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OFFICE OF THE
City Auditor

Mobile Equipment Services Branch Audit

October 17, 2007

THE CITY OF Edmonton

The Office of the City Auditor conducted this project in accordance with the *International Standards for the Professional Practice of Internal Auditing*

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Mobile Equipment Services Branch Audit

Executive Summary

Mobile Equipment Services Branch (MES) provides comprehensive city-owned equipment services for all City departments, EPCOR and Edmonton Police Services. In 2007 MES will provide equipment services for 3,858 equipment units at 11 different maintenance facilities with 520 budgeted positions. The MES 2007 expenditure budget is $107 million. This budget includes $23 million for City fuel purchases and $21 million for municipal fleet equipment replacement costs. MES is a centralized organization with three main business areas: Municipal Fleet Maintenance, Transit Fleet Maintenance, and Fleet Support.

The primary objective of this branch audit was to provide assurance that services provided by Mobile Equipment Services are economical, efficient, and effective. To meet this objective we assessed operational performance, policy compliance, and analyzed and tested many of its key processes. We also gauged MES performance against industry best practice criteria.

MES achieves optimal economic life of equipment through ongoing measurement of equipment costs and performance. In 2006, MES also achieved over $3.7 million in savings through bulk fuel purchasing. Our analysis showed that the 2006 MES shop rate was less than 2006 Edmonton area industry shop rates. We believe this demonstrates that MES provides an economical service. For future comparisons, we recommend that MES adopt American Public Works Association (APWA) standards in comparing shop rates to industry rates.

We analyzed mechanic productivity in order to assess efficiency of services. MES has been unsuccessful in its attempts to measure mechanic productivity using the current maintenance management system. Previous system data from 2002 to 2004 shows a minor decline in overall productivity. We analyzed a limited sample of service tasks and determined that mechanic productivity has likely continued to decline. We recommend that MES work with system support staff to implement system reporting capabilities in order to monitor and improve mechanic productivity levels.

We reviewed equipment downtime performance to assess effectiveness of services. The MES customers that we surveyed indicated that equipment downtime needs to be measured and monitored because of the major impact it has on delivering programs. We recommend that MES work with system support staff to find ways to monitor and improve equipment downtime levels.

We observed multiple vehicle makes and models within the City's fleet and recommend that MES develop a business case to rationalize consolidation of vehicles makes and models to achieve cost savings.

We compared MES's recent customer survey of equipment operators to our own survey of department vehicle coordinators, which yielded contrasting results. We recommend that MES broaden the audience and questions in future customer satisfaction surveys in order to more effectively assess how well customer needs are being met.

During this audit, we surveyed the majority of MES customers in order to understand how well MES is meeting customer service expectations. The survey results suggest that service expectations need to be defined better. We recommend that MES work with its customers to develop and set service delivery targets such as equipment service turnaround times, service overdue rates, and spare equipment inventory ratios.

We also reviewed MES's process for planning for new equipment. Many of MES's customers expressed dissatisfaction with how long it takes to get replacement and growth equipment. We recommend that MES work with customers to communicate planning requirements and timelines in order to better meet equipment replacement and growth needs.

We reviewed the MES warranty program and observed that processes for identifying and recovering warranty work were not well defined. We recommend that MES revamp this program and establish targets for expected levels of warranty recovery.

We reviewed the MES Enterprise fiscal policy requirements and are satisfied with MES's compliance to this policy. MES currently uses three pricing models as part of its chargeback system, which we believe should be simplified. We recommend that MES adopt a single pricing approach of fixed and variable rates for its entire customer base.

We reviewed MES's long range financial forecasting of operating and capital needs and believe MES needs to improve its planning processes. We recommend that MES work with the Finance Branch to develop a rolling 10-year cash flow statement of financial needs and funding sources.

We also reviewed and tested the MES equipment inventory records and controls and observed inconsistencies in electronic data records. We recommend that MES work with its customers to periodically conduct a physical inventory of vehicles and equipment.

Interviews with MES customers indicated that engineering support services seem strained. We recommend that MES review service levels within the Fleet Support area in order to ensure customer needs are being met effectively.

As a result of our review of alternate business models for service delivery, we believe that the current enterprise model works reasonably well, but MES could benefit from establishing a steering committee of senior customer representatives to enable client driven shared services delivery by MES. The OCA reviewed the current centralized approach to delivery of equipment services and believes that it provides the corporation good value.

Mobile Equipment Services Branch Audit

1. Introduction

The Office of the City Auditor's (OCA) 2007 work plan approved by City Council included an audit of the Mobile Equipment Services (MES) Branch. MES is one of eight branches within the Corporate Services Department. The MES business objective is: *To effectively supply complete fleet services at a competitive price to satisfy our customers' needs.*

2. Background

MES provides comprehensive city owned equipment services for a customer base with diverse equipment needs ranging from light-duty service vehicles to heavy-duty road equipment. The services provided span the entire life cycle of city-owned equipment and include acquisition, licensing, training, fuelling, maintenance, modifications, towing, twenty-four hour repair services, disposal and replacement. Most private industry peers focus on the provision of services for specific equipment such as light duty vehicles or heavy duty transport equipment and provide only a limited spectrum of the services provided by MES.

In addition to providing fleet management services for city operations, MES provides service for EPCOR, an entity separate from the City of Edmonton, as well as the Edmonton Police Service, who are overseen by the Edmonton Police Commission.

2.1. How MES is organized:

MES is a centralized organization divided into three main business areas: Municipal Fleet Maintenance, Transit Fleet Maintenance, and Fleet Support.

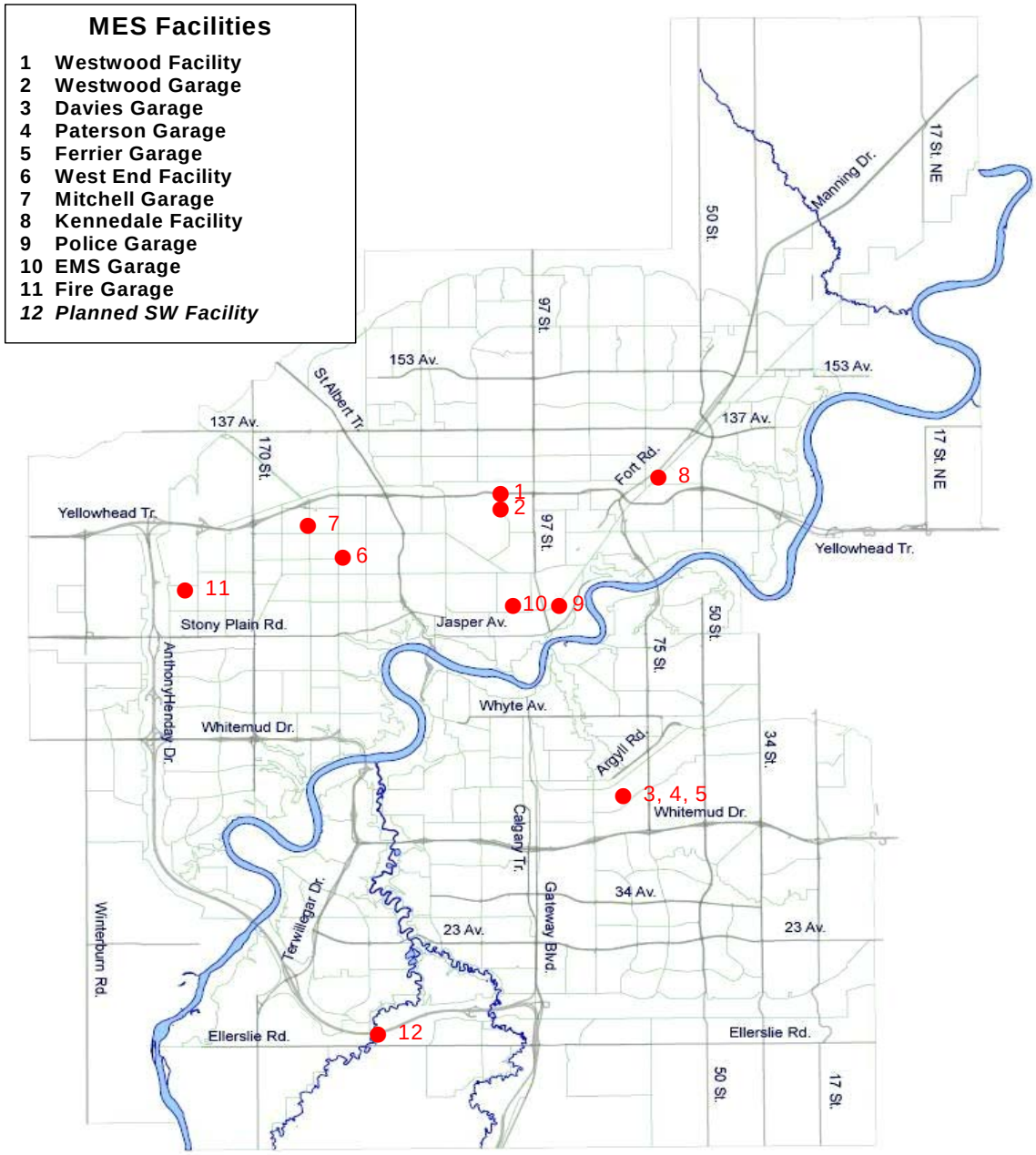
- ***Municipal Fleet Maintenance*** provides services for the municipal fleet which includes all City business areas and Edmonton Transit DATS fleet. The Westwood facility is the largest of the MES shops and serves as the central support facility for maintenance operations. District maintenance operations are provided at facilities which include East Kennedale, South Davies, West End, EMS, Police Facilities, and Fire/Rescue.

- ***Transit Fleet Maintenance*** provides fleet maintenance services exclusively for Edmonton Transit. Major repair work is performed at the Westwood Transit facility and the Paterson garage. Minor maintenance and dispatch of the bus fleet occurs at the Ferrier, Mitchell, and Westwood service garages. A new service garage in the southwest area of the city is currently being planned.

- ***Fleet Support*** provides support services to both the municipal and transit fleet maintenance areas. The range of services includes engineering, equipment acquisition and disposal, safety and training, and specialized fabrication services.

The map in Figure 1 illustrates how MES has eleven facilities geographically located throughout the city of Edmonton to serve its customers.

Figure 1: Map of MES Shop Locations



2.2. Description of Services:

Following is a high level summary of services provided by MES.

