

Meeting date: September 3, 2019
Department: Fire and Emergency Services
Prepared By: Brian George, Director of Fire Services/Fire Chief
Reviewed By: Greg McClinchey, Chief Administrative Officer
Subject: **Replacement of Engine 21 (Pumper Truck)**

RECOMMENDATION:

That Council approve the replacement of Engine 21 at Station 2.

BACKGROUND:

While safe for use in the short-term, earlier this year we were informed that Engine 21 will not pass the required Ministry of Transportation safety checks necessary to continue using the vehicle. It was found several years ago that the pumper truck has a condition referred to as “Frame Jacking” on the frame rails. The frame rails are a two rail system (C channels) that run the length of the truck with an inner rail and an outer rail. The frame system has two rails and connecting spars on both sides creating a “backbone” for the truck. They manufacturers use the double rail system due weight of the truck. These two channels can hold moisture and corrosive materials (Liquid anti-icing agents used on roads and other agents like salt and sand) within the two rails which in turn causes the rails to rust prematurely.

During the annual safety inspection, it was discovered that our pumper’s frame was significantly rusted and in need of repair. The rusting has caused the rails to spread apart and the loss of materials was also occurring. The frame members have not cracked or twisted, but visual deterioration is apparent. Closer inspection unveiled large gaps between the inner and out frame rail (C Channels) at the tops of the rails. This is abnormal and requires remediation if the vehicle it to continue to be in service.

Prior to 2015, the trucks were not regularly treated for rust resistance. In 2015, the department started a preventative maintenance program on the trucks by using a specialized treatment that protects metal components of the truck. This product is designed to spread into hard to reach areas and crevices by creeping and spreading itself along these panels and electrical wiring and components. Particular care has been given to the frame rails as this has started to become a broader issue throughout the region.

The frame rails must meet a thickness and density testing in order to withstand the weight of the pumper, ability to flex and twist as designed. Currently, the truck meets all safety standards but has been slowly deteriorating over the last five years. The heavy truck mechanic now informs us that Engine 21 will not pass the MTO inspection in 2020.

The NFPA Standards contain recommendations for front line apparatus. NFPA 1911; *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles*. The standard recommends that apparatus is only in service for twenty years. ULC has accepted that apparatus in rural departments the call volumes are much different than that of larger departments and will not change their municipal insurance ratings until 25 years of use as long as the municipality completes the annual MTO safety checks and the department does annual pump testing. We do have those done each year and documented. Our goal is to keep each truck in service for twenty-five years. Our trucks do not have the type of call volumes.

This type of rust repair is not an uncommon repair on fire apparatus. London has had numerous apparatus in need of replacement and while meeting with personnel from a repair shop there was several trucks already in the process of replacing the frame rails.

COMMENTS:

As a result of the mechanics MTO inspection, we have reached out to several Heavy Truck repair shops and sought their advice and an estimate on replacing the frame rails on Engine 21. While the truck is repairable, the work would be quite extensive. Three repair shops were asked to provide estimates on the repairs to Engine 21.

A local repair shop (Carstar) provided us a costing that would start at approximately \$60,000.00. Another company in the Kitchener – Waterloo area, specializing in this type of work and does the repairs for departments such as Toronto, Niagara Falls and Hamilton, was consulted and provided a similar estimate. A facility that London Fire has used in the past was consulted but was unable to perform this work. The London Fire Department would typically remove the rear body component in their Apparatus Division from the chassis prior to sending it to the repair facility.

The figure noted above is the initial estimated cost, but both companies advised us that the final costs generally exceed initial estimates given the nature of the work. Specifically, these cost overruns occur as it is normal to discover other potential damage that may exist on the cross-members of the frame, the components attached to the frame that may be damaged in the removal of these parts or damage to the body once they pull the frame rails from body and structure of the truck. Neither of these repair shops are able or willing to give a firm price on the replacement due to the complexity of the rebuild.

A search of GovDeals reveals that trucks in the same manufacture years are bringing in less than \$10,000.00 on their auction pages. This does not take into consideration what future repairs may be required over the life of the truck. The significant cost of the repairs far outweighs the value of the truck that would have remaining life cycle of no more than seven years.

In discussions with the Treasurer, we have in the Apparatus replacement line \$236,466.77, that can be used to purchase fire vehicles. The cost of a new pumper truck can range from \$450,000.00 and \$600,000.00 for a custom pumper built on specifications. It is proposed to do a "Request for Quotations" in order to have the individual manufacturers tell us what they have available on their basic truck built to their standard specification. This means either a truck they have built as a Demonstrator Truck, or a specification truck already on the line.

All future purchases of apparatus will require that they have a galvanized frame in order to reduce the risk of frame failures. The last truck purchased for the municipality was the Truck 17, the aerial

Platform, has this process on the frame and the torque box that supports the aerial device and outrigger stabilizing devices.

