



Fleet Audit Report – Emergency Medical Services

April 2005

TABLE OF CONTENTS

Section	Page No.
1.0 MANAGEMENT SUMMARY	2
2.0 INTRODUCTION.....	3
3.0 OBJECTIVES AND SCOPE	3
4.0 METHODOLOGY.....	4
5.0 DETAILED OBSERVATIONS AND RECOMMENDATIONS	5
5.1 REVIEW OF PREVENTIVE MAINTENANCE AND REPAIR SERVICE INVOICES	5
5.2 FUEL USAGE ANALYSIS.....	6
5.3 REVIEW OF PREVENTIVE MAINTENANCE AND REPAIR SERVICE CONTRACT DOCUMENTATION	7
5.4 TIRE INVENTORY RECORDS KEEPING	9
5.5 DEVELOPMENT OF KEY PERFORMANCE INDICATORS (KPI) FOR EMS FLEET MANAGEMENT	9
5.6 USE OF LEADING EDGE VEHICLE TECHNOLOGY - CRYOGENIC BRAKE COMPONENTS & BIO-DIESEL .	10
5.7 REPORTING CAPACITY OF AUTOMATED VEHICLE LOCATOR (AVL) SOFTWARE	11
5.8 CONTRACT DOCUMENTATION FOR AUTOMATED VEHICLE LOCATION (AVL) SOFTWARE / SERVICES	13
5.9 CLAIMS REPORTING AND TRACKING	14

1.0 Management Summary

Audit Services has completed a comprehensive review of York Region's (the Region's) fleet administration process. The audit engagement identified three distinct fleets at the Region; Transportation & Works York Region Transit (Transit), Health Services Emergency Medical Services (EMS), and Transportation & Works Road Services (Roads). Due to the distinct nature of each of the fleet areas, Audit Services will be reporting opportunities for improvement noted through four separate audit reports. This will help facilitate action plans required from Region management and establish clear roles in the improvement process.

The opportunities presented in this report represent opportunities existing at EMS. For the purposes of this report, EMS opportunities were considered to be where processes, whose subject matter had an impact within the EMS fleet area only, and was best served from a decentralized point within the Region's EMS area. Opportunities highlighted at the other branches and at the corporate level will be reported separately in Branch or Corporate specific audit reports.

The scope of the Fleet audit included interviewing fleet personnel, reviewing pertinent documentation, and detailed testing of records at a sufficient level from which to draw a conclusion.

Based on the work performed, we noted opportunities for improvement relating to:

- Paradigm Business Systems (PBS) fleet administration software utilization
- Contract administration
- Claims reporting
- Key performance measures
- Use of cryogenic brake components to reduce maintenance cost
- Reporting capability of the automated vehicle locators (AVL) software from Grey Island Systems
- Preventative maintenance and repairs invoices
- Fuel usage reporting

A draft copy of this report has been discussed with EMS fleet management, who have provided us with their comments and have agreed to take the necessary action to implement the noted opportunities.

Should the reader have any questions or require a more detailed understanding of the risk assessment and sampling decisions made during this audit, please contact the Director, Audit Services.

We wish to thank the Commissioners, Directors, and their staff for their co-operation and assistance in providing Audit Services with requested documentation and timely responses.

2.0 Introduction

As part of our 2004 Audit Plan, which accommodates various types of audit projects, consulting engagements, and follow up requests from the Audit Committee and Management, the Audit Services Branch performed an audit of fleet management in EMS.

The Audit Plan, approved by York Region's (the Region's) Audit Committee, is developed annually by the Audit Services Branch using a Risk Assessment Methodology that helps to define the different risks associated with the various processes here at the Region. It is one tool that Audit Services uses in assessing where best to allocate audit resources.

EMS is one of three York Region fleets supplying citizens with services that have been entrusted into the Region's care. Responsibility for EMS was transferred from the Province to the Region in 2000.

EMS employs vehicles that must meet the minimum requirements of the Land Ambulance & Emergency Response Vehicle Standard and the Land Ambulance Specifications, along with other vehicle and safety related legislation. In 2003, the EMS fleet employed 24 Type II & III ambulances, 6 emergency response vehicles and 3 Supervisor vehicles. The vehicles traveled an estimated 2.6 million kilometers annually while responding to 93,672 calls. Maintenance, repair, and fuel costs were approximately \$700,000 for 2003.

