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Emergency Mechanical Services Branch Audit

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AUDIT AT A GLANCE

RECOMMENDATIONS

We recommended that the WFPS:

1. *Develop procedures for better maintenance record keeping*
2. *Develop and implement a quality control program*
3. *Develop and implement a performance measurement system*
4. *Reinstate annual parts inventory counts*
5. *Develop a model for work outsourcing*
6. *Update Mechanic job descriptions*
7. *Clarify required qualifications for the Director of EMSB*
8. *Create a job description for the Supervisor of EMSB*
9. *Develop a needs assessment for and source an information system that meets the Branch's needs*
10. *Develop a standard operating procedure manual*
11. *Develop a process for keeping the SOP manual current*
12. *Develop a life-cycle costing analysis to determine the optimal point to replace vehicles*
13. *Account for parts inventory in accordance with GAAP*
14. *Include the Director of EMSB in the annual budget process*
15. *Develop a risk management plan for the Branch*

Background

Safe and well-maintained fire apparatus and emergency response equipment are an essential component of a quick-responding, reliable fire and paramedic service.

Findings

Well-functioning attributes of the EMSB include:

- The EMSB is consistently performing annual maintenance and mandatory government inspections on heavy fleet vehicles.
- Shop space and equipment are well-maintained.
- EMSB is generally compliant with regulatory requirements, industry standards, and City policies.

Improvements required to management of the operations include:

- More diligent maintenance records should be kept for vehicles
- Labour hours should be tracked to vehicles
- Quality assurance should be completed on work done
- Parts inventory counts should be completed

The lack of a performance measurement system prevents WFPS senior management from knowing how well the EMSB is operating.

The branch requires an information system that can capture and report on standard fleet industry performance metrics.

Current departmental guidance is not sufficient to clarify the educational qualification requirements for the Director of EMSB role. There also is no job description for the Supervisor position.

Readily available standard operating procedures and functional information should be made available to staff.

Risks of resource shortages were not planned for, causing several important management and staff functions to be abandoned for extended periods when staffing levels were below complement.

MANDATE OF THE CITY AUDITOR

- The City Auditor is a statutory officer appointed by City Council under *The City of Winnipeg Charter*. The City Auditor is independent of the Public Service and reports directly to Executive Policy Committee, which serves as the City's Audit Committee.
- The City Auditor conducts examinations of the operations of the City and its affiliated bodies to assist Council in its governance role of ensuring the Public Service's accountability for the quality of stewardship over public funds and for the achievement of value for money in City operations.
- Once an audit report has been communicated to Council, it becomes a public document.

AUDIT BACKGROUND

- Safe and well-maintained fire apparatus and heavy equipment are an essential component of a quick-responding, reliable fire and paramedic service.
- The Emergency Mechanical Services Branch ("EMSB" or "the Branch") is responsible for the maintenance of the heavy fleet and response equipment of the Winnipeg Fire Paramedic Service ("WFPS").
- An audit of the heavy fleet operations was added to the City Auditor's 2012 update of the *Audit Plan 2011-2014*.

AUDIT OBJECTIVES

- The objectives of our audit were:
  - To evaluate the efficiency and effectiveness of the Emergency Mechanical Services Branch.
  - To evaluate whether adequate systems, processes, resources and controls are in place at the Branch.

RISK ANALYSIS

- We conduct our audits using a risk-based methodology. We considered the following *potential* risks and focused our resources where they could provide the greatest value:
  - Are performance measures in place to monitor and evaluate how well the Branch is performing?
  - Have proper policies and procedures been developed, documented and communicated for shop operations?
  - Has a preventative maintenance program been established in the Branch?
  - Do management and staff have the necessary knowledge, tools and skills to run operations effectively and efficiently?
  - Are the mechanics properly certified to perform repairs on heavy fleet emergency vehicles?
  - Does the information system meet the Branch's needs?
  - Is life-cycle analysis performed to optimize fleet costs?
  - Is quality assurance completed on repairs and maintenance work?
  - Is the parts inventory being managed appropriately?
  - Is the Branch complying with relevant legislation and regulations?
  - Are records being properly managed for work performed?
  - Are operational risks being appropriately managed?

AUDIT SCOPE

- The scope of our audit included performance, administrative, regulatory, and human resources information related to the Branch's operations from 2012 to 2014.
- The Branch maintains the heavy fleet for the WFPS (fire apparatus and support vehicles) and fire rescue equipment (including hoses, ladders, and SCBA). This audit examined the maintenance operations for heavy fleet vehicles only.
- We compared the Branch to generally accepted fleet management guidance, as well as to other jurisdictions when appropriate, in the following areas:
  - Maintenance Management
  - Professional Development
  - Information Systems Management
  - Regulatory and Policy Compliance Management
  - Asset Management
  - Financial Management
  - Risk Management

APPROACH AND CRITERIA

- We conducted our audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient appropriate evidence to provide a reasonable basis for our observations and conclusions, based on our audit objectives. We believe the evidence we have obtained provides a reasonable basis for our observations and conclusions.
- To gather sufficient appropriate evidence for our audit we conducted interviews with WFPS senior management, as well as the Acting Director and staff of the EMSB, to gain an understanding of the current operations, policies, procedures and practices. We obtained and evaluated financial and non-financial performance information. Information that we tested included financial records, work orders, status reports, inventory records, personnel certifications and training records.
- Our fieldwork compared the Branch's operations to generally accepted fleet industry management guidance and fire service standards and guidelines. The generally accepted fleet industry guidance we used to evaluate the Branch included:
    - The study materials and fleet management guides for the Certified Automotive Fleet Manager ("CAFM") designation program of the National Association of Fleet Administrators ("NAFA").
- The fire service guidance we used to evaluate the Branch included:
    - Fleet maintenance specific standards of the National Fire Protection Association ("NFPA").
    - Insurance rating guidelines and standards of the Underwriters' Laboratories of Canada ("ULC"), and the Insurance Services Office, Inc. ("ISO").

CONCLUSIONS

A lack of performance information for the Branch prevented a comprehensive analysis of the effectiveness and efficiency of the Branch.

- The Branch does not have a functioning performance measurement system in place to collect the appropriate information to report on and evaluate its performance. With this statement we do note that WFPS senior management demonstrated a sincere interest to implement a reliable performance measurement system in the Branch.
- We observed positive aspects of the Branch management, including the fact that annual maintenance services and mandatory inspections were performed and on record with only two exceptions. Though Branch management was willing to attempt to provide us with any information that we required for our audit, we were informed that the information was not kept on a regular basis, was not necessarily accurate, and was, therefore, not sufficient or reliable enough to perform a comprehensive objective analysis of the Branch's performance.
- A performance measurement system will provide WFPS senior management with information to evaluate whether the Branch is efficiently maintaining safe operating vehicles, while minimizing vehicle downtime.

There are positive features of the current management systems for the Branch. There are also numerous opportunities for improvement, some of which are in key management areas.

- Positive features of the Branch's management systems that we observed included:
  - Logs of work completed by Branch staff that stated the diagnoses and repairs completed on vehicles
  - Compliance with hazardous materials disposal regulations
  - Annual preventative maintenance and provincial regulatory inspections completion
- Areas where the Branch requires improvement include:
  - Development and implementation of target service standards to minimize turnaround, rework, and downtime
  - Development and implementation of a robust performance measurement system to facilitate management decision making
  - Definition of professional development plans for employees and clarification of the qualifications required to achieve the level of Director of EMSB
  - Implementation of an information system that meets the Branch's information needs
  - Development of a risk management plan to mitigate the risks of resource shortages

INDEPENDENCE

The team members selected for the audit did not have any conflicts of interest related to the audit's subject matter.

ACKNOWLEDGEMENT

The Audit Department wants to extend its appreciation to all of the stakeholders who participated in this audit and especially to the WFPS Support Services Division staff for their time and cooperation.

