CITY OF HOUSTON

Annise D. Parker
City Controller

Steve Schoonover
City Auditor

Houston Fire Department
Fleet Maintenance Division
Maintenance Program Performance Audit

Mir & Fox Rodriguez, P.C.
Certified Public Accountants

Report No. 2009-01

OFFICE OF THE CITY CONTROLLER
CITY OF HOUSTON
TEXAS

ANNISE D. PARKER

July 10, 2008

The Honorable Bill White, Mayor
City of Houston, Texas

SUBJECT: Houston Fire Department Fleet Maintenance Division-Maintenance Program
Performance Audit - Report No. 2009-01

Dear Mayor White:

In accordance with the City's contract with Mir•Fox & Rodriguez, P.C. (MFR), MFR has completed a Performance Audit of the Houston Fire Department (HFD) Fleet Maintenance Division's Maintenance Program to determine to what extent the HFD Maintenance Division was achieving its Mission Statement; complying with its Standards, City Policies, Procedures, and its Standard Operating Procedures; attaining its goals; and was being effectively and efficiently managed.

The report, attached for your review, noted that that the combination of an inadequate Mission Statement and goals, out-of-date management policies and procedures and a computerized fleet maintenance information system that lacks reporting, maintenance scheduling features and functionality to support business processes have all contributed to management inefficiencies within the Division. Also, the report indicates that as the Division faces new challenges in the future, HFD may need to consider bringing in a knowledgeable fleet maintenance expert capable of managing the fleet maintenance program.

It is important to note that in spite of various obstacles in the path of the Division, the audit team stated that there does not appear to be any degradation of emergency services as a result of the observations identified in the report.

The observations, recommendations, and corrective actions identified during the audit are included in the body of the report. Draft copies of the matters contained in the report were provided to Department officials. The Views of Responsible Officials as to actions being taken are appended to the report as Exhibit B.

We commend Department management for their timely efforts to take action during the audit to remedy the deficiencies identified by MFR. We also appreciate the cooperation extended to the MFR engagement team by Department personnel during the course of the audit.

Respectfully submitted,

Annise D. Parker

Annise D. Parker
City Controller

xc: City Council Members
Anthony Hall, Chief Administrative Officer
Michael Moore, Chief of Staff, Mayor's Office
Phil Boriskie, Fire Chief, Houston Fire Department
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Mir•Fox & Rodriguez, P.C.
Certified Public Accountants

June 30, 2008

Controller Annise D. Parker
Office of the City Controller
City of Houston
901 Bagby, 8th Floor
Houston, Texas 77002

Re: Houston Fire Department Fleet Maintenance Division
Maintenance Program Performance Audit

Dear Controller Parker:

Mir•Fox & Rodriguez, P.C. (MFR) has completed the City of Houston's (the City's) Fire Department (HFD) Fleet Maintenance Division Maintenance Program Performance Audit. This audit was outlined in our engagement letter dated January 8, 2007 under Contract No. 56546, approved by City Council Ordinance No. 04-1296.

The purpose of our audit was to determine to what extent the HFD Fleet Maintenance Division was: achieving its Mission Statement; complying with its Standards, City Policies, Procedures, and its Standard Operating Procedures; attaining its goals; and was being effectively and efficiently managed.

Our assessments, observations, recommendations, corrective actions, and cost savings noted during our examination are presented in the attached report. Our procedures, which accomplished the objectives, were performed through March 25, 2008 and have not been updated since that date. Our observations included in this report are the only matters that came to our attention based on the procedures performed.

This report is intended solely for the information and use of the City and the Controller's Office, and is not intended to be used for any other purpose. MFR is pleased to have been given the opportunity to work on this engagement and we appreciate the cooperation received from your office and the HFD Fleet Maintenance Division.

Very truly yours,

Mir•Fox & Rodriguez, P.C.

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HOUSTON FIRE DEPARTMENT FLEET MAINTENANCE DIVISION
MAINTENANCE PROGRAM PERFORMANCE AUDIT

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HOUSTON FIRE DEPARTMENT FLEET MAINTENANCE DIVISION
MAINTENANCE PROGRAM PERFORMANCE AUDIT

EXECUTIVE SUMMARY

Background

The Houston Fire Department Fleet Maintenance Division (the Division) is responsible for the maintenance of approximately 1,050 wheeled, motorized, towed, and/or other type of equipment located at over 90 HFD locations throughout the City. The Division's budget was approximately $8.2 million and $8.4 million for fiscal years 2007 and 2008, respectively. The majority of this equipment is used to support HFD emergency operations conducted 24 hours a day, seven days a week, 52 weeks per year. The Division performs scheduled maintenance, including preventive maintenance services, for all motorized wheeled vehicles and equipment with motors/engines including related equipment such as ladders and trailers. The Division also performs unscheduled maintenance such as non-emergency maintenance including headlight/bulb replacement, windshield wiper replacement, emergency light repair, etc. The Division has maintenance teams which perform emergency maintenance consisting primarily of emergency vehicle/equipment support and repairs at the site of fire or EMS incidents. The Division also delivers fuel when necessary to support the equipment located at an emergency event site or multi-alarm site for a long period of time.

Scope and Objectives

The purpose of this performance audit was to perform an independent assessment of the Division's Program by examining operational areas and records for the scope period April 1, 2004 through May 31, 2007 and by conducting a Customer Satisfaction Survey. The objectives included determining to what extent:

- The Division Program was achieving its Mission Statement,
- The Division Program was complying with its Standards, City Policies, Procedures, and its Standard Operating Procedures,
- The Division Program was attaining its goals, and
- The Division Program was being effectively and efficiently managed.

Overall Conclusion

In spite of various obstacles in the path of the Division, and according to our survey, there does not appear to be any degradation of emergency services as a result of the observations identified in this report.

The combination of an inadequate Mission Statement and goals, out-of-date management policies and procedures, and a computerized fleet maintenance information system that lacks reporting, maintenance scheduling features, and functionality to support business processes have all contributed to management inefficiencies within the Division. Additionally, because of reporting deficiencies in the software application, there appears to be a routine information gap between the Division and upper HFD Management related to fleet maintenance performance.

As the City continues to grow and expand, the demands for maintaining the HFD fleet will create new challenges for the Division. In order to prepare for these new challenges, HFD may need to consider bringing in a knowledgeable expert in the area of Fleet Maintenance. This individual may be an unclassified position with extensive experience, capable of managing HFD's fleet maintenance program.

Assessment

Organization documentation had not been updated since 1999 and there was a lack of written standards and maintenance shop goals. As a result of the audit observations, the Division has updated their Mission Statement, Standard Operating Guidelines, and issued new standards and goals for each maintenance shop.

Based on our examination of the operational areas, records reviewed, and interviews with key personnel, we determined that the most serious problems surrounded the current GEMS2000 software application. GEMS2000 is used to track parts and maintenance records for the entire City and for the Division.

- Mileage data used in GEMS2000 to schedule services is corrupt and cannot be relied upon.
- The GEMS2000 does not have management reporting capabilities, and is no longer supported by its manufacturer.
- The City has one individual sufficiently knowledgeable in the report writing functionality of GEMS2000.

HFD is participating with other City departments in reviewing various fleet management systems to replace the GEMS2000 software application. More automated fuel dispensing sites are also planned to better manage fuel usage and mileage data. The corrupt mileage data between the automated and manual fuel dispensing sites have not been adequately resolved.

During the performance audit we also noted:

- No inventory records were available for cannibalized parts/components removed from equipment that was being sold or salvaged,
- Oil based product storage tank (tanks) maintenance (both above and below ground) had been neglected and a Spill Prevention Control and Countermeasures Plan (SPCC) for the Dart Street facility had not been prepared. The City was renovating and/or removing many tanks and has a go-forward plan,

- Controls for verification of data entry of maintenance services into the computer system were inadequate, a direct result of the lack of report writing functionality.
- Controls for the receipt of fuel and spare parts and entry into the computer system were not adequate. During the audit, the Division was developing and implementing new procedures related to spare parts management to better account for receipt, issuance, and reconciliations,
- No controls existed in the software to ensure that certain maintenance performed is not covered by a manufacturer's warranty,
- Lack of segregation of duties in the parts room with the same individual receiving new parts, and performing data entry functions,
- Obsolete parts recorded on the GEMS2000 software,
- 2006 maintenance records indicated there were many vehicles and pieces of equipment that received only one or two services for the year, rather than the minimum of three per servicing guidelines,
- Maintenance and repairs issues noted at HFD stations are not consistently reported to the Division and property recorded in the GEMS2000 software,
- A formal maintenance quality control program was not in use,
- A formal annual mandatory safety training program was not taught, and
- The Division was preparing a SPCC plan, training program, and quality control program.

The current Division Director assumed the position in April of 2004. Prior to this appointment, he had no maintenance experience or related training. Based upon his ability "to get things done," he was tasked to maintain the HFD fleet. Since the initial appointment, due to budget constraints he has not participated in any specific training to aid him for the position.

All of the recent changes and improvements made under the direction of the Division Director have been a direct result of his diligence, attention to detail, and his management style. Throughout the audit, the Division Director promoted candor and spontaneity from all of the mechanics and supervisors within the Division and provided all documents requested. He and his staff have responded to suggested improvements by taking immediate action to improve process controls, thereby improving the overall operations.

The Division's budget was managed daily to properly align needs with funds. Maintenance training for the Division mechanics and supervisors was included in the purchase agreement of new vehicles and equipment. Additional monies for maintenance related mechanics and supervisors training had not been funded during the scope period.

Customer Satisfaction Survey

Decision Information Resources, Inc. (DIR), a Houston-based research and evaluation company, performed a Customer Satisfaction Survey for MFR that had 127 HFD classified staff responses from 40 fire stations throughout the City. The survey results indicated that the majority of the respondents were satisfied with the overall performance of the Division, while approximately 26% believed the Division needed improvements in the following areas:

- Scheduling of maintenance,
- Repairing the vehicles on a more timely basis,
- Resolving reoccurring maintenance problems more quickly,
- Upgrading the poor condition of the reserve or loaner vehicles, and
- Increasing the number and type of available parts needed to make repairs.

Other comments included increasing the number, and to a lesser degree the quality, of the Division personnel.

During the audit, MFR noted the Division made significant efforts toward controlling and reducing their cost of maintenance service by performing heavy equipment alignments and vehicle inspections within the Division. More recently, the Division performed significant reconstruction/repairs to its heavy equipment. For example, a recent repair to a major piece of equipment resulted in an estimated $340,000 savings to the Division.

