



CITY OF HAMILTON
HEALTHY AND SAFE COMMUNITIES DEPARTMENT
Hamilton Fire Department

TO:	Chair and Members Emergency and Community Services Committee
COMMITTEE DATE:	August 17, 2023
SUBJECT/REPORT NO:	Procurement of All-Electric North American Style Fire Pumper for Trial (HSC23037) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Michael Rember (905) 546-2424 Ext. 3376
SUBMITTED BY:	David Cunliffe Chief, Hamilton Fire Department Healthy and Safe Communities Department
SIGNATURE:	

RECOMMENDATION

- a) That the Hamilton Fire Department be authorized to revise the type of fire apparatus previously approved as part of the 2023 Capital Budget process to be purchased in 2024 from one (1) All-Electric North American Style Fire Pumper to one (1) current style Urban Engine; and
- b) That the Hamilton Fire Department be authorized to re-allocate \$516,000.00 from the 2024 Vehicle Replacement Capital Reserve fund to the 2023 Vehicle Replacement Capital Reserve fund to fund the increased cost to purchase one (1) All-Electric North American Style Fire Pumper.

EXECUTIVE SUMMARY

As a part of the 2023 Capital Budget process, the Hamilton Fire Department received approval to purchase two (2) North American Style All-Electric Fire Pumps, in alignment with its firefighting apparatus replacement schedule as a trial, with one (1) being purchased in 2023 at an estimated cost of \$1,800,000.00 and one (1) in 2024 at an estimated cost of \$1,884,000.00 for a total combined budget of \$3,684,000.00.

All-Electric North American Style Fire Pumps produce significantly lower greenhouse gas emissions compared with their diesel engine equivalents. This is achieved primarily

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

through the elimination of idling at emergency incidents as these vehicles function primarily (>90%) in all-electric zero emissions mode.

At present, the combination of market demand, pacing of technological improvements, and supply chain variability have created upward pressures on both the cost and timelines for acquisition of All-Electric North American Style Fire Pumps. Price has increased from \$1,800,000 in 2022, to approximately \$2,400,000 currently, and the lead time for delivery of an All-Electric North American Style Fire Pumper has also increased to between two and a half to three and a half years.

These increased pressures have negatively impacted the Hamilton Fire Department's ability to procure the originally scheduled quantity of All-Electric North American Style Fire Pumps and still be able to meet its firefighting apparatus replacement obligations. Timely replacement of emergency response apparatus is a critical component of ensuring operational readiness and controlling costs associated with vehicle maintenance (labour and components).

To mitigate these impacts/variables and ensure adherence to its firefighting apparatus replacement schedule, the Hamilton Fire Department is requesting approval to revise the type of fire apparatus scheduled to be purchased to one (1) All-Electric North American Style Fire Pumper in 2023, and to one (1) current style Urban Engine and in 2024. In order to do this, approval is also being requested to re-allocate the \$516,000.00 cost differential realized from the change in the types of fire apparatus to be purchased to fund the increased cost of one (1) All-Electric North American Style Fire Pumper in 2023.

It should be noted that the Hamilton Fire Department remains committed to the City's goal of achieving net zero emissions by 2050.

Alternatives for Consideration – See Page 4

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: As part of the 2023 Capital budget process Council approved the replacement of one (1) firefighting apparatus in 2023, in the amount of \$1,800,000.00 and the replacement of one (1) firefighting apparatus in 2024, in the amount of \$1,884,000.00 for a total of \$3,684,000.00. The reallocation of \$516,000.00 from the 2024 Vehicle Replacement Capital Reserve fund to the 2023 Vehicle Replacement Capital Reserve fund will have a net zero financial impact.

Staffing: There are no staffing impacts.

Legal: There are no legal impacts from this report.

HISTORICAL BACKGROUND

Manufacturer support of non-fossil fuel vehicle alternatives continues to improve. This is true in the firefighting apparatus industry but due to the technical complexities of producing modern fire trucks, there is considerable lag behind the consumer electric vehicle (EV) industry. Interest in All-Electric North American Style Fire Pumpers by municipal fire services has outpaced production and supply. The downside of the current supply/demand ratio is pricing increases of greater than 30% in 2023 compared to the previous year and delivery lead times now ranging two and a half to three and a half years.

Three vicinity jurisdictions (Toronto, Brampton, Mississauga) have ordered All-Electric North American Style Fire Pumpers, however none have been delivered. While there is currently no proof of concept, North American Style Electric Fire Pumpers operating as front-line emergency response vehicles within Canada, some jurisdictions in the United States have reported positive performance in similar climates (Madison, WI).

While adoption rates of All-Electric North American Style Fire Pumper will assuredly increase, the Hamilton Fire Department seeks to balance its commitment to climate change and greenhouse gas reduction strategies with its operational readiness and vehicle replacement obligations.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

N/A

RELEVANT CONSULTATION

Consultation for this report included:

- Corporate Services, Planning and Economic Development, Climate Change Office
- Finance and Administration

ANALYSIS AND RATIONALE FOR RECOMMENDATION

The Hamilton Fire Department is pursuing the acquisition of an Electric Fire Pumper to introduce a “green firefighting apparatus” into its front-line firefighting fleet.

At present, the combination of market demand, pacing of technological improvements, and supply chain variability have created upward pressures on both the cost and timelines for acquisition of All-Electric North American Style Fire Pumpers. Price has

increased from \$1,800,000 in 2022, to \$2,400,000 currently and the lead time for delivery of an All-Electric North American Style Fire Pumper is between 2.5 – 3.5 years. Additional factors that must be considered includes facility infrastructure evaluation and up-fitting (Electric Fire Pumper charging station install, upgrading utility electrical service to buildings, etc.).

These increased pressures have negatively impacted the Hamilton Fire Department's ability to procure the originally scheduled quantity of All-Electric North American Style Fire Pumpers and still be able to meet its firefighting apparatus replacement obligations. Timely replacement of emergency response apparatus is a critical component of ensuring operational readiness and controlling costs associated with vehicle maintenance (labour and components). If the Hamilton Fire Department proceeds to order two (2) All Electric North American Style Fire Pumpers, due to the extended delivery times we would be required to operate existing fire apparatus beyond anticipated end-of-life timeframes.

To mitigate these impacts/variables and ensure adherence to its firefighting apparatus replacement schedule, the Hamilton Fire Department is requesting approval to revise the type of fire apparatus to be purchased in 2024 to one (1) current style Urban Engine. In order to do this approval is also being requested to re-allocate \$516,000.00 from the 2024 Vehicle Replacement Capital Reserve budget to the 2023 Vehicle Replacement Capital Reserve budget.

ALTERNATIVES FOR CONSIDERATION

1. That the Hamilton Fire Department continue with the to plan to purchase two (2) North American Style All-Electric Fire Pumpers, one (1) in 2023 and one (1) in 2024. This would require Council approving \$1,116,000.00 in additional capital funding. Maintaining this direction will also cause potential pressures on fire operations because of the lead time of two and a half to three and a half years for delivery.
2. That the Hamilton fire Department hold off for a number of years on purchasing two (2) All-Electric North American Style Fire Pumpers until Toronto, Brampton and Mississauga who have ordered All-Electric North American Style Fire Pumpers take delivery and there is proof of concept information available of the All-Electric North American Style Fire Pumpers operating as a front-line emergency response vehicle in a Canadian operation and in the Canadian climate.

APPENDICES AND SCHEDULES ATTACHED

None