



**CITY OF HAMILTON**

**HAMILTON EMERGENCY SERVICES**  
*Emergency Medical Services*

<b>TO:</b> Chair and Members Emergency & Community Services Committee	<b>WARD(S) AFFECTED:</b> CITY WIDE
<b>COMMITTEE DATE:</b> March 19, 2012	
<b>SUBJECT/REPORT NO:</b> Standardization of EMS Station Garage Ventilation System (HES12008) (City Wide)	
<b>SUBMITTED BY:</b> Brent Browett Director, Emergency Medical Services Paramedic Chief Hamilton Emergency Services	<b>PREPARED BY:</b> Doug Waugh (905) 546-2424 ext.7742
<b>SIGNATURE:</b>	

**RECOMMENDATION**

That Hamilton Emergency Medical Services facilities be standardized to the Airmation Industrial Exhaust Extraction System for a period of three years (2012, 2013, 2014) and that the system be supplied and maintained by the sole source Ontario vendor, Air Technology Solutions at a cost of \$42,000 for 2012 to be charged to Project ID 7641141103, and \$14,000 for 2013 to be charged to Project ID 7641141102.

**EXECUTIVE SUMMARY**

The Airmation Exhaust Extraction System was developed to capture and remove harmful pollutants from diesel and gasoline fumes from enclosed areas such as Emergency Medical Services (EMS) garages. The Airmation System is designed to capture particulate contamination and gaseous pollutants upon vehicle start up or when a vehicle is entering a garage. The Airmation units are hung on the garage ceiling and

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have the ability to be easily moved to efficiently adapt to changes in vehicle parking patterns.

The Airmation Exhaust Extraction System is used in many paramedic services in the United States and within the last seven (7) years several paramedic services in Ontario installed this system. Hamilton EMS began using this technology in 2005 and there are now 30 units in use across four stations.

The Paramedic Service has stations that require a new ventilation system that include Station 32 on Limeridge Road, and Station 25 in Greensville. Both these sites are undergoing Council approved renovations.

The Paramedic Service is seeking to standardize to the Airmation Exhaust Extraction (AEE) System for the following reasons;

1. The AEE system has been endorsed as the ventilation system of choice by the Paramedic Service Joint Occupational Health and Safety Committee since 2005 when the technology became available in Hamilton.
2. The AEE System has the unique ability to be moved within a garage to adjust to the vehicle parking layout that can change no less than annually to accommodate the deployment plan. In most cases the AEE System will not have to be moved for minor adjustments in vehicle allocations, and if there is a major change the unit is easily and efficiently moved. Moving a fixed ventilation system is complex, is limited to the traditional parking lanes and it is expensive relative to the AEE System.
3. The AEE system is not dependent on connection hoses and therefore its health and safety benefits are not dependent on operator compliance or training. In simple terms the AEE System is a large vacuum at ceiling level cleaning the air. Direct ventilation systems require two staff with one backing in the vehicle and one outside hooking up a hose to the exhaust system. This procedure is essential for a direct system to function and, as described, places the staff member hooking up the hose in immediate proximity of the exhaust and right beside the vehicle's wheels.
4. There are no hoses hanging down in the garage with the AEE System vs. the direct system which has a large hose for every diesel vehicle. The swinging hose poses a risk to any person in the garage and they are frequently backed into and damaged requiring repair and making that garage uninhabitable during the repair.
5. There is no training and associated training costs for veteran and new staff with an AEE system vs. with the direct ventilation system all these contingencies must be in place.

***Alternatives for Consideration – Not Applicable***

The alternative is a direct ventilation system. If the Paramedic Service was to install a direct system we would anticipate a Ministry of Labour complaint on the basis of the demonstrated health and safety benefit the AEE System has over a direct system.

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In addition, if a direct system was purchased all staff would have to be trained, including any new future staff adding to the cost of the direct ventilation units which in the past few years were already approximately \$5,000 more expensive than the AEE System.