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Details of the assessment are contained in the AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS section of this report.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

Detailed Background

The Maintenance Operations office has one manager, an assistant manager, and six customer service representatives. The manager has developed a Microsoft Access database which is used for the information control of all the information located in the GEMS2000 software application as well as a Preventive Maintenance Forecaster tool for HFD.

Within the Division, HFD Fleet Operations prepares status and update reports for the Division Director and all shop managers. They provide vehicle mileage reports to permit the scheduling of preventive maintenance services for all the shops. They create and close work order tickets for all shops, fuel information control, toxic waste and environmental issues control, vendor warranty and repairs, the request for payments for vendor repairs, and vehicles files administration.

Fleet Operations also coordinates the certification process of the fuel underground storage tanks with the General Services Department (GSD). MFR understands that since the year 2000, the State of Texas mandated an annual self-certification inspection of underground storage tank sites to ensure compliance with applicable regulations.

Light Duty

The Light Duty Shop performs maintenance and repairs for over 450 light duty vehicles, boats, and trailers. The shop is managed by one shop manager who oversees seven mechanics. The section is located at Dart Street and has five service bays to conduct their maintenance activities. The Light Duty section receives and prepares all light duty new equipment as well as a variety of boats, trailers, and other specialty apparatus. See pictures of the Light Duty Shop at Figure 1 and Figure 2.

Heavy Duty

The Heavy Duty Shop is responsible for the maintenance and repair for over 200 vehicles including Pumpers, Ladder Trucks, Haz-Mat Equipment, a Communication Command Van, Rehab Trucks, Airport Rescue and Fire Fighting Equipment, and all Reserve Equipment. The section is located at Dart Street and has twelve service bays dedicated to them. The Heavy Duty Shop is comprised of one shop manager, one assistant shop manager, and eighteen mechanics. Also included are six troubleshooters with trucks. The troubleshooters have inventory on their trucks and make repairs off site when possible.

The main duties for the Heavy Duty Section include:

- Repair and maintenance of the vehicles and equipment assigned. This includes both scheduled and non-scheduled maintenance.
- 24-hour coverage for repairs seven days a week.
- Coverage for on road vehicle failures.

- Support at fire or EMS site during multiple alarms for vehicle breakdowns.
- Support at fire or EMS site for fueling fire fighting vehicles and equipment.
- Assistance to vendors when equipment has been sent for outside repairs.
- Assistance to other fleet shops as needed.
- Completing required State Inspections.

See a picture of an apparatus parked outside the Heavy Duty Shop at Figure 3.

Fabrication and Body Shop

On January 11, 2007, the Division combined the Fabrication Shop and the Body Shop into one facility (the Shop). The Shop supports vehicles assigned to GSD, the Arson Division, the Public Works and Engineering Department, and HFD's Heavy and Light Duty vehicles and equipment. The Shop is located at the Dart Street facility and consists of seven service bays, five dedicated to vehicle Body repairs, and two for vehicle fabrication requirements. The Shop has one manager who supervises seven mechanics. The Shop performs specialized services, such as windshield replacement and upholstery, and provides industrial gas for welding as well as coordination of decals from outside vendors.

Major frame work is completed by outside vendors. However, the Shop has become more self-sufficient by empowering their skilled workers to do more of the jobs themselves. A recent equipment purchase has enabled the Shop to do the bigger jobs on heavy-duty apparatus. Currently, they are performing 95% of all repairs in house.

Additionally, the Shop has purchased a vinyl letter-cutting machine (Plotter) that saves money and time for the repair of signs. Mechanics are also trained to weld aluminum. The Shop assists all shops at the Dart Street Facility with vehicle as well as structural fabrication and repairs. See pictures of a damaged ambulance ready for repair at the Shop at Figure 4, and the same ambulance after repair at Figure 5.

Ambulance Shop

The Ambulance Shop consists of a shop manager, one assistant shop manager, and twelve mechanics. Their main responsibility is to ensure that routine preventative maintenance is performed, and vehicles in need of emergency services are repaired in a timely manner. The Ambulance Shop, located at Dart Street, provides services for over 200 vehicles and has five service bays.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

Small Engine Shop

The Small Engine Shop has three individuals that perform repairs and maintenance on the small engines and ancillary equipment carried on the fire trucks and stored at the fire stations, including chain saws, compressors, fans, and lawn mowers. The priority in this shop is working first with the ladder truck generators, then chain saws, and lawn mowers. The services of an outside vendor are contracted for certification testing of the aerial and ground ladders. The Small Engine Shop began using the iMagic Inventory software in August 2006 that is used to manage the repairs and the parts. The application assigns a number called "Invoice Number" to every job performed in the shop, which includes the parts used for each task. See pictures of the Small Engine Shop at Figure 6, Figure 7, and Figure 8.

West Side Service Center

The West Side Service Center (Center) at Station 75, located at 1995 Dairy Ashford, was reopened in 2004. The Center's responsibility is to provide preventive maintenance service and repair work for 125 vehicles used by the Fire Prevention Division and 75 vehicles used by the Arson Division. The Center also provides service to emergency units such as ambulances, ladder trucks, and pump trucks as needed. There is a shop manager, three mechanics, and one inventory clerk at the Center, and it has two service bays. Specialized services, such as State Inspection and front end alignments from an outside source, are also performed. The Texas Department of Public Safety certified the Center in 2006 to complete State Inspections on all 1996 and newer units. The Center has its own State Inspection equipment, and three people are certified to use this equipment.

FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

FIGURE 5

FIGURE 6

FIGURE 7

FIGURE 8

Audit Methodology

To accomplish the scope and objectives of this audit, the team performed the following:

- Requested, received, and reviewed all available maintenance guidance documents; i.e. Mission Statement, Policies and Procedures, etc.,
- Requested, received, and reviewed the latest organization chart,
- Requested, received, and reviewed budget information,
- Requested, received, and reviewed Division performance data,
- Interviewed the Division Director, Assistant Director, Inventory Manager, and shop supervisors,
- Interviewed selected fire station captains regarding maintenance support provided by the Division,
- Observed maintenance operations within various shops,
- Contracted with a sub-contractor to conduct a Customer Satisfaction Survey,
- Identified certain anomalies within maintenance management, operations, and reporting processes,
- Prepared and provided Division management various Internal Audit Memorandums (IAM) as potential problems/problem areas were identified,
- Conducted numerous informational meetings with HFD management,
- Worked with Division management to improve maintenance guidance documentation, processes, and controls within the processes,
- Performed a detailed assessment and benchmarked Division maintenance related technology tools and resources,
- Reviewed maintenance costs and performance to identify significant processes, management performance goals, and areas of high risk,
- Identified the impact of staff turnover on fleet availability, reliability, and maintenance,
- Compared the Division’s performance to fleet performance standards and goals,
- Tested efforts to recover credits, rebates, and warranty claims,
- Developed an operational chart or diagram that explains how IT processes work,
- Determined the impact of emergency response for maintenance personnel on multiple alarm fires, including maintenance costs, preventative costs, spare parts costs, availability, and useful life,
- Determined if the daily, weekly, and monthly maintenance checklists for each vehicle type and manufacturer was adequate and complete, and
- Determined recommendations, including industry best practices, for Division fleet staffing, availability performance, cost, spare parts, and maintenance.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

1. Mission Statement, Goals, Standards, Policies and Procedures

Observation

The existing Policies and Procedures, compiled in the document called Standard Operating Guidelines, had not been updated since 1999. Although, this document was the only written information available regarding Division operations, most of the shop managers were not using it as a reference for their daily operations, nor was a hard copy or electronic version available to them. As of March of 2007, Division management created a new version of such document under the name of Standard Operating Procedures (Internal) and in a different document the Customer Service Manual (External), thus replacing the 1999 version.

The Division did not have written performance goals and/or standards for the department sections. The unwritten mission statement consisted of “Fire trucks in and Fire trucks out” (FIFO). No performance standards were established to identify any daily metrics related to FIFO. As a result, supervisors and employees were not aware of any measurable performance goals or standards and therefore could not compare their performance against a standard or the Division’s expectations. Additionally, no formal maintenance quality control program was in use. Also, formal annual mandatory safety training was not taught.

HFD is at risk of not knowing whether its maintenance personnel are over or under performing their assigned duties within the prescribed policies and procedures.

Recommendation

MFR recommends that the Division create and/or modify its processes to ensure that the Goals, Standards, Policies and Procedures, the Standard Operating Procedures, and the Customer Service Manual are updated on a timely basis. The corresponding mission statement should also be reviewed on a periodic basis to ensure that it is current.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

Corrective Action

In addition to the Standard Operating Procedures and Customer Service Manual, MFR understands that the Division has, introduced a new Mission Statement and it reads as follows:

"The mission of the Fleet Command Division is to support the members of the Houston Fire Department by providing exemplary fleet management practices to all vehicles and equipment. This support includes all aspects of fleet maintenance: preventative maintenance; scheduled maintenance; unscheduled maintenance; and deferred maintenance. Fleet Command will provide on site support of vehicles and equipment. Fleet Command will assist in the specification, acquisition, and acceptance of new and replacement vehicles and equipment. Fleet Command will maintain above ground equipment at Houston Fire Department fuel sites and maintain records of fuel inventory.

Fleet Command will maintain an aggressive preventive maintenance program to ensure minor problems are repaired at an early stage, preventing larger, more costly repairs. The City of Houston is in the process of updating the current Fleet Maintenance Software, which will allow using newer technology to schedule maintenance, track repairs, and maintain the Fire Department Fleet in a more aggressive, cost effective manner.

Fleet Command will seek to repair all items on a vehicle while it is in the shop for scheduled maintenance, thus reducing the unscheduled visits needed to keep members in Front Line units."

2. Computer Software and Mileage Data

Observation

Several City departments, including HFD, currently utilize the GEMS2000 software application to track all maintenance performed on a vehicle. The Division schedules vehicle/apparatus preventive maintenance (PM) services based on mileage recorded in GEMS2000.

GEMS2000 was acquired by the City approximately ten years ago, and it is no longer supported by the vendor. MFR learned that only one City employee is knowledgeable enough to support GEMS2000. GEMS2000 has limited functionality, and as a result, the Division routinely downloads the data to a Microsoft (MS) Access database created by the Division to create preventive maintenance schedules that are based on vehicle mileage. The preventive maintenance schedules currently in use are based exclusively on the information stored in the MS Access database. The Division was unable to provide documentation that described how the database was constructed, maintained, and technically supported. There were no written procedures or guidelines for the administration and security of the information stored in the database.