1. Planned and Unscheduled Repairs: The diversity of equipment that MES maintains requires multiple skills sets including both light and heavy duty mechanics who perform scheduled equipment checks, scheduled maintenance services, and unscheduled repairs.

Service Van In For Maintenance

Parts Room

2. Parts Rooms: MES shops are supported by Materials Management Section with on-site parts rooms. Mechanics have direct access to many parts with assistance from partsmen when required. Other parts orders are coordinated by partsmen along with restocking of shelves and inventory control.

3. Autobody Work: MES performs in-house auto body repairs on some equipment such as transit buses. Autobody work on light duty equipment such as cars and trucks is contracted out.

Transit Bus in for Autobody Work

4. Fleet Support: Fleet support includes engineering services which support the acquisition, modification, replacement and technical support of all mobile equipment within the City's fleet.

Engineering Schematics

City Fuelling Station

5. Fuelling: MES, in collaboration with Materials Management, purchases and transports bulk fuel to City owned fuelling stations which fuel the City of Edmonton's fleet of vehicles. Fuel from commercial sites and by mobile fuel trucks is also provided as needed.

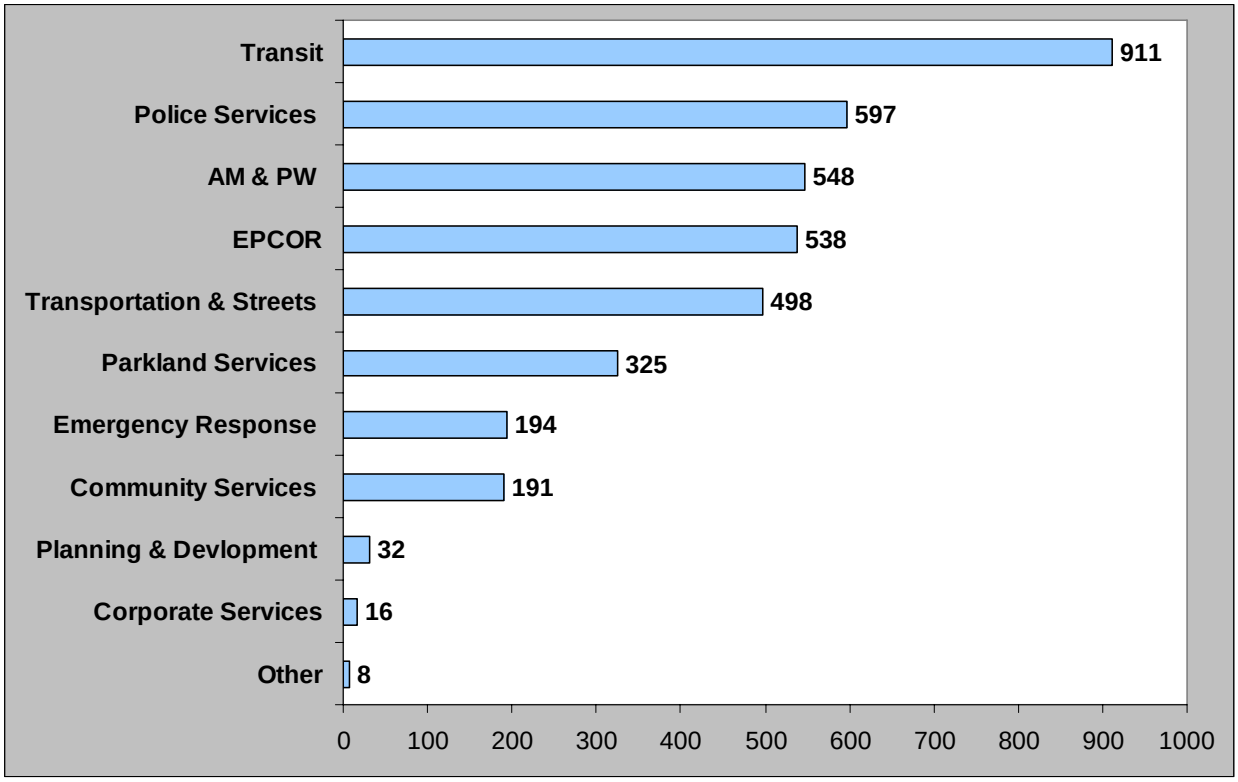
6. Safety and training, licensing and registration: MES provides operational and safety training for much of the city-owned equipment. MES monitors collisions and conducts investigations to proactively reduce the City's risk exposure. Additionally, MES licenses and registers all City-owned equipment.

Safety Education Display

2.3. The Fleet

MES provides equipment services for 3,858* fleet units for customer areas as shown in Figure 2 below.

Figure 2: Numbers of Units in MES Fleet by Customer Area



* Information as of December 31, 2006

The MES fleet is divided into Transit and Municipal fleets in line with the MES organizational structure. The Municipal fleet includes all equipment and vehicles used by customers other than Transit. EPCOR and Police Services, equipment and vehicles are included in the Municipal Fleet.

The range of fleet units that MES manages is very diverse. MES services light duty vehicles such as cars and light trucks and heavy duty equipment such as buses, garbage trucks and fire trucks, cranes, aerial lift equipment, and stacking conveyors. MES also maintains smaller equipment such as snow blowers, mowers, aerators, and forklifts. The total replacement cost for the entire fleet inventory, excluding EPCOR units, is currently estimated at $536.5 million (May, 2007).

2.4. MES Financials

Table 1 illustrates the actual and budget details for the MES program from 2003 to 2007.

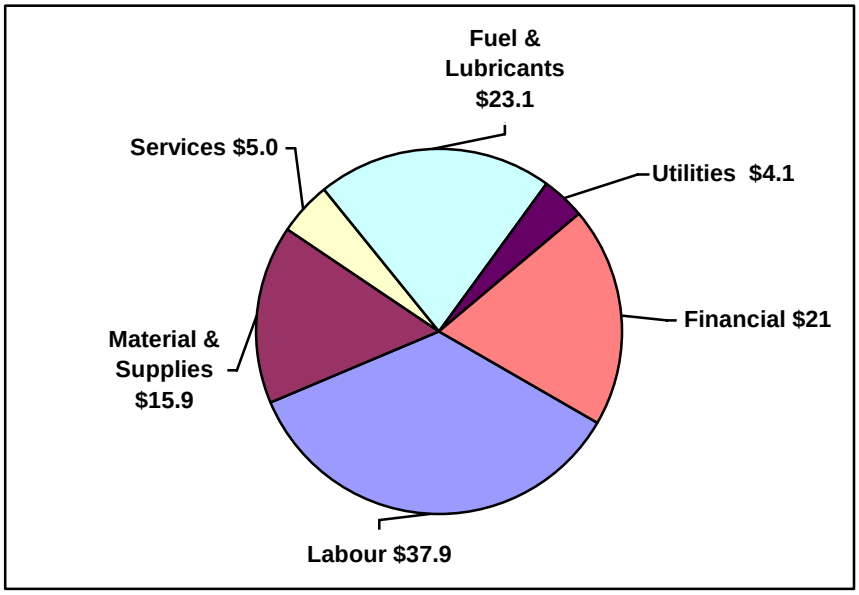
Table 1: Mobile Equipment Services Budgets ($ Millions)

	2003 Actual	2004 Actual	2005 Actual	2006 Actual	2007 Budget
Revenue	$81.9	$102.4	$111.3	$105.8	$108.6
Expenditures & Transfers	$78.4	$99.6	$108.5	$101.8	$107.0
Net Income	$3.5	$2.8	$2.8	$4.0	$1.6
FTEs	**457**	**505**	**500**	**518**	**531**

As shown in Table 1, overall revenues and expenditures have increased over the last four years. These increases have been driven by increased program demands by MES customers. As shown in the table, MES has increased budgeted FTEs in order to meet this increased service requirement.

Figure 3 below illustrates the key expenditures in the 2007 MES Budget. Labour is the largest input cost at $37.9 million. MES purchases fuel and lubricants on behalf of the corporation and these costs are budgeted at $23.1 million.

Figure 3: 2007 Budgeted Expenditures ($ Millions)



3. Objectives, Scope and Methodology

Audit Objectives: The primary objective of this branch audit was to provide assurance that services provided by Mobile Equipment Services are effective, efficient, and economical.

Scope: We performed a risk assessment and narrowed the scope of this audit down to areas that we believe presented the highest risk. The activities and transaction testing focused on in this audit were primarily from 2006 and 2007, although prior years were included in some of our analyses.

During the planning phase this audit, the OCA analyzed how MES was managing environmental risks. MES is an active participant in the Corporate ENVISIO environmental program which includes ongoing environmental assessments, control reviews, and reporting. Due to the rigor of this program, environmental risks were therefore scoped out of any audit fieldwork that the OCA conducted.

Methodology: Our audit was performed in accordance with the *International Standards for the Professional Practice of Internal Auditing*. Audit procedures included:

- Interviewing MES personnel
- Conducting site review of operations
- Reviewing and testing available information records, reports, and processes
- Conducting interviews and surveys of MES customers
- Conducting surveys with industry peers
- Researching industry best practices

4. Detailed Observations and Recommendations

4.1. MES Operational Performance

Economy, Efficiency, Effectiveness

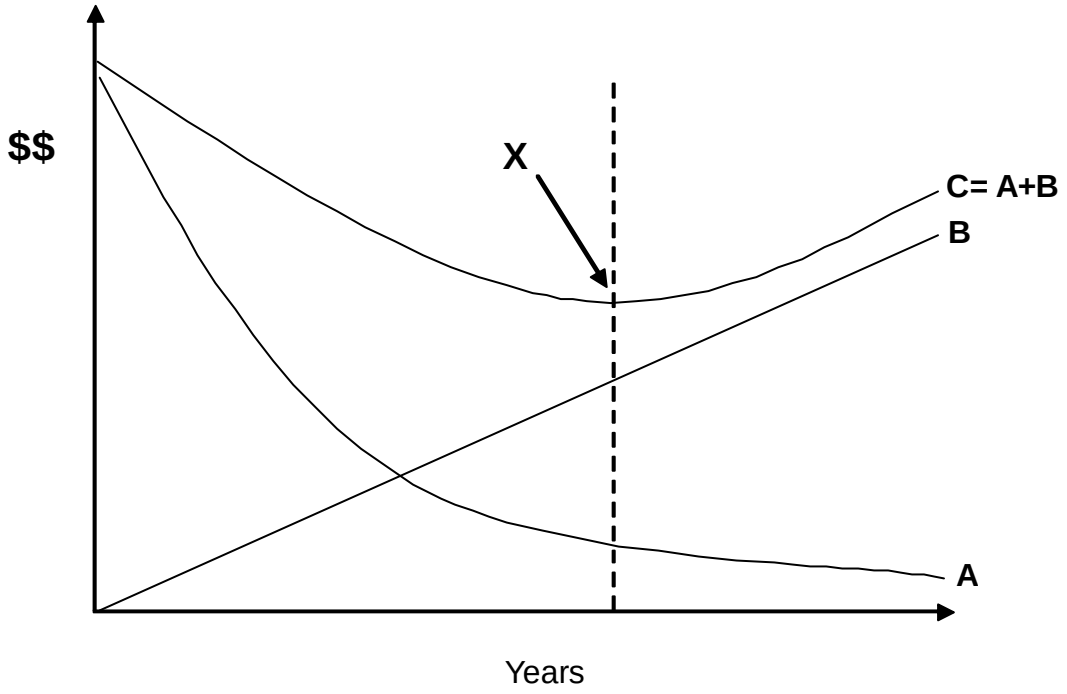
4.1.1. Economy

We examined the following aspects of MES practices to determine whether MES operates in an economical manner that minimizes costs: economic life, fuel purchases, and shop rates.