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February 3, 2016
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Emergency Mechanical Services Branch Background

1.1 Why the Emergency Mechanical Services Branch Exists

- The Emergency Mechanical Services Branch ("EMSB" or "the Branch") of the Winnipeg Fire Paramedic Service ("WFPS") supports the WFPS in its mission "to serve and safeguard the community by protecting life, property and the environment through prevention, education, medical and fire services and to provide optimum emergency and stable patient pre-hospital care to the citizens of Winnipeg" by providing maintenance of the department's heavy fleet and emergency response equipment.
- To meet international standards for emergency response times, the WFPS maintains a fleet of heavy apparatus[1] and other heavy vehicles and equipment that respond quickly to fire and medical emergencies. Ambulances and other "light fleet" vehicles are not maintained by the EMSB, but are instead maintained by the Winnipeg Fleet Management Agency, and are overseen by the WFPS's Light Fleet Supervisor.
- The heavy fleet vehicles maintained by the EMSB are generally large, and are driven under extreme conditions when responding to emergencies. Maintaining the heavy fleet in excellent working condition is *critical* to providing citizens and visitors with first class, safe emergency protection and care.

1.2 Services Provided by the EMSB

- The Branch is responsible for maintaining the heavy fleet for the department – which consists of fire apparatus, specialty vehicles, trailers, trucks and boats. The Branch also maintains the department's specialty equipment (including hoses, ladders, and self-contained breathing apparatus) and provides maintenance services to the department's facilities.
- The EMSB also houses the reserve apparatus to replace vehicles that are brought in for service. This model is common across North America, and is also required for jurisdictional insurance rating purposes.

1.3 Branch Resources

- Significant changes in WFPS senior management occurred shortly before and during our audit. At the start of our audit, the Chief of the WFPS had been serving for less than one year, the Manager of Finance had been serving for less than three months, and the Deputy Chief of Professional Development was covering the Deputy Chief of Support Services position until a new deputy could be appointed. Shortly after we began our audit, a new Deputy Chief of Support Services was appointed, which is the immediate supervisor of the Director of EMSB. WFPS senior management is interested in the continual improvement of the WFPS, including potential improvements in the EMSB.
- The approved complement for the Branch includes the Acting Director of EMSB, one Supervisor of maintenance operations, six certified heavy-duty mechanics, and one utility maintenance staff member. The Acting Director was appointed from a Mechanic position after the prior Director and the Supervisor both retired. The Acting Director has been in this role for the last two years. The Supervisor position has been vacant since the prior Supervisor retired.
- The WFPS had a heavy fleet of 88 serviceable vehicles as of December 31, 2014. The fleet included 52 active and 13 reserve fire apparatus (also known as "spares"), as well as 13 trailers, 7 specialty vehicles, and 3 boats. The reserve vehicles are kept at the maintenance facility until they are required for use by the fire stations. The WFPS has developed a draft long-term vehicle replacement plan to ensure that there are sufficient numbers of fire apparatus to respond to emergency calls.

[1] "Apparatus" is also commonly known as "fire engine" or "fire truck".

- The facility that the Branch operates in is approximately 31,000 square feet (an 11,000 square foot maintenance shop and a 20,000 square foot storage facility).

1.4 Operational Standards

- The following industry standards are applicable to the Branch:

National Fire Protection Association

- The National Fire Protection Association ("NFPA") provides codes and standards for jurisdictional fire departments. The NFPA is a recognized emergency response standard setting authority across North America accredited by the American National Standards Institute.
- The WFPS has voluntarily adopted the NFPA standards as a best practice for its operations.
- The WFPS's compliance with NFPA standards is also examined by insurance rating authorities for jurisdictional insurance rating purposes.

Underwriters' Laboratories of Canada

- Underwriters' Laboratories of Canada ("ULC") is the Canadian branch of a global independent safety science company. The ULC standards branch is accredited by the Standards Council of Canada, and publishes asset management standards that are used in jurisdictional insurance rating systems.
- The ULC standards relevant to the WFPS dictate the allowable useful life for fire apparatus.

Insurance Services Office, Inc.

- Insurance Services Office, Inc. ("ISO") is another standard setting agency whose standards are used for jurisdictional insurance rating systems.
- The ISO standards relevant to the WFPS dictate the number of reserve vehicles that should be kept on hand to replace vehicles taken out of service for repairs.[1]

1.5 Fleet Management Guidance

- The WFPS has not subscribed to any particular set of fleet management standards or guidance as a model for EMSB operations. For the purposes of our audit, we evaluated the management of the Branch based on the certification materials for the "Certified Automotive Fleet Manager" designation of the National Association of Fleet Administrators:

National Association of Fleet Administrators

- The National Association of Fleet Administrators ("NAFA") is an internationally recognized not-for-profit organization that provides certification programs for fleet management professionals. Its guidance is directed at automotive fleet management organizations in general, regardless of industry type, geographic location, or fleet composition.
- NAFA's flagship certification is the Certified Automotive Fleet Manager ("CAFM") designation. The program educates candidates in a range of management categories that could be found in introductory post-secondary business or administration degree or diploma programs.

[1] The number of "in-service" apparatus required (as opposed to reserve apparatus) depends on the capacity to meet response time standards set by the NFPA. An analysis of whether the WFPS has an appropriate number of in-service vehicles was outside of the scope of our audit.

- The CAFM tests candidates on the following subject matter modules:

Figure 1: Fleet Management Certification Areas

Fleet Management Knowledge Areas	
Maintenance Management	Information Systems Management
Asset Management	Risk Management
Business Management	Fuel Management
Financial Management	Professional Development

~Source: NAFA CAFM Fleet Management Guides and Module Materials

- We obtained permission from NAFA to use the educational materials from its CAFM program as relevant criteria to evaluate the performance and management systems in the EMSB.
- Since the CAFM modules are designed to train a wide swath of fleet managers across various industry lines, the subjects are applicable to varying degrees to what the EMSB is responsible for. For the purposes of this report, we have discussed the management knowledge areas as they apply to the EMSB.
- The knowledge areas presented in the Operational Management Evaluation sections are in order of their relevance to the responsibilities of the Director of EMSB. A fuel management analysis has not been completed. The fuel management module of the CAFM program relates to in-house sourcing and distribution programs for fuel inventories, which is a responsibility of the Winnipeg Fleet Management Agency and not the WFPS. The most significant impact that the EMSB can have on the WFPS's fuel consumption is to run an effective vehicle maintenance program that maintains vehicles at their best achievable mileage rates.

Performance Evaluation

2.1 Branch Performance Management System

- The primary responsibility of the Emergency Mechanical Services Branch is the maintenance and repair of the WFPS's heavy fleet vehicles. Commonly accepted performance measures are available for fleet and maintenance organizations from industry associations such as the National Association of Fleet Administrators.[1]
- The WFPS has not yet implemented a performance measurement system in the Branch and, consequently, the limits on the information being tracked by the Branch do not allow for a complete and meaningful performance evaluation of its efficiency and effectiveness.
- Despite this limitation, we do note that WFPS senior management has shown sincere interest over the course of our audit to implement a performance measurement system at the Branch.
- Though an overall assessment of performance cannot be completed, some isolated performance indicators can be discussed from the information that was provided to us.

2.2 Financial Performance

- The financial performance of the Branch is presented in Exhibit 1:

Exhibit 1: Financial Performance

	2011	2012	2013	2014
Actual Expenses	$ 3,917,198	$ 4,309,974	$ 4,270,434	$ 4,114,200
Budgeted Expenses	3,876,001	4,051,203	4,703,692	4,823,992
Over/(Under) Budget	$ 41,197	$ 258,771	$ (433,258)	$ (709,792)
Variance %	1%	6%	-9%	-15%

Source: City of Winnipeg PeopleSoft Database

- Exhibit 1 shows a wide range of results in relation to the budgeted expenses. The differences from budget are mainly attributed to variances in the parts inventory expense and vacancy management.
- Forming conclusions on the variances in Exhibit 1 would not be appropriate due to the fact that the Branch is not accounting for parts inventory in accordance with generally accepted accounting principles. While the effect of this accounting practice does not have a significant effect on the City's overall consolidated financial statements, it does have a significant effect on the quality of any financial analysis that we could provide in this report. Inventory management and accounting practices are discussed further in our Operational Management Evaluation section. Further, staffing shortages in the Branch have also been cited as the reason for several observations that we discuss further in our Operational Management Evaluation section.

2.3 Operational Performance Measures

- The only formal reporting that WFPS senior management receives from the Branch are daily reports on the vehicles at the EMSB and the number of reserve vehicles at the end of the business day. These reports are kept for a few months and then are deleted. This prevented us from using this information in a meaningful performance evaluation.
- Anecdotally, the EMSB has informed us that they have not ever run out of reserves on a given day, which would require diverting resources from other stations should any more vehicles break down than were in reserve.