MFR compared the odometer reading of 26 vehicles/apparatus to the mileage recorded in GEMS2000. The mileage recorded in GEMS2000 for 3 of the 26 vehicles was within two miles. The odometer reading for the remaining 23 of the 26 vehicles ranged from minus 121,500 miles to plus 110,500 miles of the mileage recorded in GEMS2000. The average variance was approximately 2,400 miles.

Mileage data is recorded from the vehicle's odometer at either a fuel dispensing location or at the completion of a Preventive Maintenance Service. Fuel dispensing locations have either a manual recording process or an automated process known as Fuel Force.

When a vehicle/apparatus is fueled at a manual recording site, the quantity of fuel and the odometer reading of the vehicle are recorded in a fuel dispensing log. MFR did not note any verification process of the data being recorded. Furthermore, fuel locations are required to submit the manual fuel dispensing logs daily to the Dart Street facility; however, it is common for the fuel locations not to send the fuel dispensing log reports regularly or not send them at all. Upon receipt of the manual fuel dispensing logs, the Division's customer service members manually enters the mileage data into GEMS2000. These manual entries are then reviewed.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

Five of the 52 HFD fuel sites use Fuel Force to dispense fuel and record the odometer mileage reading which is uploaded into GEMS2000. Aside from the recording features, Fuel Force has an internal control that prevents vehicles from being refueled if 3,000 miles has passed since the previous fueling. MFR understands that occasionally vehicle operators may have to circumvent the mileage control within the Fuel Force System before the system will dispense fuel.

For example, a vehicle/apparatus may have been fueled at a location which uses a manual fuel log process. Upon the return to a location using the Fuel Force System, the vehicle operator is unable to receive fuel from Fuel Force with the current odometer reading because of the 3,000 mile system control. To receive fuel, the operator is forced to enter erroneous mileage numbers into the Fuel Force System that are within 3,000 miles of the last time the vehicle was fueled at a Fuel Force location. The erroneous mileage that was entered into the Fuel Force System is then uploaded into GEMS2000.

Mechanic Technicians will record the odometer reading when closing a preventative maintenance work order on the vehicle/apparatus; however, there is no verification to ensure that the actual mileage was recorded. MFR understands that the Division captures the odometer mileage readings and routinely overrides warnings from GEMS2000 especially, if the previously recorded mileage is out of range or unreasonable.

The Division has no reconciliation process to validate the accuracy of the vehicle and mileage information. Preventative maintenance (PM) scheduling is still taking place despite the errors while capturing and consolidating the reading from the odometers; however, there is no process to measure the effectiveness, timeliness, and accuracy of the PM schedule produced.

Current processes established do not take into consideration all the circumstances that may affect timeliness and accuracy of acquiring the correct odometer readings. As a result, the Division is at risk of not maintaining vehicles on a timely basis which could lead to lack of adequate vehicle performance during an emergency, and unnecessary costly repairs. However, a procedure does exist at HFD Stations which may mitigate some risk. This procedure includes completion of a checklist prepared daily, weekly, and monthly by engineers/operators assigned to HFD apparatus.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

GEMS2000 does not have management reporting capabilities, and is no longer supported by its manufacturer. Additionally, the City has one individual sufficiently knowledgeable in the report writing functionality of GEMS2000. This lack of functionality limits the ability for verification of data entry of maintenance services into the system.

Recommendation

MFR recommends that the Division takes immediate action to reduce the risk of not properly maintaining its fleet since the PM schedule relies upon the recorded vehicle odometer mileage. MFR understands that HFD is participating with other City departments in reviewing various fleet management systems to replace the GEMS2000 software application. More automated fuel dispensing sites are also planned to better manage fuel usage and mileage data. The corrupt mileage data between the automated and manual fuel dispensing sites have not been adequately resolved.

Corrective Action

MFR understands that the Division is:

- Currently participating with the City to select a new system with more functionality to replace GEMS2000 to increase efficiency.
- In the process of implementing additional Fuel Force stations. However, in the meantime, HFD should consider improving its manual mileage recording processes related to:
    - Receiving all of the manual fuel dispensing logs on a timely basis,
    - Reconciling the mileage between the Fuel Force and manual fuel dispensing logs, and
    - Verifying mileage recorded on work orders.

3. Cannibalized Parts Inventory

Observation

Major used parts/components, including engines, transmissions, and other ancillary used parts such as emergency lights, seats, rims, doors, and front ends, were stored at the Dart Street maintenance facility. Most of the used parts/components were removed (commonly called cannibalized) from fire fighting equipment that was either being sold or salvaged. When the used parts/components were removed by the Division, inventory records were neither initiated nor maintained. Prior to being cannibalized, the used parts/components were on vehicles that had already been written off the City's books and records. Similarly, in certain instances the used parts/components were refurbished; however, the Division does not maintain any records of the refurbished inventory.

Since there were no inventory records of either used or refurbished parts/components, the City is at risk of misappropriation of these assets, inefficient management of parts, and related higher costs including new parts and storage costs.

Recommendation

MFR recommends that the Division conduct an inventory of parts/components and maintain proper records of the cannibalized parts. Such records would allow the Division to monitor and manage the cannibalized inventory in a similar manner to its regular parts inventory. All parts that can not be used should be salvaged, and the valuable storage space at the Dart Street maintenance facility be used for other storage.

Corrective Action

MFR understands that the Division is currently revising their current cannibalized parts/components policies and related practices to ensure that only reusable vehicle and related equipment parts are recorded in the used parts/equipment inventory database.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

4. Compliance with Environmental Regulations

Observation

During the course of the audit, MFR was made aware of the possibility that certain noncompliance issues exist with the registration of the oil based products storage tanks, (tanks) at the Division's Dart Street maintenance facility. MFR reviewed the Texas Administrative Code (the Code), Environmental Quality, Texas Commission on Environmental Quality Underground and Aboveground Storage Tanks General Provisions, Rule 334.8 Certification for Underground Storage Tanks and Systems.

Based on MFR's understanding of Rule 334.8, the Dart Street tanks were not properly marked. In addition, certain tanks at other HFD fueling locations appear not to have active corrosion protection systems in place.

Rule 334.8 indicates that if the tank owner, the Division, "certifies" that the tanks meet the applicable regulations, for the issuance of a Delivery Certificate by GSD. As a result, a commercial fuel vehicle can then by law, deliver any fuel product provided the delivery certificate is current and prominently displayed. Furthermore regarding the marking of tanks, the Code in 334.8 (C) (5) (C) states in part, "… the owner and operator of tanks regulated under this section are responsible for ensuring that a legible tag, label, or marking is permanently applied upon or affixed to either the top of the fill tube or to a non-removable point in the immediate area of the fill tube for each regulated tanks at the facility…"

MFR was informed that the Division personnel do not know if the corrosion protection devices are operational on the remaining 6 tanks (2 – waste oil tanks, 2 – engine oil tanks, 1 – antifreeze tank, and 1 – transmission fluid tank) at Dart Street.

MFR was subsequently informed by GSD that the UST and associated underground piping at the Dart Street facility was a non-corrodible fiberglass-reinforced plastic material. Additionally, per the Code, the gravity flow piping was not required to have release detection capability. Per Code 334 C Rule 334.50 (b)(2)(B)(i)(I), gravity piping may be tested for pressure or tightness every three years to detect any possible leakage.

MFR requested the Spill Prevention Control and Countermeasures (SPCC) Plan for the Dart Street facility, and the SPCC Plan had not been prepared. The United States Environmental Protection Agency regulation 40 CFR 112 requires this plan.

In addition, numerous tanks at the various fueling locations operated by the Division appear not to comply with Texas Water Code requirements. The Texas Water Code requires all tanks to be registered with the Texas Water Commission (Sec 26.346). There is also a requirement to complete an annual compliance certification using Form (Sec 26.346). Section 26.3475 RELEASE DETECTION REQUIREMENTS; SPILL AND OVERFILL PREVENTION; CORROSION PROTECTION; NOTICE OF VIOLATION; SHUTDOWN (C) states "A tank in system must comply with commission requirements for: (1) tank release detection equipment; and (2) spill and overfill equipment".

MFR noted that the non-fuel (waste oil, transmission fuel, etc.) tanks located at the Dart Street facility do not have leak detection capabilities, and that there are no spill and overfill prevention devices/equipment installed and/or available.

The lack of appropriate leak detection, spill and overfill prevention devices has the potential for a major release of oil based products into the ground water system.

MFR understands that since the year 2000, the State of Texas mandated an annual self-certification inspection of underground storage tank sites to ensure compliance with applicable regulations.

Recommendation

To reduce the risk of non-compliance with the various environmental regulations, MFR recommends that the Division:

- Takes the necessary steps to fully understand all the related regulations,
- Perform the necessary corrective action(s) to ensure that all tanks become and remain compliant,
- Prepare a SPCC Plan, and
- Coordinate efforts with GSD.

Corrective Action

MFR understands that the Division is coordinating with GSD to ensure that the tanks are in compliance with the Texas Commission on Environmental Quality regulations, including accurate registration forms, markings, and inactive corrosion protection systems.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

5. Computer Access Controls

Observation

The Division did not have a process to regularly monitor their employee's access to GEMS2000 and the work order system. The Division's intention was to limit access only to current employees and that the access granted was aligned with their current function and responsibilities.

The Division is at risk if in the event that certain information resources are compromised by allowing individual(s) access which may not be justified due to their current duties. The Division is also at risk of transferred or terminated employees having access to the computerized maintenance records.

Recommendation

MFR recommends that the Division design and implement a regular review process to reconcile employees current access granted at network and application level with their existing position and responsibilities. This process should be supported and implemented in conjunction with the City's IT Department.

Corrective Action

MFR understands that all members of the Division are now located in a central location at the Dart Street, and that only HFD members with access to GEMS2000 are in this office. As members leave their employment, their access to GEMS2000 is discontinued. The access list is reviewed annually to evaluate the need for access to GEMS2000. The City is in the final stages of implementing a new City-wide fleet system. The new system will incorporate security profiles which will limit member access to the members job function.

6. Fuel Usage

Observation

The Division does not reconcile fuel deliveries, fuel usage, and fuel inventory on hand at the fire stations. Based upon information provided by HFD, the Division spent approximately $2.6 million for fuel in fiscal year 2006, approximately $3.8 million in fiscal year 2007, and approximately $2.1 million in the first half of fiscal year 2008. In addition, the Division provides fuel to any City vehicle that arrives at any of the 52 HFD fuel dispensing sites. Furthermore, MFR noted that certain fuel receipts and fill ups of vehicles did not have accompanying paperwork and therefore were not recorded.

