Municipal Hall
1229 Esquimalt Road
Esquimalt, B.C. V9A 3P1

CORPORATION OF THE TOWNSHIP OF ESQUIMALT

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7/15/2024	1	Committee of the Whole	approved	

TOWNSHIP OF ESQUIMALT STAFF REPORT

MEETING DATE: July 15, 2024 Report No. EPW-24-020

TO: Committee of the Whole

FROM: Joel Clary, Director of Engineering & Public Works

SUBJECT: Fleet Electrification Plan

RECOMMENDATION:

That the Committee of the Whole recommends to Council to endorse the Fleet Electrification Plan and to direct staff to proceed with implementation.

EXECUTIVE SUMMARY:

The purpose of this report is to provide Council with a plan to electrify the Township's fleet. A Fleet Electrification Plan is attached to this report and outlines the recommended year an internal combustion vehicle should be replaced with electric.

BACKGROUND:

In 2019, Council endorsed the target to reduce corporate emissions by 45 per cent from 2010 levels by 2030. One of the actions related to this that is identified in the Township's Climate Mitigation Action Plan as Big Move 5 is to Decarbonize Commercial Transportation. The plan identifies to do this by leading by example to transition municipal fleet to electric.

Currently when staff procure vehicles and equipment, they consider electric options through discussions with suppliers. This approach is reactive and does not provide a long-term plan to transition the fleet to electric or provide the necessary information to plan for charging infrastructure.

Staff have been working with Innotech Fleet Strategies (Consultant) to assess the Township's fleet and develop a long-term plan to transition the fleet to electric. The result of this work is the Fleet Electrification Plan (Plan; see Attachment 1). The Plan focuses on Parks and Public Works fleet and identifies which year each vehicle or equipment should be replaced with electric based on the planned year of replacement, the technology readiness, and the vehicle's importance as a critical service (example: snow clearing equipment provides a critical service). If the technology is anticipated to be available at the planned year of replacement and the vehicle isn't identified as a critical service, the vehicle will be identified in the Plan as a candidate for electric at the planned year of renewal.

ANALYSIS:

The Township has a small fleet compared to larger municipalities and needs to consider different risks when exploring electric options. Mainly, the Township's fleet has minimal redundancies and will be impacted in a greater way than a large municipality if a critical piece of equipment isn't available during an emergency. The likelihood of this occurring increases when relying on a newer technology that isn't as proven as the current technology. The Plan addresses this overall risk by identifying equipment that provides a critical service such as during a storm event or sewer pump station failure. These pieces of equipment are listed in the Plan as "Critical service not suitable for electric" in Appendix A of the Plan.

There are additional risks with being an early adopter to new technology. Brand new technology poses a higher likelihood that the vehicle is down for repairs. This was considered for both the garbage trucks and street sweeper which are currently budgeted for procurement to begin this year. For both of these vehicles, there are only a few examples of this technology in Canada.

The Township has two diesel garbage trucks. One truck is primarily used to complete the daily collections on a rotating basis. The second garbage truck is used as a backup due to regular mechanical issues these types of vehicles experience with the rigorous use expected of a garbage truck. Following statutory holidays, staff use both trucks to catch up on the missed collection day.

Both Township's garbage trucks are nearing the end of life. The approved budget for replacing these in 2024 is $1,200,000 combined. This value was based on pricing for diesel replacements. Based on feedback from the Township's Mechanic and the consultant, the Plan recommends procuring one diesel truck now (arrival in 2025) and delaying the second garbage truck until 2028 when the technology is expected to be more proven.

If a diesel garbage truck is procured this year and an electric garbage truck in 2028, the existing garbage trucks would not be disposed of until the electric garbage truck arrives in 2028. In this scenario the Township would utilize the new diesel truck and keep both existing ones as backup as their reliability is decreasing. Staff feel the use of both trucks as backup and one new vehicle will match existing levels of service.

The Township only has one street sweeper to complete roadway sweeping (note: bike lane street sweeper that was recently ordered doesn't have capacity to sweep entire roadways). The condition of the existing street sweeper is poor and is nearing the end of life. Based on electric street sweepers being emergent technology, the poor condition of the existing sweeper, and no other backup options,

the Plan recommends replacing the street sweeper with diesel now in order to maintain existing levels of service.

The Plan identifies the estimated daily energy needed for the vehicles identified as being transitioned to electric. This information will be used to develop a charging plan for the Public Works Yard and Archie Browning Sports Centre, which is budgeted for $30,000 this year. The Parks department is already in progress in implementing a charging plan for the Parks Yard (Nursery) to facilitate their current plan of transitioning to electric.

Missing from the Plan is a strategy to transition the Fire department's fleet as staff focused on gathering information to develop charging plans in existing facilities. Staff plan on actioning a review of Fire's fleet after the completion of this project.

The Plan provides a tool for staff to use to plan for long-term funding and charging infrastructure while also considering operational risks. To address corporate greenhouse gas emissions, staff recommend transitioning the fleet to electric according to the Plan. As vehicle conditions change and new technologies become available, staff expect the exact timeline in the Plan to change to meet these operational needs; however, the overall approach will be followed as the Plan is implemented.

Environmental Impact:

Transitioning the fleet to electric is a way to reduce corporate greenhouse gas emissions as identified in the Climate Action Plan. It also aligns with mandatory targets set by the Government of Canada for:

- all new light-duty cars and passenger trucks sold to be zero-emission vehicles by 2035, with interim targets of 20% by 2026 and 60% by 2030.
- 35% of all new medium and heavy-duty vehicles to be zero emission by 2031 and will develop zero-emission regulations for 100% by 2040. Note: some vehicles and operations, such as emergency services, are expected to be exempt.

OPTIONS:

1. That the Committee of the Whole recommends to Council to endorse the Fleet Electrification Plan and to direct staff to proceed with implementation.
2. That the Committee of the Whole provide alternative direction to staff.
3. That the Committee of the Whole request further information from staff.

COUNCIL PRIORITY:

Climate Resilience & Environmental Stewardship

FINANCIAL IMPACT:

There are significant financial implications to transitioning to electric vehicles and equipment. The total cost of ownership for internal combustion and electric are shown in Appendix A of the Plan. This includes capital cost, maintenance, and fuel or electricity over the life of asset. For many of the vehicles the total cost of ownership favours electric vehicles; however, this isn't the case for heavy duty vehicles which cost approximately double to replace with electric compared to internal combustion. This has an impact on the Township's ability to fund the upfront capital costs of these procurements. Additional funding from what is currently planned is expected. The Plan identifies

grant funding opportunities, which staff will explore at the time of procurement.

Another cost to consider is the charging infrastructure. At this time, staff have not completed an estimate of the capital costs required to install charging infrastructure at the Public Works Yard and Archie Browning Sports Centre. These costs will be estimated as part of the charging plan being developed later this year and will be identified as supplemental requests in the 2025 budget process.

COMMUNICATIONS/ENGAGEMENT:

No communications or engagement have been completed on this project

TIMELINES & NEXT STEPS:

If the Plan is approved, the next steps are for staff to hire an electrical consultant to develop a charging plan and begin the procurement processes for a diesel garbage truck and street sweeper.

REPORT REVIEWED BY:

1. Steve Knoke, Director of Parks and Recreation, Reviewed
2. Ian Irvine, Director of Finance, Reviewed
3. Deb Hopkins, Director of Corporate Services, Reviewed
4. Dan Horan, Chief Administrative Officer, Concurrence

LIST OF ATTACHMENTS:

List of all items attached to the Staff Report

1. Attachment 1 - Fleet Electrification Plan
2. Attachment 2 - Consultant’s Presentation