[1] Similar guidance is also published by the Canadian Public Works Association, Government Fleet Magazine, and other well-respected fleet management associations.

- We were able to obtain maintenance record logs that showed that annual maintenance checks and Manitoba Government Inspections are being completed for all applicable vehicles.[1] The logs also show that some periodic preventative maintenance inspections are also completed. We noted, however, that status reports for vehicles showed that vehicles were regularly well over the thresholds for when preventative maintenance inspections should be completed according to the internal standards set by the Branch. The information available to us was not enough to calculate a percentage of how often preventative maintenance inspections were being completed on time. Maintenance Management and the vehicle maintenance program is discussed further in our Operational Management Evaluation section.
- The WFPS has an aging fleet. The average age of its heavy fleet apparatus is ten years old, which is 2/3 of the allowable age of active vehicles under applicable standards. The WFPS has created a vehicle replacement plan in 2015 to enable the service to continue to meet NFPA and insurance underwriting requirements. Vehicle life-cycle management is discussed further in our Operational Management Evaluation section.

2.4 Commonly Accepted Fleet Management Performance Measures

- The three most critical measures of a fleet maintenance operation's performance are:
  - Safety – The ability to provide and maintain safe working vehicles to emergency responders. Key indicators include:
    - Percentage of preventative maintenance inspections completed on time
    - Tow Rate (percentage of work completed because of breakdowns)
  - Downtime – When vehicles are not available for use. Key indicators include:
    - Vehicle Downtime Rate (amount of time active vehicles are out of service)
    - Reserve Availability (percentage of time spares were available for use)
  - Technician Productivity – The ability for vehicle technicians to provide effective service with the lowest levels of time and rework possible. Key indicators include:
    - Billable hours (percentage of direct labour hours spent working on vehicles)
    - Productivity (number of actual hours of repair time vs. standardized hours)
    - Turnaround time (percentage of time the Branch met its turnaround time goal)
    - Rework rate (time spent fixing repairs that were not completed to standard)
- The Branch does not track any of these common industry measures. A listing of other jurisdictions that track these measures is provided in Appendix 4.[2]

2.5 Overall Conclusions

- We cannot conclude on the overall effectiveness and efficiency of the Branch due to the lack of performance information being tracked. The fact that the Branch is not tracking common benchmarks indicates that there are opportunities for improvement in the operations. The various facets of EMSB management are discussed in our Operational Management Evaluation.
- WFPS senior management has shown the desire to implement a performance measurement system in the Branch to determine whether there can be improvements to the operations, and to receive assurance that the Branch is operating well.
- Sufficient literature and guidance exists to enable the department to implement a performance measurement system that will provide management with necessary operational information. The performance measurement system is discussed further in our Operational Management Evaluation.

[1] Some exceptions were noted and are discussed in our Operational Management Evaluation section.
[2] Jurisdictional comparisons are made to US cities where information has been made available. Comparable public Canadian information could not be found in our research.

Operational Management Evaluation

3.1.1 Maintenance Management

Issue

- Are the maintenance management systems and processes appropriate for the Branch?

Conclusions

- While the Branch performs maintenance on heavy fleet vehicles, and maintains compliance with legal requirements to inspect vehicles annually and for hazardous materials disposal, the systems must be improved for performance monitoring, records management, staffing analysis, and inventory management.

Analysis

- Maintenance management from a fleet manager's perspective entails running the maintenance shop in a manner that enables the Branch to meet its performance targets, including:
  - Monitoring performance and making operational adjustments as required
  - Operating an effective vehicle maintenance program
  - Managing inventory to optimize parts availability while minimizing waste
  - Ensuring that the shop is staffed appropriately
  - Outsourcing work when it is appropriate to do so
  - Ensuring compliance with environmental regulatory requirements
- As we noted in our Performance Evaluation section, the Branch does not have specified performance targets to evaluate the management system against. We performed our analysis based on the guidance of NAFA's *Fleet Maintenance Operations Guide*.

Performance Monitoring

- A performance measurement system is essential for providing WFPS senior management with assurance that the Branch is maintaining appropriate stewardship over the resources provided to it.
- Benchmarking performance is essential for providing management the information needed to make resourcing decisions, and to communicate operational performance.
- The Branch does not have predefined performance measures to communicate performance other than budgetary spending and which vehicles are in the shop daily.
- Common fleet management performance measures as defined by industry organizations include those that communicate safety activities, downtime, and technician productivity.
- The Director of EMSB should develop and report on a set of commonly accepted fleet performance measures to enable proper decision making and for reporting purposes.

Vehicle Maintenance Program Management

- Vehicle maintenance can take several different forms:
  - Reactive – Vehicle maintenance that is performed after a vehicle has broken down. This is commonly regarded as the most expensive type of maintenance.
  - Preventative – Maintenance procedures that are completed on a predetermined basis (at specified time or usage intervals) in order to prevent vehicles parts from breaking down from wear and tear (eg. fluid replacement and parts lubrication).
  - Predictive – Parts are replaced on a predetermined or diagnostic basis to avoid breakdown from continued use (eg. tire replacement).

- The process of strategically removing vehicles from service to perform preventative and predictive maintenance forms the basis of a preventative maintenance ("PM") program. The two essential components of a PM program are (1) a checklist of maintenance actions to be performed periodically and (2) the frequency these actions are performed (a schedule). A well-designed PM program helps to ensure that heavy fleet apparatus are safe to operate for emergency response, minimizes maintenance costs, and maximizes technician productivity by scheduling work on a constant basis.
- We observed that a PM program exists for the Branch. It consists of two different inspection types. Schedule B ("PM-B") inspections are completed annually along with Manitoba Government Inspections ("MGI") required by *The Highway Traffic Act* and its associated regulations. Schedule A ("PM-A") inspections are based on internally set thresholds on vehicle mileage (5,000 km) or hours (150 hours). The Branch is not currently tracking information on how many inspections are being completed on time.

Management of Annual Inspections (PM-Bs) and Manitoba Government Inspections

- The Branch is managing annual PM-Bs and MGIs well. Detailed handwritten checklists are completed by Mechanics when PM-Bs and MGIs are completed. We observed that all vehicles had PM-Bs and MGIs recorded over the period of our audit scope, noting only two instances where no PM-B or MGI was recorded for vehicles in the year that they should have been completed. The Acting Director explained that these two MGIs were likely performed by third-party vendors, but the records of the inspections could not be located.

Management of Periodic Inspections (PM-As)

- The Branch is not keeping information on how well PM-As are being managed. In some cases PM-As will be recorded in handwritten form, and in some cases PM-As will only be noted as completed in the information system, but a checklist of the work completed will not be detailed. Schedules for when PM-As should be performed are not being prepared, and statistics on overdue PM-As are not being kept.
- In order to track the status of in-service vehicles, the Branch receives "Weekly Apparatus Service Status" reports from each fire station. These reports include the weekly mileage/hours for vehicles in the stations and the mileage/hour count when the vehicles were last inspected. Reports are generally kept in the EMSB email records for four months, and are then deleted. We randomly sampled one month of reports to assess how many vehicles were receiving PM-A inspections on time. From the reports sampled we observed that 42% of the vehicles were overdue for a PM-A inspection, 30% were not yet due for a PM-A inspection, and 28% had incomplete or erroneous information that prevents us from concluding on whether the vehicles were overdue for inspection. These observations lead us to believe that information is not being sufficiently tracked for vehicles, and that the Branch is not currently meeting their goal of performing PM-A inspections within 150 hours. Overdue vehicles exceeded their scheduled PM-A inspection time by 227 hours on average (more than double when they were scheduled for inspection). The overages on PM-A inspections may be due to staffing levels, which is discussed later in this section. The incompleteness of reports has implications on records management, which is also discussed later in this section.

Quality Control Management

- Quality assurance is an integral part of a well-designed PM program as it helps ensure that work has been performed to Branch standards. NAFA guidance states that quality control and training are a supervisory responsibility that an organization's reputation is based on.

- We observed that quality control reviews of work are not being performed at the Branch. The Acting Director explained that staffing shortages did not allow for quality control reviews to be completed.