Since the quantities of fuel were not reconciled, the Division is at risk of losing fuel without its knowledge. Such fuel loss could include and be the result of unrecorded fueling transactions, UST leakage, and/or fuel theft.

Recommendation

MFR recommends that the Division improve its overall controls over fuel and related costs by reconciling the fuel receipts to usage to inventory on hand. With the cost of fuel continuing to rise, this reconciliation would help control costs, detect UST leakage, and identify losses through theft.

Corrective Action

The Division is in the process of reducing the unleaded fuel sites from 52 to 14. The hardware to measure the fuel at the 14 sites has been purchased and is being installed. Comdata fuel cards have been issued to vehicle operators who are not stationed at unleaded fuel sites. These improvements will greatly facilitate the reconciliation process.

7. Verification of Work Performed

Observation

Upon completion of a preventive maintenance task on a vehicle/apparatus, the Division does not have a formal internal control process to verify that the work was actually performed and that the new parts were actually installed. Also, there was no verification process to ensure that the related work orders were complete and accurate including the recording of parts installed and maintenance work performed. Since the Division has no internal controls pertaining to the work performed, the determination of the productivity and quality of maintenance was not efficiently and effectively determined.

With the lack of quality controls, the Division is at risk of inadequate and poor quality maintenance being performed, if at all, in an inefficient manner. Without adequate internal control, parts usage may be inaccurately recorded and parts could be either misplaced or misappropriated. The Division may, without their knowledge, also have certain maintenance personnel that are not performing efficiently and effectively.

Recommendation

MFR recommends that the Division implements a formalized quality control program to ensure that all work is being efficiently and effectively performed, and that the parts usage is being properly recorded on the work orders. Such a quality control program would facilitate identifying areas for performance improvement as well as future training needs of maintenance personnel.

Corrective Action

MFR understands that the Division has started a quality control program that will spot check certain work orders. MFR's concern is that this piecemeal approach may not be adequate. Consideration should be given to performing a 100% control check on all work orders to verify that the repair problem has been corrected, maintenance has been performed, and that all parts have been replaced.

8. Vehicle Warranty Controls

Observation

MFR noted that the various shop managers have general knowledge of the vehicle warranties through their everyday work maintaining the vehicles. The warranty information related to a vehicle is maintained on an electronic spreadsheet. The Division has no formal controls to ensure that certain maintenance is covered by a manufacturer's warranty.

The Division is at risk of increasing its maintenance costs by performing certain maintenance procedures that could be paid through a warranty claim.

Recommendation

To potentially reduce maintenance costs, MFR recommends that the Division improves its internal controls by implementing a formal system to identify all vehicle maintenance that is subject to a certain manufacturer's warranty. Consideration should be given to a fully automated solution that would provide the appropriate notices before proceeding with the maintenance work.

Corrective Action

As discussed earlier regarding computer software, the Division is participating with the City to select an improved technology solution.

9. Segregation of Duties in the Parts Room

Observation

The physical receiving, inspection of new parts, and their input into the GEMS2000 and SAP were all performed by the same individual. Once the information was entered into SAP and the purchase order was completed, the accounts payable department processed the payment; however, no further validation of the receipt of the parts was made. The same individual in the parts room was also in charge of the follow-up on any shipping shortage or overage of parts directly with the vendor.

MFR also noted that when an item or items were delivered to the parts room, no process was in place that detailed how and when the item or items must be formally received, counted, and recorded.

Due to the lack of a segregation of duties, the Division is at risk of inaccurate information being entered into its inventory records and/or a potential loss of physical inventory. Untimely recording of the receipt of new parts has a direct impact on inventory balances and could impact physical inventory counts.

Recommendation

MFR recommends that the receiving function in the parts room be adequately separated from the recording function. To reduce the risk of loss and inaccurate inventory records, the Division should require that all parts received be counted and recorded in a timely manner.

Corrective Action

During the audit, the Division separated the receiving and recording functions. The tasks are now performed by two different individuals in separate areas of the Dart Street facility.

10. Obsolete Parts

Observation

MFR noted that prior to April 2004, certain parts, with a recorded value of $370,611, were considered slow moving and were transferred to the Fire Department Slow (FDSLOW) account in GEMS2000. During 2005, $70,259 of the $370,611 in FDSLOW parts were physically disposed through the City's salvage process. The remaining physical parts totaling $300,352 could not be located within the Division; however, the balance still remains in the FDSLOW account. MFR understands from the Division Director that the City's external auditors have recommended the balance be removed/written-off from GEMS2000. The Division is currently seeking assistance to write off the remaining balance. In addition, MFR understands that the Division has coordinated with the City's Office of Inspector General (OIG) regarding an inquiry of the missing parts valued at $300,352. Further, MFR understands that an Inquiry Report has been issued to the Fire Chief, OIG Control #2007-0213, in October 2007.

Recommendation

Based upon the resolution of the OIG inquiry, MFR recommends that HFD take appropriate action, which may include write-of of the respected inventory book balances.

Corrective Action

MFR understands that the Division has scheduled a meeting with the OIG to conclude the inquiry into this observation. Additionally, once this meeting is finalized, the Division will request that the balance in the FDSLO account be written off and removed from GEMS2000.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

11. Maintenance and Repairs Noted at HFD Stations

Observation

The Engineer/Operator (E/O) Checklist was utilized at HFD stations as a means for equipment and apparatus to be verified as ready for service. The E/O assigned to the equipment used the checklist to check on the operating condition and readiness, and noted items needing maintenance and repair. HFD Form 15 was then intended to be used to report conditions in need of repair. This form was sent to Fleet Operations at the Dart Street location so that a work request could be generated in the GEMS2000 software.

MFR gathered a sample of approximately 60 E/O checklists and Form 15s (when available and used) at three HFD stations. The sample gathered clearly indicated maintenance and/or repair was needed. The sample was then tested at the Dart Street Fleet Operations office. The test was to determine if work was recorded in GEMS2000 and properly performed. The testing resulted in failure of over 60% of the sample. It appeared that some of the maintenance and repair items were not properly handled. Examples of the items included:

- Check engine light is on,
- Headlights not working,
- PM based upon mileage/hours is overdue,
- Emergency lights not working, and
- Gauges not working.

The Manager of Fleet Operations indicated that maintenance and repair may have been properly handled, and not properly recorded in GEMS2000. MFR did note several instances in which this appeared to be the case.

The Manager of Fleet Operations described a process which required maintenance and repair requests are to be sent to Fleet Operations on HFD Form 15 via e-mail. This process was created in February 2008, and it did not appear that the process was consistently followed. The Manager described one significant obstacle of the process as being the E/O who may not be familiar with the use of computers and e-mail.

The E/Os and other individuals at HFD stations indicated that maintenance and/or repair does often take place without the process being followed. Station 81 near Hobby Airport indicated that maintenance and/or repair was often handled by airport personnel, but this activity was not consistently documented in GEMS2000.

Use of Form 15 at Station 11 was not consistent, and that they normally drive to Dart Street when maintenance and repair was needed.

Recommendation

MFR recommends that management re-emphasize to appropriate personnel the importance of following the process created in February 2008 be followed consistently. Without complete maintenance records in GEMS2000, HFD may have maintenance and/or repair issues.

Corrective Action

MFR understands that HFD Rules and Regulations Section 11.03 specifies the process for the E/O at the stations to report maintenance and repair issues. Specifically, Section 11.03 states:
Checking Equipment: Members shall check their respective equipment and apparatus at relief time to ensure operational readiness.

A. Firefighters shall be responsible for the operational readiness of all tools and equipment on their respective apparatus (i.e., air paks, nozzle settings, extinguisher, secured equipment, generators, etc.). Equipment checklist shall be filled out if applicable before morning roll call.
B. Engineer/Operators shall be responsible for the operational readiness of the vehicle or apparatus (i.e., engine, fuel not below 3/4 full, water level, warning lights, tires, batteries, etc.) The apparatus checklist shall be filled out before morning roll call.
C. All members are responsible for reporting faulty or missing equipment to the Captain of the apparatus or the Station Captain, who will in turn take the appropriate action in reporting and/or repairing of such equipment.

AUDIT DETAILS, OBSERVATIONS, RECOMMENDATIONS, CORRECTIVE ACTIONS, AND COST SAVINGS

Cost Savings

With the high cost of repairs and lack of a timely response by third party vendors, the Division has started to perform certain maintenance at the Dart Street facility. The Division has purchased a machine to perform alignments on heavy equipment. As part of the purchase the vendor was required to provide the Division staff adequate training on the use of the alignment machine. The Division has also started to perform vehicle safety inspections within the Division. Such internal inspections reduce the amount of time and related costs of transporting the vehicle to a third party vendor.

The Division has also acquired other equipment that has enabled it to perform heavy equipment repairs related to accidents.

For example during August 2006, a fire engine was in a serious accident that caused it to roll over. The damage was so extensive that the vehicle was being considered for replacement at a cost of $430,000. However, since the Division did not have adequate funding to replace the vehicle, they chose to repair it. The cost of repair was estimated at approximately $90,000. According to the Division Chief, the resulting savings was approximately $340,000.

See Figure 9 and 10.

FIGURE 9: The following picture illustrates the vehicle before the repair:

FIGURE 10: The following picture illustrates the vehicle after the repair:

SURVEY RESULTS

Decision Information Resources, Inc. (DIR), a Houston-based research and evaluation company, conducted a survey of 127 HFD classified staff concerning their perceptions regarding the Division's performance as part of the Performance Audit of HFD Fleet Maintenance. Approximately, 23 to 28 percent of the respondents were from each of the four City quadrants. See Exhibit A for the complete survey report.

HFD classified staff was surveyed about the following topics regarding the Division's performance:

a. Number, type, and work order documentation of maintenance repairs,
b. Satisfaction with the Division's maintenance repairs,
c. Satisfaction with the Division's customer service,
d. Satisfaction with the condition of reserve vehicles,
e. Satisfaction with the overall performance of the Division, and
f. Recommendations for improving the Division's performance.

The overall survey results reflected in Exhibit A indicated the following:

- Approximately 75% of those surveyed were strongly satisfied or satisfied with the Division's scheduling of maintenance repairs - see Figure 1 on page 43.
- Approximately 75% of those surveyed were strongly satisfied or satisfied with the Division's response to questions - see Figure 2 on page 44.
- Approximately 60% of those surveyed were strongly satisfied or satisfied with the maintenance repairs - see Figure 3 on page 45.
- Approximately 20% of those surveyed were strongly satisfied or satisfied with the condition of the reserve vehicles - see Figure 4 on page 47.
- Approximately 65% of those surveyed were strongly satisfied or satisfied with the Division's overall performance of fleet maintenance - see Figure 5 on page 49.