Economic Life

A primary goal of MES, as the City's fleet manager, is to optimize economic life by determining when fleet units should be taken out of service and replaced with newer units.

Figure 4: Economic Life of Equipment



A - Salvage value
B - Operating and Maintenance Costs
C - Average of Annual Costs to Date

Figure 4 illustrates the relationship of salvage value (A), and operating/maintenance costs (B). The sum of curves A and B equals curve C which is the average of annual costs to date. The lowest point on curve C is Point X, which represents the point in time at which optimal economic life occurs.

MES tracks these costs for each unit in the fleet and uses this model to determine its economic life. As a unit approaches its economic life, MES further assesses its operating costs, performance, usage and physical condition. This information is used as part of the overall decision whether to retain or take a unit out of service. Retiring a unit that has reached its economic life and replacing it with a newer unit helps achieve best value for the corporation.

Our research indicated that the methodology used by MES is consistent with industry best practice. Both the American Public Works Association[1] (APWA) and the

[1] The American Public Works Association is an international educational and professional association of public agencies, private sector companies, and individuals dedicated to providing high quality public works goods and services.

International City Management Association[2] (ICMA) promote the use of economic life calculations to achieve economy.

Based on our research and review of MES practices, we believe that the methodologies MES uses to determine the economic life of units in the fleet help to ensure that the life cycle cost of each unit is optimized.

Fuel Purchases

In 2006, MES spent approximately $22 million on diesel and gasoline on behalf of its customers. Through combined corporate efforts, all fuel procurement has been centralized, which allows the City to buy in bulk at significant discounts from retail pump prices. Table 2 illustrates the savings that were achieved in 2006.

Table 2: 2006 Bulk Fuel Purchase Savings

	Total Fuel Purchased in Litres	Negotiated Savings per Litre vs. Commercial Rates	Total Approximate Savings
Diesel	31,623,000	11.6 cents	$3,668,000
Gasoline	816,000	8.4 cents	$ 69,000
		Total	$3,737,000

Bulk fuel purchasing saved the City 11.6 cents a litre for diesel and 8.4 cents per litre for gasoline in 2006, achieving a total savings of $3.7 million. Based on these results, we believe the City is receiving good value from centralized fuel purchasing.

Shop Rates

The APWA specifies that developing shop rates is an essential part of a sound financial management program for public sector fleet organizations. Fully-burdened shop rates allow the fleet manager to gauge cost competitiveness against peer organizations and may differ from the rates actually charged to internal customers. MES annually compares its shop to industry peers; however, it does not use the APWA recommended fully-burdened methodology.

We calculated the 2006 MES shop rate using APWA standards. The shop rate is calculated by totalling MES's applicable costs used to support MES (including administrative and corporate costs) and then dividing the total by the number of productive hours. Table 3 is a comparison of MES's rate to Edmonton area shop rates. The Edmonton area average shop rate was derived using shop rate surveys that are compiled annually by MES and applying a weighted average that reflects the diverse types of MES operations (heavy equipment, light duty vehicles, etc.).

[2] The International City Management Association is a professional and educational organization whose purpose is to strengthen the quality of management of local government.

Table 3: 2006 MES Shop Rate Comparison

MES Shop Rate	$92.46 per hour
Edmonton Area Average Shop Rate	$97.23 per hour

The MES calculated shop rate is below industry rates and as a result could achieve a savings of approximately $2.5 million if labour hours were charged out at the industry average rate. It is important to note that even though rates are in line with industry rates, MES provides some additional services as compared to those organizations surveyed. Examples of a few of these differences include:

- Comprehensive services that encompass safety, engineering, vehicle life cycling, and fabrication services.
- 24/7 maintenance support to 24/7 City operations. MES is able to provide maintenance services with minimal overtime compared to industry, who charge overtime or on-call rates.
- MES primarily serves one customer (the City) and is generally able to balance its workload priorities to best serve the City's overall interest.

Based on these results, we believe that MES provides an economical service. We believe MES can further benefit from adopting APWA-recommended methods of calculating shop rates.

Recommendation 1	Management Response and Action Plan
The OCA recommends that MES adopt APWA practices for developing a shop rate to better gauge market competitiveness.	**Accepted** Comments: None Planned Implementation: December 31, 2007 Responsible Party: Director of Fleet Support, MES

4.1.2. Efficiency

Efficient service delivery is aimed at ensuring that resources are used in a productive manner, or in other words, that input resources are minimized and outputs are maximized. The APWA identifies productivity as a key performance measure to assess efficiency of fleet management operations. As illustrated in Figure 3, labour represents the single largest input cost and therefore we expected to find that management focuses significant effort on achieving maximum value from its labour resources.

In 2002, the City of Edmonton undertook a corporate initiative to implement a standardized maintenance management process and supporting information system. In keeping with the Enterprise Resource Planning (ERP) Strategy, this initiative replaced legacy systems used by eleven business areas including MES with a SAP standardized maintenance management solution. SAP, which is one of four pillar applications used by the City, was selected to enable the standardization process, using Plant Maintenance (MAIN-LINK).

In June 2003, the MAIN-LINK project was continued to replace the MESIS+ system used by MES. Its objective was to support the functional needs of MES while meeting the need of the City to establish a common maintenance management process and system. This is a long term objective, and MES along with other business areas, is experiencing challenges in implementing this change and still meet its operational objectives. Throughout the system transition MES has identified and pursued management information gaps and continues to work with corporate support staff in Business Enterprise Services (BES) to resolve them in accordance with corporate priorities.

Mechanic productivity

Through discussions with MES management, they have used mechanic productivity as a key metric to manage their operation. Table 4 illustrates MES productivity levels.

Table 4: MES Productivity Levels

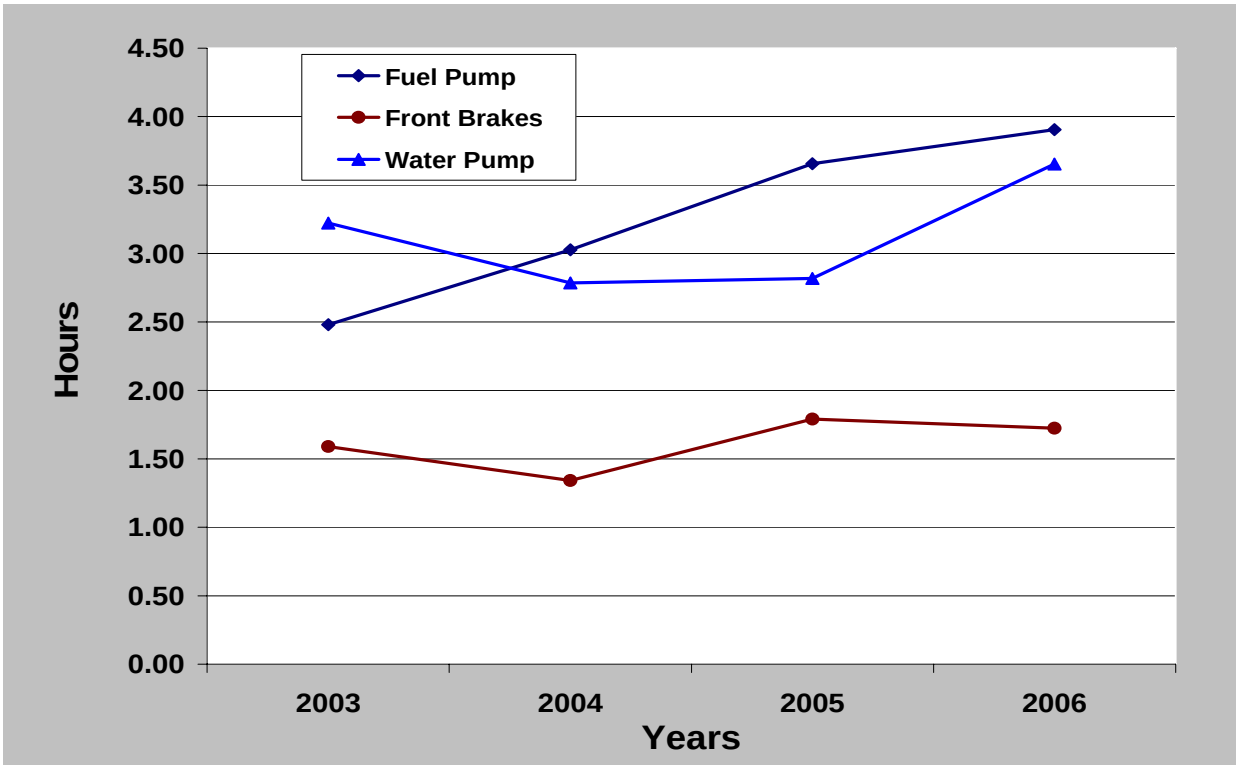
Year	2002	2003	2004	2005	2006
Productivity	64.9%	64.2%	63.6%	N/A*	N/A*

*N/A - Data not available

From 2002 to 2004, MES experienced a 1.3% decline in productivity. MES has not been able to measure and monitor mechanic productivity since information system conversions to MAIN-LINK in 2004. Consequently, no productivity reports are available for 2005 or 2006.