Records Management

- Records of work performed for preventative maintenance, MGI inspections and other repairs are being maintained by the Branch. We observed that some of the records were being kept in the Branch's fleet information system, some were only in manual records, and some were in both manual and electronic forms. The fact that many of the records were kept in handwritten format would have made statistical analysis of the information cumbersome, and prevented us from performing analyses of the information.
- Fire station crews complete regular operator checklists at each fire station. These checklists involve high level inspections of vehicles, and form part of the overall maintenance records for vehicles. Once the checklists are complete, they are kept in the stations and are not sent to the Branch for records management.
- Incomplete Weekly Apparatus Service Status reports sent in by fire stations are preventing the Branch from tracking the status of a significant portion of the PM-A schedules for vehicles.
- Warranty work on the fire apparatus is completed externally by third-party service providers. Records for external work are a part of the overall maintenance documentation for vehicles; however, the Branch does not keep records for maintenance performed by external service providers.
- As noted above, other records of third-party work, such as PM-Bs and MGIs might not be kept in the Branch records.

Inventory Management

- Inventory management processes are important for a shop as they can ensure that parts are available for repairs as needed and can prevent obsolescence from excess stock.
- The EMSB had an estimated parts inventory of $500,000 as of December 31, 2014. Management was not able to state the last time an inventory count had been performed.
- We performed inventory count procedures to gain some comfort on the balance that was recorded. We observed many of the counts were accurate to what was recorded in the Branch's information system. We also noted areas of discrepancy including unlabeled boxes on shelves, counts that did not match the inventory listing, and no reliable way to measure the automotive fluids that were in stock. These discrepancies indicate that there could be a significant amount of obsolete inventory in storage for the Branch.
- The information system is capable of tracking the minimum order quantities for inventory parts but this function it is not being used consistently by staff.
- Controls should be improved for purchasing, tracking, storing, and turnover of inventory. Performing periodic test counts and/or annual inventory counts can also improve the efficiency and effectiveness of inventory management and shop operations. Ultimately this will aid in mechanic efficiency, reduce waste, improve turnaround times and reduce vehicle downtime.

Maintenance Shop Staffing

- The right number of maintenance staff for servicing the fire apparatus is required for the Branch to achieve appropriate service times for heavy fleet vehicles.

- NAFA's *Fleet Maintenance Operations Guide* provides a model for determining the optimal number of staff for a maintenance operation. The model takes into consideration vehicle classifications and equivalencies for maintenance hours, fleet size, and the numbers of maintenance hours available to maintain the fleet. The model then determines the number of staff required to provide appropriate service for the fleet.
- To complete the NAFA guide analysis, we would have required detailed information about the labour hours spent on vehicles from the Branch's information systems. We were prevented from completing the NAFA staffing analysis due to the fact that labour hours are not being tracked to vehicles in the Branch's information system. The Acting Director explained that staffing shortages did not allow for staff to spend the time to track their hours to this level of detail.
- Instead of performing the NAFA analysis specific to the Branch, we obtained publicly available, general vehicle equivalency information to estimate the number of mechanic staff that would be required for the WFPS heavy fleet. This publicly available information was collected from several sources and may not reflect the actual experience of the EMSB. Further, the public sources differed on the equivalency attributed to fire apparatus and the numbers of vehicles that one mechanic could be responsible for. Our review of the publicly available vehicle equivalency information suggests an appropriate number of mechanic staff for the EMSB is likely between four and eight mechanics. The complement of five mechanics at the time of our audit work was within that range. We note that it would be more appropriate for WFPS management to perform an analysis based on the actual experience of the EMSB.
- During the course of our audit, understaffing was cited as the main reason for incomplete records being maintained in the information systems, quality control reviews not being completed on vehicles, inventory counts not being performed, PM-A inspections not being completed on time, and performance tracking not taking place. We also noted that the Branch had two less staff than the approved complement number during our field work. The Acting Director of EMSB was working on filling vacant positions. The Acting Director was filling in on mechanic duties, reducing the time spent on management duties. This is not ideal for managing the Branch as gaps in key management functions are not being addressed. Current vacancies should be reviewed in sync with a review of job descriptions (see the Professional Development evaluation in section 3.1.2) and the compiling of meaningful performance information to determine the optimal complement.

Outsourcing

- Outsourcing work when appropriate can help reduce downtime, reduce costs of specialized work, and create greater capacity for the Branch as a whole. Reasons for outsourcing include skill levels for technicians, parts availability, total cost of service, and hours of operations.
- EMSB outsources warranty work, specialized repairs, and work over and above their capacity.
- The branch does not obtain or retain documentation of the external warranty work completed in their maintenance records.
- A costing analysis has not been completed to determine when it would be more advantageous to outsource excess work that prevents the Branch from performing other tasks such as performing quality control checks on work completed, ensuring proper records are being input into the information systems, and ensuring inventory is being appropriately stored and managed.

Environmental Considerations

- The shop footprint has been reported as being of adequate size for Branch operations. We observed that the shop floor was well maintained, equipment had been appropriately serviced, and that the shop was kept relatively clean.
- Environmental regulations for fleet and maintenance operations are aimed at providing a clean, healthy and safe work environment for everyone.
- The Branch has processes in place for hazardous materials disposal. We observed that hazardous material was properly stored and the shop was reasonably clean.
- However, there is no documented collection (SOP manual) to help instruct employees on the environmental regulations that they need to follow.

RECOMMENDATION 1			
We recommend that the Director of EMSB develop procedures to ensure that the Branch is keeping appropriate records in the electronic records including work performed by EMSB staff, vehicle reports from fire station staff, and work performed by external service providers.			
RISK AREA	Information Resources	**ASSESSMENT**	High
BASIS OF ASSESSMENT	The records that the Branch are maintaining do not allow WFPS senior management to make informed resourcing decisions for the Branch, and do not provide a complete record of all of the maintenance work completed on vehicles.		

MANAGEMENT RESPONSE	
Agree. WFPS will work with IT-Services on the development of a data base where operational staff will enter vehicle report information. Work performed by external service providers, including warranty work, is currently being entered into the existing RTA system. EMSB processes will be mapped to identify efficient means of documenting work performed by EMSB staff.	
IMPLEMENTATION DATE	Q4 2016

RECOMMENDATION 2			
We recommend that the Director of EMSB develop, document, and implement a quality assurance program for work completed at the Branch.			
RISK AREA	Physical Assets	**ASSESSMENT**	High
BASIS OF ASSESSMENT	Providing safe operating vehicles to the WFPS is critical for the service. Proper supervision and review of work is an essential part of any professional service.		

MANAGEMENT RESPONSE	
Agree. WFPS Service Quality Branch will work with the Supervisor of EMSB to identify the quality assurance program consistent with NAFA guidelines. Hiring a permanent Director and Supervisor of EMSB, and maintaining a full staff complement remains a priority ensuring adequate human resources to support this program.	
IMPLEMENTATION DATE	Q1 2017

RECOMMENDATION 3			
We recommend that the Director of EMSB design and implement a performance measurement system for the Branch, in cooperation with WFPS senior management, that communicates how the Branch is performing in safety, downtime, and technician productivity measures.			
RISK AREA	Information Resources	**ASSESSMENT**	High
BASIS OF ASSESSMENT	An appropriate performance measurement system is essential for the management of the Branch, and for resourcing decisions for WFPS senior management.		

MANAGEMENT RESPONSE	
Agree. WFPS continues to work with IT Services on the capacity of the RTA system to produce industry standard key fleet maintenance performance measures. Measures on technician productivity and inventory will be produced for Q4 2016. Any future EMSB software solution will be required to produce all fourteen measures outlined in Appendix 5.	
IMPLEMENTATION DATE	Q2 2017

RECOMMENDATION 4			
We recommend that the Director of EMSB, in consultation with the WFPS Manager of Finance, reinstate annual inventory counts at the Branch.			
RISK AREA	Information Resources	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Inventory counts support proper inventory management, enable the City to follow generally accepted accounting principles, help to safeguard inventory assets, and provide feedback on the costing systems for maintenance work completed.		

MANAGEMENT RESPONSE	
Agree. WFPS completed a full inventory count for 2015. WFPS will continue to consult with the Manager of Finance to ensure appropriate inventory is maintained, and reported consistent with generally accepted accounting practices.	
IMPLEMENTATION DATE	Implemented.

RECOMMENDATION 5			
We recommend that the Director of EMSB, in consultation with the WFPS Manager of Finance, develop a process to determine when it is appropriate to outsource work.			
RISK AREA	Business Process	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Foregoing management responsibilities to complete maintenance work when staff levels are low or service requests are high prevents the Director from providing proper management information to WFPS senior management and from ensuring that appropriate quality control is occurring.		