Prior to 2004, the responsibility to source new ambulances rested with the Province. The Province performed all of the tendering process. York Region EMS would purchase ambulances directly from the Province. Beginning in 2004, purchases of new ambulances became the responsibility of York Region EMS. Audit Services was able to review the process used to prepare the draft RFP, and made minor recommendations that were adopted by EMS. The cost of a new ambulance is approximately \$150,000 per vehicle, to become 'road ready'.

Preventative maintenance and repairs has been sourced out to three vendors. These vendors are strategically situated in the northern, central, and southern ends of the Region.

Software applications used by EMS fleet management consists primarily of MicroSoft products and the Paradigm Business Systems (PBS) fleet administration software.

3.0 Objectives and Scope

The objectives of this engagement were to determine if the acquisition, maintenance, disposal, and administration of the Region's EMS fleet are performed in such a manner as to promote:

- ◇ Compliance with related Regional policies.
- ◇ Cost effectiveness and best practices.
- ◇ A strong management internal control structure.
- ◇ An efficient and effective use of information systems technology.

- ◇ Achievement of strategic fleet initiatives and timely reporting of key performance indicators.

The audit objectives were accomplished through:

- Interviews with EMS fleet personnel.
- A review of fleet related documentation.
- Detailed testing of records at a sufficient level.

4.0 Methodology

The approach taken for this review was to meet with EMS fleet personnel and discuss:

1. The acquisition practices used when sourcing vehicles; how requirements were determined.
2. The maintenance and repairs process, and tracking of outsourced services.
3. The method used for the disposition of vehicles once their useful life has been spent and reclamation of salvage value, if any.
4. The administrative policies, procedures, and information technology tools employed to help ensure fleet administration is operated efficiently and effectively.

5.0 Detailed Observations and Recommendations

5.1 Review of Preventive Maintenance and Repair Service Invoices

Observation

The following opportunities for improvement were noted from a review of 59 invoices processed in 2003:

Opportunity	Comment
Overcharges	Three invoices, or 5% of the total number of invoices reviewed contained overcharges. These overcharges were minimal; however inaccuracies inappropriately drain budget dollars.
Itemized charges	Invoices do not detail any credit / discount information and amounts for items such as alternator casings. EMS fleet management cannot ensure that all credit / discount amounts have been duly passed on to the Region.
Out-date-price lists	Price lists, requested during the original RFP submission, have not been kept up to date. EMS fleet management cannot ensure that prices being charged reflect the prices on the current price lists.

Recommendation

1. Invoices should be more closely reviewed for accuracy to the current, up-to-date price list. Evidence of the review should be marked on each invoice.
2. Suppliers should be asked to detail all credit / discount information as separate line items on the invoice, as per the contract.
3. Suppliers should be requested to submit an up-to-date price list on an annual basis.

Management Response

York Region EMS has implemented the following:

1. A fleet maintenance management process to ensure that all vehicle maintenance and repair costs are listed as per the price list.
2. Approved vendors have provided a Schedule "A" with parts costing. Invoicing outside the Schedule "A" will include separate line credit and discount details.
3. Up to date listings are required from each vendor annually.
4. Through current CQI (continuous quality improvement) initiatives, York Region EMS is reviewing opportunities for improvement in the Fleet Management Program.

5.2 Fuel Usage Analysis

Observation

Periodic fuel usage analysis is not being performed.

Reporting from the fuel purchasing card supplier (ARI) does not capture the odometer reading of the vehicle when refueled.

Regular examination of fuel usage can help to highlight vehicles in need of servicing, and potential inappropriate purchases of fuel.

Recommendation

EMS fleet management should ensure that all necessary data is captured. This data should be used to perform periodic fuel usage analysis, which would help to ensure that all fuel purchases are monitored for appropriateness and reasonability.