A sample of the comments made by the respondents included:

- Poor customer service around scheduling and promptness of repair,
- Reoccurring problems after repair completed (especially air conditioners),
- Condition of the reserved vehicles is poor and safety is compromised,
- Provide the shop mechanics with more technical assistance,
- Seems crowded; need more physical facility space,
- Improve communications between shifts,
- Extended hours,
- Some maintenance could be done at station,
- Warranty work should be done onsite,
- Improve safety of shop, and
- Dedicate teams of mechanics to different divisions and quadrants within the City. Special mechanics should be dedicated to special operations, rescue, and the airport. The Division would have autonomous purchasing authority. A long term plan should be developed to standardize the vehicles and equipment in the fleet.

Respondents were also asked how they would improve the repair procedure for the Division, assuming money was no object. Three common themes emerged from respondents:

- 30% stated that they would improve the condition of the reserve vehicles,
- 20% stated they would increase the number (and to a lesser degree the quality) of the Division personnel, and
- 15% stated that they would increase the number and type of available parts that the Division needed to make repairs.

EXHIBIT A

CUSTOMER SATISFACTION SURVEY REPORT

EXHIBIT A

Decision Information Resources, Inc.

Results from the Performance Audit Survey of Fleet Maintenance, Houston Fire Department

May 2007

Submitted to:

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Executive Summary

This report provides results based on survey data collected from Houston Fire Department (HFD) staff regarding their perceptions of the performance of HFD Fleet Maintenance from 2004 to 2007.

Introduction

In the spring of 2007, Mir, Fox, & Rodriguez (MFR), hired Decision Information Resources, Inc. (DIR), a Houston-based research and evaluation company, to survey Houston Fire Department (HFD) staff about their perceptions regarding HFD Fleet Maintenance performance. This survey was part of the Performance Audit of HFD Fleet Maintenance directed by the City of Houston Controller's Office. HFD staff were surveyed about the following topics regarding Fleet Maintenance performance:

- Number, type, and work order documentation of maintenance repairs,
- Satisfaction with the Division's maintenance repairs,
- Satisfaction with the Division's customer service,
- Satisfaction with the condition of reserve vehicles,
- Satisfaction with the overall performance of the Division, and
- Recommendations for improving Fleet Maintenance performance.

Methodology

DIR, in conjunction with MFR, developed a 22-item performance audit survey (see Appendix) to assess the above topics. Using a list of HFD station addresses, which was provided to DIR by MFR, DIR randomly selected 40 fire stations from four different quadrants in Houston, TX, and administered the survey to them. DIR used CATI (computer-assisted telephone interviews) software to administer the survey to these fire stations between April 24, 2007, and May 2, 2007.

Sample and Results

Approximately 127 HFD staff were surveyed and between 23 percent and 28 percent were from each of the four quadrants in Houston, TX.

Maintenance Repairs

The average number of maintenance repairs completed over the past three years, as reported by respondents, was 19. The majority or 68 percent of respondents characterized these repairs as emergency, scheduled, unscheduled, and preventative maintenance. On average, four or 20 percent of all maintenance repairs were covered under warranty.

Contact with Fleet Maintenance

The majority of respondents or 77 percent contacted Fleet Maintenance by phone with the remaining respondents reporting contact through email, phone *and* email, or another means such as fax or radio. The majority of respondents reported being satisfied or strongly satisfied with the way Fleet Maintenance personnel scheduled a time for maintenance repairs, responded to respondents' questions, and completed maintenance repairs. Additionally, 60 percent of respondents reported that they were not aware of any vehicles that needed maintenance repairs but did not receive them over the past three years.

Reserve Repairs

Of all the maintenance repairs reported by respondents over the last three years, five (on average) required a reserve vehicle, which means that (on average) one quarter of all maintenance repairs required a reserve vehicle. Of all the reserve repairs reported by respondents, two (on average) or 40 percent were under warranty. The majority of respondents reported being neutral about or dissatisfied and strongly dissatisfied with the condition of the reserve vehicles.

Work Orders

The majority of respondents indicated that Fleet Maintenance furnished a work order for most or all of maintenance repairs and that most or all of the maintenance repairs were documented on work orders.

Overall Performance of Fleet Maintenance

The majority of respondents reported being satisfied or strongly satisfied with the overall performance of Fleet Maintenance. Sixty percent of respondents gave examples which described Fleet Maintenance positively, citing common attributes such as how Fleet Maintenance was prompt in fixing repairs, went beyond required work and fixed other unexpected problems, and had improved over the last three or more years. Twenty-six percent of respondents gave examples which described Fleet Maintenance negatively. Common negative examples included poor customer service around scheduling, promptness of repair, reoccurring problems after repair completed (especially air conditioners), and poor condition of reserve vehicles.

Respondents were also asked how they would improve the repair procedure for Fleet Maintenance, assuming money was no object. Three common themes emerged from respondents. Thirty percent stated that they would improve the condition of the reserve vehicles, 20 percent stated they would increase the number (and to a lesser degree the quality) of Fleet Maintenance personnel, and 15 percent stated that they would increase the number and type of available parts that Fleet Maintenance needed to make repairs.

Introduction

In the spring of 2007, Mir, Fox, & Rodriguez. P.C. (MFR), hired Decision Information Resources, Inc. (DIR), a Houston-based research and evaluation company, to survey Houston Fire Department (HFD) staff about their perceptions regarding HFD Fleet Maintenance performance. This survey was part of the Performance Audit of HFD Fleet Maintenance directed by the City of Houston Controller's Office. HFD staff were surveyed about the following topics regarding Fleet Maintenance performance:

- Number, type, and work order documentation of maintenance repairs
- Satisfaction with Fleet Maintenance's maintenance repairs
- Satisfaction with Fleet Maintenance's customer service
- Satisfaction with the condition of reserve unit vehicles
- Satisfaction with the overall performance of Fleet Maintenance
- Recommendations for improving Fleet Maintenance performance

Methodology

DIR, in conjunction with MFR, developed a 22-item performance audit survey (see Appendix) to assess the above topics. Using a list of HFD station addresses, which was provided to DIR by MFR, DIR randomly selected 40 fire stations from four different quadrants in Houston, TX, and administered the survey to them. DIR used CATI (computer-assisted telephone interviews) software to administer the survey to these fire stations between April 24, 2007, and May 2, 2007. DIR staff were trained on how to administer the survey and its purpose so they were fully prepared to administer the survey and to answer questions asked by HFD employees.

Sample and Results

Approximately 127 HFD staff were surveyed and between 23 percent and 28 percent were from each of the four quadrants in Houston, TX.

Results are presented by the following topics:

- Maintenance Repairs
- Contact with Fleet Maintenance
- Reserve Repairs
- Work Orders
- Overall Performance of Fleet Maintenance

Maintenance Repairs

The average number of maintenance repairs completed over the past three years, as reported by respondents, was 19. Sixty-eight percent of respondents characterized these repairs as emergency, scheduled, unscheduled, and preventative maintenance. The remaining respondents characterized these repairs as emergency repairs (six percent), scheduled and preventative maintenance (six percent), preventative maintenance only (six percent), and emergency, unscheduled, and preventative maintenance (three percent), or some other combination (11 percent) of the four types of repairs.

On average, four or 20 percent of all maintenance repairs were covered under warranty. Of all the repairs that were covered under warranty, respondents reported that, on average, most were emergency repairs, followed by preventative maintenance, unscheduled, and scheduled repairs.

Contact with Fleet Maintenance

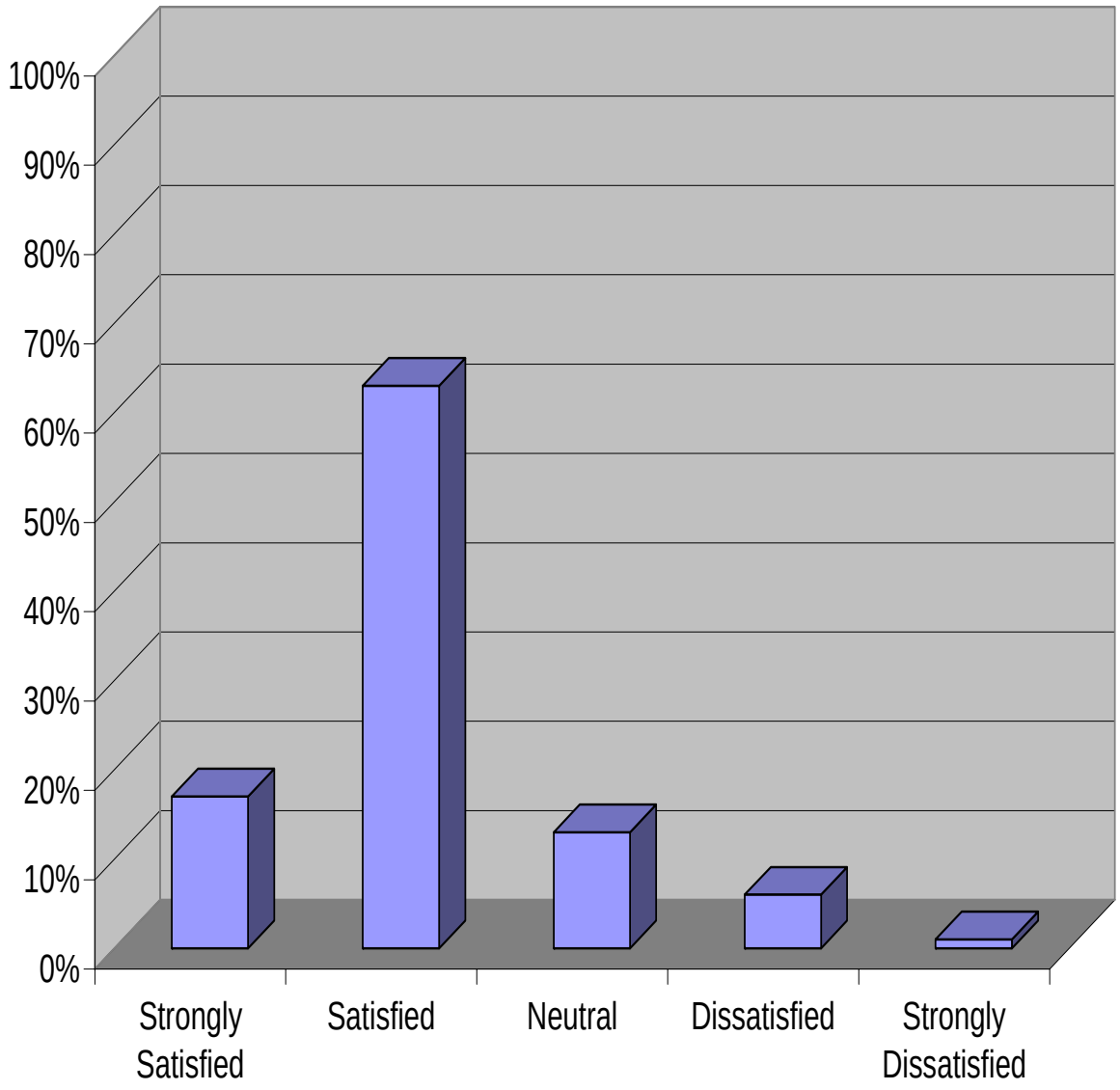
The majority of respondents or 77 percent contacted Fleet Maintenance by phone, followed by email, phone *and* email, or another means such as fax or radio (see Table 1).

