City of Austin



A Report to the Austin City Council

Mayor Lee Leffingwell

Mayor Pro Tem Sheryl Cole

Council Members

Chris Riley Mike Martinez Kathie Tovo Laura Morrison Bill Spelman

Office of the City Auditor

City Auditor

Kenneth J. Mory CPA, CIA, CISA, CRMA

Corrie E. Stokes CIA, CGAP, CFE

AUDIT REPORT

Public Safety Vehicle Repair Audit

October 2013



REPORT SUMMARY

We found that the Fleet Services Department (Fleet) does not consistently adhere to best management practices, which may impact Fleet's ability to consistently provide quality and timely repair services to the City's public safety departments. Additionally, Fleet has not fully implemented an effective system to gauge customer satisfaction and identify areas for improvement. Further, we found that vehicle repair data tracked by Fleet does not always contain complete and accurate information, which may result in inaccurate charges to departments.

TABLE OF CONTENTS

BACKGROUND	1
OBJECTIVE, SCOPE, AND METHODOLOGY	1
AUDIT RESULTS	2
Appendices	
Appendix A: Management Response	g
Appendix B: Key Sources Used to Identify Fleet Management Best Practices	
Exhibits	
Exhibit 1: Number of Public Safety Vehicles	1
Exhibit 2: Comparison of Fleet Services Quality-Related Practices to Recommended Best Practice	
Exhibit 3: Comparison of Public Safety Departments Vehicle Availability Rates to	
Recommended Best Practices	4
Exhibit 4: Public Safety Departments Vehicle Turnaround	
Exhibit 5: Public Safety Vehicles Breakdown Frequency	
Exhibit 6: Timeliness of Preventative Maintenance for Public Safety Department Vehicles	
Exhibit 7: Comparison of Fleet Customer Communication Practices to Recommended Best	
Practices	E

GOVERNMENT AUDITING STANDARDS COMPLIANCE

We conducted this performance 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 findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

AUDIT TEAM

Niki Raggi, CGAP, CRMA, CICA Assistant City Auditor Henry Katumwa, CGAP, CRMA, CICA Auditor-in-Charge Felipe Garcia-Colon, Auditor John Anthony Martin, Auditor

> Office of the City Auditor Austin City Hall phone: (512)974-2805

email: oca_auditor@austintexas.gov website: http://www.austintexas.gov/auditor

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October 2013



Audit Report Highlights

Why We Did This Audit

This audit was conducted as part of the Office of the City Auditor's (OCA) FY 2013 Strategic Audit Plan.

What We Recommend

The City Fleet Officer should direct and monitor the adoption and implementation of improvements to the vehicle repair management program, in accordance with applicable best practices.



For more information on this or any of our reports, email oca_auditor@austintexas.gov

PUBLIC SAFETY VEHICLE REPAIR AUDIT

Mayor and Council,

I am pleased to present this audit on Public Safety Vehicle Repair.

BACKGROUND

This audit was included in the FY 2013 Strategic Audit Plan due to the observed risks in this area during previous OCA audits.

The Fleet Operations Division of the Fleet Services department (Fleet) is responsible for the maintenance and repair of all City of Austin vehicles and equipment, including approximately 1,700 vehicles for the City's public safety departments.

OBJECTIVE AND SCOPE

The objective of the audit was to evaluate the responsiveness, effectiveness, and efficiency of public safety vehicle repairs conducted by Fleet Services.

The audit scope included public safety vehicle repair-related activities between FY 2012 - FY 2013 (3rd Quarter).

WHAT WE FOUND

We found that while the Fleet Services has implemented most components of a best practice vehicle repair program, it has not fully implemented key elements related to quality and timeliness of repairs, which may impact Fleet's ability to consistently provide quality and timely repair services to the City's public safety departments.

Further, Fleet's customer communication infrastructure is not working effectively, limiting Fleet management's ability to gather information on customer satisfaction and identify areas that may need improvement.

In addition, vehicle repair information management practices need improvement to ensure that monitoring vehicle repair data maintained in the M5 system is complete, accurate, and reliable.

We appreciate the cooperation and assistance we received from Fleet Services and the City's three public safety departments during this audit.

Kenneth J. Moky, City Auditor

BACKGROUND

This audit was included in the fiscal year (FY) 2013 Strategic Audit Plan due to the observed risks in this area during previous Office of the City Auditor (OCA) audits.