**FINANCIAL / STAFFING / LEGAL IMPLICATIONS (for Recommendation(s) only)**

**Financial:**

The Airmation System is competitively priced as less expensive than most exhaust extraction systems as was evidenced in previous tenders for exhaust extraction systems. The maintenance costs are low, basically requiring filter changes anywhere from four (4) to seven (7) years. The yearly maintenance cost per unit since the Airmation units were first installed in 2005 is approximately \$180.00 per unit

Unit cost approximately \$14,000 per unit.

**Staffing:**

None

**Legal:**

None

**HISTORICAL BACKGROUND**

Since 2005 EMS has installed 30 Airmation units across four (4) stations. Fifteen of the units are in active use at the EMS Operations Centre on Victoria Avenue and the other fifteen are in use at three (3) other stations.

The Airmation units were originally installed after a challenge by the EMS Joint Occupational Health and Safety Committee (JOHSC) which involved the Ministry of Labour in regards to air quality concerns at several volunteer stations where it was felt that ventilation of vehicle exhaust was inadequate by the fan and louver system used at the time. During the Ministry of Labour appeal process it was agreed that a more robust ventilation system would be explored by EMS management and the EMS JOHSC.

In 2005 a Tender was issued for the Supply, Delivery and Installation of an Exhaust Capture and Filtration System. The successful bidder was Air Technology Solutions who are the sole supplier of the Airmation Exhaust Filtration System in Ontario.

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In 2009 in order to address health and safety issues in regards to diesel and gasoline exhaust at the EMS Operations Centre a tender was once again issued for the Supply, Delivery and Installation of an Exhaust Capture and Filtration System. Air Technology Solutions again was the successful bidder.

**POLICY IMPLICATIONS**

None

**RELEVANT CONSULTATION**

Previously as noted the recommendation of the paramedic JOHSC endorses the Airmation unit that is proposed.

**ANALYSIS / RATIONALE FOR RECOMMENDATION**

(include Performance Measurement/Benchmarking Data, if applicable)

The AEE System is now commonly installed as a ventilation system in many paramedic services in Ontario.

**ALTERNATIVES FOR CONSIDERATION**

(include Financial, Staffing, Legal and Policy Implications and pros and cons for each alternative)

There is no alternative that would meet the needs of the EMS Division keeping in mind the health and safety implications which originally brought the EMS to install the Airmation units and the downstream training and maintenance costs that would occur with a fixed hose ventilation system.

The Fire Division uses the Nederman Exhaust Extraction System which captures exhaust directly on a hose and track system. Nederman Canada was approved by Council at its meeting of October 28, 2009 to be the approved manufacturer's standard for providing vehicle exhaust systems for the Fire Division. The Fire Service has different needs than the Paramedic Service. The fire apparatus is typically assigned to one fixed station throughout the shift and year after year. This is contrasted completely with the Paramedic Service whereby the paramedic units are continuously moving from station to station to balance coverage as soon as they start their shift. The fixed

Nederman System is therefore not appropriate for the Paramedic Service where there is wide variation in the number and types of vehicles in a station at any one time.

## **CORPORATE STRATEGIC PLAN**

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

### ***Skilled, Innovative & Respectful Organization***

- ◆ A culture of excellence
- ◆ More innovation, greater teamwork, better client focus
- ◆ An enabling work environment - respectful culture, well-being and safety, effective communication
- ◆ Opportunity for employee input in management decision making
- ◆ Council and SMT are recognized for their leadership and integrity

### ***Financial Sustainability***

- ◆ Financially Sustainable City by 2020
- ◆ Delivery of municipal services and management capital assets/liabilities in a sustainable, innovative and cost effective manner
- ◆ Full life-cycle costing for capital

### ***Environmental Stewardship***

- ◆ Natural resources are protected and enhanced
- ◆ Reduced impact of City activities on the environment
- ◆ Aspiring to the highest environmental standards
- ◆ One of the Environmental Benefits of the Airmation Exhaust Extraction System is that any pollutants are captured within the four stage progressive filtration system eliminating any harmful pollutants vented into the community as is typical with many conventional exhaust extraction systems

## **APPENDICES / SCHEDULES**

None