In the absence of program level productivity data for 2005 and 2006 we examined data available for specific tasks to gauge current productivity levels. Figure 5 illustrates the results of this analysis.

Figure 5 Task Level Analysis



The results show that the average length of time to complete these tasks has increased since 2003. Through OCA analysis and management discussion, several key causes have been identified as contributors to declining productivity:

Staff Turnover

The number of new staff has increased which requires training to integrate them into city systems and procedures. In addition, new staff require support and mentoring from experienced staff further impacting productive time. MES has been proactive in its attempt to attract and retain staff during a tight labour market. However it has still faced high turnover of staff during the last few years. MES is continuing to work with Human Resources to develop recruitment strategies to attract and retain staff.

Overcrowded Facilities

Some MES facilities have reached operational capacity which has led to decreases in productivity. Key facility constraints include insufficient number and size of maintenance bays, inadequate vehicle and parts storage, and vehicle access into and within facilities. Examples of facilities with over capacity are the Westwood, Ferrier and Mitchell Transit facilities. A report prepared by the IBI Group in June 2006 states these facilities are all beyond their bus design capacity, totalling 62 buses. Currently over 200 new buses are being procured for both replacement and growth further increasing overcrowding and contributing to capacity issues. MES is working with Land and Buildings and Edmonton Transit in the planning of a new transit facility located in the south west area of the city.

Computer System Changes

Another factor identified as having an impact on productivity is the transition to the MAIN-LINK system. Since its implementation, the system has increased the time mechanics spend on data-entry and therefore has had an impact on the mechanics' productive time. Mechanics input work order data into the system, tracking time used, parts required, and comments relating to the equipment. MES is currently working with Business Enterprise Services (BES) to address these issues and reduce time entry. To date some improvements have been achieved such as improving and simplifying data entry methods, however additional work is required.

Diversity of City Fleet

Finally, the City's vehicle fleet includes several vehicle manufacturers and model types. Each vehicle type requires MES to maintain a unique knowledge base and inventory of parts. The OCA examined vehicles classified as lights trucks and vans and identified the number of model types for the various manufacturers as shown in Table 5.

Table 5: Light Trucks and Vans Models

Manufacturer	Number of Model Types	Number of Vehicles
Ford	15	285
Daimler Chrysler	8	86
General Motors	11	184
Total	**34**	**555**

The OCA determined that there is duplication of similar model types across manufacturers and therefore MES could benefit from a consolidation of manufacturers of various model types. This practice of model consolidation or single vendor supplying is currently being used in some areas of the city such as Transit buses and Fire apparatus.

The OCA believes that a consolidation of the number of vehicle model types would result in improved operational efficiency and cost savings to the corporation.

Recommendation 2	Management Response and Action Plan
The OCA recommends that MES work with Materials Management to develop a business case for consolidation of vehicle manufacturers and models across the corporation.	**Accepted** Comments: Materials Management has initiated a study to identify and implement innovative opportunities from a strategic procurement approach for light duty vehicles. This process will involve participation with MES and all of its customers. Planned Implementation: October 2008 Responsible Party: Branch Manager of MES / Director of Materials Management

4.1.3. Effectiveness

Effective service delivery is aimed at ensuring that resources achieve intended goals. In determining MES's overall effectiveness, we focused attention on two key effectiveness measures: equipment downtime and customer satisfaction.

Equipment Downtime

The APWA identifies equipment downtime as a key measure in demonstrating program effectiveness. Downtime represents the percentage of time that equipment is unavailable when the customer needs to use that piece of equipment. Excessive equipment downtime is very costly to an organization and can impact a program area's ability to deliver services because required equipment is not available when needed. Downtime cannot be avoided entirely and is a normal cost of business as equipment must be taken out of service for scheduled maintenance and for unscheduled repairs due to equipment failures. Organizations need to measure and minimize equipment downtime to be effective.

Prior to 2005, MES monitored and reported this performance measure. However, since the transition to MAIN-LINK, MES has been unable to report reliable downtime results. Given that MES could not produce information on current equipment downtime levels, we interviewed MES customers to discuss the impacts of equipment downtime.

We consulted with the Waste Management Branch, one of MES's larger customers. The Waste Management Branch identifies downtime as those vehicles not operational at the start of the collection work day. This could include vehicles in for repair, preventative maintenance activities, or warranty-related issues. The Waste Management Branch does not have spare waste collection vehicles; therefore equipment downtime impacts their ability to meet waste pick-up schedules. All vehicles that are operational are put into service at the start of each work day. Key potential impacts to operations identified by Waste Management Branch are as follows:

- Increased risk of reduced waste collection service and public dissatisfaction
- Increased call volumes to elected officials
- Increased adverse media attention
- Increased labour overtime, staff fatigue, and risk of injury
- Increased resource capital and operating costs
- Premature aging of collection vehicle fleet
- Increased risk of adverse impacts to the environment through oil spills

Overall, vehicle downtime can impact all of MES's customers in terms of public service delivery, cost, safety and environmental liabilities. We believe that MES needs to measure and monitor downtime to be able to respond effectively to its customers and to make equipment available when the customer needs it. Similarly, as previously discussed, MES needs to also measure and monitor mechanic productivity to improve operational inefficiencies and reduce costs.

As a result, measuring and improving mechanic productivity and downtime remains a significant issue for MES management in order to impact change and facilitate improvements. As shown in Table 6, mechanic productivity and equipment downtime if managed effectively can result in significant cost avoidance. Improvements to equipment downtime is achieved by reducing the number of future equipment purchases required as a reduced amount of spare vehicles are required in order to support operations. In addition, improvements in mechanic productivity would result in reduced future staffing as operations would be achieving more with the same complement of staff.

Table 6: Potential Cost Avoidance

Measure	2.5% Improvement	5% Improvement	Notes
Equipment Downtime	3.75 Million	7.5 Million	Total One Time Savings
Mechanic Productivity	0.75 Million	1.5 Million	Annual Cost Avoidance

MES has worked with BES and identified the need for this information from the MAIN-LINK system. The OCA believes that that information is critical to improving MES operations and should become a high priority.

Recommendation 3	Management Response and Action Plan
The OCA recommends that MES work with Business Enterprise Services to develop an action plan to obtain the necessary management information to facilitate: • Measurement and increases in mechanic productivity and • Measurement and reduction of equipment downtime.	**Accepted** Comments: A work plan to develop the identified management information systems will be prepared with the assistance of staff from Business Enterprise Services. Implementation of the work plan will be dependent upon overall corporate priorities for improvements of the SAP system. MES is working with other departments and SMT to provide a new transit maintenance facility. This new facility will contribute to increased mechanic productivity through a more efficient flow of vehicles during maintenance. Planned Implementation: April 30, 2008 Responsible Party: Director of Fleet Support, MES

Customer Surveys

MES recently conducted a survey of equipment operators relating to their experience when bringing vehicles in for service. Equipment operators were asked to rate MES services on four questions using the five-point scale shown in Table 7.

Table 7: MES Equipment Operator Feedback Survey

Question:	Average Result
How do you rate the service you received?	4.68
How quickly were your needs met?	4.70
If you had a complaint, how well was it handled?	4.69
How did our staff treat you?	4.82
Overall Average	**4.72**

Rating Scale: 1 - Very dissatisfied, 2 - Dissatisfied, 3 - Neutral, 4 - Satisfied, 5 - Very Satisfied

As shown in Table 7, equipment operators rated the MES service experience overall as satisfactory or very satisfactory.

During this audit, we also surveyed the majority of vehicle coordinators for departments served by MES. The service categories were selected based on recommendations of APWA. Vehicle coordinators were asked to rate each service category using a five point scale with one being poor and five being excellent.

Table 8: MES Customer Service Rating by Vehicle Coordinators

Service Category	Average Rating
1. Maintenance, Repairs, Acquisitions and Replacement	2.4
2. Communications, Reporting, and Billing	2.0
3. Facilities and Fueling Sites	3.2
Overall Average	**2.4**

Rating Scale: 1 – Poor, 2 – Fair, 3 – Good, 4 – Very Good, 5 – Excellent

As shown in Table 8, the overall average rating by all respondents was 2.4 (fair to good), indicating that the Vehicle Coordinators are somewhat satisfied with the services delivered. The service category Communications, Reporting, and Billing rated the lowest.

These survey results provide an overall indication that MES is effective in delivering quality services, but improvements can be made in specific areas. Given the contrasting results between the MES and OCA surveys, we believe MES should consider surveying a broader range of its customers and including a wider range of the services that MES provides.

Recommendation 4	Management Response and Action Plan
The OCA recommends that MES broaden the audience and questions for future customer satisfaction surveys in order to more effectively assess how well customer needs are being met.	**Accepted** Comments: Service Level Agreements are being developed to better define the relationship between MES and all its customers. The issue of customer satisfaction is a key consideration. Additional surveys will be undertaken involving more customers. Planned Implementation: Aug 31, 2008 Responsible Party: Branch Manager, MES

4.1.4. Meeting Service Expectations

A key expectation of MES's customers is that equipment is maintained in a manner that minimizes service disruption or downtime and also protects the asset. MES has developed a maintenance schedule for each equipment unit that it maintains. In meetings held with MES staff, we determined that these maintenance schedules were created based on the following resources:

- Manufacturer's recommendations
- Past MES experience servicing the equipment/vehicle type
- Results from oil analysis testing
- Historical data (indicating possible trends and time-sensitive repairs)

Preventative maintenance schedules are entered into MES's maintenance management system, establishing a baseline for expected service. The maintenance schedule is determined by fuel consumption, kilometres driven, or hours in use. Actual vehicle and equipment use is captured using the fuelling system records. The MAIN-LINK system generates a service requirement report when actual usage is at 80% of the baseline. This normally provides enough lead time for MES and the user departments to arrange for servicing before the unit reaches 100% of the baseline. MES and user department Vehicle Coordinators communicate regularly on scheduling routine inspections, maintenance, and unscheduled repairs.

Our review of April 2007 past due preventative maintenance reports revealed that 16% of the municipal fleet was past due for servicing. Half of the overdue units were considered significantly overdue in that they were more than 50% over the baseline for required maintenance. Delayed preventative maintenance servicing is primarily caused by the customer department not making appointments for service. Significantly delayed preventative maintenance increases the risk of premature equipment failure.

