

Date: 2021-06-09

Subject: **Supply and Delivery of One (1) Fully Electric Powered Fire Truck – Budget Amendment and Request to Begin Procurement Report**

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Report Number: Brampton Fire and Emergency Services-2021-649

Recommendations:

1. That the report titled: **“Supply and Delivery of One (1) Fully Electric Powered Fire Truck – Budget Amendment and Request to Begin Procurement Report”**, to the Committee of Council Meeting of June 9, 2021, be received;
2. That a budget amendment be approved for Capital Project #202310-001 (Fire Vehicle Replacement – Squad 203) in the amount of \$730,000 to cover incremental costs of purchasing a fully electric powered fire truck, with funding of \$360,000 to be transferred from project #182310-001 and \$370,000 to be transferred from project #192310-006; and
3. That the Purchasing Agent be authorized to commence the procurement and enter into direct negotiations with ResQtech Systems Inc. for the Supply and Delivery of One (1) Fully Electric Powered Fire Truck.

Overview:

- **Council approved the department’s request to replace a Squad Class “A” Pumper as part of the 2019 Capital Budget. In an effort to achieve Council’s priority of being a Green City, Brampton Fire and Emergency Services has identified a viable alternative to the traditional internal combustion engine powered apparatus in the Rosenbauer RT, fully electric emergency response apparatus.**
- **The Rosenbauer RT is the only fully electric fire apparatus available on the market that is able to meet current firefighting standards and would make the City the first municipality in Ontario to deploy an electric**

powered front-line emergency response vehicle, joining other world class cities such as Berlin, Amsterdam, Dubai, Los Angeles and Vancouver.

- **ResQtech Systems Inc. is the only authorized dealer of Rosenbauer product in Ontario.**
- **The purpose of this report is to amend the Capital Budget by reallocating unspent capital funds to authorize the procurement of a fully electric fire truck through a direct negotiation.**

Background:

The 2020 Capital Budget Submission included an approved budget for the replacement of one Squad Class “A” Pumper apparatus. In support of a “Green City” as identified in the Term of Council Priorities by moving towards greener and more environmentally friendly technologies, coupled with the sustainability focus in the 2021-2025 Fire Master Plan, an alternative to the traditional internal combustion engine was sought for the replacement of the aforementioned apparatus. The Rosenbauer RT is a fully electric powered fire truck and has been identified as a viable alternative to the traditional vehicles purchased by Brampton Fire and Emergency Services (BFES) in the past.

Moving forward with this advanced technology vehicle would represent an innovative contribution to the Community Energy and Emissions Reduction Plan and allow BFES to strengthen our commitment to a sustainable fleet. The City would join other world class cities such as Berlin, Amsterdam, Dubai, Vancouver and Los Angeles in deploying such technology and showcase Brampton as an international leader.

Current Situation:

In an effort to continue the City’s drive towards a greener, more environmentally sustainable community, BFES has sought a viable alternative to the traditional emergency response vehicles. As such, the current in-service 2008 Squad Pumper that is due for replacement, is an ideal candidate to be replaced with the first fully electric powered fire truck in the province of Ontario.

The identified replacement vehicle is the world’s first fully electric fire truck (apparatus). The new technology allows fire crews to respond to emergencies while creating zero emissions, not only while travelling but also on site. The elimination of emissions on-site not only protects the environment but also the health and safety of the firefighters on scene by reducing the intake of carcinogens while operating near a diesel apparatus.

As is the case with all electric vehicles (EV), range and battery useful life is a key area of concern. However, the proposed replacement vehicle has increased range technology for the batteries while also deploying a redundancy system known as a range extender. This built-in range extender is essentially an onboard diesel generator

which is able to charge the batteries up to 80% in 15 minutes in the case of extensive fire and emergency service operations.

Additional unique features of the vehicle include the ability to raise and lower ride heights, similar to a passenger bus, to allow for ease of entry into the vehicle and reduce the reach height for firefighters to access equipment while on site. The ride height can be lowered to 6.8 inches and raised to a height of 18.5 inches. The raising of the ride height is significant, as it allows for flood response with no chance of water entering the engine, as there is not one.

Other noteworthy attributes to the driving capabilities, include all wheel steering to maneuver in tight locations and narrower roads in new subdivisions. In addition to its driving characteristics and safety features, the truck deploys the latest in ergonomic technologies, improving the health and safety of firefighters and reducing risks.

The fully electric vehicle will be adjusted to meet the needs of BFES in terms of usage and loading, without limiting the flexible vehicle architecture in the building process. The unit will be designed to meet all current industry standards for firefighting. Moreover, the reduction in fuel, maintenance and operating costs is expected to generate financial savings over the life cycle of the vehicle.

The new unit is planned to be deployed at the new, state of the art, Brampton Fire Campus, which is currently under construction. The required electrical infrastructure that charges electric apparatus has been incorporated into the construction of the new Fire Campus to ensure that current and future needs for electrical power supply have been addressed for the foreseeable future.

This new apparatus will enable BFES to lead the fire and emergency services industry in environmental sustainability and climate protection while protecting the safety of the citizens of Brampton.

The Rosenbauer RT is the only fully electric fire apparatus available on the market that is able to meet current firefighting standards. ResQtech Systems Inc. is the only authorized dealer of Rosenbauer product in Ontario.

Corporate Implications:

Purchasing Comments:

The City will enter into direct negotiations with ResQtech Systems Inc. Upon successful conclusion, purchase approval will be obtained in accordance with the Purchasing By-law.

Financial Implications:

Council approved \$950,000 as part of the 2020 Capital Budget for the purchase of a new Squad Class “A” Pumper apparatus at Station 203. A budget amendment will be required to Capital Project #202310-001 (Fire Vehicle Replacement – Squad 203) in the amount of \$730,000 to cover the incremental costs of purchasing a fully electric powered fire truck with similar capabilities, with funding of \$360,000 to be transferred from capital project #182310-001 and \$370,000 to be transferred from capital project #192310-006. This recommendation will result in a net zero budget impact. The operating cost savings realized over time from reduced fuel usage and maintenance will partially offset the incremental capital cost of purchasing an electric powered apparatus when compared to a traditional diesel powered apparatus.

Term of Council Priorities:

This report has been prepared in full consideration of the Term of Council Priority of “Brampton is a Green City” by showing leadership in environmental innovation, by upgrading the City’s assets according to energy and environmental efficiency standards.

Conclusion:

It is recommended that a budget amendment be approved and the Purchasing Agent be authorized to commence the procurement, subject to Council’s approval of the budget amendment as described in this report.

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