The Fleet Operations Division of the Fleet Services department (Fleet) is responsible for the maintenance and repair of all City of Austin vehicles and equipment, including approximately 1,700 vehicles for the City's public safety departments: Emergency Medical Services (EMS), Austin Fire Department (AFD), and Austin Police Department (APD), as shown below.

EXHIBIT 1
Number of Public Safety Vehicles

EMS	AFD	APD
162	285	1,231

SOURCE: OCA Analysis of public safety vehicles, July 2013

Fleet utilizes a monthly maintenance rate system, where the customer departments are billed for the services provided based on the citywide average maintenance cost per vehicle group/class over the past 12 months. For special services, such as department-requested modifications to vehicles, Fleet bills the department directly. In FY 2012 and 2013, Fleet charged the public safety departments approximately \$7 M annually for services provided.

OBJECTIVE, SCOPE, AND METHODOLOGY

The Public Safety Vehicle Repair Audit was conducted as part of the OCA FY 2013 Strategic Audit Plan, as presented to the City Council Audit and Finance Committee.

Objective

The objective of the audit was to evaluate the responsiveness, effectiveness, and efficiency of public safety vehicle repairs conducted by Fleet Services.

Scope

The audit scope included Fleet vehicle repair-related activities between FY 2012 - FY 2013 (3rd Quarter).

Methodology

To accomplish our audit objectives, we performed the following steps:

- interviewed Fleet Services management, managers and staff at the service centers that service public safety vehicles, and relevant public safety department personnel;
- analyzed Fleet Services' records related to vehicle repair and maintenance activities;
- performed a walk-through of Fleet vehicle repair activities and processes at 3 service centers;
- reviewed documents including applicable vehicle repair policies and processes;
- selected a random sample of 30 vehicle repair jobs out of the 8,277 jobs within the work orders which were closed between May-July 2013 and tested them for compliance with Fleet's policies and procedures; and
- researched best practices relating to fleet management.

AUDIT RESULTS

We found that the Fleet Services department (Fleet) does not consistently adhere to best management practices, which may impact Fleet's ability to consistently provide quality and timely repair services to the City's public safety departments. Additionally, Fleet has not fully implemented an effective system to gauge customer satisfaction and identify areas for improvement. Further, we found that vehicle repair data tracked by Fleet does not always contain complete information, which may result in inaccurate charges to the departments.

Finding 1: While Fleet has implemented most components of a best practice vehicle repair program, it has not fully implemented key elements related to quality and timeliness of repairs.

We found that Fleet has adopted some components of a best practice¹ vehicle repair program. For example, Fleet has:

- established a centralized vehicle repair program;
- adopted a work order system to document all maintenance and repair services provided to a vehicle:
- implemented a Fleet Focus M5 Information System (M5 System) to track and manage various aspects of fleet vehicle repairs;
- established service level agreements with public safety departments;
- created an employee incentive system to encourage technicians to obtain and maintain certifications;
- established vehicle repair policies and procedures; and
- instituted a preventative maintenance program to minimize vehicle breakdown.

Best practices also call for fleet service organizations to develop repairs programs that provide a high level of quality coupled with customer-focused services. Such a program would include quality assurance procedures to ensure that requested services are performed properly; a training program to ensure that technicians are up-to-date with current technologies; and monitoring relevant trends to assess the quality of work performed and identify problem areas. However, as shown in Exhibit 2, Fleet has not fully implemented these elements.

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¹ City of Seattle Competitive Analysis and Recommendations for Fleet Management Best Practices, March 2005; Report on Fleet Operations Study of Fleet Services Division of Seattle Washington, June 2008; and other sources as noted in Appendix B.

EXHIBIT 2
Comparison of Fleet Services Quality-Related Practices to Recommended Best Practices²

Industry best practice	Auditor's Observations
Management should develop	Fleet management asserted that they are piloting some aspects
and implement a formal quality	of quality assurance, including performing quality spot checks.
, , ,	
assurance process that should	However, at the time of our audit quality assurance steps were
include road tests, quality	not consistently performed. Based on our review:
checklists, complete	 quality spot checks are rarely conducted. Based on available
observations of repairs	documentation, only 0.003% (or 27 of approximately
	10,000) work orders were checked for quality
	 road tests are performed by the technician who conducted
	the repairs
A formal skills assessment and	Fleet currently has not implemented a formal skills assessment
training plan should be	and training plan for technicians; however, management
developed to keep employees	asserted that they are in the process of developing one.
current on industry standards	Based on our work, Fleet provided limited hours of technical
and provide a minimum of 40	training in the scope period.
hours of technical training per	
year	
Require certifications or	Fleet has established incentives to encourage technicians to
establish incentives to	obtain certifications, but certifications are not a requirement.
encourage technicians to obtain	Based on our review:
certifications	■ 65% (or 24 of 37) of public safety technicians have a current
Require all technicians working	certification
on Fire Department vehicles to	■ 38% (or 3 of 8) of fire and emergency vehicle technicians
be certified as an Emergency	hold the EVT certification
Vehicle Technician (EVT)	