MANAGEMENT RESPONSE	
Agree. Hiring a permanent Director and Supervisor of EMSB will enable appropriate resourcing of the branch. WFPS will consult with the Manager of Finance to review historical work outsourced outside of warranty work and specialty repairs, and recommend outsourcing guidelines for EMSB leadership to reference.	
IMPLEMENTATION DATE	Q2 2017

3.1.2 Professional Development

Issue

- Does the Branch have an effective professional development program?

Conclusions

- An informal professional development program exists for the Branch that is effective for technical and personal development of staff, but is not effective for succession planning and preparing staff to take on higher level management responsibilities.

Analysis

- Professional development management consists of ensuring that individuals and groups in organizations are equipped to handle the responsibilities required of their jobs, and the increasing challenges and responsibilities they will face in the future. Professional development incorporates the concepts of developing leaders, succession planning, communication, and ethical decision making.
- The City's *Administrative Standard No. HR-003: Employee Education & Development* and *Administrative Standard No. HR-012: Employee Performance Management* state that the continual professional development of employees is the responsibility of leaders (supervisory staff) and employees alike. The principles of these standards are built on the concepts of providing excellent service to customers and allowing employees to grow by providing clear communication on how they contribute, what is expected, and how they can continue to develop both now and in the future.
- We assessed the professional development program in the Branch based on three focus areas: (1) communications of expectations through job descriptions and performance reviews, (2) qualifications held by staff, and (3) access to professional development opportunities.

Job Descriptions and Performance Reviews

- Job descriptions exist for Mechanics and the Director. A job description does not exist for the Supervisor position. The job descriptions communicate the responsibilities of the positions and required qualifications for the positions, but also have a few gaps in the clarity of communication of the minimum qualifications required for positions:
    - The job description for Mechanics does not contain the requirement for the possession of, or the pursuit of, Emergency Vehicle Technician (EVT) certification. *NFPA 1911: Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus* requires that technicians inspecting, diagnosing, and maintaining fire apparatus meet the qualifications of the NFPA's EVT standard. This requirement should be built into the minimum qualifications for the Mechanic job description.
    - The job description for the Director of EMSB position requires the "completion of post-secondary courses in management and administration and/or equivalent". The actual management training areas, or what is considered as the equivalency, however, are not defined. This makes the qualifications for the position vague and does not provide adequate direction for what educational requirements to achieve for employees who wish to pursue this position.
- Documented performance reviews are not being completed for either the Acting Director or for employees of the Branch. This limits the feedback provided to employees on their performance, and stifles the identification of opportunities for professional growth of both staff and the Director.

Qualifications Held

- We observed that all Mechanics in the Branch possess valid heavy-duty mechanic certifications in the province of Manitoba.
- We observed that all Mechanics in the Branch either possessed or were working towards achieving EVT certification. The Acting Director's EVT certification had expired and he was not pursuing recertification at the time of our audit.

Access to Professional Development Opportunities

- We observed that employees had access to professional development opportunities and regularly obtained professional development related to the technical aspects of maintenance work, as well as other areas of interest offered by the City's Employee Development Branch.
- We also observed that the Acting Director had obtained numerous supervisory courses offered by the City's Employee Development Branch.
- Due to the economies of scale, the City does not provide industry specific courses, such as fleet management training courses. The City relies on industry associations to provide this type of training. The Acting Director has not obtained fleet management training, or other post-secondary management training other than the supervisory development courses that the City's Employee Development Branch offers.

RECOMMENDATION 6			
We recommend that the Mechanic job description be updated to include the requirement for EVT certification upon recruitment, or the pursuit and achievement thereof within a specified timeframe.			
RISK AREA	Human Resources	**RISK ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	EVT certification is required for the WFPS to meet NFPA standards and also provides confidence that vehicle technicians have been appropriately trained to address the specific issues associated with fire apparatus maintenance.		

MANAGEMENT RESPONSE	
Agree. WFPS will update the Mechanic job description to include this requirement or the pursuit and achievement thereof within a reasonable time period. WFPS will strive to ensure a consistent process of EVT Certification attainment and maintenance. WFPS Academy instructors have been qualified as exam proctors to enable this process.	
IMPLEMENTATION DATE	Q4 2016

RECOMMENDATION 7			
We recommend that the Director of EMSB job description be updated to clarify the minimum management and administration education required to qualify for the position, and what the acceptable equivalency for the education would be.			
RISK AREA	Human Resources	**ASSESSMENT**	High
BASIS OF ASSESSMENT	Appropriate managerial training is required for the Director of EMSB to be able to provide WFPS senior management with assurance that the Branch is operating effectively and efficiently.		

MANAGEMENT RESPONSE	
Agree. WFPS management is currently in discussions with UFFW on both a transition to updated minimum management and administration education required or acceptable equivalency and a future state where incoming applicants will require said qualifications.	
IMPLEMENTATION DATE	Q1 2017

RECOMMENDATION 8			
We recommend that the WFPS create a job description for the Supervisor of EMSB position.			
RISK AREA	Human Resources	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Job descriptions are essential to communicate the minimum qualifications for a job, as well as the expectations for the position.		

MANAGEMENT RESPONSE	
Agree. Both the job description for the Director and Supervisor of EMSB are currently under review.	
IMPLEMENTATION DATE	Q4 2016

3.1.3 Fleet Information Management

Issue

- Does the information system at EMSB sufficiently address the information and reporting needs of the WFPS?

Conclusions

- Under its present configuration, the information system that the Branch is using does not meet the information needs for the Branch or the reporting needs of WFPS senior management. The EMSB requires an information system that will be able to provide key fleet maintenance performance information to WFPS senior management.

Analysis

- Organizations must have information systems that can handle their information needs.
- The EMSB's current system has been in place for the last ten years without any significant version updates. The current information system has the capacity to store a significant portion of the Branch's required information. The custom tailored program, however, does not have the capacity to store downtime information (which is identified by NAFA as the second most critical metric next to safety in a maintenance operation) or to track the status and availability of spare vehicles.
- When we requested basic fleet management information discussed in the CAFM designation program, the information was not readily available. Rather, an Information Systems Specialist had to write specifically-designed queries to extract the requested information from the system.
- While the Branch does not have any prescribed performance measurements to report, the current database system does not have the capacity to report on measures that would report the safety, downtime and productivity measures to senior management. Of the twelve key fleet maintenance performance measures for the Branch outlined in Appendix 4, we were informed by City staff that the information system at the Branch only had the capability to report on four of the measures. We were further informed that it may be possible to produce reports for the other measures, except for downtime and availability of reserves, with the aid of auxiliary software. A caveat was placed on this, noting that it may not be possible and that the reporting may not be user-friendly.
- We communicated with other fleet maintenance divisions within the City and found an in-house-developed program that may be able to handle the information and reporting needs of the EMSB. The contact information for the information systems manager has been shared with the WFPS.

RECOMMENDATION 9			
We recommend that the WFPS develop a needs assessment for information and procure an information system that will handle its information and reporting needs.			
RISK AREA	Information Resources	**ASSESSMENT**	High
BASIS OF ASSESSMENT	Information systems are essential to provide management with the information needed to assess and adjust the operations of the Branch.		

MANAGEMENT RESPONSE	
Under review. WFPS is currently working with IT staff from WFMA who administer the RTA system. If the current software solution is unable to meet the needs of EMSB, a program of requirements will be drafted and a new solution will be sought.	
IMPLEMENTATION DATE	Review will be complete Q4 2016

3.1.4 Business Management

Issue

- Are the business management systems and processes sufficient for the Branch to maintain compliance with legislation, regulations, industry standards, and policies?

Conclusions

- The Branch appears to be largely complying with relevant regulations, standards and policies, which are communicated informally. Relevant policies and regulation guidance should be made readily available to all staff.

Analysis

- The term "Business Management" for the Certified Automotive Fleet Manager relates to regulatory compliance and internal policy development and administration.

