

CITY AUDITOR'S OFFICE



**AUDIT OF FIRE AND RESCUE
VEHICLE MAINTENANCE SHOP**

Report No. CAO 1308-1617-01

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CITY AUDITOR

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**AUDIT OF FIRE AND RESCUE
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BACKGROUND

The Fire and Rescue Vehicle Maintenance Shop is a work unit under the Fire Administrative Battalion Chief. The Vehicle Maintenance Shop consists of one Fire Equipment Mechanic Foreman, four Fire Equipment Mechanics, and one Parts Technician. Together they ensure the readiness of over \$30 million in front line emergency response vehicles and readiness of reserve units in the event of a surge in activity or to replace units removed from service due to damage or for maintenance. Ninety-four of Fire and Rescue's 246 vehicles are serviced at the Vehicle Maintenance Shop (Shop) and the remaining 152 non-emergency vehicles are serviced by the division of Fleet Services.

Outsourcing of repairs and maintenance is sometimes necessary to ensure the readiness of the emergency vehicles. The mission of the Vehicle Maintenance Shop is to maintain Fire and Rescue's emergency vehicles ready to serve the community.

The Fire and Rescue utilizes the Ron Turley Associates fleet management software program (RTA) to track vehicle maintenance and parts inventory at the Vehicle Maintenance Shop.

OBJECTIVES

The audit objectives included the following:

- Determine whether the management controls over the vehicle parts were efficient and effective.
- Evaluate the vehicle parts inventory processes and identify weaknesses.
- Evaluate the effectiveness of established policies and procedures of the Shop.
- Evaluate the adequacy of the security over the Shop.

SCOPE AND METHODOLOGY

Unless otherwise indicated, the scope of the audit was limited to activity during calendar years 2014 and 2015. The last date of fieldwork was April 21, 2016.

Our audit methodology included:

- Interviews of city employees,
- Research of applicable guidelines, and
- Analysis and detail testing of available data.

We conducted this performance audit in accordance with generally accepted government auditing standards except for the requirement for an external peer review every three years. 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.

The exception to full compliance is because the City Auditor's Office has not yet undergone an external peer review. However, this exception has no effect on the audit or the assurances provided.

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The following conclusions to our audit objectives were noted:

Evaluate the vehicle parts inventory processes and identify weaknesses

- There were excessive vehicle parts on hand. See Finding #1.

Determine whether the management controls over the vehicle parts were efficient and effective.

- Controls for the parts room inventory were not documented. See Finding #1.

Evaluate the adequacy of the security over the Shop

- Access to the Parts Room was not secure. See Finding #2.
- Entry into the building was not secure. See Finding #2.

Evaluate the effectiveness of established policies and procedures of the Shop

- The Shop's purchasing process is inefficient and not adequately documented. See Finding #3.
- Procedures for vehicle maintenance outsourcing were not found. See Finding #4.
- Refrigerant stored was not in compliance with the city's Refrigerant Compliance Plan. See Finding #5.

Further information is contained in the sections below. While other issues were identified and discussed with management, they were deemed less significant for reporting purposes.

1. Deficiency in Management Controls over Parts

Criteria

The overall purpose of internal controls is to help an organization achieve its mission and accomplish certain goals and objectives. An effective internal control system helps to safeguard resources against loss due to waste, abuse, and fraud.

NRS 332 and city Purchasing and Contracting policies govern the process of purchases. FN607.1 Disposition of Surplus Property Policy governs the disposal of items of value. Disposal can be through public surplus auction, sold as scrap or donated to qualified organization (NRS 372.3261 and R-33-2011).

Condition

The Fire and Rescue Vehicle Maintenance Shop has an official Fleet Management System – Ron Turley Associates (RTA) in place to track vehicle maintenance, vehicle part information, and part inventory levels. The following deficiencies in management controls over parts were noted:

- In April 2013 when RTA trainers provided the initial training, Fire and Rescue used only the work order module and did not use the inventory parts module.
- The vehicle parts inventory was maintained on an Excel spreadsheet that did not include all the parts.
- In June 2015 RTA conducted additional training for Fire and Rescue
- In June 2015 the parts inventory maintained on the Excel spreadsheet was downloaded into RTA.
- A test of parts revealed that windshield wiper blades, light bulbs, a rebuilt transmission and countless other parts were not listed on the vehicle parts inventory.
- During calendar year 2015, over 370 miscellaneous VMRS code “999-000-000” entries were entered into the vehicle history of over 60 vehicles.
- There was no documented policy or procedure on how to use RTA or using or altering VMRS codes.
- A walk through of the parts room revealed an excessive number of many parts being stored such as windshields, leaf springs, brake drums, rims, rebuilt transmission, air and oil filters, etc. Some boxed parts had been removed from other vehicles and had questionable reliability.
- There is no documented policy or procedure on how to track, organize, or maintain the vehicle parts inventory in the parts room.
- Requested parts are placed on shelves for the mechanics. There are no internal controls over these parts and they could be taken without detection.
- Many cores (including those for batteries, starters, alternators, P/S pumps, P/S gear boxes, brake shoes, fuel injectors, fan clutches, air compressors, and A/C