Table 1. Contact with Fleet Maintenance

Method	Percentage
Phone	77%
Email	2%
Phone and Email	9%
Other	12%

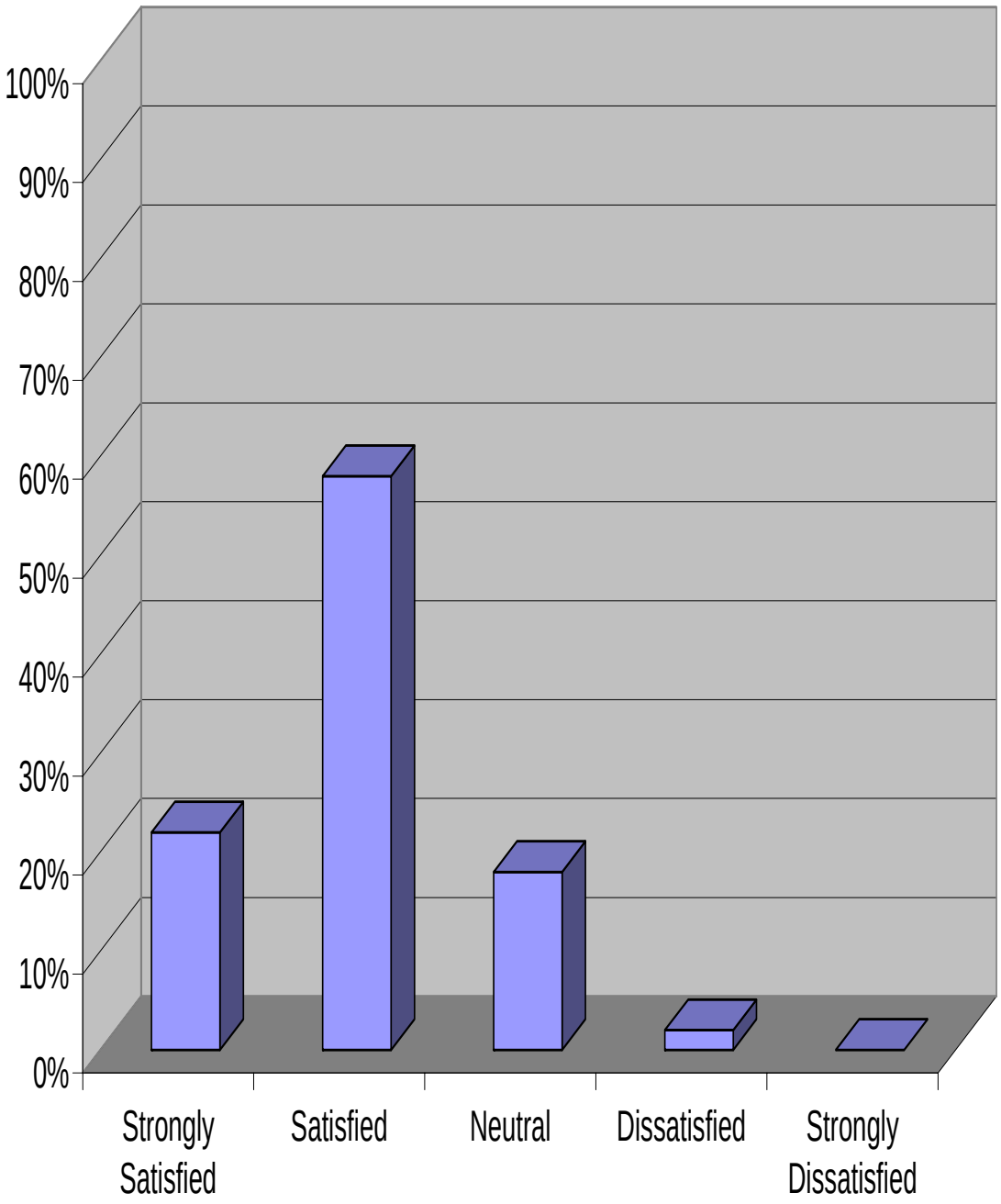
The majority of respondents reported being satisfied or strongly satisfied with the way Fleet Maintenance personnel scheduled a time for maintenance repairs (see Figure 1). Among the few who were dissatisfied or strongly dissatisfied with the manner in which maintenance repairs were scheduled, most respondents complained that it took too long to schedule repairs.

Figure 1. Satisfaction with Scheduling Maintenance Repairs



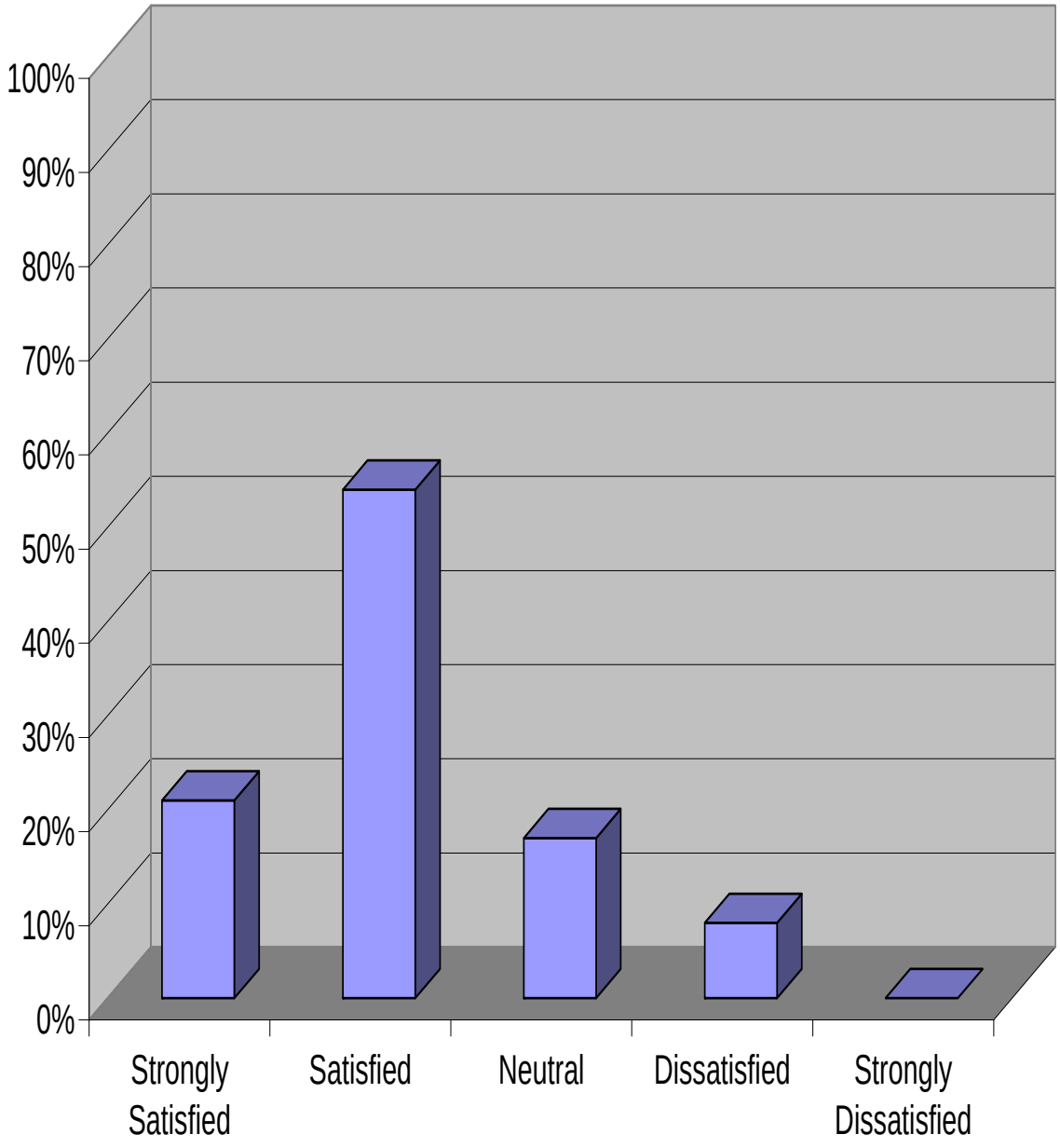
The majority of respondents reported being satisfied or strongly satisfied with the way Fleet Maintenance personnel responded to respondents' questions (see Figure 2). Only three respondents (two percent) were dissatisfied with the way Fleet Maintenance responded to questions, but only one discussed why. This respondent reported that the piece of paper (and print) sent back by Fleet Maintenance was hard to understand.

Figure 2. Satisfaction with the Way Fleet Maintenance Responded to Questions



The majority of respondents reported being satisfied or strongly satisfied with the way Fleet Maintenance personnel completed maintenance repairs (see Figure 3). Ten respondents (eight percent) reported dissatisfaction with the way maintenance repairs were completed and the majority cited reoccurring problems, for example, with air-conditioners, after the repairs were completed.

Figure 3. Satisfaction with Maintenance Repairs



Additionally, 60 percent of respondents reported that they were not aware of any vehicles that needed maintenance repairs but did not receive them over the past three years.

Reserve Repairs

Of all the maintenance repairs reported by respondents over the last three years, five (on average) required a reserve vehicle, which means that (on average) one quarter of all maintenance repairs require a reserve vehicle. Twelve percent of respondents reported that none of the maintenance repairs required a reserve while 10 percent reported that between 12 and 27 (i.e., the maximum number) of maintenance repairs required a reserve vehicle (see Table 2).