Adherence to regulations, industry standards, and organizational policies

- We observed that the Branch is aware of, and appears to be in compliance with, relevant standards and regulations.
- An exception to following the NFPA standards was that the Acting Director of the Branch explained that he was performing mechanical service on vehicles over the period of review for our audit due to shortages in staffing levels. This work was being performed after the Acting Director's EVT certification had expired, which is contrary to the guidance of *NFPA 1911: Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus*.
- Manitoba Government Inspections are required on an annual basis for all fire apparatus under *The Highway Traffic Act*. We observed that annual inspections were being performed and recorded, with only two missing records for the period of our audit (this is discussed in our Maintenance Management section).
- We observed that the Branch is compliant with the City's Attendance Management Program by randomly testing the attendance records of five employees. We limited our testing for compliance to City policies to this program based on our risk assessment of the operations.
- We observed that the EMSB is not keeping the most current Material Safety Data Sheets on hand as required by Manitoba workplace safety regulation.
- The NFPA standards kept by the Branch were outdated and were not readily accessible to staff.
- Further, the Branch does not have readily available documented guidance to inform staff of other regulations and policies that the Branch is required to comply with. Access to this information is useful for staff training and to periodically confirm proper process.

Standard Operating Procedures

- Standard operating procedures describe the activities necessary to complete tasks in accordance with industry regulations, provincial laws or other standards for running a business. It is important to have good procedures and work instructions in place to communicate standards and work practices to staff in a clear and consistent manner.
- The only procedural documents readily available to Mechanics at the Branch are the repair manuals published by vehicle manufacturers.

- Examples of Standard Operating Procedures could include:
  - Vehicle intake procedures
  - Information systems tracking procedures for parts and labour
  - Inventory count procedures
  - Listings of relevant regulation and legislation

RECOMMENDATION 10			
We recommend that the Director of EMSB develop a standard operating procedures manual to inform employees of requirements and their responsibilities outside of repairs.			
RISK AREA	Business Process	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Clear and consistent communication of work practice, expectations, and regulatory requirements is essential for employees to understand all of the responsibilities and aspects of their jobs.		

MANAGEMENT RESPONSE	
Agree. WFPS will work with EMSB leadership and staff to develop a Standard Operations Manual that will include applicable City of Winnipeg Administrative Directives, NFPA Standards, Manitoba Government Acts and Regulations, and other relevant material. A MSDS manual will be compiled and be made available consistent with the Workplace Health and Safety Act.	
IMPLEMENTATION DATE	MSDS and Safety materials will be produced and made available Q2 2016. The Standard Operations Manual will be complete by Q1 2017.

RECOMMENDATION 11			
We recommend that the Director of EMSB develop a practice to maintain current regulatory documentation and make readily available for staff.			
RISK AREA	Compliance	**ASSESSMENT**	Low
BASIS OF ASSESSMENT	Compliance with regulatory and policy requirements is essential to maintain a safe and effective working environment. As the EMSB operates in a fairly well-established industry, major changes to regulatory requirements do not occur frequently.		

MANAGEMENT RESPONSE	
Agree. A relevant regulatory manual will be compiled. To ensure updated regulations are always available, an electronic version with links to regulatory agencies and legislation is preferable.	
IMPLEMENTATION DATE	Q2 2016

3.1.5 Asset Management

Issue

- Are the asset management systems and processes appropriate for the Branch?

Conclusions

- The EMSB is relied on to provide information for the acquisition and disposal activities of the WFPS. The information tracked by the Branch must improve to allow the WFPS to make more informed asset management decisions.

Analysis

- Asset management consists of asset acquisition, life-cycle planning, and asset disposal. Industry standards that guide the acquisition, retention, and disposal of fire apparatus include the NFPA standards, as well as the insurance ratings standards of the Underwriters' Laboratories of Canada ("ULC") and Insurance Services Offices, Inc. ("ISO"). The overall asset acquisition, life-cycle, and disposal plans are the responsibility of the WFPS senior management; however, the EMSB is responsible for tracking information that facilitates those plans.
- We observed that the WFPS created a draft asset replacement plan in 2015 designed to acquire the number of heavy fleet vehicles to ensure safety and effective response times, and to maintain NFPA, ULC and ISO vehicle life-cycle standards.
- We observed that the WFPS has met the ISO standard for reserve vehicles, which is to keep a minimum of one reserve apparatus for every eight that are in service.
- A life-cycle costing methodology for replacing vehicles has not been developed. Accurate vehicle maintenance costs are essential to perform an appropriate life-cycle cost analysis, and to determine at which point it is appropriate to replace vehicles based on the annual vehicle costs. The EMSB is not diligently tracking the labour costs on each vehicle and, therefore, is not supplying the required information for a life-cycle analysis to be completed. The effect is that there may be vehicles in the fleet that would be incrementally less expensive to replace than to keep maintaining. Keeping vehicles around longer than is appropriate also increases the strain on the hours available for mechanical service, and makes the EMSB less efficient than it could be.

RECOMMENDATION 12			
We recommend that the Director of EMSB, in coordination with the Manager of Finance and the Deputy Chief of Support Services, develop a life-cycle costing analysis to facilitate informed decisions on when vehicles should be replaced.			
RISK AREA	Physical Assets	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Fire apparatus and heavy fleet are expensive to procure and maintain. Appropriate life-cycle costing analysis should be completed to ensure that the WFPS is replacing vehicles in a cost effective manner.		

MANAGEMENT RESPONSE	
Agree. A life-cycle costing analysis will be developed in coordination with the Manager of Finance, Deputy Chief of Support Services and EMSB leadership. This is dependent on a functional Fleet Management information system.	
IMPLEMENTATION DATE	Q3 2017

3.1.6 Financial Management

Issue

- Are the financial management systems and processes appropriate for the Branch?

Conclusions

- Improvements should be made to the financial management processes for the Branch to allow for appropriate vehicle life-cycle analysis, inventory management, outsourcing protocol, and financial performance measurement.

Analysis

- According to NAFA guidance, financial management consists of analyzing various acquisition options, vehicle life-cycle analysis, accounting practices, preparing and implementing operational budgets, financial analysis for outsourcing decisions, and benchmarking financial performance. Fleet managers are not expected to be financial experts, but should have a solid understanding of how the operations of their divisions affect the financial performance of organizations as a whole.
- The Director of EMSB is the bridge between the operations and the finance areas. The Director of EMSB liaises with the Deputy Chief of the Support Services and the Manger of Finance about Branch operations. The Director's job description also includes the responsibility of assisting in the preparation of the yearly Branch and heavy fleet equipment budget.
- We observed that the Acting Director of the Branch is not being significantly involved in financial processes. Management explained that the Acting Director is not involved in the budget process. We have also observed that the Acting Director has not received any budget or financial training through the City's Employee Development Branch.
- The Branch is expensing parts inventory as soon as they are purchased, which is not in accordance with generally accepted accounting principles. This accounting practice affects overall inventory management and can lead to shortages in, or obsolescence of, inventory. The practice also prevents accurate costing of vehicle maintenance.
- Acquisitions, life-cycle analysis, benchmarking and outsourcing are discussed in the Asset Management and Maintenance Management sections of our report.

RECOMMENDATION 13			
We recommend that the EMSB account for parts inventory in accordance with generally accepted accounting principles.			
RISK AREA	Information Resources	**ASSESSMENT**	Moderate
BASIS OF ASSESSMENT	Current inventory accounting practice contributes to the lack of a performance measurement system in the Branch, and prevents appropriate information from being collected to include in a system should one be developed.		

MANAGEMENT RESPONSE
Agree. In consultation with the Manager of Finance, EMSB will review inventory management including ordering, receiving, expensing and annual accounting for inventory consistent with GAAP.

IMPLEMENTATION DATE	Q4 2016

RECOMMENDATION 14
We recommend that the Director of EMSB be involved in the preparation of the yearly Branch and heavy fleet equipment budget as necessary.

RISK AREA	Financial Resources	ASSESSMENT	Low
BASIS OF ASSESSMENT	Numerous areas of the Branch budget do not vary significantly from year to year.		

MANAGEMENT RESPONSE
Agree. Consistent with Recommendation 7, the Director of EMSB with minimum management and administration education or defined acceptable equivalency will be included in future budget cycles. In the interim, the A/Director will receive an orientation to the approved 2016 budget, and WFPS will work to identify required financial training through the City of Winnipeg Employee Development Branch.

IMPLEMENTATION DATE	Q2 2017

3.1.7 Risk Management

Issue

- Does the Branch have appropriate risk management processes in place?

Conclusions

- A risk management plan has not been developed for the Branch.

