Corporation of the Township of Brock

Staff Report to the Mayor and Members of Council

From: **Rick Harrison**
Position: **Fire Chief/CEMC**
Title / Subject: Fire Department Truck Replacement
Date of Report: October 29, 2024
Date of Meeting: November 4, 2024
Report No: 2024-PS-009

1.0 Issue / Origin

Fire Department fleet management and truck replacement program.

2.0 Background

The Fire Underwriters Survey requires that to receive credit for fire insurance grading purposes, all first line fire truck in small and rural communities should be replaced after 15 – 20 years of service and may only be extended up to 25 years when fire trucks are tested and proven to be in excellent mechanical condition. Small and rural local governments often are financially challenged to replace high cost and minimally used fire trucks on a 20-year rotational basis.

National Fire Protection Association (NFPA) 1911 standard includes guidance on retirement for fire apparatus (trucks). NFPA 1911 recommends all front-run vehicles are replaced on a 15-to-20-year cycle, depending on the community size.

The Master Fire Plan created in 2019 also recommends a replacement cycle of 20 years for all front-line fire apparatus (trucks).

For several years Brock Township Council have utilized a 20-year fire truck replacement program to prepare for and proceed with replacing fire trucks every 20 years.

The cost to purchase fire trucks have increased approximately 40% over the past few years and there seems to be no end to the rising cost.

Fire departments have also seen an increase in the time to manufacture a fire truck, whereby in the past it would take approximately 12 - 18 months to manufacture a fire truck and now can take 36 – 48 months.

3.0 Analysis

As indicated in the background the Fire Underwriters Survey requires that all first line fire trucks should be replaced after 15 - 20 years of service.

Many fire departments and municipal Councils, due to rising costs of fire trucks, are considering extending fire trucks replacements to 25 years. We have all heard that by extending replacements to 25 years it may influence the insurance rating within the municipality and therefore may result in higher residential/commercial insurance costs for homeowners/businesses.

How much does it really affect the insurance rating? How much of an increase will be forced upon the homeowners/businesses? These questions are very difficult to answer. However, it is our due diligence to assist the homeowners/businesses in keeping their insurance rates status quo to the best of our ability. We do this by maintaining our fire trucks, and equipment as per requirements of Fire Underwriters Survey, NFPA Standards and meeting the requirements of Tanker Shuttle Accreditation.

Staff feel that it is the utmost importance to replace front-line fire truck(s) when they reach 20 years old. As a front-line fire truck, it is imperative that these vehicles be reliable and well maintained, as they are the first truck out the door approximately 90% of the time.

In comparison, staff feel comfortable in recommending that the life expectancy for rescue and tanker trucks be increased to 25 years, providing that the trucks are maintained, continue to be reliable, meet requirements of annual testing and are always mechanically sound.

Truck Replacement Program

As per the fire departments 20-year fire truck replacement program, Brock Township Fire Department is scheduled to replace a pumper fire truck in 2025 and two heavy rescue trucks in 2027.

Extending the life of heavy rescue trucks to 25 years would change the scheduled year to replace the two heavy rescue trucks to 2032.

The cost to replace a pumper fire truck is approximately, depending on options and availability, $600,000 - $1,100,000, based on today’s dollar.

The cost to replace a heavy rescue truck is approximately, also depending on options and availability, $800,000 - $1,100,000, based on today’s dollars.

Fire Department Fleet

Brock Township Fire Department is made up of three (3) fire stations and house a total of ten (10) fire trucks consisting of one (1) aerial truck, three (3) pumper trucks, three (3) heavy rescue trucks, three (3) tanker trucks.

The ten (10) trucks are distributed as per:

Sunderland Fire Station 81

- Pump 81 --- 2018 Metro Star custom cab Spartan pumper truck, 1st run fire apparatus.

- Rescue 81 – 2007 International commercial cab heavy rescue truck, 2nd run fire apparatus.

- Tank 81 --- 2018 Freightliner commercial cab tanker truck, 2500 US gallons of water, 2nd run fire apparatus.

