1. Climate Change Response Coordinator.

9. Revision History:

Date	Description of Changes	Approved By

Appendix A: Green Fleet and Equipment Decision-Making Framework

Purpose:

To support the Green Fleet and Equipment Policy, a framework has been developed to guide decision-making through asset acquisition.

In collaboration with the identified stakeholders, EV strategy meetings will be held to determine the feasibility of the electric alternative based on the considerations below. It should be noted that only certain items will trigger the purchase of ICE Fleet/Equipment (i.e., where no proven reliable technology exists).

Acquisition Considerations	Guidelines
Trigger	<ul style="list-style-type: none">• A need to purchase new or replacement Fleet or Equipment (i.e., there is no existing, suitable vehicle within the Fleet that can be moved or shared).• A funding opportunity has arisen for Fleet, Equipment, or Infrastructure. <p><i>Examples include:</i></p> <ul style="list-style-type: none">- <i>Life cycle replacement</i>- <i>New purchases to meet service needs</i>
Step 1: Technology Readiness	<ul style="list-style-type: none">• Is the zero-emissions technology currently available on the market?• Is the technology proven reliable and/or tested for its intended use and meets applicable standards?<ul style="list-style-type: none">○ If not, what is the level of risk that the technology will not be able to achieve the standards of reliability and operability? If the risk is within a tolerable level, management and leadership can still adopt pre-maturity technology. If the level of risk is considered too high at the present time, can the replacement be deferred until technology becomes available? <p><i>Example:</i> <i>Technology does not currently exist but will likely become available on the market in 1-2 years.</i></p> <ul style="list-style-type: none">○ If not, is there an opportunity for demonstration or pilot project to test technology? <p><i>Example:</i> <i>Technology is available and meets applicable standards but has not been tested by users/municipalities. There may be an opportunity for a small-scale pilot project and grants.</i></p>

Acquisition Considerations	Guidelines
	<ul style="list-style-type: none"> • Is there vendor support for the new technology? • Are there parts available on the market or easily acquirable?
<p>Step 2: Infrastructure Availability</p>	<ul style="list-style-type: none"> • Is there infrastructure available to support low or zero emissions technology? <ul style="list-style-type: none"> ○ If not, can the Municipality install the infrastructure in the required location? ○ If not, what are the timing considerations of installing the appropriate infrastructure? ○ If not, can procurement be deferred until infrastructure is ready? • Is the infrastructure owned/operated by the Municipality? If not, what are the risk considerations of relying on charging that is owned by third party against the Municipality's ability to install the necessary infrastructure?
<p>Step 3: Infrastructure Readiness</p>	<ul style="list-style-type: none"> • What impact will the new Fleet and/or Equipment have on energy load and electrical infrastructure on site? Are there options to distribute the new load requirements to other locations and to favourable time-of-day? • Does the charging technology have the ability to monitor usage/consumption? • What IT infrastructure is available/needed on site?
<p>Step 4: Operational Requirements</p>	<ul style="list-style-type: none"> • What are the Fleet or Equipment specifications, and do the low or zero-emissions technologies meet operational requirements when compared to conventional technology? • What changes would be needed to operate and maintain the low or zero-emissions technology and the associated infrastructure? • Is additional training required to operate and/or maintain the Fleet or Equipment?
<p>Step 5: Total Life Cycle Cost/Benefit Analysis</p>	<ul style="list-style-type: none"> • What are the capital costs impacts (including soft costs) of the zero or low emissions technology and its associated infrastructure when compared to conventional technology? • What are the annual operating cost impacts – in terms of increases and savings (including resourcing, utility, maintenance and licensing) of the low or zero emissions

Acquisition Considerations	Guidelines
	<p>technology and its associated infrastructure (e.g., annual subscription fees) compared to conventional technology?</p> <ul style="list-style-type: none"> • What are the training and/or operational adjustment costs (if applicable) or staff resource implications when compared to the conventional technology? • Will there be a decrease in greenhouse gas emissions due to the new technology? • Are there any other associated benefits of the new technology (e.g., improved air quality, reduced noise, publicly-available)? • What is the total lifecycle cost (e.g., total cost of ownership) of the low or zero-emission Fleet or Equipment when compared to the conventional technology?
Step 6: Funding	<ul style="list-style-type: none"> • Has the budget been secured for purchasing the new low or zero-emission Fleet or Equipment? • If infrastructure is not currently available, are there budgeted funds secured for the required infrastructure (including operating costs)? <ul style="list-style-type: none"> ○ If not, are there alternative funding opportunities available (e.g., grants, rebates)? ○ If not, have additional operating expenses been considered (e.g., keeping an asset in use beyond its useful life)?