Analysis

- According to NAFA, risk management in fleet organizations considers:
  - Risk Management Assessments and Plans
  - Insurance
  - Driver Safety Training
  - Crash Management
- Responsibilities for insurance, driver training and crash management are split between the WFPS's Operations Division and the Risk Management Division of the Corporate Finance Department.
- Risk assessments and plans can be formal or informal. Formalized risk assessments are preferable for large or complex organizations due to the numerous components that comprise an effective risk management plan.
- The significant risks that the EMSB faces are associated with ensuring the safe working-condition of the vehicles (which is what the Branch has been designed to ensure). Other significant risks are that enough staff have been hired to handle the workload, the risk of spikes in services, or the risk of the shop becoming inaccessible due to an emergency incident.
- The Branch has identified vendors that are able to allay overages in work. However, we observed that some important processes and management tasks had been foregone over the period of our audit to allow the Acting Director to perform Mechanic duties to increase service capacity.

RECOMMENDATION 15			
We recommend that the Director of EMSB document a formal risk management plan.			
RISK AREA	Business Processes	**ASSESSMENT**	High
BASIS OF ASSESSMENT	Risk planning is essential to ensure that prevention strategies are developed for foreseeable operational risks.		

MANAGEMENT RESPONSE	
Agree. WFPS will conduct a formal risk assessment and identify means of mitigating risk and ensuring business continuity. WFPS will work with Risk Management and WFPS Safety Officer to establish effective and well understood processes to address insurance, driver training and crash management.	
IMPLEMENTATION DATE	Q2 2017

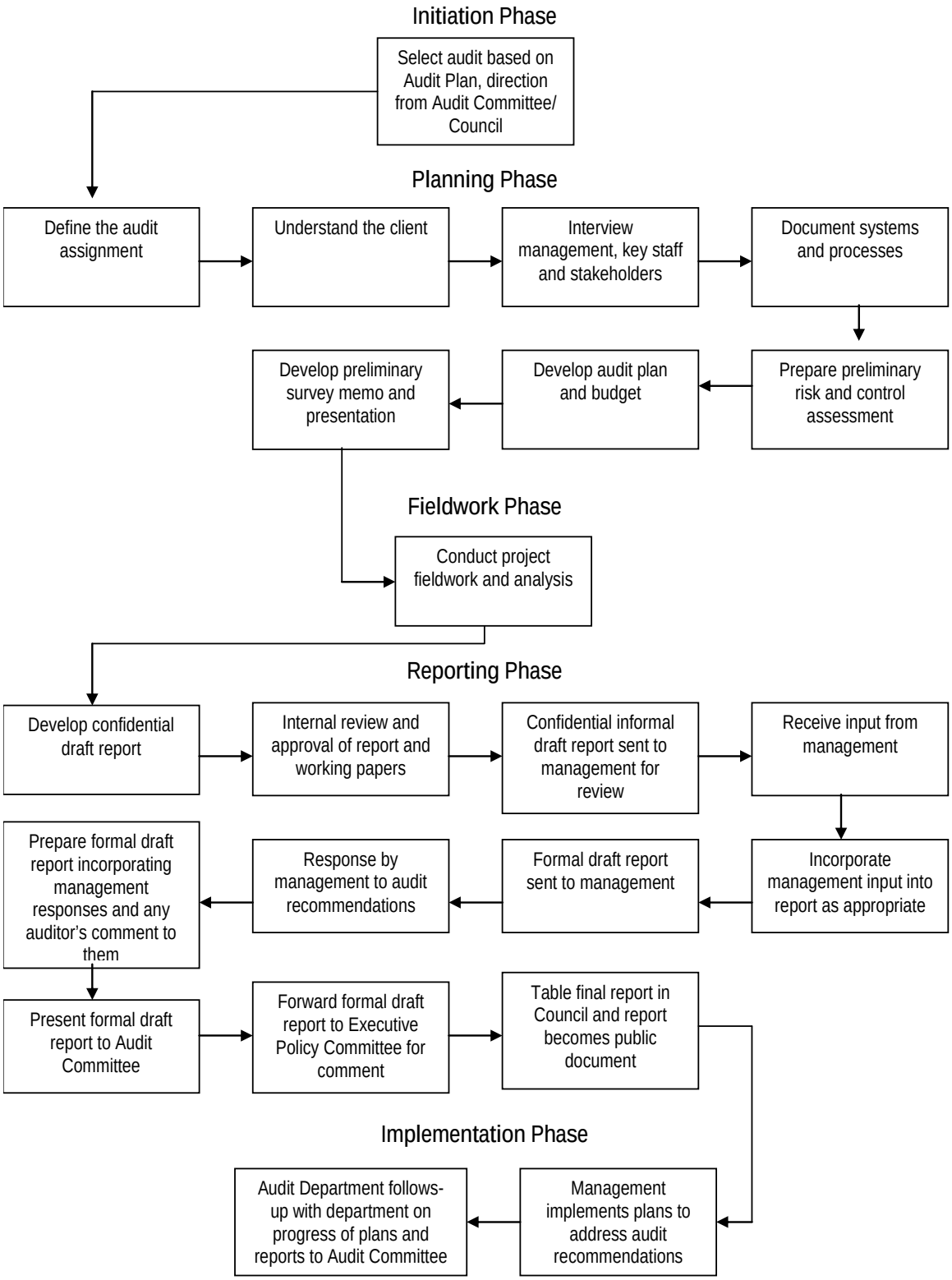
APPENDIX 1 – Risk Assessment Worksheet

Potential Impacts / Likelihood	Insignificant - None or minor change in services, project or processes - Very limited exposure of sensitive information - Very minor, non-permanent environmental damage - Financial impact < $100K	Minor - Minor change in achievement of service objectives - Limited exposure of sensitive information - Minor, non-permanent environmental damage - Financial impact $100K – $500K	Moderate - Moderate change in delivery of essential services - Exposure of limited amount of confidential information - Moderate environmental damage - Financial impact $500K – $1M	Major - Significant change in delivery of essential services - Exposure of significant amount of confidential information - Significant change in quality of life indicators - Major environmental damage - Financial impact $1M – $10M	Extreme - Unable to perform essential services for extended period Exposure of critical confidential information - Very significant change in quality of life indicators - Significant damage to environment - Financial impact >$10M
Almost certain (Excepted to occur unless circumstances change)	M	M	H	C	C
Likely (Probably occur in most circumstances)	M	M	H	C	C
Possible (Might occur under different circumstances)	L	M	M	H	H
Unlikely (Could occur if circumstances change)	L	L	M	H	H
Rare (May occur in exceptional circumstances)	L	L	M	M	M

Legend

C Critical risk:	Requires urgent action, monitor and review at least weekly by Senior Management and COO, inform CAO and Committee of Council
H High risk:	High impact, monitor and review at least quarterly by management, inform COO
M Moderate risk:	Monitor and review at least quarterly by management
L Low risk:	Review periodically, no explicit action required.

APPENDIX 2 – Audit Process



APPENDIX 3 – Applicable NFPA Standards

The standards reviewed for the audit were as follows:

- 1071 - Standard of Emergency Vehicle Technician Professional Qualifications
- 1201 - Standard for Developing Fire Protection Services for the Public
- 1500 - Standard on Fire Department Occupational Health and Safety Programs
- 1901 - Standard for Automotive Fire Apparatus
- 1911 - Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus
- 1914 - Standard for Testing Fire Department Aerial
- 1915 - Standard for Fire Apparatus Preventative Maintenance Program
- 1931 - Standard for Manufacturer's Design of Fire Department Ground Ladders
- 1932 - Standard on Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders
- 1962 - Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances:

APPENDIX 4 – Jurisdictional Use of Performance Measures[1]

Performance Measure	Non-financial Measure	Raleigh	Reno	Sterling Heights	Oklahoma City	Dallas	Edmond	Cary	Fort Worth	Bozeman	San Marcos	Eagan	Greensboro	Raeigh	St. Petersburg	Vancouver (US)
Downtime	Fleet Availability/Downtime %	✔	✔	✔	✔	✔										
	Reasons for Downtime															
	Rework Rate		✔		✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	
	Spare/Reserve Availability Rate															
Technician Productivity	Billable Hours	✔	✔			✔	✔				✔		✔			✔
	Repair Time Budget Variance															
	Rework Rate		✔		✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	
	Turnaround Time	✔						✔	✔	✔					✔	
Safety	Preventative Maintenance (PM) Performed %							✔				✔				✔
	PM Performed on Time															
	Scheduled Repair Rate															
	Road Call/Tow Rate															
	Average Vehicle Age for Fleet			✔												✔

[1] Ammons, David N. *Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards – Third Edition*. Abingdon: Routledge, 2015. Print.