Management Response

In recognition of the issues associated with the fuelling process and environment of considerable fluctuations in cost of fuel, York Region EMS will be working with York Region Transportation & Works and the York Region Police Department to look at opportunities that would provide “best prices” and to take advantage of fuelling practices employed by T&W. This initiative has been in process for approximately six months and includes:

- All EMS employee information and vehicle information have been provided to T&W for input into their fuelling system.
- T&W has been implementing improvements and upgrades to their fuelling system to facilitate access to and reporting of internal fuel purchases. These upgrades are scheduled to be completed in early December 04.
- Ad-hoc performance reports are to be provided by T&W, which will include odometer reading, usage by vehicle, and cost per kilometer comparison by vehicle.
- York Region EMS intends to pilot their Supervisors vehicles on the new system by March 2005, in anticipation of moving their entire fleet to this system.

In the interim, York Region EMS has implemented an audit process to ensure that all invoices are reviewed on vehicle fuel consumption. York Region EMS requires staff refueling EMS vehicles to identify the vehicle, the odometer, and the identity of the employee fuelling the vehicle on the credit slip and submit it in the daily log envelope.

5.3 Review of Preventive Maintenance and Repair Service Contract Documentation

Observation

The following contract documentation could not be located, had not been updated, or was not distributed to the correct areas, for the service contracts relating to the three suppliers of preventive maintenance and repairs:

Supplier	Documentation	Comment
Mr. M's	Insurance certificate	Certificate located in Insurance Risk expired 10 / 02.
	WSIB form	Expired 07 / 02.
Joe Rose	Insurance certificate	Insurance Risk did not have a copy of the 05 / 03 certificate.
	WSIB form	Expired 05 / 02.
	Report to Council	Award by CAO in May 2002 for \$200K has not been reported to Council.
	Report to Council	Contract extension / renewal approved by CAO in May 2003 for \$200K has not been reported to Council.
Rick's Towing	Insurance certificate	Insurance Risk did not have a copy of the certificate that expired 08 / 02.
	WSIB form	Was not able to locate a WSIB form.
	Report to Council	Contract renewal / extension in May 2003 for \$60K, approved by the Commissioner & Medical Officer of Health, increased the original April 2002 award from \$60K by an additional 60K. The \$120K new total cost of the contract has not been reported to Council.

Recommendation

Documentation should be processed as follows:

1. Reports to Council – purchases requiring a report to Council should be reported as per the Purchasing By-law. For these purchases, Supplies & Services should ensure that reporting to Council is performed soon as possible.
2. Insurance Certificate – all certificates should be sent to the Insurance Risk Manager directly from the supplier. Monitoring and renewal of certificates is the responsibility of Insurance Risk.

3. WSIB Forms – forms must be kept up-to-date and current. Expired forms exposes the Region to liability should the supplier default on WSIB payments.

Management Response

1. *Response from Health Services EMS Branch:* York Region EMS has completed the necessary documents and obtained the authorized signatures for all documents issued and contracts signed. Finance Supplies & Services are required to include these contracts in Finance & Administration Committee reports to Regional Council, as per the Purchasing By-law.

Response from Finance Supplies & Services Branch: Agreed. The Joe Rose and Rick's Towing purchases will be reported as per the Purchasing By-law in the March 2005 Finance & Administration Report to Regional Council.

2. *Response from Finance Policy, Risk & Treasury:* Insurance certificates are to be collected and reviewed by Risk staff. Upon review, the certificate information is logged into the Certificate and Claims System (CCS). If any corrective follow up is required such as ensuring the certificate is a Region form, Risk staff is responsible to complete the task. Using CCS Risk staff print a list of all insurance policies that renew 60 days in advance of renewal and send out letters requesting renewal certificates. These are followed up again 30 days in advance. Upon renewal, if a certificate is not received, Risk staff notifies the Region staff contact for the contract/project that a proper certificate is not on file and work may cease. During 2003 Risk staff consisted of two temporary analysts as our full time staff were away on various leaves. The position of Manager, Insurance and Risk was left vacant in March 2003, and was not replaced until August 2003. During several months of 2003 it is quite likely that proper procedure was not followed and that some certificates were not correctly monitored. We are currently fully staffed and following procedures.

In addition to our staffing issues at that time, it is common practice by many departments in the Region to not forward insurance certificates Risk Department. Risk is currently conducting several meetings with various departments to educate them on the role of Risk within the Region, in conjunction with re-vamping the Risk Management Committee process. We are also planning to join forces with Supplies and Services as part of their presentation on procurement procedures within the Region. These efforts should improve the communication between Departments and Risk.