Table 2. Percentage of Maintenance Repairs Requiring a Reserve

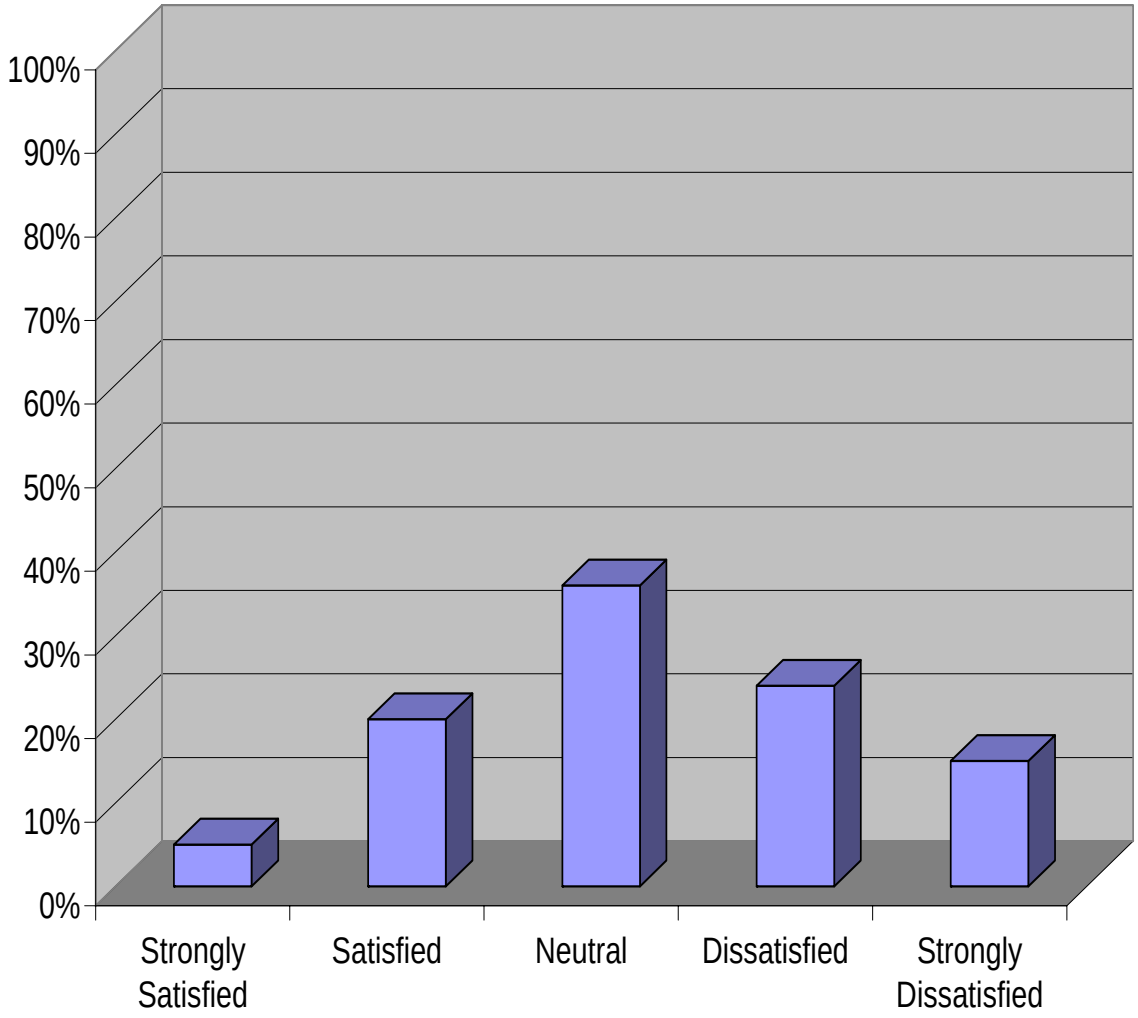
Number of Repairs Under Warranty	Percentage
Zero	12%
One to Five	58%
Six to Eleven	20%
Twelve to Twenty Seven	10%

Of the repairs that required a reserve, respondents reported that, on average, most were emergency repairs, followed by unscheduled repairs, scheduled repairs, and preventative maintenance repairs.

Of all the reserve repairs reported by respondents, two or 40 percent (on average) were under warranty and most were emergency repairs, followed by scheduled, unscheduled, preventative maintenance repairs.

The majority of respondents reported being neutral about or dissatisfied and strongly dissatisfied with the condition of the reserve vehicles (see Figure 4).

Figure 4. Satisfaction with the Condition of Reserve Vehicles



Below are a few respondent quotes about the condition of the reserve vehicles.

- "The reserves are, as a general rule in very bad condition, very old."
- "The condition of the reserves is poor and safety compromised. Most reserves are unsuited for our operations."
- "They were not 1500g/min. trucks, (if we) had a large fire, we could not supply enough water."
- "Currently in a 1994 reserve apparatus, why are old trucks still on the streets?"
- "Ladder tied to the unit; improper running vehicle; lost speed on a bridge."
- "They come dirty and filthy and not in good condition."
- "A piece of junk; barely running."

Work Orders

The majority of respondents indicated that Fleet Maintenance furnished a work order for most or all of maintenance repairs (see Table 3) and that most or all of the maintenance repairs were documented on the work order (see Table 4).

Table 3. Percentage of Maintenance Repairs that Were Accompanied by a Work Order

Repairs	Percentage
All Repairs	47%
Most Repairs	23%
Some Repairs	12%
A Few Repairs	4%
No Repairs	10%
Don't Know	4%

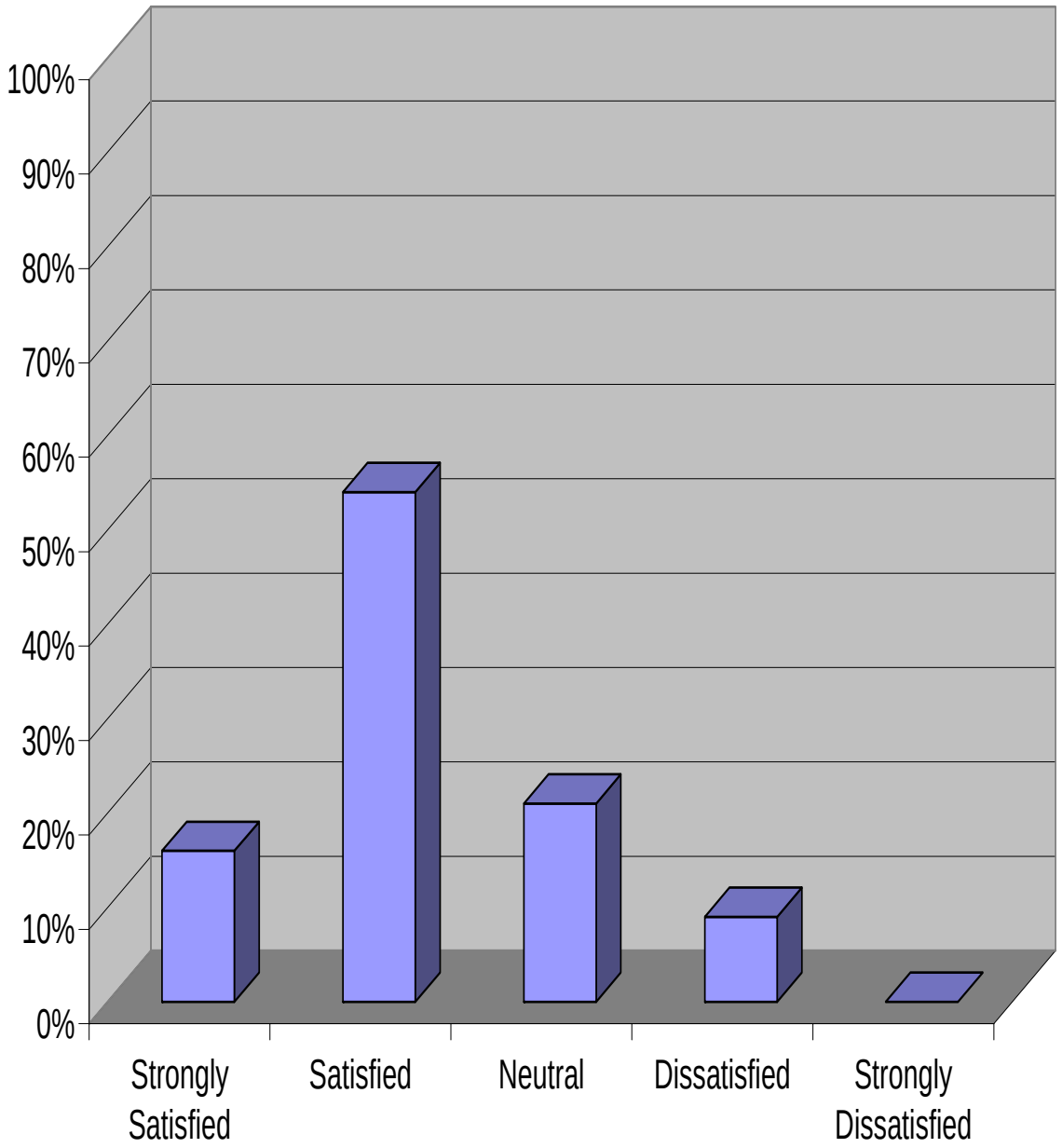
Table 4. Percentage of Maintenance Repairs that had Repairs Documented on the Work Orders

Repairs	Percentage
All Repairs	49%
Most Repairs	33%
Some Repairs	6%
A Few Repairs	5%
No Repairs	5%
Don't Know	2%

Overall Performance of Fleet Maintenance

The majority of respondents reported being satisfied or strongly satisfied with the overall performance of Fleet Maintenance with 11 respondents (nine percent) reporting dissatisfaction (see Figure 5). Respondents who reported dissatisfaction with the overall performance of Fleet Maintenance cited problems with scheduling, re-occurring (equipment breaking soon after being repaired), time (taking too long for repairs), and lack of necessary parts (to fix repairs).

Figure 5. Satisfaction with Overall Performance of Fleet Maintenance



Respondents were also asked to describe one or two examples of their experience with Fleet Maintenance. Most respondents provided one example and some provided two. For analysis of these written responses, DIR combined these examples for a total of 156 examples among the 127 respondents. Sixty percent of respondents described Fleet Maintenance positively, citing how they were prompt in fixing repairs, went beyond required work and fixed other unexpected problems, and had improved over the last three or more years.

Twenty-six percent of respondents described Fleet Maintenance negatively, reporting problems around scheduling, promptness of repair, reoccurring break downs after repairs (especially air conditioners), and condition of reserve vehicles. Fourteen percent of respondents described Fleet Maintenance neutrally with comments about parts, performance, time, locating departments, and contact.