Most departments indicated that they would delay getting their equipment in for servicing in order to meet program requirements and avoid downtime. Delayed

maintenance is a symptom of user departments not having sufficient spare equipment to offset downtime required for routine maintenance.

We conducted interviews with MES customers who indicated that they believe MES maintenance downtime for equipment servicing could be improved. Customers identified several issues that they believe contribute to longer maintenance turnaround times:

- Increased parts order time as a result of shop mechanics not being able to order parts directly
- Time spent by MES mechanics entering repair/service work specifics into SAP as opposed to actually servicing the vehicle/equipment
- Specialized MES staff being pulled away from niche areas towards other/generalist work
- Lost productivity and added service turnaround times when having to transport vehicles/equipment to and from the various MES shops
- Disconnect or incongruence with respect to MES shop hours and their user departments

Our analysis indicates that the most successful service delivery occurs when MES effectively aligns itself with customer service goals. For example, MES and Transit have established a common goal in achieving targeted downtime rates which has led to more effective service delivery. We believe that MES needs to work more closely with all of its customers to define common goals and set service delivery targets.

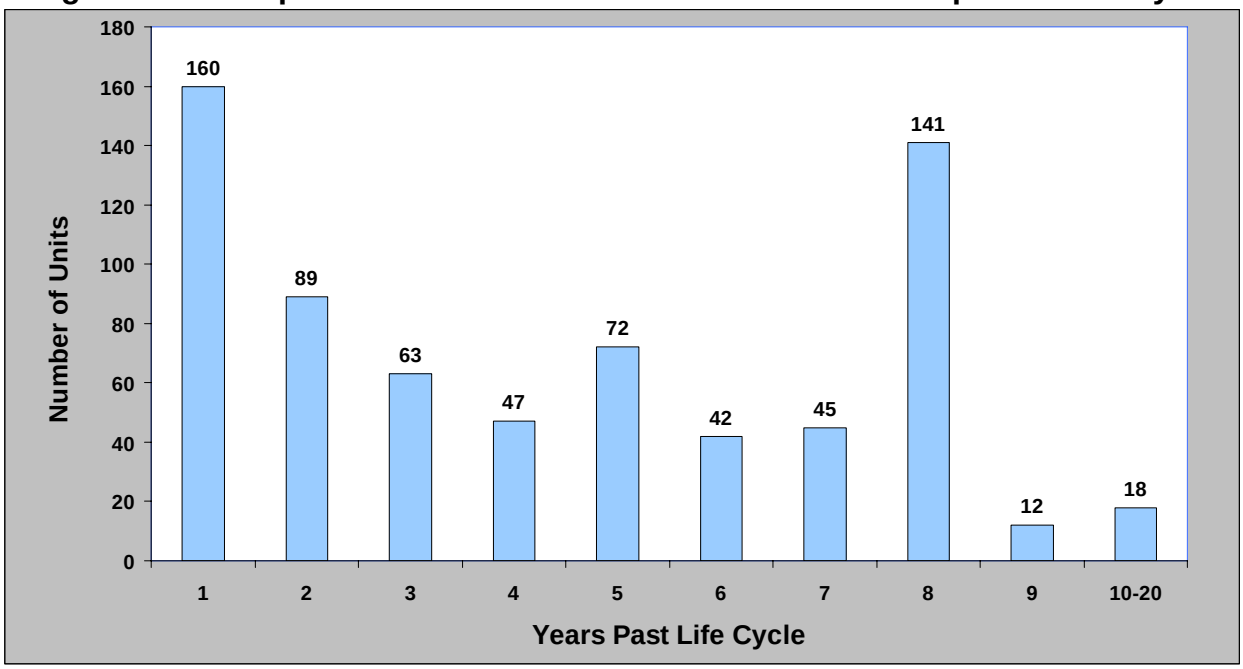
Recommendation 5	Management Response and Action Plan
The OCA recommends that MES work with its customers to develop and set service delivery targets such as equipment service turnaround times, service overdue rates, and spare inventory ratios.	**Accepted** Comments: Through the Service Level Agreement development process, MES and its client departments will develop service delivery targets suitable to the client's operation. Planned Implementation: August 31, 2008 Responsible Party: Branch Manager, MES

Planning for Equipment Needs

4.1.5. Replacing Existing Equipment

One of MES's key responsibilities is the task of procuring vehicles and equipment to meet customer needs. As previously discussed, vehicle and equipment replacement is based on determining each unit's useful life. Other replacement factors are cost/usage, age, and mileage.

Figure 6: Municipal Fleet Units That Have Exceeded Their Expected Life Cycle



As shown in Figure 6, 689 fleet units (approximately 20% of the fleet) have exceeded their expected life cycle. The estimated total replacement value of these units is $41 million.

Each fleet unit that is retained past its originally anticipated lifecycle undergoes annual evaluation. MES staff performs a cost benefit analysis to determine whether they should continue to retain the unit or replace it. In addition, some physical inspections are conducted to determine the ongoing operability of the unit.

The process for replacement of units in the fleet includes the following key steps:

1. **Decision to Replace:** MES management determine which units should be replaced based on information from their analysis of cost forecasts produced from SAP and physical inspections of units. These findings are communicated to MES customers.
2. **Budget Approval:** MES submits a consolidated capital budget request on behalf of its customers. This budget request is normally approved in December.
3. **Planning:** MES works with customers to identify ongoing and new fleet requirements and develop specifications.
4. **Procurement Process:** MES works with Materials Management to tender and purchase units in accordance with standard City processes.
5. **Equipment Order Received:** MES receives the orders from vendors/manufacturers, inspects the order, and may modify the units to meet customers' specific needs.

6. **Customer Receives Equipment:** The customer receives the vehicle or equipment. For municipal customers, MES develops and charges a fixed and variable rate that is agreed to by the customer.

The time required to complete this process varies considerably depending largely on the vehicle/equipment type and whether or not the City has previously selected vendors for that type of unit. If established vendor contracts exist, the entire replacement process can take as little as four months. If the equipment is specialized in nature, requiring a special order, the process can take up to 18 months.

MES customers indicated to us that they believe equipment replacement planning is currently not reliable because equipment is often not replaced in the years originally forecast by MES. MES management believes this perception is due to a misunderstanding with respect to the fleet replacement methodology and practice and the City's transfer pricing policies. Most customers expect to acquire new replacement vehicles after their originally anticipated lifecycle comes to an end. MES's responsibility, as a fleet management provider, is to apply sound economical fleet management practices to minimize overall fleet expenditures for the City. This means that equipment is maintained and kept in service as long as it is safe and operationally cost effective, regardless of the forecast service life. The decision to retain rather than replace equipment that is past its originally forecast lifecycle primarily rests with MES rather than the user department. Retaining equipment past forecasted lifecycle is based on several factors including cost benefit analysis, physical inspections, and client consultations.

4.1.6. Meeting Growth Needs

In addition to addressing replacement needs, MES also assists customers in meeting growth needs (with the exception of EPCOR which finances and manages its own growth). During the planning phase of this audit, MES and its customers identified meeting growth requirements as one of their major challenges. MES customers face increasing difficulty in meeting their expanding program requirements due to lack of equipment.

The process for meeting fleet growth needs is similar to the process for replacing units. MES consults with customers as early as mid-year to identify growth needs for the next year and subsequently submit a collective budget submission for Council approval. Some of the MES user departments indicated they felt that the process of acquiring growth units was too lengthy.

As previously discussed, lack of available fleet units has led to delays in equipment servicing and high rates of overdue preventative maintenance. MES customers are also implementing interim growth strategies such as retaining units that are being replaced even after the new unit is received.

Another strategy being used to deal with growth is using rental units. Prior to 2005, MES coordinated all rental use on behalf of user departments. Currently user departments

coordinate rental use directly through Materials Management's Hired and Capital Fleet Unit.

Figure 7: Rented and Owned Fleet Units

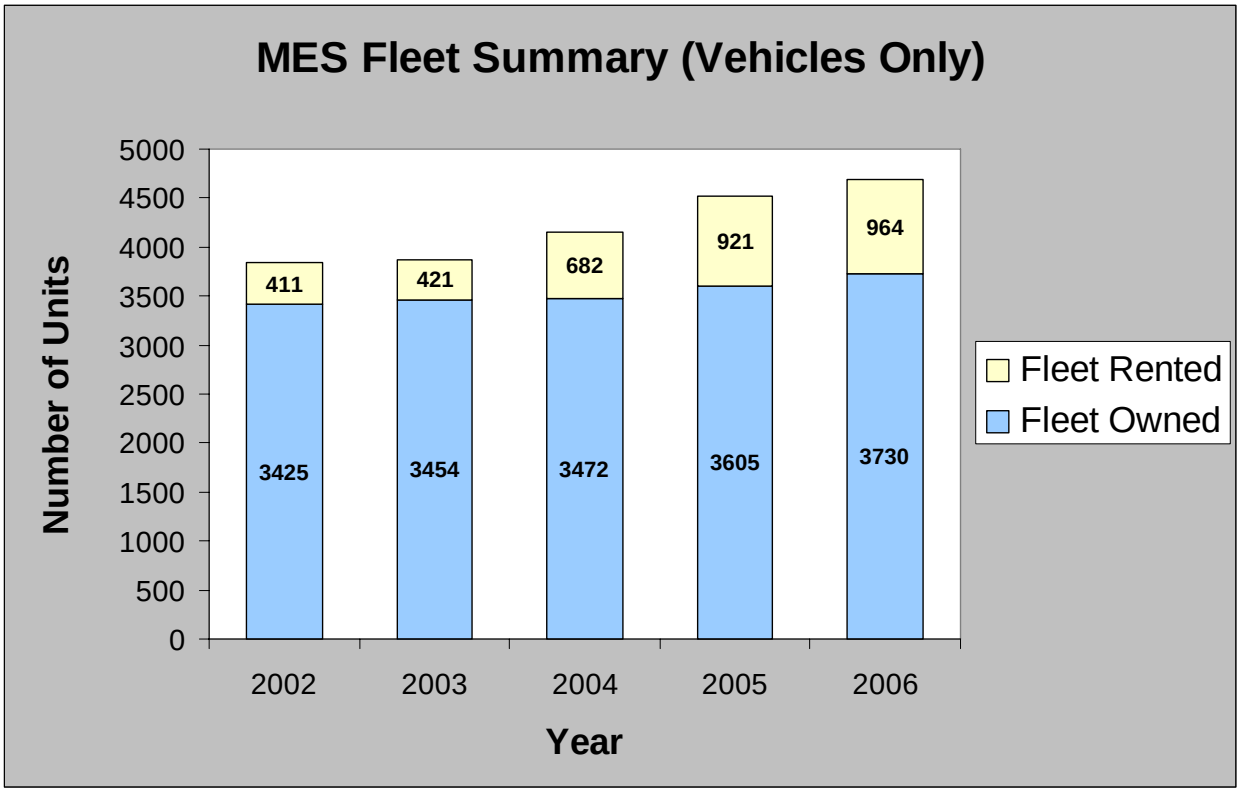


Figure 7 shows the increased use of rental units from 2002 to 2006. The number of rental units used by the City of Edmonton has increased from 411 units in 2002 to 964 units in 2006. Rentals accounted for 11% of the total number of fleet units in 2002 and 21% in 2006.