3. *Response from Finance Policy, Risk & Treasury:* Insurance Risk will also be highlighting documentation practices relating to WSIB forms as part of the presentation by Supplies and Services on procurement procedures within the Region.

Auditor's note: The presentation referred to in responses 2 & 3 is to occur in Q1 2005, as per Finance Supplies & Services.

5.4 Tire Inventory Records Keeping

Observation

Tires, purchased to minimize downtime for EMS vehicles required to have new tires installed, are not being monitored for use and replenishment. The tires are kept at a service provider's establishment.

Recommendation

A perpetual inventory of this tire inventory should be kept by EMS fleet management.

Management Response

Tires were removed from the service provider's establishment and relocated to the Newmarket EMS Supplies Depot at 520 Steven Court in early 2004. A new inventory process and vehicle tire tracking process has also been developed.

Tires are purchased through a Michelin National Account at a recognized Michelin Dealer to ensure "best price", and provided to the service providers on 'as needed' basis. Direct purchase of tires by the service provider also occurs in instances when the cost and availability of transport of the tires from the Michelin Dealer to the service provider negate the potential savings.

5.5 Development of Key Performance Indicators (KPI) for EMS Fleet Management

Observation

Additional KPIs need to be developed. These performance measures should capture cost drivers such as wear and tear component parts. They should demonstrate performance in a given area, one that should be of key interest to decision makers.

Fleet management currently employs two KPIs, both of which are compliance measures:

- a) Budget / actual maintenance repair costs; and,
- b) Vehicle service maintenance adherence to schedule.

However, these measures are at too high a level to promote proactive management of costs.

Recommendation

Other types of performance measures could include:

- Unscheduled repairs downtime – to report the capacity for the fleet preventive maintenance program to avoid unscheduled repairs.
- Brake and tire costs per vehicle – to report excessive wear and tear item costs and identify root causes.

- Administrative costs for fleet management – to report the efficiency and effectiveness of the administrative efforts.
- Fuel consumption – to report the fuel cost of EMS operations as compared to other related costs.

Management Response

York Region EMS has implemented a comprehensive Quality Operating System (QOS) performance management program that includes key performance indicators for all aspects of the business. In terms of EMS Fleet management reports, the following indicators have been developed since the audit and are reported on a monthly basis:

- Percentage compliance to the Preventative Maintenance Schedule.
- Costs and breakdown information associated with Scheduled and Unscheduled Maintenance and Repairs.
- Costs associated with uninsured body repair costs, and towing costs.
- Vehicle performance related to cost per kilometer by category and vehicle year.
- Unscheduled repairs (no. of incidents and costs).
- Fuel costs by vehicle and fleet.

New performance indicators proposed for 2005 will include:

- Tire usage and costs.
- Unscheduled repairs downtime.

5.6 Use of Leading Edge Vehicle Technology - Cryogenic Brake Components & Bio-Diesel

Observation

Cryogenic Brakes

In June 2003 EMS fleet management identified the potential to reduce brake cost through the use of cryogenic brake components; however no further steps have been taken to perform a cost / benefits analysis, or pilot project.

Bio-Diesel

In March 2004 Canada's first bio-diesel filling station opened in York Region. Some of the benefits associated with bio-diesel include significant reductions in emissions, similar engine performance to petroleum diesel, superior lubricity, and improved mileage of approximately 40%.

In a Fuels Policy & Practices report by the Transportation & Works Committee on June 3, 2003, bio-diesel was described as having downsides relating to cold weather starting, fuel economy, higher per litre costs over regular diesel, and higher emissions in some pollutants.

Recommendation

EMS management should consider performing a cost / benefits analysis on the potential use of cryogenic brakes and bio-diesel on EMS vehicles as measures to reduce operating costs.

While previously noted conclusions relating to bio-diesel were unfavourable, the technology behind the production of the fuel may have changed sufficiently to warrant a second look.

As a first step EMS management should consider inquiring with the City of Brampton and Toronto Hydro, two noted bio-diesel fuel users, as to their success with this fuel.

Management Response

Cryogenic Brakes: EMS will perform a cost / benefit analysis in Q3 2005 to determine potential for cost savings. This would be conditional based on any liability concerns from Risk Management (including liability under Bill C45 - federal legislation that addresses workplace safety and corporate liability) that might make it prohibitive to use of the brakes.

