

Clause No. 4 in Report No. 11 of the Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on June 26, 2014.

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**EMERGENCY MEDICAL SERVICES
VEHICLE LIFE-CYCLE AND DISPOSAL PROCESS**

Committee of the Whole recommends adoption of the following recommendation contained in the report dated May 29 , 2014 from the Commissioner of Community and Health Services:

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

At the Committee of the Whole meeting on March 20, 2014, Committee requested staff to provide a report outlining the current process for the decommissioning of Emergency Medical Services (EMS) vehicles. This report details the historic life-cycle process and outlines the current consultancy work underway in order to optimize the life-cycle of EMS vehicles.

3. BACKGROUND

Emergency Medical Services is available 24 hours a day to respond to emergency incidents. Emergency response driving places stress on vehicles that is beyond what is produced in regular commercial fleets. In order to achieve its mandate, EMS must maintain a fleet of ambulances and emergency response vehicles in a state of mechanical readiness and reliability. To this end, all EMS vehicles are maintained to the original equipment manufacturer preventative maintenance standards. When vehicles reach the point of disposal, the assets may be repurposed for other functions, sold at public auction for recovery of their current value or donated to qualifying not-for-profit organizations.

Ambulances and emergency response vehicles must meet strict provincial standards

The Ministry of Health and Long-Term Care Emergency Health Services Branch sets the specifications for ambulances and emergency response vehicles through the *Ontario Provincial Land Ambulance & Emergency Response Vehicle Standard*. Ambulances and emergency response vehicles in Ontario must be certified under this standard.

As a result of costs and effort to comply with the rigorous engineering and testing requirements of the provincial vehicle standards, only a few vehicle manufacturers supply the Ontario market

The Ontario provincial vehicle certification standards are one of the most rigorous and complex set of vehicle standards in North America. The standards set minimum design, engineering and crash testing criteria that each vehicle sold for EMS use must meet. As a result of the costs to meet the engineering and certification requirements in Ontario, there are only two prominent ambulance manufacturers in the Ontario market – Demers Ambulances and Crestline Coach.

Ambulance and emergency response vehicle life-cycle practices have remained consistent with the provincial pre-download practices

Since the download of EMS from the Province of Ontario on January 1, 2000, fleet maintenance has followed the pre-existing standard of ambulance replacement benchmark of 54 months or 200,000 km. For the past 14 years, York Region EMS has continued this practice as one of the strategies for maintaining the fleet in response-ready condition. This practice has resulted in a fleet of ambulances/emergency response vehicles that are dependable and whose costs for repairs and maintenance are predictable.

The replacement interval followed by York Region EMS is consistent with fleet practices in neighbouring municipalities.

Table 1 summarizes vehicle replacement intervals of neighbouring municipalities.

Table 1
 Comparative EMS Vehicle Replacement Intervals of Neighbouring Municipalities
 and York Regional Police

Municipality	Ambulances (Two Paramedics-transport vehicle) Replacement Interval	Emergency Response Vehicle (Single Paramedic non-transport) Replacement Interval
Durham	5 years	Not Provided
Halton	4.5 years	4.5 years
Muskoka	4.5 years	4.5 years
Peel	5 years or 250,000 kms	6 years or 200,000 kms
Simcoe	Refurbish after 3 years. Replace 6 years or 350,000 kms	6-7 years or 300,000 kms
Toronto	4.5 years	6 years
York	4.5 years or 200,000 kms	5 years
York Regional Police	Patrol Cars	160,000 or 3 years
	Patrol Cars - Interceptor	200,000 or 3 years

4. ANALYSIS AND OPTIONS

The accumulation of vehicle engine hours increases vehicle wear

All EMS vehicles are equipped with engine hour metres. This metre allows for the measurement of engine run-time. Mileage does not accumulate while a vehicle is idling. Idling does cause wear and tear of the engine and engine parts. In 2013, Ford Canada advised York Region EMS that one hour of engine run time is equivalent to accumulating 53 kms of mileage travelled.

Over the past 10 years, EMS has experienced an increase in idling time of ambulances. New on-board technologies have been installed on the vehicles. Because of these new technologies, the vehicle's electronic systems must be kept running. At the same time, vehicles must be constantly running when away from stations in order to maintain relative interior vehicle temperatures for patient care. All Paramedic Response Stations are equipped with shore-line power for vehicles when parked inside garage bays in order to maintain vehicle-readiness.