SOURCE: OCA Analysis of Fleet services vehicle maintenance and repair program, September 2013

With only some components of a best practice system in place, Fleet Services Department may not be able to effectively manage all areas of a public safety vehicle repair program, as discussed in the next finding.

Finding 2: Fleet is not meeting recommended targets for selected vehicle maintenance and repair performance indicators.

By adopting best practices³, a fleet management organization can become more efficient and effective with fleet operations, thus allowing it to provide the required services to its customer with the best use of taxpayer dollars. Based on our review of the performance data for the public safety

² Ibid.

³ Ibid.

departments, Fleet is not meeting recommended targets for a number of indicators, including availability/downtime and timeliness of preventive maintenance.

Fleet availability/downtime rate is below recommended targets. Availability is defined as an average percentage of scheduled operating time the vehicle is available for use. Conversely, downtime is a measure of time during which a vehicle should be available for use, but is not available due to maintenance or repair. As shown in Exhibit 3, while best practices call for a 95% availability rate, Fleet averaged an availability rate of 91% for the three public safety departments and performances vary among the three departments. It should be noted that each of the public safety departments maintains a reserve fleet in order to offset vehicle downtime and help ensure that operational needs are met.

EXHIBIT 3

Comparison of Public Safety Departments Vehicle Availability Rates to Best Practices

	EMS	AFD	APD	Average	Best Practices
Downtime	12%	9%	5%	9%	5%
Availability	88%	91%	95%	91%	95%

SOURCE: OCA Analysis of public safety departments' vehicle repair information from the M5 Information System, September 2013

Another indicator commonly used to evaluate quality of maintenance and repair services is **turnaround time**. Turnaround time relates to the amount of time needed for a vehicle to be returned to service after it has been brought to Fleet for maintenance or repair. Recommended targets for overall fleet repairs suggest that at least 70% of repairs should be completed within one day and that at most 10% of repairs should take longer than two days. As shown in Exhibit 4, Fleet turnaround time nears this general goal for repairs completed within one day, while repairs that take longer than two days appear to be an area that needs improvement.

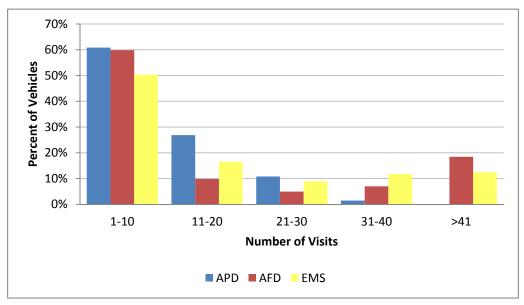
EXHIBIT 4
Public Safety Departments Vehicle Turnaround Rates (Cumulative)

Repairs Turnaround Time	EMS	AFD	APD	Average
Completed within 1 day	62%	71%	66%	66%
Completed within 2 days	71%	79%	75%	75%
Completed within 5 days	84%	90%	85%	86%

SOURCE: OCA Analysis of Public safety Departments vehicle repair information from the M5 Information System, September 2013

Breakdown measures the frequency with which a vehicle must be taken out of service because of repair-related problems. While we could not identify specific breakdown targets, we observed that frequent breakdowns appear to be a problem for EMS and AFD. As shown in Exhibit 5, we estimated that out of the 389 EMS and AFD vehicles that were taken to the Fleet service centers for repairs related issues during our scope period, approximately 25% (or 97 of 389) vehicles were taken at least 31 times and up to 76 times each.

EXHIBIT 5
Public Safety Vehicles Breakdown Frequency



Visits	AI	סי	Al	-D	EN	/IS
1-10	806	61%	146	60%	73	50%
11-20	356	27%	24	10%	24	17%
21-30	143	11%	12	5%	13	9%
31-40	19	1%	17	7%	17	12%
>41	1	0%	45	18%	18	12%
	1325	100%	244	100%	145	100%

SOURCE: OCA Analysis of public safety departments' vehicle repair information from the M5 Information System, September 2013

Fleet is not consistently performing **preventative maintenance** on time for public safety vehicles. Per best practices, along with downtime, breakdown is one of the factors that reflects the overall management of the maintenance operation and the quality of repair work done. A high level of breakdowns may be a symptom of maintenance problems. Based on our review, Fleet is not consistently performing preventative maintenance on public safety vehicles in accordance with established schedules.