Bio-Diesel: EMS will follow the recommendations of the Corporate Clean Air Task Force that is presently looking into low sulphur and bio-diesel. It is anticipated that the Task Force will have a report by 2006.

5.7 Reporting Capacity of Automated Vehicle Locator (AVL) Software

Observation

Paper reports, which were an original deliverable in the AVL RFP, cannot be printed from the AVL software.

A review of the request for proposal (RFP) issued when the system was being sourced revealed that reports needed to be 'exportable to a common format'. To date, this capacity has not been delivered by the Vendor. York Region EMS has been using the AVL software for approximately a year and a half.

There are no penalty clauses in the RFP for deliverables that are not met within a certain time period.

The service charges for the use of the AVL technology, which were stipulated in the RFP that was put to market, included hard copy reporting. Therefore, the deliverable of being able to print the reports would have been part of the overall charges.

Recommendation

EMS fleet management responsible for the use of AVL technology should meet with the Vendor (Grey Island Systems) of the AVL software to develop a timeline for the delivery of the capability to print hard copy reports and export data to a common format.

EMS fleet management responsible for the use of AVL technology should attempt to negotiate lower service charge fees in light of the fact that the reporting function is not yet operational. EMS could potentially recoup a portion of past service charges.

In the future, a penalty clause that includes dollar charge back for late deliverables should be included in the RFP.

Management Response

Prior to issuing an RFP, York Region EMS issued an RFI on systems that could provide the following:

- 1) electronic driver performance monitoring
- 2) vehicle mechanical information
- 3) GPS/AVL information.

There was no single product identified on the market that could provide all of the items requested in an integrated product. A former Project Manager from the IT Department recommended that York Region EMS include all three of these components in our RFP in an attempt to encourage vendors to expand their product line. In essence the RFP was released for a product that did not exist in the market place. The award of the RFP took into account the fact that this product did not exist and was priced accordingly by the vendor.

Since that time York Region EMS has worked with the vendor to overcome the challenges needed to develop this product. The production of reports is based on obtaining data. The vendor cannot provide a report on engine data unless they can obtain engine data from our vehicles. The vendor has reported that some of the data requested (e.g.: “live odometer”) is not available from our fleet because it is either non-existent in the on-board computer or proprietary information of the vehicle manufacturer. EMS Fleet Manager has contacted Ford Canada and has confirmed that data is not available on our vehicles. Subsequently the vendor has been working with York Region EMS on providing a “virtual odometer”, which is calculated from other parameters. The driver performance reporting requires a comparison of Paramedic driving against speed limit. As such, the vendor requires the “speed limit” data for each road segment to be provided by the Geomatics Department. While “road class” is available, “speed limit” is not; York Region EMS continues to work with the vendor to overcome these obstacles.

Raw data can be obtained from the system using the existing “query” tool and can be exported into MS Excel format. It is the custom reporting feature, related specifically to the driver performance reports, and vehicle maintenance reports that are not functional. York Region EMS continues to work with the vendor on providing this information.

The AVL component and its electronic and paper reports are functional and in compliance with the RFP. The electronic AVL reporting has been integrated into the York Region EMS monthly CQI performance measurement process reports on:

- legislated response time compliance
- call investigations
- real-time ambulance dispatch processes

The charges by the vendor were divided into three installments. York Region EMS has paid the first two installments based on compliance with the RFP. The third installment is withheld until the system is compliant with the RFP. Ongoing monthly fees for AVL usage (including monthly airtime charges) have been paid. The vendor has not charged York Region EMS any extra development charges or extra service charges (above non-warranty maintenance), and in fact has added hardware (driver ID and audible buzzer), and upgraded hardware and software without charge. The original costs under the RFP took into account the fact that reports for these functions did not exist and the vendor was competitive on these issues. York Region EMS continues to work with the vendor to resolve development issues. York Region EMS has been unable to find a comparable system which addresses all components of the RFP for a comparable price.

At the time the RFP was released “Performance Agreements” were not common in all Regional RFP’s. All new RFP’s generally include this, and clearly outline financial penalties for late deliverables. The third installment of the existing RFP will not be paid to the vendor until the system is compliant with the RFP. Ongoing costs associated with AVL (which is functional, and used for real-time ambulance dispatch) will continue to be paid.