APPENDIX 5 - Key Fleet Maintenance Performance Measures

Category	Report	Description	Can system produce?
Safety	PM %	The percentage of required preventative maintenance inspections that are completed	No
	On-time PM %	The percentage of required preventative maintenance inspections that are completed on time	No
	Scheduled Repair Rate	The percentage of all repairs conducted that were scheduled before hand (i.e. not breakdowns)	No
	Tow Rate	The percentage of repairs completed that were from emergency breakdowns	No
	Average Vehicle Age	The average age of all vehicles in the fleet (or by each vehicle class)	No
Effective Downtime	Availability/Downtime %	The percentage of time that all regular operations vehicles are available for use (not in shop)	No
	Downtime Reasons	An analysis of downtime hours by most common reasons (categories) for downtime	No
	Rework Rate	The percentage of repairs conducted for rework	No
	Spare/Reserve Availability Rate	The percentage of time that spares were available to cover for vehicles coming into the shop	No
Technician Productivity	Billable Hours	The number of direct hours or percentage of time that mechanics were working directly on repairs/maintenance	Yes
	Productivity	The comparison of actual hours spent on repairs to expected hours spent on repairs	Yes
	Turnaround time	The average time vehicles spent in the shop, or percentage of time that the shop met a turnaround time goal	No
Inventory	Inventory Turnover	The number of times that complete inventory turned over during the year	Yes
	Fill Rate	The percentage of time that inventory was immediately available for use	Yes

Source: City of Winnipeg IT staff

APPENDIX 6 - Summary of Recommendations

Focus Area	Rec. #	Recommendation	Priority
Maintenance Management	1	*We recommend that the Director of EMSB develop procedures to ensure that the Branch is keeping appropriate records in the electronic records including work performed by EMSB staff, vehicle reports from fire station staff, and work performed by external service providers.*	High
Management Response Agree. WFPS will work with IT-Services on the development of a data base where operational staff will enter vehicle report information. Work performed by external service providers, including warranty work, is currently being entered into the existing RTA system. EMSB processes will be mapped to identify efficient means of documenting work performed by EMSB staff. Implementation: Q4 2016			
Maintenance Management	2	*We recommend that the Director of EMSB develop, document, and implement a quality assurance program for work completed at the Branch.*	High
Management Response Agree. WFPS Service Quality Branch will work with the Supervisor of EMSB to identify the quality assurance program consistent with NAFA guidelines. Hiring a permanent Director and Supervisor of EMSB, and maintaining a full staff complement remains a priority ensuring adequate human resources to support this program Implementation: Q1 2017			
Maintenance Management	3	*We recommend that the Director of EMSB design and implement a performance measurement system for the Branch, in cooperation with WFPS senior management, that communicates how the Branch is performing in safety, downtime, and technician productivity measures.*	High
Management Response Agree. WFPS continues to work with IT Services on the capacity of the RTA system to produce industry standard key fleet maintenance performance measures. Measures on technician productivity and inventory will be produced for Q4 2016. Any future EMSB software solution will be required to produce all fourteen measures outlined in Appendix 5. Implementation: Q2 2017			

Focus Area	Rec. #	Recommendation	Priority
Maintenance Management	4	*We recommend that the Director of EMSB, in consultation with the WFPS Manager of Finance, reinstate annual inventory counts at the Branch.*	Moderate
Management Response Agree. WFPS completed a full inventory count for 2015. WFPS will continue to consult with the Manager of Finance to ensure appropriate inventory is maintained, and reported consistent with generally accepted accounting practices. Implementation: Implemented.			
Maintenance Management	5	*We recommend that the Director of EMSB, in consultation with the WFPS Manager of Finance, develop a process to determine when it is appropriate to outsource work.*	Moderate
Management Response Agree. Hiring a permanent Director and Supervisor of EMSB will enable appropriate resourcing of the branch. WFPS will consult with the Manager of Finance to review historical work outsourced outside of warranty work and specialty repairs, and recommend outsourcing guidelines for EMSB leadership to reference. Implementation: Q2 2017			
Professional Development	6	*We recommend that the Mechanic job description be updated to include the requirement for EVT certification upon recruitment, or the pursuit and achievement thereof within a specified timeframe.*	Moderate
Management Response Agree. WFPS will update the Mechanic job description to include this requirement or the pursuit and achievement thereof within a reasonable time period. WFPS will strive to ensure a consistent process of EVT Certification attainment and maintenance. WFPS Academy instructors have been qualified as exam proctors to enable this process. Implementation: Q4 2016			
Professional Development	7	*We recommend that the Director of EMSB job description be updated to clarify the minimum management and administration education required to qualify for the position, and what the acceptable equivalency for the education would be.*	High

Focus Area	Rec. #	Recommendation	Priority
Management Response Agree. WFPS management is currently in discussions with UFFW on both a transition to updated minimum management and administration education required or acceptable equivalency and a future state where incoming applicants will require said qualifications. Implementation: Q1 2017			
Professional Development	8	*We recommend that the WFPS create a job description for the Supervisor of EMSB position.*	Moderate
Management Response Agree. Both the job description for the Director and Supervisor of EMSB are currently under review. Implementation: Q4 2016			
Fleet Information Management	9	*We recommend that the WFPS develop a needs assessment for information and procure an information system that will handle its information and reporting needs.*	High
Management Response Under review. WFPS is currently working with IT staff from WFMA who administer the RTA system. If the current software solution is unable to meet the needs of EMSB, a program of requirements will be drafted and a new solution will be sought. Implementation: Review will be complete Q4 2016.			
Business Management	10	*We recommend that the Director of EMSB develop a standard operating procedures manual to inform employees of requirements and their responsibilities outside of repairs.*	Moderate
Management Response Agree. WFPS will work with EMSB leadership and staff to develop a Standard Operations Manual that will include applicable City of Winnipeg Administrative Directives, NFPA Standards, Manitoba Government Acts and Regulations, and other relevant material. A MSDS manual will be compiled and be made available consistent with the Workplace Health and Safety Act. Implementation: MSDS and Safety materials will be produced and made available Q2 2016. The Standard Operations Manual will be complete by Q1 2017.			
Business Management	11	*We recommend that the Director of EMSB develop a practice to maintain current regulatory documentation and make readily available for staff.*	Low

Focus Area	Rec. #	Recommendation	Priority
Management Response Agree. A relevant regulatory manual will be compiled. To ensure updated regulations are always available, an electronic version with links to regulatory agencies and legislation is preferable. Implementation: Q2 2016			
Asset Management	12	*We recommend that the Director of EMSB, in coordination with the Manager of Finance and the Deputy Chief of Support Services, develop a life-cycle costing analysis to facilitate informed decisions on when vehicles should be replaced.*	Moderate
Management Response Agree. A life-cycle costing analysis will be developed in coordination with the Manager of Finance, Deputy Chief of Support Services and EMSB leadership. This is dependent on a functional Fleet Management information system. Implementation: Q3 2017			
Financial Management	13	*We recommend that the EMSB account for parts inventory in accordance with generally accepted accounting principles.*	Moderate
Management Response Agree. In consultation with the Manager of Finance, EMSB will review inventory management including ordering, receiving, expensing and annual accounting for inventory consistent with GAAP. Implementation:Q4 2016			
Financial Management	14	*We recommend that the Director of EMSB be involved in the preparation of the yearly Branch and heavy fleet equipment budget as necessary.*	Low
Management Response Agree. Consistent with Recommendation 7, the Director of EMSB with minimum management and administration education or defined acceptable equivalency will be included in future budget cycles. In the interim, the A/Director will receive an orientation to the approved 2016 budget, and WFPS will work to identify required financial training through the City of Winnipeg Employee Development Branch. Implementation: Q2 2017			
Risk Management	15	*We recommend that the Director of EMSB document a formal risk management plan.*	High

Focus Area	Rec. #	Recommendation	Priority
Management Response Agree. WFPS will conduct a formal risk assessment and identify means of mitigating risk and ensuring business continuity. WFPS will work with Risk Management and WFPS Safety Officer to establish effective and well understood processes to address insurance, driver training and crash management. Implementation:Q2 2017			