Cannington Fire Station 82

- Pump 82 --- 2005 Freightliner commercial cab pumper truck, 1st run fire apparatus.

- Pump 822 – 2003 Freightliner commercial cab pumper truck, primarily used as a spare truck

- Rescue 82 – 2007 Kenworth heavy rescue truck, 2nd run fire apparatus.

- Tank 82 – 2016 Freightliner commercial cab tanker truck, 2500 US gallons of water, 2nd run fire apparatus.

Beaverton Fire Station 83

- Aerial 83 -- 2022 Pierce custom cab aerial truck, 1st run fire apparatus.

- Rescue 83 – 2020 Freightliner commercial cab heavy rescue truck, 2nd run fire apparatus.

- Tank 83 --- 2019 Freightliner commercial cab tanker truck, 3000 US gallons of water, 2nd run fire apparatus.

Replacement in 2025

As previously noted, the fire department is scheduled to replace a pumper fire truck, located at Cannington Fire Station 82 in 2025, as it will be 20 years old.

The Fire Chief contacted several manufacturers of fire trucks to discuss purchasing options and discovered Dependable Emergency Vehicles to have a few in-stock pumper fire trucks ready for purchase and available for delivery within a period of approximately 4 weeks.

Other manufacturers contacted did not meet our operational requirements and/or costing requirements.

The Fire Chief also discovered that it is anticipated the cost of a pumper fire truck may increase approximately 3-4% in 2025.

It was also noted that 2025 will be the last year for fire trucks to be built using the L9 Cummins engine, whereby in 2026 all fire trucks will be built using the L10 Cummins engine. It is anticipated that this will result in a cost increase of approximately $100,000 - $150,000.

Options

The Fire Chief in conversation with several manufacturing companies, other Fire Chief's, and investigating many options available to replace the pumper fire truck resulted in the following:

Option # 1:

- Purchase an in-stock 2024 Spartan FC-94 custom cab pumper fire truck from Dependable Emergency Vehicles @ a cost of $778,000 + applicable tax

- The Spartan custom cab pumper fire truck is equipped with:

    - Seating capacity for 6 personnel
    - 1000 US gallon water tank
    - 30 US gallon foam cell
    - Hale QFLO 5000 LPM pump
    - Cummins L9 360 HP @ 2200 RPM engine
    - Allison 3000 VP transmission
    - 1728 cubic feet of interior compartment dimensions
    - Interior ladder, equipment storage compartment
    - Gross vehicle weight @ 42,000 lbs
    - Front axle rating @ 18,000 lbs
    - Rear axle rating @ 24,000 lbs
    - Crash tested & received a passing grade
    - Personnel seating is built to highest standards for ultimate firefighter safety.

Option # 2:

- Purchase an in-stock 2024 Freightliner M2 106 QFLO commercial cab pumper fire truck from Dependable Emergency Vehicles @ a cost of $ 645,000 + applicable tax

- The Freightliner commercial cab pumper truck is equipped with:

    - Seating capacity for 5 personnel
    - 1000 US gallon water tank
    - 30 US gallon foam cell
    - Hale QFLO 5000 LPM pump
    - DD8 7.7 L 360 HP @ 2200 RPM engine
    - Allison 3000 EVS transmission
    - 1728 cubic feet of interior compartment dimensions
    - Interior ladder, equipment storage compartment
    - Gross vehicle weight @ 39,000 lbs
    - Front axle rating @ 12,000 lbs
    - Rear axle rating @ 27,000 lbs

It should be noted that the purchasing of in-stock fire trucks is becoming very popular, as it shortens the delivery date compared to building a fire truck. The in-stock fire truck is very comparable to purchasing a vehicle from the lot of a dealership, the truck is a standard truck that meets the requirements of most fire departments and adjustments/retrofits can be completed at later dates, if required.

Recommendations for the Future

- Continue to replace 1st run fire trucks (pumpers) every 20 years to ensure a reliable, safe, well maintained fire truck is the first truck out the door of the fire station for emergency responses.