MES conducted a study in 2006 that suggested using rental units is less cost effective than City-owned equipment. Despite this, user departments continue to use higher cost rental units as a strategy to deal with growth needs when capital funding for additional units is not approved. We believe that using rental units is not a cost-effective growth strategy.

Recommendation 6	Management Response and Action Plan
The OCA recommends that MES work with customers and Corporate Business Planning Department to communicate planning requirements, procurement timelines and acquisition and capital funding sources in order to better meet both equipment replacement and growth needs.	**Accepted** Comments: MES will work with customers to better communicate planning and procurement needs and timelines with current processes. As the strategic sourcing project moves towards implementation, MES will work with Materials Management and Corporate Business Planning to communicate any changes to the vehicle acquisition processes and capital budget challenges. The new Service Level Agreements will also define improved communication methodologies. Planned Implementation: October 2008 Responsible Party: Branch Manager, MES

While the fleet replacement and fleet growth decisions are based on fleet economic life and the city's capital planning process, it is important to recognize that Police and EPCOR are outside MES's decision authority. MES is not involved in EPCOR's fleet replacement and growth decisions and the responsibility for the fleet requirements of the Police Program is the responsibility of the Edmonton Police Commission.

4.1.7. Managing Warranty Work

MES is responsible for coordinating all warranty recovery work for the fleet that it maintains. MES Standard Operating Procedure 4.05 states, "That MES vigorously pursue all warranties, both written and perceived, to receive full benefit."

Warranties on vehicles and equipment vary by manufacturer and type or class of the unit. MES refers most major warranty repairs on municipal vehicles and equipment to the manufacturer, but does perform some work internally. Warranty repairs are primarily done internally on municipal fleet units when downtime costs associated with transporting a unit back to the manufacturer for minor repairs exceed the internal repair costs. Most of the warranty repairs for transit buses are done internally because the vendor only assembles the buses and does not have repair facilities.

MES relies on frontline technical staff to identify repairs covered under warranty and to determine whether the work should be completed internally or externally. There is no established criteria and no management performance tracking to ensure that all warranty work is properly identified and performed.
When warranty repairs are done internally, MES relies on two staff members to pursue recovery, one for transit and one for the municipal fleet. Both staff members work only part time on warranty recovery because they have other responsibilities such as

contracts, recalls and inspections. These two staff members identify warranty work to be recovered by collecting warranty parts from the shop and through contact with shop foremen. Limited use is made of the computerized maintenance system, MAIN-LINK, to identify warranty work orders to facilitate cost recovery.

In order to determine the performance of MES with respect to warranty recovery, we attempted to obtain reliable data regarding the number of warranty repairs completed and costs recovered. MES was able to provide the total number of work orders coded as warranty when the repair was completed internally, but no data was available for the number of warranty repairs sent externally to the manufacturer.

Similarly, data was available for the costs recovered when MES completed a warranty repair internally, but no data was available for the costs of repairs done externally. The cost data for internal warranty repairs was obtained from the Finance Branch staff and is based on actual deposit of recoveries. All warranty cheques and credits are posted to a general revenue account, however, which makes it more difficult to track the total amount of warranty recovery. Neither MES nor the Finance Branch staff members currently perform any scheduled tracking or measuring of warranty recovery.

Parts claimed under warranty are obtained at no cost from the vendors/manufacturers; however, labour costs are not consistently recovered when MES completes the warranty repair. Formal agreements do not exist with all vendors/manufacturers to allow for reimbursement of labour costs at the City charge-out rate. In some cases, the manufacturers will not reimburse labour costs.

Table 9 presents the warranty data provided by MES and provides some indication of MES's performance with respect to warranty identification and cost recovery.

Table 9: Warranty Recovery

Year	Total Running Repairs Completed[3]	Warranty Work Completed	Warranty Costs Recovered
2005	$23,354,761	$244,036	$186,875
2006	$23,932,730	$418,255	$101,234

The percentage of warranty costs recovered to warranty costs incurred was 77% in 2005 and 24% in 2006.

In order to provide additional evidence to help evaluate MES's warranty performance, we attempted to obtain data from other cities. The 2006 City of Ottawa annual report indicates that they were successful in recovering 90% of eligible warranty claims. Unfortunately many of the other cities we surveyed did not track their warranty performance.

[3] Running Repairs do not include preventative maintenance or inspections.

Based on the evidence available, we believe that there is an opportunity for MES to improve their performance in identifying warranty work and recovering costs. We believe the following issues are impairing their performance:

- Lack of management focus on tracking warranty work and cost recovery
- Recording warranty recoveries as corporate revenues, making them difficult to track
- Limited time available for assigned staff to devote to warranty recovery
- Limited use of the MAIN-LINK system to track warranty work orders for recovery
- Lack of accountability for technical shop staff regarding consistent warranty identification

The importance of operating efficiently with respect to warranty work is critical to MES being perceived as fiscally responsible. The upcoming delivery of 200 new transit buses will make it more difficult for MES to successfully manage their warranty program given their limited resources. MES has begun the process of hiring an additional staff member for which we commend them, but we believe that they must commit to further measures in order to efficiently and effectively manage warranty work.

Recommendation 7	Management Response and Action Plan
The OCA recommends that MES redevelop its warranty program to ensure effective management of warranty identification and recovery, including establishing a target range (%) for expected warranty recovery.	**Accepted** Comments: Planned Implementation: March 31, 2008 Responsible Party: Director of Transit Fleet Maintenance, MES

4.2. Financial Performance

In 1994, Administrative Directive A1422 *(MES Branch Fiscal Policy)* was adopted by the City Manager which provided the policy framework and financial model for MES to operate as an enterprise. We assessed the individual policy requirements in order to verify compliance.

4.2.1. MES Enterprise Fiscal Policy

Policy Requirements

- The delivery of a self-funded operation must be based on delivery of services at competitive rates.
- MES financial transactions are recorded as a separate accounting entity.
- MES operate in compliance with the Reserves and Equity Account Policy and the Debt Management Fiscal Policy.
- Ensure that the department maintains the general accounting principles and procedures applicable to a Municipal operation.

- A five year financial plan for the MES Branch is submitted for approval to the General Manager.
- MES submits operating and capital budgets to the Administration's Budget Committee.

Observations on Compliance with Policy Requirements

Since 1994, MES has operated as a self-funded operation with no direct impact on tax levy. However, MES recovers the majority of its costs from departments that are tax-levy supported. The one exception is EPCOR, which represents approximately 6% of MES revenues. Additionally, MES demonstrates its competitiveness through ongoing local market comparisons of shop rates as previously discussed in Section 4.1.1.

We reviewed MES accounting statements and believe MES has complied with stipulated accounting requirements and related reserve and debt management policies. The status of the Retained Earnings Account is reported in the Branch's annual financial statements in accordance with the City's Reserves and Surplus Policy.

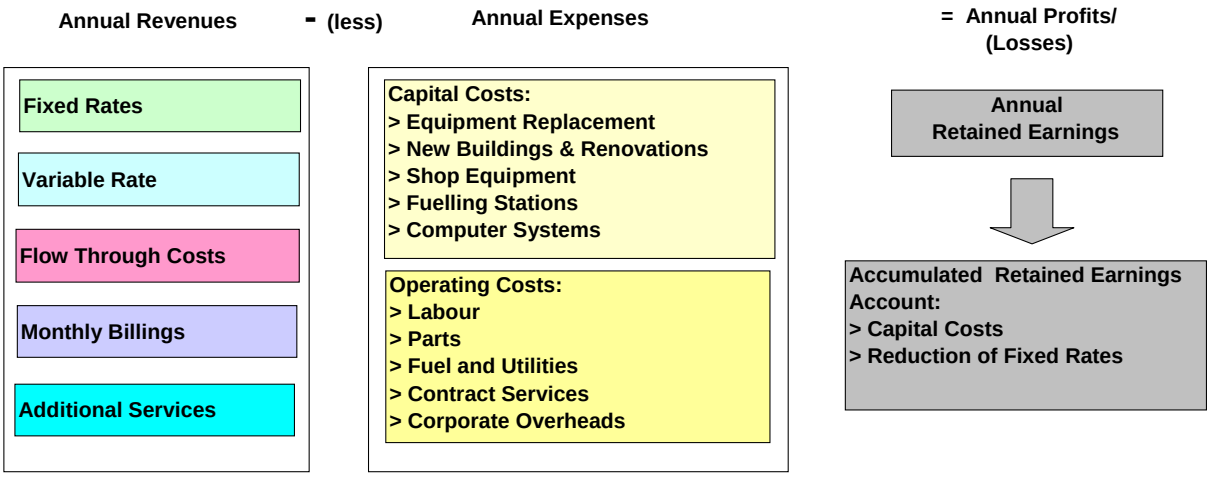
As discussed above, the Policy requirements are for MES to have a five-year financial plan approved by the General Manager. MES currently produces a three-year business plan which is approved by the General Manager and incorporated into the Corporate Services Department three-year business plan. MES also identifies five-year requirements within the Capital Budget that is submitted for Council approval.

Based on these observations, the OCA believes that MES has generally complied with the requirements defined with the MES Branch Fiscal Policy but improvements in financial planning are needed as described in the following paragraphs.

4.2.2. Financial Model

Shown in Figure 8 is an overview of the MES financial model.

Figure 8: MES Financial Model



As illustrated, MES receives multiple streams of revenues which are combined and used for both capital and operating costs. Operating costs also include corporate overheads such as computing support, human resources, accounting, legal services, and material management costs. MES incorporates these corporate overhead costs into its pricing for services. Capital costs include equipment replacement, buildings and renovations, shop equipment, fuelling stations and computer upgrades.

