



Date: Wednesday, October 23, 2024

From: Niall Lobley, CAO & The Climate Action Working Group

Subject: Georgian Bluffs Green Fleet Strategy

Report CAO2024-032

This document and its attachments are public and available in an accessible format upon request.

Recommendation

That Council acknowledge and recognize the valued contribution of Roger Martin's expertise and generous volunteer support in helping to develop a Green Fleet Strategy and a fleet GHG estimating tool for Georgian Bluffs and,

That staff be directed to use the tool in developing a long-term strategy for fleet renewal and replacement to be embedded within the Georgian Bluffs Asset Management Plan in 2025, and,

That staff be directed to develop a long-term (thru 2050) fleet renewal program that supports the adoption of zero emission vehicles (ZEVs) only as practical ZEVs become available for the Township's various jobs.

Background

In November 2023, Council approved "Committed to Change", a Corporate Climate Action Plan for the Township of Georgian Bluffs.

Embedded within "Committed to Change" are targets for the reduction of greenhouse gas emissions; by 2030, a reduction of 40% from baseline (2018), by 2040 a reduction of 70% and by 2050 a reduction of at least 80%.

The Township's fleet and equipment are currently the largest contributor of greenhouse gas emissions and make up an increasingly large proportion of overall greenhouse gas emissions as the Township makes reductions in other areas.

In 2018, a total emission of 729 tonnes equivalent of GHGs were produced, of which 375 came from fleet, with corporate buildings making up the next largest category at 261 tonnes. By 2021, overall emissions had fallen to 570 tonnes, but fleet reduction was



only 17 tonnes of this reduction. Building energy use had fallen by 39% over this period, fleet energy use by only 0.05%.

Meeting the targets adopted in “Committed to Change” will only be possible with sustained and significant reductions in fleet-based emissions.

Fleet based emissions reductions are driven by two principal changes:

- 1) Reduced fleet use, where practical, and behavioral adaptations, such as preventing idling.
- 2) Changes in fuel from high emission sources such as diesel and gasoline, to low or zero emission sources such as grid energy or local solar energy

While changes of the first type are important and seeking efficiencies in use and lower reliance on vehicles remain an ongoing consideration, the emissions reductions that can be achieved by these are far smaller than what is required by “Committed to Change”. Further, as a growing community, overall reduction in fleet use is unlikely to be a realistic option as new roads and new infrastructure are brought online to support the evolving community, each requiring management and maintenance and a reliance on fleet and equipment. Therefore, in order to reduce overall emissions to the extent required by “Committed to Change”, a transition of fleet equipment from traditional internal combustion engines toward low and zero emission vehicles (ZEVs) is needed.

In Focus Area 2 of “Committed to Change”, the Township committed to undertaking a Green Fleet Strategy toward providing a plan toward reduced vehicle emissions.

This report reflects that work.

Analysis

A Green Fleet Strategy is a plan that provides a map toward the gradual replacement of traditionally fueled vehicles with zero emissions vehicles, over time, in a sustainable manner, so that overall emissions can be reduced. Fleet equipment has a long replacement schedule and commands significant budget impacts; implementing a commitment today, will result in a gradual change in fleet over the next 20 – 25 years toward meeting the commitments in “Committed to Change”.

In developing a strategy, expertise was sought that understood the equipment and vehicle marketplace and had an awareness and knowledge of the Township’s program of work and reliance on fleet, and that understood the impact of zero-based emission vehicles. Luckily, such expertise existed within the Georgian Bluffs Climate Action Team (GBCAT).



Roger Martin has worked in the truck body and equipment industry for more than four decades, first as President and more recently as Chairman of the Unicell Group. In the early 2000s, Unicell, working with Purolator Courier, Transport Canada and Meritor Inc. developed Canada's first EV delivery truck. During that period, Roger co-authored NRCAN's "Electric vehicle technology roadmap for Canada" and became familiar with GHG emissions calculations for different types of vehicles. Roger is a local resident and a passionate member of the Climate Action Working Group that has worked with the municipality since 2020 to create the Corporate Climate Action Plan and support its implementation.

Roger has volunteered extensively for the Township in 2024 to support the development of the Green Fleet Strategy and the fleet GHG estimating tool.

In early March, he attended the 12th annual Green Truck Summit in 2024 in Indiana, part of the annual Work Truck Show. This four-day event is attended by all the global truck manufacturers and by most members of North America's truck body and equipment industry. Roger summarized what he learned from the Show in a four-page report entitled "Report to Georgian Bluffs on the 2024 Green Truck Summit and Work Truck Show". This report was given to the CAO and to the rest of the Climate Action Working Group in late March. The summary report from the event is attached to this report.

This is the opening summary from the report:

"Driven by global regulations and by competitive pressures, all the global truck manufacturers that currently supply trucks to Georgian Bluffs are in a race to create a full suite of commercially competitive zero emission (ZEV) trucks by the mid 2030s. Some ZEV trucks are already commercially available."