EXHIBIT 6
Timeliness of Preventative Maintenance for Public Safety Department Vehicles

Indicator	EMS	AFD	APD	Average	Best Practices
Preventive Maintenance on Time	79%	74%	82%	78%	95%

SOURCE: OCA Analysis of public safety departments' vehicle repair information from the M5 Information System, September 2013

Based on our interviews with Fleet management and staff, we concluded that due to the pressure to minimize the time a public safety vehicle is unavailable for service, the main focus of the organization is on "getting vehicles back on the road." As a result, less importance may be given to other activities such as qualitative reviews that identify areas that need improvement.

Finding 3: Fleet's customer communication infrastructure is not working effectively, limiting Fleet management's ability to gather information on customer satisfaction and identify areas that may need improvement.

Per best practices, customer service management is central to the effective performance of fleet management. Best practices recommend that fleet organizations establish an effective customer communication infrastructure, aimed at gathering information on the needs and concerns of customers and their satisfaction with the services provided, so that necessary changes can be made. A formal process is preferable over an informal one, as relying only on informal channels may result in loss or misinterpretation of information. Furthermore, best practices call for defining services provided and expectations for both the service provider and the customers. As shown in Exhibit 7, Fleet services communication infrastructure is not working effectively.

EXHIBIT 7

Comparison of Fleet Customer Communication Practices to Recommended Best Practices⁴

Industry Best Practice	Auditor's Observations
Fleet should develop detailed Service Level Agreements (SLAs) with its primary customers; such documents should: be customized in order to capture the unique operating characteristics and needs of each group include response time, resolution time and quality indicators	 Fleet has developed service level agreements with the public safety departments; however, it appears that they are not used as part of the customer communication infrastructure Based on our interviews, customer departments did not have a clear understanding of the expected level of service, including downtime and turnaround time
Conduct customer satisfaction surveys at least once per year; customer satisfaction should be maintained at 95% or above	 Fleet does not have information on overall customer satisfaction with its services Fleet does not perform surveys of overall customer satisfaction with its services Fleet does not track customer complaints and resolutions which would enable them to identify patterns and trends Although Fleet surveys its customers after the completion of each repair work order, response rates are very low and may not be reflective of actual customer overall experience Data from Fleet indicates a satisfaction rate of 86%, based on a response rate of less than 1% During our interviews, departments expressed dissatisfaction with the availability, quality, and timeliness of repair services

SOURCE: OCA Analysis of Fleet services customer communication processes, September 2013

4 Ibid.

The lack of a formal customer communication infrastructure may limit Fleet's ability to gather information to evaluate customer satisfaction with their services and to quickly revise its service practices to keep pace with changes in its customers' service needs. During our audit, we observed a gap between the quality of services Fleet believes they are providing and how those services are perceived by the customers.

Finding 4: Vehicle repair data in the M5 Information System may not be complete, accurate, and reliable due to insufficient data entry controls.

As per best practices⁵, management should have controls in place to ensure the integrity of data. Information integrity relates to the accuracy and completeness of information, as well as to its validity based on business needs. Based on our review, we identified data reliability problems due to data entry which may impact the accuracy of Fleet's charges to the public safety departments.

Fleet currently utilizes the M5 system to track and manage various aspects of fleet vehicle repairs. Repair information is tracked by work order and includes labor hours, applicable outsourcing costs, and part and warranty information for each job performed within a work order.

According to Fleet policies, a service center supervisor is required to ensure that all information on the work order is correct and completed prior to closing the work order. However, in our review of approximately 75,000 vehicle repair jobs, we observed that work orders do not always contain complete information. Specifically, approximately 9% (or 7,000 of 75,000) of public safety vehicle repairs jobs which were coded as "done" in the M5 system did not contain information for labor hours, labor cost, parts costs, and/or outsourcing costs.

Since Fleet utilizes a charge system where the customer departments are billed for the services provided on prior year costs, incorrect and incomplete cost information may impact the accuracy of Fleet charges to the customer departments. Based on our interviews with service centers' management and staff, we concluded that Fleet Services main focus is on "getting vehicles back on the road" and less importance may be given to other activities such as review of data or exception reports.