Over the last two years, in order to minimize the negative effects of idling, EMS has integrated ant-idling technology into the fleet. With this technology the engine automatically cycles based on the temperature in the vehicle and the charge-level of the vehicle's battery system. This means that the ignition will shut off automatically when the maximum temperature or electrical charge level in an ambulance is reached and will turn on automatically when the minimum temperature or charge level is reached.

Table 2 details the difference in odometer mileage and engine hours converted to mileage of recently disposed ambulances in 2013. The variation in engine hours is primarily the result of the station assignment of the ambulance as vehicles operating in the south of the Region tend to accumulate higher engine hours than the vehicles stationed in the north of the Region.

Table 2
Comparison between Odometer Mileage and Relative Mileage
Based on Engine Hours of Recently Disposed Ambulances

Vehicle Year	Odometer (KM)	Engine Hours (H)	Relative Mileage (53KM/Engine Hour)	Difference Between Relative Mileage by Engine Hours and Odometer (KM)
2009	205,943	5,234	277,402	71,459
2009	196,851	8,278	438,734	241,883
2009	201,968	6,148	325,844	123,876
2009	197,137	7,452	394,956	197,819
2009	205,941	5,450	288,850	82,909
2009	207,595	6,497	344,341	136,746
2009	212,543	7,003	371,159	158,616
2009	202,598	7,506	397,818	195,220

The disposal of vehicles is consistent with the Purchasing Bylaw or Council's donation guidelines

When an ambulance or emergency response vehicle reaches the point of decommissioning, it is repurposed for another use within the Branch (i.e., Logistics delivery vehicle), sold at public auction or donated in accordance with Council's vehicle donation guidelines to a not-for-profit agency.

Table 3 details the number of ambulances and emergency response vehicles sold at auction per year and their total net value as well as their average value for that year.

Table 3
Average Revenue from Vehicles Disposed by Auction

Vehicle Replacement Year	Number of Ambulances and Emergency Response Vehicles	Net Value Obtained at Auction	Average Value
2011	9	\$ 32,500	\$ 3,611
2012	16	\$162,484	\$10,155
2013	13	\$100,208	\$ 7,708
Total	38	\$295,192	\$ 7,768

Note: The year is the vehicle replacement year. The ambulances and emergency response vehicles may in some cases have been sold the following spring.

Fleet life-cycle optimization work is underway with an expert consulting firm and recommendations will be available for implementation in the 2015 vehicle replacement cycle

Emergency Medical Services has secured the services of Mercury Associates, Inc., fleet consultants, through a competitive request for proposal. The consultant will make recommendations on optimal fleet size, vehicle mix, as well as developing replacement thresholds based on time, maintenance and other contributing factors. This work will commence in the second quarter of 2014 and recommendations will be available for implementation for the 2015 fleet replacement cycle. Pending the consultant recommendations, it may be possible to reduce the amount of ambulances ordered in future years with a change in replacement practices resulting from being able to extend the life of EMS vehicles.

Due to the ordering deadlines of the current vendor of record, an order has been placed for 13 ambulances and 2 emergency response vehicles for replacement following the existing replacement parameters. Two ambulances have been ordered for growth purposes. These purchases are in accordance with the approved EMS Capital Plan.

5. FINANCIAL IMPLICATIONS

2014 fleet capital purchases

The approved 2014 EMS capital budget is \$2,893,000 which includes the purchase of two new ambulances for growth and the replacement of 13 ambulances and two emergency response vehicles.

Fleet repair and maintenance costs are managed within the approved annual operating budget for the EMS branch.

6. LOCAL MUNICIPAL IMPACT

There is no local municipal impact associated with this report.

7. CONCLUSION

The current condition of the EMS fleet is good as a result of the current life-cycle management processes. The fleet is made up of 54 ambulances and 24 emergency response vehicles. The average age of an ambulance in the fleet is 2.7 years and the average age of an emergency response vehicle is 3.7 years.

York Region EMS has managed the life-cycle of ambulances and emergency response vehicles consistent with historical practices. These life-cycle practices are similar to those observed in neighbouring municipalities. In-vehicle anti-idling technology has assisted in reducing the accumulation of engine hours.

To ensure that optimal vehicle life-cycles are achieved in the future, a comprehensive consultancy review is underway. Recommendations from the consultancy optimization will be available for implementation in 2015.

For more information on this report, please contact Norm Barrette, Chief and General Manager, York Region Emergency Medical Services, at Ext. 74709.

The Senior Management Group has reviewed this report.