The report concluded with the following:

"Implications of all this for Georgian Bluffs

Assuming that the truck manufacturers are successful in meeting their own targets to create commercially competitive ZEVs, there will be a full suite of practical ZEV trucks available for Georgian Bluffs (GB) sometime in the 2030s. There are already some practical ZEV trucks available to do some of GB's work.

Proposed next steps

Put together a fleet replacement plan for GB using different assumptions about the timing of ZEV availability for the various types of trucks in the GB fleet. Calculate the GHG emissions reductions achieved under different assumptions. "



The report was favourably received by the CAO and the rest of the Climate Action Working Group at its April meeting. It was agreed then to proceed with building a 30-year fleet replacement planning tool which would include estimates of fleet GHG emissions for each year of the plan.

The 30-year fleet planning tool was developed in Microsoft Excel over the summer months and completed in September. The tool starts with the current fleet and forecasts through 2054 the composition of the fleet and its annual GHG emissions. The primary inputs to the tool are: i) vehicle life; ii) when practical ZEVs will become available for each truck type; and iii) the future carbon intensity of the Ontario grid.

The preliminary results from the model, based on initial assumptions, show that fleet emissions will reduce as follows:

Year	Target Reduction per Committed to Change	Reduction per model
2030	40%	16%
2040	70%	70%
2050	At least 80%	99%

Of course, the major enabler of fleet emissions reductions, the availability of ZEV Heavy Duty trucks in the 2030s, is beyond the control of Georgian Bluffs. Heavy Duty trucks are currently responsible for 60% of fleet GHG emissions.

As shared during Budget 2025 discussion, staff are anticipating a fleet renewal program to be developed in 2025 and that early work on this will see smaller vehicles (such as used by bylaw, building and administrative functions) replaced on a 7–10 year cycle, and larger vehicles, such as the single and double axle vehicles that are used during summer and winter operations, every 10-12 years.

If a renewal program is implemented that sees these vehicles replaced with zero emission vehicles when they are due for replacement, based on the information shared by manufactures, it will be possible to transition most, if not all of the fleet, by 2047. Such a program would allow the municipality to meet, and possibly exceed its emissions targets by or before 2050, though it is noted that the Township will likely remain behind target until at least 2040, given the nature of fleet replacements and equipment availability.



It is noted that many factors might influence this, such as earlier or later equipment availability, funding pressures and new technologies; the predictions made above are based on the current forecasts for both replacement cycles and manufacturers anticipated availability of ZEV fleet replacements.

Given the high financial cost of fleet and the long-term replacement of fleet, it is critical that a long-range commitment is made to fleet transition. The equipment that is anticipated to be secured through the 2025 budget process will, at the end of its life, be replaced by the first zero based emission larger truck, vehicles. The smaller, more administrative vehicles that the Township uses will need to be replaced by zero based emission vehicles at their replacement in order that the longer-term emission reductions committed to in Committed to Action can be met.

Financial Impact

None at this time.

To date, battery based zero emission vehicles (BEV) have commanded higher capital costs at launch than traditionally fueled vehicles have. This has been in the range of 25% higher costs, although, these costs have become increasingly competitive with non-BEV comparators within a handful of years of initial launch as increasing competition enters the marketplace and efficiencies in production are found.

It is likely that implementing the green fleet strategy through the adoption of a fleet renewal and replacement program will command higher costs than replacing like with like, and initial zero emission vehicles will command high capital costs.

Based on existing fuel use, and assuming that the cost of hydro and diesel/gasoline fuels remain comparatively priced as they are today, much of the predicted increased purchase cost will be offset by fuel savings over the vehicles lifespan.

Costs should also reflect that infrastructure costs will be incurred to modernize facilities to support charging or other re-fueling needs that will arise from moving to zero based emission vehicles. For example, it is likely that significant upgrades will be required to electricity supplies before heavier trucks can be brought in that rely on batteries.

Staff will be presenting a capital renewal plan that will include a financial model of annual investments into reserves to provide for future fleet replacements that help address and offset these costs and provide for a sustainable financial model to support fleet transition in 2025.

Strategic Priorities

NA



Conclusion

In November 2023, Council adopted Committed to Change: A Corporate Climate Action Plan. The Plan established targets for reducing greenhouse gas (GHG) emissions between 2023 and 2050 aiming for an 'at least 80% reduction' over that period. Georgian Bluffs fleet equipment contributes more than 50% of the Townships total GHG emissions and as such, fleet changes are critical to reducing overall GHGs. While the Township has seen positive trends in reducing GHG emissions from facilities, this pattern is not yet reflected within fleet-based emissions. Committed to Change provided direction to establish a Green Fleet Strategy that would inform the transition of the current fleet to zero emission vehicles (ZEVs) over time. This report reflects that work and directs staff to incorporate a transition to ZEVs as and when suitable ZEV alternatives are available, over time through the asset management planning work.

Respectfully Submitted: Niall Lobley. CAO