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⁵ Committee of Sponsoring Organization of Treadway Commission (COSO) Internal Controls-Integrated Framework, 2011

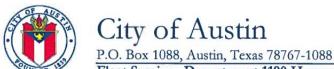
RECOMMENDATIONS

The recommendations listed below are a result of our audit effort and subject to the limitation of our scope of work. We believe that these recommendations provide reasonable approaches to help resolve the issues identified. We also believe that operational management is in a unique position to best understand their operations and may be able to identify more efficient and effective approaches and we encourage them to do so when providing their response to our recommendations. As such, we strongly recommend the following:

- 1. The City Fleet Officer should direct and monitor the adoption and implementation of improvements to the vehicle repair management program, in accordance with applicable best practices. Elements that needs to be addressed include, but are not limited to:
 - A. processes to ensure quality and timeliness of repair services;
 - B. process to establish an effective customer communication infrastructure; and
 - C. processes to ensure completeness and accuracy of work order data in the M5 system.

MANAGEMENT RESPONSE: Refer to Appendix A for management response and action plan.

MANAGEMENT RESPONSE



Fleet Services Department 1190 Hargrave Street, Austin, Texas 78702

MEMORANDUM

TO:

Kenneth J. Mory, City Auditor

Gerry Calk, Fleet Officer

FROM:

Gerry Calk, Fleet Officer

DATE:

October 21, 2013

SUBJECT:

Management Response to Public Safety Vehicle Repair Audit

Attached please find Fleet Services Department's (FSD) response to the Public Safety Vehicle Repair Audit. While FSD concurs with the recommendation made in the audit report, it is important to note that in order to present a clear picture of the situation, the following information is submitted.

Finding 1 states that: While Fleet has implemented most components of a best practice vehicle repair program, it has not fully implemented key elements related to quality and timeliness of repairs. Fleet Services has adopted and implemented a quality assurance program. However, the effectiveness of the program has yet to be realized as the program was implemented 01/2013. Road tests are performed by technicians who conduct repairs to confirm the repair performed results in a successful corrective and preventive repair/service outcome. In addition, supervisory staff conducting a quality assurance inspection may also perform a road test, depending upon repairs/services performed to the unit.

This finding also states that: a formal skills assessment and training plan should be developed and that; Fleet Services should require certifications or establish incentives to obtain certifications and further that; Fleet should require all technicians working on Fire Department vehicles to be certified as Emergency Vehicle Technicians (EVT). Fleet has provided technical training to technical staff as operationally permissive. Although the training has been limited, Fleet has constructed a training curriculum focusing on skills assessment and certification. Fleet has experienced technical staffing constraints during the reporting period of this audit. The technician skill set (automotive and/or equipment technician) has been identified in a number of national and industry specific publications as the second or third most difficult skill set in the country to recruit. Many predict that there will be a 40% shortage of technicians in the industry within the next two to five years. The City of Austin is not currently compensation competitive with the private sector in recruiting technicians. This has led to staff shortages that have impacted the ability to dedicate the time necessary for training. FSD has an incentive awards program that provides an annual stipend ranging up to \$500.00 per year for certifications completed by technicians, however, requiring EVT certification as a condition of employment would unnecessarily restrict the pool of qualified applicants and further hinder FSD's ability to achieve full staffing.

The City of Austin is committed to the Americans with Disabilities Act, reasonable modifications will be made upon request.

Finding #2 states that: Fleet is not meeting recommended targets for selected vehicle maintenance and repair performance indicators. Fleet has adopted performance measures for availability. The goal of 95% that Fleet has adopted for this performance measure is higher than that used by most public sector fleets. However, there is not an industry standard for turnaround time, nor has Fleet adopted turnaround time as a performance measure. As a best practice, Fleet uses turnaround time as a trend indicator to identify potential areas of improvement. A number of factors have impacted Fleet's ability to meet the goals. These are:

- Approved FTE's (5 additional FTE's were approved in the 2014 budget)
- Parts availability
- Facilities (The available facility space is significantly below what is needed for a fleet of the size maintained)
- Accidents/Incidents/Major Repairs
- Specialized equipment
- Vendor availability; priority/performance

It is important to note that Fleet has traditionally measured availability as a percentage of time available for all units in the fleet, both on-line and reserve units. Many public sector fleets only count downtime against on-line requirements and do not count time as unavailable when there is a reserve unit available. If this were the calculation method used for the COA Fleet we would be reporting a 99+% availability rate (AFD and EMS) since there has not been any instance during the past twelve months when a unit was unavailable to meet an on-line need, and only 1 instance where EMS had to use a standby demand unit for approximately 4 hours to meet their on-line needs. APD controls their own reserve / standby units internally and as noted by the audit APD has enjoyed 95+% availability of all assigned fleet.