FINANCIAL IMPLICATIONS:

The actual cost of an apparatus replacement is not known until a Request for Quotations have been responded to. We have reviewed some recent information on available custom specification trucks and these available units range from \$465,000.00 to \$600,000.00.

The three Options would be available to the municipality;

- Finance the full purchase of the Apparatus over ten years and once paid for start putting money into reserve funds until the apparatus needs replacement in the future.
- A Combination of reserve and the finance the remainder over ten years.
- Utilize up to 50% of reserves and finance the remainder of the costs.

CONSULTATION

- Director of Finance
- Chief Administrative Officer

ATTACHMENTS:

- Estimated Quotation for Frame Replacement
- Stock Units Available from Manufacturers

STRATHROY COLLISION CORP

*** ESTIMATE ***

09/07/2019 01:53 PM

Owner

Owner: C/O BRIAN GEORGE STRATHROY CARADOC FIRE DEPT
Address: 23 ZIMMERMAN
City Province Postal: STRATHROY,
Work/Day: (519)245-1900
FAX:

Inspection

Inspection Date: 09/07/2019 01:57 PM
Inspection Type:
Appraiser Name: MIKE DERUITER
Appraiser License # :

Repairer

Repairer: STRATHROY CARSTAR
Address: 27960 PIKE RD RR#7 STRATH
City Province Postal: STRATHROY, ON N7G 3H8
License # :
Contact: MIKE DERUITER
Work/Day: (519)245-3333
Home/Evening: (519)245-2460
FAX: (519)245-4350
Regulation ID: 87860-8025
Target Complete Date/Time:
Days To Repair: 88

Vehicle

Motorcycle - 2003 ROSENBAUER COMANDER 3000

Lic.Plate:
Lic Expire:
Veh Insp# : E 21
Condition: Excellent
Ext. Colour: RED
Ext. Refinish: Two-Stage
Lic Province: ON
VIN: 44KFT42862WZ20074
Kilometer Type: Actual
Code: T999Z8
Int. Colour:
Int. Refinish:

Options

Damages

Line	Op	Guide	MC Description	MFR.Part No.	Price	ADJ% B%	Hours	R
1	RI		CAB >> R&I FOR FRAME RAIL REPLACEMENT	R & I Assembly			45.0*	SM*
2	RI		REAR BOX/ TANK ASSY >> R&I FOR FRAME RAIL REPLACEMENT	R & I Assembly			75.0*	SM*
3	EC		RT FRAME RAIL >> ALL HOLES TO BE DRILLED	Replace Economy	\$8,500.00*		85.0*	ME*
4	EC		LT FRAME RAIL >> ALL HOLES TO BE DRILLED	Replace Economy	\$8,500.00*		85.0*	ME*
5	EC		HUCK BOLTS & MISC HARDWARE	Replace Economy	\$2,000.00*			SM*
6	SB		ALIGNMENT	Sublet Repair	\$450.00*			SM*

7 EC	FLUIDS	Replace Economy	\$350.00*	SM*
8 EC	DRILL BITS	Replace Economy	\$750.00*	SM*
9 SB	SHIPPING	Sublet Repair	\$2,000.00*	SM*
10 SB	RUSTPROOFING >> RUSTCHECK	Sublet Repair	\$200.00*	SM*

10 Items

Estimate Total & Entries

Other Parts			\$20,100.00	
Shop Materials	290.0 Hours @ \$5.00		\$1,450.00	
Parts & Material Total				\$21,550.00

Labour	Rate	Replace Hrs	Repair Hrs	Total Hrs
Sheet Metal (SM)	\$90.00	120.0		120.0
Mech/Elec (ME)	\$105.00	170.0		170.0
Frame (FR)	\$105.00			
Refinish (RF)	\$90.00			

Labour Total	290.0 Hours		\$28,650.00
Sublet Repairs			\$2,650.00
Towing			\$750.00
Harmonized Sales Tax	@ 13.000%		\$6,968.00
Gross Total			\$60,568.00
Net Total			\$60,568.00

Rate Name Default

Op Codes

* = User-Entered Value	E = Replace OEM	NG = Replace NAGS
EC = Replace Economy	OE = Replace PXN OE Srpls	UE = Replace OE Surplus
ET = Partial Replace Labour	EP = Replace PXN	EU = Replace Recycled
TE = Partial Replace Price	PM = Replace PXN Reman/Reblt	UM = Replace Reman/Rebuilt
L = Refinish	PC = Replace PXN Reconditioned	UC = Replace Reconditioned
TT = Two-Tone	SB = Sublet Repair	N = Additional Labour
BR = Blend Refinish	I = Repair	IT = Partial Repair
CG = Chipguard	RI = R & I Assembly	P = Check
AA = Appearance Allowance	RP = Related Prior Damage	



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