Respondents were also asked how they would improve the repair procedure for Fleet Maintenance, assuming money was no object. Three common themes emerged. Thirty percent stated that they would improve the condition of the reserve vehicles, 20 percent stated they would increase the number (and to a lesser degree the quality) of Fleet Maintenance personnel, and 15 percent stated that they would increase the number and type of available parts that Fleet Maintenance needed to make repairs. Lastly, 35 percent of respondents made recommendations or statements that did not fit into one of these three categories or any other common category. Examples included:

- “Provide the shop mechanics with more technical assistance.”
- “Seems crowded; need more physical facility space.”
- “No comment.” or “No changes necessary.” or “I don’t know.”
- “Improve communications between shifts.”
- “Extended hours.”
- “Some maintenance could be done at station.” or “Have warranty work done onsite.”
- “Improve safety of shop.”
- “I would dedicate teams of mechanics to different divisions and quadrants within the city. Special mechanics would be dedicated to special operations, rescue and the airport. Fleet Maintenance would have autonomous purchasing authority. A long term plan should be developed to standardize the vehicles and equipment in the fleet.”
- “Give 100 percent support so they have the ability to maintain the fleet!”

Appendix

Performance Audit Survey of the Houston Fire Department Fleet Maintenance

Name/Payroll #		Shift	

	Contact Phone #	

"Hello. My name is _____ and I work for Decision Information Resources or DIR, a Houston-based research and evaluation company. I am calling on behalf of Mir•Fox, & Rodriguez, P.C. and Chief Tommy Dowdy to conduct a performance audit of the Houston Fire Department Fleet Maintenance."

"May I speak to the most senior person currently on duty?"

WHEN THE MOST SENIOR PERSON GETS ON THE LINE READ:

"My name is _____ and I work for Decision Information Resources or DIR, a Houston-based research and evaluation company. I am calling on behalf of Mir•Fox, & Rodriguez, P.C. and Chief Tommy Dowdy to conduct a performance audit of the Houston Fire Department Fleet Maintenance."

IF YOU ARE SPEAKING TO THE MOST SENIOR PERSON ALREADY READ:

"Over the next few weeks we will be contacting 40 randomly selected fire stations. Our goal is to speak with three staff members from each station that have had direct experiences with Fleet Maintenance personnel and repairs over the past three years. Have you had direct experiences with Fleet Maintenance personnel and repairs over the past three years?"

IF DO NOT HAVE EXPERIENCE: "Could you please recommend three other staff members who have had direct experiences with Fleet Maintenance repairs over the past three years? Can we speak with them to complete the survey? Are any of them available now?"

IF HAVE EXPERIENCE: "The survey will only take about 15 minutes to complete. Your participation is completely voluntary. May we begin?"

IF NO: "Let's set an appointment."

INTERVIEWER SET APPOINTMENT AND READ: "Before I let you go, could you please recommend two other staff members who have had direct experiences with Fleet Maintenance repair over the past three years? Can we speak with them to complete the survey? Are either of them available now?"

IF YES: "Before we begin could you recommend two other staff members who have had direct experiences with Fleet Maintenance repair over the past three years and could complete our survey?"

RECORD NAMES AND BEST TIMES TO BE REACHED: "Will they be available once we complete our survey?"

IF NOT: "What would be the best times to reach them?"

"We are almost ready to begin but first we must inform you that the survey is completely confidential and your name will not be connected with any information you provide."

Maintenance Repairs

First let's talk about maintenance repairs. I am going to ask you about the approximate number and type of maintenance repairs Fleet Maintenance has completed for you over the past three years. The types of maintenance repairs I will ask about are:

a. Emergency-This includes repairs, for example, that occur on the road or that are unexpected, need to be addressed immediately, and are initiated by a phone call or email.

b. Scheduled-This includes repairs that are set up for a specific time or by an appointment, and are initiated by a phone call or email.

c. Unscheduled-This includes repairs that are not emergencies and are not scheduled.

Preventative Maintenance-This includes expected repairs that are scheduled on a routine basis. You will also be asked about the status of the warranty at the time of the repair. Keep in mind that all four of these repair types could be covered under one warranty.

1a. Approximately how many maintenance repairs has Fleet Maintenance completed for you over the past three years?
_____ (write number here)

1b.To the best of your knowledge what type of repairs were these?

a. _____ Emergency
b. _____ Scheduled
c. _____ Unscheduled
d. _____ Prev. Maintenance
e. _____ Do not Remember

2. Of the repairs that we just talked about, how many would you say were covered under a warranty?
_____ (write number here)

2b. To the best of your knowledge how many of these warranty repairs were…?

a. _____ Emergency
b. _____ Scheduled
c. _____ Unscheduled
d. _____ Prev. Maintenance
e. _____ Do not Remember

Now, let's talk about your overall experience contacting and communicating with Fleet Maintenance personnel about the repairs you mentioned.

3. How did you typically contact Fleet Maintenance to schedule a repair? (please choose one)?

a. Phone
b. Email
c. Phone and email
d. Other (Specify)_____
_____
e. Don't Know

These next few questions are about your overall satisfaction with the way Fleet Maintenance responded to your questions or issues about your repairs.

4. Now thinking about your initial contacts with Fleet Maintenance personnel, what was your overall satisfaction with the manner in which they scheduled a time maintenance repair to be completed or addressed?

Would you say you were Strongly Satisfied, Satisfied, Neutral Dissatisfied or Strongly Dissatisfied?

CATI instructions: Insert

INTERVIEWER PROBE IF RESPONDENT REPORTS DISSATISFIED OR STRONLY DISSATISFIED – Why were you dissatisfied?

5. Now thinking about your initial contacts with Fleet Maintenance personnel, what was your overall satisfaction with the way they responded to any questions or issues that you may have had? Would you say you were Strongly Satisfied, Satisfied, Neutral, Dissatisfied or Strongly Dissatisfied?

Strongly Satisfied Satisfied Neutral Dissatisfied Strongly Dissatisfied DK

INTERVIEWER PROBE IF RESPONDENT REPORTS DISSATISFIED OR STRONLY DISSATISFIED – Why were you dissatisfied?

6. Overall, how satisfied were you with the way Fleet Maintenance personnel completed the maintenance repairs you mentioned?

Strongly Satisfied Satisfied Neutral Dissatisfied Strongly Dissatisfied

INTERVIEWER PROBE IF RESPONDENT REPORTS DISSATISFIED OR STRONLY DISSATISFIED – Why were you dissatisfied?

Reserve

1a. Approximately how many of the maintenance repairs you mentioned required you to change out into a reserve vehicle?

_____ Enter range (0 -20)

1b. What type of repairs were these? INTERVIEWER ENTER NUMBER OF REPAIRS BY TYPE.

a. _____ Emergency
b. _____ Scheduled
c. _____ Unscheduled
d. _____ Prev. Maintenance
e. _____ Do not Remember

1c. To the best of your knowledge how many of these *reserve* repairs were under warranty?
_____ (write number here)

1d. What type of repairs were these? Please list the number of warranty reserve repairs by type.

a. _____ Emergency
b. _____ Scheduled
c. _____ Unscheduled
d. _____ Prev. Maintenance
e. _____ Do not Remember

2. Overall, how satisfied were you with the condition of the reserve vehicles?

Strongly Satisfied Satisfied Neutral Dissatisfied Strongly Dissatisfied

INTERVIEWER PROBE IF RESPONDENT REPORTS DISSATISFIED OR STRONLY DISSATISFIED – Why were you dissatisfied?

_____

_____

3. Over the past three years, have you been aware of any vehicles that needed maintenance repairs but did not receive them?

1. Yes
2. No
3. Don't Know
4. Refused

Work Order

Now thinking about the repairs that you just mentioned, let's talk about the work orders you received from Fleet Maintenance.

1. Were you furnished a copy of the Work Order for…? Check one

All repairs Most repairs Some repairs A few repairs No repairs DK

2. Were maintenance repairs documented on your copy of the Work Order for…?

All repairs Most repairs Some repairs A few repairs No repairs DK

Finally, let's talk about your overall satisfaction with your interaction and the services you received from Fleet Maintenance.

Overall

1. Considering the overall performance of Fleet Maintenance, how satisfied were you with their work? That is, the manner in which they scheduled, completed, and documented all maintenance repairs.

Strongly Satisfied Satisfied NeutralDissatisfied Strongly Dissatisfied DK

INTERVIEWER PROBE IF RESPONDENT REPORTS DISSATISFIED OR STRONLY DISSATISFIED – Why were you dissatisfied?

2. Please describe one or two examples of your experience with Fleet Maintenance.

3. If you had the power and money was no object, what would you change to improve the repair procedure for Fleet Maintenance?

EXHIBIT B

VIEWS OF RESPONSIBLE OFFICIALS

EXHIBIT B

CITY OF HOUSTON
Fire Department

Bill White
Mayor

Phil Boriskie
Fire Chief
1205 Dart Street
Houston, Texas 77007

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June 23, 2008

CONTROLLER'S
2008 JUN 25 AM 10:34

Annise D. Parker
City Controller
900 Bagby
Houston, Texas 77002

Dear Controller Parker:

I have reviewed Mir Fox and Rodriguez's Fleet Maintenance Program Performance Audit and offer the following response.

The Houston Fire Department is composed of many dedicated individuals. Fleet is no exception. The Maintenance Program Performance Audit detailed some areas of concern while at the same time acknowledged that there was no degradation of emergency services. Two- (2) areas of major concern, information technology and expertise in fleet management processes, make up the biggest issues in this report.

The IT issues will be resolved as the COH migrates to a new Fleet Maintenance Reporting platform. This affects fuel accountability, parts accountability, mileage data, and quality control over work performance.

The other major area of concern involved the expertise of management in Fleet. The District Chief assigned as the Fleet Director has management experience and has received training in management processes. However, he currently lacks expertise of fleet operational processes. HFD will be looking into the addition of a fleet management expert to fill this void.

Houston Fire gave Mir – Fox and Rodriguez the support it needed to make this a successful audit. We look forward to resolving the issues that have been brought forward.

Sincerely,

Phil Boriskie
Fire Chief

Council Members: Toni Lawrence Jarvis Johnson Anne Clutterbuck Wanda Adams Mike Sullivan M.J. Khan Pam Holm Adrian Garcia James G. Rodriguez Peter Brown Sue Lovell Ronald C. Green Melissa Noriega Jolanda "Jo" Jones Controller: Annise D. Parker

Views of Responsible Officials