Fleet also has adopted a performance measure for on-time PM Performance. In addition to the staffing and space issues identified above, Fleet's ability to meet the goal indicated is significantly impacted by the customer department not making units available for PM during the scheduled time frame. Wherein units cannot be made available during the scheduled time frame due to user department's operational requirements, PMs may be deferred until available. Where tracking ontime PM performance is considered a best practice for public sector fleets no goal specific to public safety fleets is referenced.

Finding #3 states that: Fleet does not have an effective customer communication infrastructure, limiting its ability to gather information on customer satisfaction and identify areas that may need improvement. Fleet agrees that an effective customer communication infrastructure is imperative and is at the forefront of "best practices". Fleet originally developed and provided Service Agreements to our public safety departments in an effort to communicate the services that are available to them, along with how they will be administered. These departments have provided feedback and have made requests to include additional requirements in the document. Due to the dynamic nature of the public safety fleet, and the resources available these additional requested requirements remain under review.

Surveys

Fleet has a customer survey program in place, however due to the dwindling response rates over the past years Fleet has elected to modernize our current paper system by installing touch screen

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monitors at the checkout desk to allow all customers to provide feedback about their experience. At the time of the audit the equipment had been purchased and the installation was being tested and scheduled for deployment.

In addition, Fleet management staff frequently meet with user department staff at various levels as needed to discuss specific issues as they arise.

Finding #4 states that: Vehicle repair data in the M5 Information System may not be complete, accurate, and reliable due to insufficient data entry controls. There are many controls in place within the M5 system to ensure data integrity. The M5 system contains many constraints and relational integrity controls to ensure the data being entered is accurate. However, beyond the controls of M5, Fleet Services has procedures that outline processes to address data input and review. Fleet supervisory staff is responsible to ensure that work order data entered and reviewed is as accurate as possible. Fleet Services has two separate procedures/work instructions that address work order and job code data entry and review, Fleet-WKI-429 and Fleet-WKI-430. The percentage indicated in the report is minimal in comparison to the total amount of jobs performed annually and a proportion of the jobs identified without costs are canceled jobs, work not needed, and / or a deferred job. It should be noted that job codes without charges will not have a monetary impact to a customer or a unit. Fleet Services management will review these processes and procedures to ensure the accuracy of data entry and staff compliance with designated processes/procedures. Processes /procedures will be revised if necessary.

I appreciate the thoroughness and professionalism of the audit staff in conducting this audit. If I can provide any additional information or clarification, please advise.

CC: Rey Arellano, ACM

ACTION PLAN

Public Safety Vehicle Repair Audit

Recommendation	Concurrence and Proposed Strategies for Implementation	Status of Strategies	Proposed Implementation Date
The City Fleet Officer should direct and monitor the adoption and implementation of improvements to the vehicle repair management program, in accordance with applicable best practices. Elements that needs to be addressed include, but are not limited to:			
a. processes to ensure quality and timeliness of repair services;	Concur (with comments in management response)	In progress	Already in progress
b. process to establish an effective customer communication infrastructure; and	Concur (with comments in management response)	In Progress	Already in progress
c. processes to ensure completeness and accuracy of work order data in the M5 system	Concur (with comments in management response)	In progress	12/01/13

KEY SOURCES USED TO IDENTIFY FLEET MANAGEMENT BEST PRACTICES

- Report on Fleet Operations Study of Fleet Services Division of Seattle Washington, conducted by Chatham Consulting Inc., June 2008
- City of Seattle Competitive Analysis and Recommendations for Fleet Management Best Practices, conducted by Mercury Associates, Inc., March 2005
- International Association of Fire Chiefs (AFC) Emergency Vehicle Maintenance Section White Paper on NFPA 1911 Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus
- City of Springfield Fleet Management Program Review conducted by CST Fleet Services, May 2012
- University of Minnesota, Center for Transportation Studies Benchmarking Fleet Management Report, July 2003
- COSO Internal Control-Integrated Framework, December 2011
- Relevant articles from industry publications, including Government Fleet and International City/County Management Association
- Guide To Federal Fleet Management U.S. General Services Administration