The balance of revenues less expenses represents a profit or loss which is accumulated into the Retained Earnings Account. The Retained Earnings Account is simply an account which identifies monies that City of Edmonton must make available to MES for capital purchases. The Retained Earnings Account is not an actual reserve of dollars. As of December 31, 2006, the MES Retained Earnings Account position was $43 million.

We worked with MES and Finance staff to assess whether the current level of the Retained Earnings Account is sufficient to meet identified capital needs. The single largest capital need is the ongoing replacement of municipal fleet units. Municipal customers contribute monthly fixed rates which are collected by MES to fund fleet replacement. The following table illustrates the relationship between contributed fixed rates and capital replacement requirements for the municipal fleet.

Table 10: Fixed Rate Contributions and Capital Needs ($ Million as at May 2007)

	Older Fleet Units*	Newer Fleet Units**	Totals
Fixed Rate Contributions	$44	$91	$135
Estimated Replacement Costs	$41	$184	$225

*** Older Equipment – in service but past estimated life**
**** Newer Equipment – in service and not reached estimated life**

As illustrated in Table 10, as of May 2007, an estimated $44 million has been contributed to the reserve for older equipment and $91 million has been contributed for newer equipment. MES estimates that the replacement cost for units past their life cycle is $41 million.

MES may have sufficient funds within the Retained Earnings Account ($43M) to replace all older equipment. However, MES needs additional funds to finance other capital needs such as buildings, renovations, shop equipment, and fuelling stations. MES produced a 10-year cash-flow statement annually using Excel up to 2004, which identified all capital and operating requirements and also projects the position of the Retained Earnings Account. The OCA believes that completing this cash flow statement is a valuable exercise and is a necessary step to ensure that future Retained Earnings Account levels will be sufficient to meet capital needs.

Although MES has taken the lead for producing this cash flow statement, we believe that MES should work more closely with the Finance Branch to develop this projected cash flow statement on an annual basis. This cash flow statement and the Retained

Earnings Account balance should also be reconciled annually to ensure accuracy of available funding for MES operations.

Recommendation 8	Management Response and Action Plan
The OCA recommends that MES work with Finance Branch to develop a 10-year cash flow statement of financial needs and funding sourcing which should be updated annually.	**Accepted** Comments: None Planned Implementation: March 31, 2008 Responsible Party: Director of Fleet Support, MES

4.2.3. Pricing and Billing of Services

A chargeback system is a system that includes a pricing model(s) and billing process(es) in order to recover costs incurred in the provision of services made to customers. A chargeback system is designed to serve three main purposes:

1. Promote the efficient and effective use of resources
2. Distribute capital asset costs over multiple fiscal years
3. Facilitate the distribution of overhead costs

We used these criteria in assessing the three pricing models for normal maintenance costs used within the MES chargeback system. MES customers pay additional for costs of activities outside of normal maintenance costs, such as for fabrication services or damages due to abnormal use.

Fixed and Variable Rate Model

The majority of MES customers including Drainage, Community Services, EPS, DATS, Roadways and Waste Management are on the fixed and variable rate model.

The fixed rate portion of the model is a form of pricing that is intended to generate a source of funding for capital replacement. Fixed rates distribute the capital asset costs over the useful life of the equipment and facilitate the accumulation of funds for replacement of assets when needed. Monthly fixed rates are calculated by adding the purchase and carrying costs, subtracting estimated salvage value and dividing this result by the estimated useful life in months of the equipment. In general, these fixed rates do not change over the expected life cycle of a vehicle other than for annual inflationary increases.

When a vehicle reaches its estimated life expectancy but remains in service, MES reduces the fixed rate charge according to the following schedule:

- 15% - 1st year
- 25% - 2nd year
- 40% - 3rd year onwards

Other adjustments to the original fixed rate can occur when MES and the customer jointly agree to a significant re-investment in the equipment. For example, MES could perform a major overhaul of a crane and extend the service life by ten years, which would result in an adjusted fixed rate.

The variable rate portion of the model is a form of pricing used to charge for operating expenses. The variable rate is charged on a per-kilometre or per-hour basis. In this manner, the higher the use or consumption, the higher the charge billed to the customer. MES calculates variable rates based on estimated maintenance costs and fuel consumption for a given class of vehicle or equipment. Variable rates are adjusted annually based on changes to maintenance costs and by fuel cost changes.

The variable and fixed rate model satisfies the first chargeback criterion in that it promotes behaviour towards the efficient and effective use of resources. Inefficient or ineffective use will increase a program area's overall costs. This model satisfies the second criterion through fixed rate contributions which distributes capital costs over multiple years. The third criterion is also satisfied as MES overhead costs are included within variable and fixed rates.

Direct Cost Model

The second pricing model used by MES is the direct cost model in which the customer is charged only for direct costs such as maintenance and fuel and an allocation of MES overhead costs. This model is used for Edmonton Transit (except DATS). MES captures all costs in cost centers which are then transferred at the end of each month to a central account.

This model satisfies the first chargeback criterion in that it promotes the efficient and effective use of resources. Edmonton Transit is impacted by varying monthly costs which are dependant on usage. The second chargeback criterion on distribution of capital costs is not satisfied. MES does not collect funds for bus replacement as this is currently funded directly in the Capital Budget. The third criterion is satisfied in that MES recovers a defined portion of total MES overheads from Transit.

Fixed Monthly Rate Model

The third pricing model used by MES includes charging a predetermined monthly amount which includes projected maintenance, fuel, equipment replacement and overhead costs. This monthly amount is recalculated on an annual basis. MES uses this model for the Emergency Medical Services and Fire Rescue Services Branches. An obvious advantage to this method is that a predetermined monthly charge makes financial planning very easy for the customer. A disadvantage to MES is that they must bear the burden of cost fluctuations for fuel, maintenance, and replacement costs.

Compared to the other two models, the monthly rate model does the least to promote the efficient and effective use of resources. The customer has no incentive to alter behaviour given the monthly costs remain the same. The second criterion is met in that

MES receives funds for equipment replacement. Finally, the third criterion is also met in that MES recovers a potion of its total overheads.

Shown in Table 11 is the summary of our assessment of these multiple pricing models.

Table 11: Pricing Models Assessment

Criteria for an Effective Chargeback System	Pricing Model		
	Fixed and Variable Rate	Direct Billing	Monthly Charge
1. Promotes efficient & effective use of resource	Yes	Yes	No
2. Distribute cost of capital assets over multiple years	Yes	No	Yes
3. Facilitate distribution of MES overheads	Yes	Yes	Yes

As illustrated in Table 11, only the fixed and variable rate pricing model satisfies all three criteria for an effective chargeback system. The fixed and variable rate model serves best to motivate fleet users to make efficient and effective use of equipment resources or face higher operating costs through increased variable rate costs. The fixed and variable rate model is also the only model that moves the organization towards a process of funding equipment replacement through ongoing contributions. All three models individually do meet the criteria of distributing MES overheads, but collectively the current multiple pricing model approach fails to demonstrate that these costs are distributed equitably among its customers.

The Finance Branch is responsible for billing MES customers for services provided. Accounting and computing staff must support each of the three pricing models in the current MES chargeback system.

Based on this analysis, we believe that MES should simplify its current chargeback system and adopt the fixed and variable rate pricing model for all MES customers.

Recommendation 9	Management Response and Action Plan
The OCA recommends that MES implement a single pricing model for its entire customer base using the fixed and variable rate model.	**Accepted** Comments: MES will work with the outstanding areas to implement a single pricing model. However this initiative will follow the completion of all service level agreements in order to ensure that the parameters of the billing model represent service standards developed in the Service Level Agreements (SLA's). Planned Implementation: December 31, 2008. Responsible Party: Branch Manager, MES

4.3. Safeguarding Assets

4.3.1. Security of Assets

MES owns over 3,300 City vehicles and pieces of equipment with a combined acquisition cost of over $280 million. These vehicles are owned and maintained by MES, who essentially "leases" them out to the user departments. As the owner, it is MES's responsibility to have sufficient controls in place to safeguard these assets.

Although MES does not have control over the physical security of units in the fleet once they leave MES's premises, they do have responsibility to protect them from theft and vandalism while on MES property. In order to ensure the physical security of vehicles and equipment while on MES premises, the following measures have been implemented:

- Perimeter fencing
- Locked security gates
- Security lights
- Locks and limited access on nights and weekends
- Vehicle, key & building access controls
- Video Surveillance
- Security Patrols
- Security Alarms

The OCA reviewed Risk Control Inspection reports from inspections completed at Davies, Westwood, Kennedale, Police Garage, and the West End Transportation Garage. All inspections were completed by Corporate Security and took place within the last 6 years. There were no significant security risks noted at any of these facilities, however, a common recommendation was to install City of Edmonton approved C-Cure Alarm systems at all sites. We note that MES has complied with this recommendation and upgraded all existing systems; however, not all sites have alarms. The inspection reports stated there had not been any thefts, break-ins or vandalism at any of these facilities in recent years. Other MES sites will undergo Risk Control Inspections in the next few years as part of Corporate Securities' inspection plans, but exact dates are not yet confirmed.

Based on our review of the available data we believe that MES has sufficient measures in place to adequately safeguard vehicles and equipment while on MES premises and have no recommendations for increased controls in this area.

4.3.2. Inventory Control

As the owner of the majority of the City of Edmonton fleet, MES is responsible for keeping track of the whereabouts and physical condition of these assets. In order to accomplish this, MES must maintain accurate fleet records and ensure that adequate inventory controls are in place.

The fleet records that hold the majority of data regarding the City of Edmonton fleet are stored in the Plant Module of SAP. MES is responsible for entering and editing data in these records. The fleet records hold data such as MES equipment number, manufacturer's serial number, description, and unit status.

In order to keep track of its fleet, MES has the following controls currently in place:

- Preventative Maintenance (PM) schedules – all COE vehicles are supposed to be seen by MES at least once per year for PM. If vehicles are not brought in for PM they will be flagged on an exception report and MES will contact the user department to bring the vehicle in.
- Customer billings – if a customer is billed incorrectly for vehicles, they should inform MES.
- Disposal inspections – about 14% of City vehicles are inspected for possible disposal every year.
- CVIP inspections – all vehicles above 3 tonnes must have annual inspections in accordance with Provincial legislation.
- GPS units are mounted on approximately 164 City vehicles (5% of the fleet).