Future contracts will contain a performance clause when necessary.

5.8 Contract Documentation for Automated Vehicle Location (AVL) Software / Services

Observation

The following contract documentation could not be located, had not been updated, or was not distributed to the correct areas, for the AVL software / services:

Supplier	Documentation	Comment
Grey Island	Insurance certificate	Insurance Risk did not have a copy of the certificate that expired December 2002.
	WSIB form	Expired November 2002.
	Report to Council	Contract award to Grey Island for \$216,274 in August 2002 has not been reported to Council.

Recommendation

Documentation should be processed as follows:

1. Reports to Council – purchases requiring a report to Council should be reported as per the purchasing by-law. For these purchases, Supplies & Services should ensure that reporting to Council is performed soon as possible.

2. Insurance Certificate – all certificates should be sent to the Insurance Risk Manager directly from the supplier. Monitoring and renewal of certificates is the responsibility of Insurance Risk.
3. WSIB Forms – forms must be kept up-to-date and current. Expired forms exposes the Region to liability should the supplier default on WSIB payments.

Management Response

1. *Response from Health Services EMS Branch:* York Region EMS has completed the necessary documents and obtained the authorized signatures for all documents issued and contracts signed with Grey Island. Finance Supplies & Services are required to include these contracts in Finance & Administration Committee reports to Regional Council, as per the Purchasing By-law.

Response from Finance Supplies & Services Branch: Agreed. The Grey Island purchase will be reported as per the Purchasing By-law in the March 2005 Finance & Administration Report to Regional Council.

2. *Response from Finance Policy, Risk & Treasury:* As noted in 5.3, many departments do not know to send insurance certificates to the Risk department for data tracking and monitoring. Through our education efforts we hope to enlighten Regional departments as to correct procedures. A central contract system would be of assistance in this process as it would provide a "master" list of contracts entered into as a check list of certificates required to be received and reviewed.
3. *Response from Finance Policy, Risk & Treasury:* Insurance Risk will also be highlighting documentation practices relating to WSIB forms as part of the presentation by Supplies and Services on procurement procedures within the Region.

5.9 Claims Reporting and Tracking

Observation

A comparison of EMS accident claims to accident information captured in the Insurance Risk Claims System revealed that communication of accident information is not flowing in a timely and clear fashion.

As per the Insurance Risk Claims System, of the 27 closed claims, 7 were closed with no invoices submitted. These claims had repair work listed as being performed, or the description of the damage appeared serious enough to warrant repairs, or resolution could not be determined, as per the Insurance Risk Claims System. Further examination revealed that 3 of the claims should be reopened as they are still a work in process, and 4 listed as repaired have not yet been repaired.

Of the 10 open claims:

- 2 are actually closed and were keyed in incorrectly; and,
- 4 should be closed.

Recommendation

EMS fleet management should periodically request a copy of the Status of Claims Report available through the Insurance Risk Claims System as one step to help ensure that all EMS related claims are recorded and administered accurately.

Management Response

Response from Health Services EMS Branch: York Region EMS has implemented a new Quality Review System (QRS) database that requires on-line reporting of all incidents / accidents (i.e. Vehicle Accident), incident data, incident related data, follow-up data, and performance reports. Communication of accident information is now flowing in a timely and clear fashion as this data is accessible on-line by the Manager of Insurance Risk for review and follow up. Open claims are tagged and highlighted and monthly reports are generated to indicate the open claims.

York Region EMS Fleet maintenance processes have been refined and changes made to remove identified road blocks.

Copies of the “Status of Claims Report” with Insurance Risk have been requested and outstanding issues are being addressed.

Response from Finance Policy, Risk & Treasury: As part of the education process and revamping of the Risk Management Committee, Risk is attempting to schedule quarterly meetings with each major department as a vehicle to facilitate communication. This process should keep information flowing and up to date.

Original Signed

Original Signed

Dr. Helena Jaczek
Commissioner & Medical Officer of Health

Brad Meekin
EMS General Manager

Original Signed

Original Signed

Sandra Cartwright
Commissioner Finance

Tom Appleby
Director Supplies & Services

Original Signed

Ed Hankins
Director Policy, Risk & Treasury