- Implement a 25-year replacement program for rescue trucks and tanker trucks providing the trucks are performing to the required expectations, continue to be reliable and well maintained.

- Purchase a new pumper fire truck in 2025 to replace the existing 2005 1st run pumper fire truck, located at Cannington Fire Station 82.

- Relocate the existing 2005 1st run pumper fire truck to Sunderland Fire Station 81. This truck can be utilized as a pumper/rescue combination fire truck and our spare pumper fire truck, therefore fulfilling the requirements of the existing 2007 heavy rescue truck and can then be scheduled for replacement in 2030.

- Relocate Station 81 existing 2007 International heavy rescue truck to Cannington Fire Station 82. This will continue to fulfill the requirements of a heavy rescue located in the centre of the Township allowing for a response to the north, south, west or east.

- Sell the existing 2007 Kenworth heavy rescue truck, located at Cannington Fire Station 82, as it will no longer be required. This will eliminate one truck from the fire department fleet and from the replacement program, saving approximately $800,000-$1,100,000.

- Sell the existing 2003 Freightliner spare pumper fire truck, as it will no longer be required, as the 2005 Freightliner will fill the position of a spare truck when required.

4.0 Related Policies / Procedures

Fire Underwriters Survey.
Fire Department 20-year truck/vehicle replacement program.
Brock Township Master Fire Plan.

5.0 Financial / Budget Assessment

The scheduled replacement of the pumper fire truck in 2025 will have a financial impact on the 2025 fire department capital budget and the fire department capital reserve.

In discussion with the Director of Finance it has been determined the Fire Department capital equipment reserve will have approximately $526,301 at the conclusion of 2024.

We anticipate approval, through 2025 budget deliberation, an additional $320,000 into fire department capital reserve, therefore bringing forward an approximate total of $851,861 in the fire department capital reserve.

The revenue from selling the 2003 Freightliner pumper fire truck and the 2007 Kenworth rescue truck can also be placed in the fire department capital reserve for future capital projects.

To secure the purchasing of a pumper fire truck as outlined in Option # 1 or Option # 2 requires a 30% deposit.

5.1 Asset Management

The scheduled replacement of the pumper truck in 2025, the relocation of trucks and selling of trucks will result in a change to the fire department asset management, whereby it will decrease the number trucks in the fire department fleet from our present number of ten (10) trucks to the recommended nine (9) trucks.

6.0 Climate Change Impacts

Eliminating one (1) truck from the fire department fleet that does not use Diesel Exhaust Fluid (DEF) fluid will eliminate the release of bad emissions into the atmosphere when this truck is in operation.

The new fire truck will be equipped with Diesel Exhaust Fluid (DEF) which is essential to keeping the truck up and running. DEF is a mixture of water and urea that gets injected into the exhaust before it exits the tailpipe, causing a chemical reaction that transforms harmful pollutants into clean air. Therefore, the new truck will assist in keeping the air clean and eliminate the release of bad emissions when the truck is in operation.

7.0 Communications

The purchasing of the new fire truck and relocation of others shall be advertised on all social media avenues.

8.0 Conclusion

Continuation of rising cost for fire department trucks is forcing Fire Chief's to become more creative, investigate options to govern asset management within the fire department fleet.

It is important to re-evaluate how and when the fire department will replace fire trucks in the future and how the Fire Chief will allocate all fire department equipment/resources.

It is also equally important to continue maintaining the fire department fleet so all fire trucks whether it is an aerial, pumper, rescue, tanker or administration vehicle, are always in a response ready mode.

9.0 Recommendation

BE IT RESOLVED THAT Report 2024-PS-009 "Fire Department Truck Replacement" be received for information.

That staff be directed to secure the purchase of a pumper fire truck from Dependable Emergency Vehicle.

That staff be directed to develop a truck replacement program to replace pumper(s) upon reaching 20 years of age and replace tankers & rescue trucks upon reaching 25 years of age.