We performed a review of a sample of 30 vehicles all of which were significantly overdue for preventative maintenance. We tracked each vehicle and physically verified the location, physical description and VIN or manufacturer's serial number in order to test the accuracy of the equipment records and effectiveness of MES inventory controls.

In our small sample, we found that there were multiple inaccuracies in the equipment records. The VIN numbers were recorded incorrectly for two vehicles and two more vehicles that were coded as in service were actually on MES premises awaiting disposal.

We also identified one trailer unit that was no longer in the possession of the user even though the MES records showed it as in service. There was no communication between MES and the user department regarding the disposal of this unit or record of proceeds on disposal. Through our efforts we were not able to trace the location of this trailer unit.

MES Management has advised that physical inventory of vehicles and equipment has not been performed in at least five years. We could not find any physical evidence that comprehensive vehicle inventories have ever been completed by MES or other City departments. MES staff advised us that they used to perform annual physical inventories on all vehicles and equipment that were out of service and awaiting disposal, but that this has not been done for several years.

Given the results of our review, we do not believe that MES's controls for asset management are adequate nor are their fleet records reliable. With unreliable records and inadequate controls, MES lacks the ability to verify and substantiate the number of reported vehicles and equipment. Without reliable controls, MES lacks the ability to know the location and condition of its fleet and safeguard the fleet from physical deterioration, theft or mismanagement.

As part of our survey of MES customer departments, we inquired whether it would be an onerous task for them to validate and sign off a fleet inventory listing on an annual basis. Many felt this was a reasonable request and no concerns were expressed.

Recommendation 10	Management Response and Action Plan
The OCA recommends that MES conduct a periodic inventory of vehicles and equipment in cooperation with user departments.	**Accepted** Comments: An annual review will commence beginning in the fall of 2007. Planned Implementation: December 31, 2007 Responsible Party: Director of Fleet Support, MES

4.4. Governance and Structure

4.4.1. Centralized Vs. Decentralized

The current centralized structure for MES is designed to meet the diversity of the City of Edmonton's equipment fleet. The major characteristics of this structure are:

- All City of Edmonton fleet management operations are centrally managed through one manager.
- Two distinct fleet maintenance divisions, each supported by a maintenance director; one for Edmonton Transit fleet and one for the Municipal fleet.
- Centralization of fleet support services such as new vehicle and equipment acquisition, engineering services, fabrication services, fleet safety and training. Fleet support also supported by a director of operations.
- Transit and Municipal fleets both have district shops to support City operations.
- Centralized operation of fuel sites and bulk purchase of fuel for equipment.
- City administrative directives and operating procedures serve as controls to ensure that *"emergency"* and *"essential"* vehicles receive priority maintenance. Additionally, both EPS and Fire Services have dedicated MES maintenance shops which help ensure maintenance to these business areas is a priority.

We researched how other Canadian municipalities have structured their fleet management services and present the following results:

City of Calgary: In Calgary, Transit, Fire, and Police services operate their own fleet management services. A centrally managed fleet services program exists for the remaining municipal fleet. This central fleet area operates under the agency business model and charges out fixed and variable billings to customers.

City of Winnipeg: In 2003, Winnipeg created a special operating agency. This agency assumed ownership of the fleet, access to the Equipment Replacement Reserve, and was given the authority to increase its customer base outside the City of Winnipeg. This agency is responsible for fleet services for all City of Winnipeg equipment and uses a fixed and variable charge billing.

City of Halifax: Halifax fleet services are completely centralized and the program area only charges variable rate billings (fuel and maintenance) to its customer base.

City of Vancouver: Vancouver's fleet management service, which operates as a program, is centralized with the exception of Fire and Transit equipment. Their customers are billed using the variable and fixed rates.

City of Saskatoon: Saskatoon is not fully centralized since Fire and Transit perform their own fleet services. Saskatoon operates as a program with variable and fixed charges to its customers.

City of Ottawa: The City of Ottawa is centralized with the exception of Police Services. Ottawa operates as a program area and their customers are billed on a variable and fixed rate structure.

Based on a review of these benchmarking results, we believe that the current MES centralized approach is best practice. The current centralized MES model provides benefits of a consolidated fleet support services for engineering, acquisition, safety and training, and fabrication technologies. These services were strongly supported by customer areas that we surveyed. We do not believe that decentralizing MES operations will lead to any cost advantage and may increase corporate administration costs through duplication in management, engineering support, and systems costs.

The OCA conducted interviews with MES customers whom indicated that Fleet Support resources seemed strained. We concur with this perspective and believe that increased support would benefit MES in better understanding and responding to customer needs especially during a period of high growth. The demand level of several activities within Fleet Support such as long range planning, equipment acquisition, and engineering has increased and is expected to further increase in the next few years. Also the warranty management function needs improvement and will require increased Fleet Support attention.

Recommendation 11	Management Response and Action Plan
The OCA recommends that MES review service levels within Fleet Support to ensure that customer needs are being met.	**Accepted** Comments: This review will be undertaken upon the completion of all Service Level Agreements. Planned Implementation: October 31, 2008 Responsible Party: Director of Fleet Support, MES

4.4.2. Business Models

Municipalities currently utilize three main business models in their delivery of equipment services. These business models are described as follows:

1. Tax Levy Program: A tax levy program operates entirely within the municipal policy framework and program costs are identified as part of the tax base. Under this model, budgets for equipment needs are often consolidated under the control of the equipment service program area. This model generally provides the highest level of decision-making control to the equipment service provider in that budget control resides with them. However, a major issue with this model is that program areas (equipment users) often do not make efficient use of equipment resources given they have no budget responsibility.

2. Enterprise Model: An enterprise operates within a municipal policy framework, but also has additional or supplementary policy. This supplementary policy provides a financial framework for the new entity, which include additional responsibilities that must be carried out. The enterprise is not a tax levy program although much of its revenue comes from tax levy programs through a billing system. An advantage of this approach is that greater accountability for tax levy programs occurs through the chargeback of equipment costs. An enterprise is "profit" oriented as excess revenues generated are allocated to a retained earnings account or a reserve and made available for future equipment replacements. Most enterprise policies also require the demonstration of competitiveness with industry service providers. This policy direction is aimed at ensuring the enterprise is providing economical services to the benefit of the corporation.

3. Agency Model: The third and newest business model option is what is known as the agency model. The agency model moves the entity towards a private corporation. This model requires a separate governing body or board and provides the entity more freedom in developing its own policy framework. Agencies are profit-driven and typically use some form of chargeback system for billing. A major advantage to this business model is that it can provide greater financial flexibility in taking on and managing debt. Additionally, agencies have the ability to seek out additional customers outside the municipal environment which can also benefit the corporation.

Each model presented has strengths and weaknesses. In evaluating these business models, the OCA paid particular attention as to how these alternate business models could benefit the City of Edmonton. A common theme throughout this audit was the need to better meet customers' expectations and to involve them more in decision-making. The agency model introduces the concept of a body of representatives through which the service provider receives guidance. We believe this concept has merit and could provide benefits beyond those of the current enterprise model. Ideally, this body of representatives would include high level representatives from each of MES's customers.

Two customers would have to be invited in as they are not under the City Manager's authority, those being EPCOR and the Edmonton Police Service. EPCOR is a separate entity from the City and the Police Program is the responsibility of the Edmonton Police Commission as required by the Alberta Police Act. These MES customers should be invited to participate in the steering committee but they may not be compelled to support decisions that, while in the best interests of the City, may be seen to compromise their business operations.

Recommendation 12	Management Response and Action Plan
The OCA recommends that MES establish a steering committee of customer representatives to provide MES direction on delivery of equipment services.	**Accepted** Comments: The form of the steering committee and its roles and responsibilities will be defined following the development of the Service Level Agreements. Planned Implementation: October 31, 2008 Responsible Party: Branch Manager, MES

5. Conclusions and Recommendation Summary

We recognize that MES as a service provider faces significantly different challenges than a typical industry service provider given the variety of services it provides to a diverse customer base. MES faces significant challenges to remain competitive relative to industry service providers. We worked closely with MES to understand their business environment and to communicate the challenges faced by this organization.

The primary objective of this branch audit was to provide assurance that services provided by Mobile Equipment Services are economical, efficient, and effective. To meet this objective we assessed operational and financial performance, policy compliance, and analyzed and tested many of its key processes. We also gauged MES performance against best practice criteria.

Assessing operational performance on economy, efficiency, and effectiveness was extremely challenging given the current state of management information systems. We used supplementary methods to derive performance information due to the lack of available information. Overall, more work is required by MES in order to demonstrate economical, efficient and effective service provision and the following recommendations highlight where improvements can be made.

- MES should adopt APWA practices to calculate a fully-burdened shop rate to better gauge market competitiveness.
- MES should work with Materials Management to develop a business case for consolidation of vehicle manufacturers and models across the corporation.
- MES should work with BES to implement capabilities within the MAIN-LINK system to measure and increase mechanic productivity and to facilitate measurement and reduction of equipment downtime.
- MES should broaden the audience and questions within future customer satisfaction surveys in order to more effectively assess how well customer needs are being met.

MES faces many challenges in meeting customer service expectations and responding to current and growth needs. We provide the following recommendations to address these challenges:

- MES should work with its customers to develop and set service delivery targets such as equipment service turnaround times, service overdue rates, and spare inventory ratios.
- MES should work with its customers to communicate planning requirements and timelines in order to better meet equipment replacement and growth needs.

MES performance in managing its warranty program and equipment inventory control requires significant improvement and we recommend the following changes:

- MES needs to redevelop its warranty program to effectively manage warranty identification and recovery, including establishing a target range (%) for expected warranty recovery.
- MES should conduct a periodic inventory of vehicles and equipment in cooperation with user departments.

We were satisfied with MES's compliance to its own fiscal policy; however we believe the current enterprise model could benefit from the following recommendations:

- MES should work with the Finance Branch to develop a 10-year cash flow statement of financial needs and funding sourcing that is updated annually.
- MES should implement a single pricing model for its entire customer base using the fixed and variable rate model.

We reviewed the current service delivery model and believe the current centralized model provides the corporation good value. However, we recommend the following improvements to the current model:

- MES should review service levels within Fleet Support to ensure that customer needs are being met.
- MES should establish a steering committee of senior customer representatives to provide MES with direction on delivery of equipment services.

We wish to acknowledge the significant efforts of MES staff during this audit and also the efforts of MES customers.