compressors) were located in the parts room loaded on pallets or in carts without any identification or disposition tags. Usually when a part is replaced the core goes back to the vendor for credit. Documentation of the cores was not found.

Cause

- No policies or procedures to instruct employees on the use of RTA and VMRS codes.
- Turnover of two parts personnel and lack of expertise of parts employees.
- Vehicle parts inventory has not been physically inventoried and analyzed.
- No segregation of duties over ordering of parts as evidenced by the shop foreman ordering vehicle parts.
- The employee working in the Parts Department was not using historical data to evaluate or anticipate vehicle parts that might be needed at a future date.
- Employees were unaware of NRS and city policies.

Effect

- Erroneous input into RTA creates unreliable and incomplete system information.
- Over or under ordering parts that could waste time and money.
- Not having adequate parts available could keep emergency vehicles out of service longer than required.
- Inefficient use of space needed for vehicle parts.
- Unusable parts become surplus or scrap and there's a potential loss of value.

Recommendations:

- 1.1. Fire & Rescue management should document and implement a process that will ensure vehicle parts are properly recorded and tracked in RTA.
- 1.2. Fire & Rescue management should ensure vehicle parts are tagged and organized in the parts room.
- 1.3. Fire & Rescue management should conduct periodic physical inventory counts of the vehicle parts at least annually.
- 1.4. Fire & Rescue management should document and implement procedures outlining how to track, organize and maintain the inventory of vehicle parts in the parts room.
- 1.5. Fire & Rescue management should document and implement a procedure on how to dispose of parts taken off vehicles and identify obsolete or excess parts for public auction or to be sold as scrap.

- 1.6. Fire & Rescue management should document and implement procedures on how employees should account for cores and when they should be returned to the vendor for credit.
- 1.7. Fire & Rescue management should document and implement a procedure and policy on the use of RTA and VMRS codes for the shop.

2. Inadequate Security over Parts Inventory

Criteria

Security of city property can be as simple as a locked door and controlling the access through key pads. Internal and external surveillance cameras as well as alarm systems can enhance the security. Limiting entry or knowing who gains entry into a building or room provides additional assurance that those who have a need to be there are documented. Limiting access to the building or sections of the building not only safeguards the city's assets, it also protects people from going into hazardous work areas.

Condition

- Access to the parts room is with a key. A few individuals have a key to the parts room. There is no way to determine when or who enters the parts room and what parts are taken.
- One of the fire vehicle maintenance shop doors was propped open, other doors were unlocked, and garage doors were open and anyone could gain entry into the building. There was no key pad or card readers to limit entry into the building and there were no exterior surveillance cameras or alarm systems.

Cause

- Entry into the parts room with a key does not provide information on when or who has gained entry and does not identify what parts were taken out of the parts room.
- No restrictions on the entry of unauthorized personnel into building.

Effect

- Potential theft or misuse of parts.
- Potential theft of anything inside or outside the building.
- Unauthorized personnel in close proximity of emergency vehicles with valuable life support equipment.
- Unauthorized personnel coming into hazardous areas of the shop.

Recommendations:

- 2.1. Fire & Rescue management should document and implement parts room access procedures.
- 2.2. Fire & Rescue management should consider upgrading the existing surveillance cameras in the parts room to provide precise recording of date and time and imagery.
- 2.3. Fire & Rescue management should consider installing surveillance cameras and an alarm system to deter unauthorized personnel from entry into the shop and to protect the emergency vehicles and contents of the maintenance shop.

3. Inefficient Parts Purchasing Process

Criteria

Ordering parts in a timely manner allows for a better inventory and a more efficient parts room. Having better inventory turnover ratio provides an opportunity to trim waste and reduce costs. NRS 332 and city Purchasing and Contracting policies govern the process of purchases.

Condition

When preparing purchase requisitions for parts, there is uncertainty on the number of quotes needed. In one instance, six quotes were obtained for a part and the lowest quote was not used for the purchase. The approval process takes more time than it should and when the approver is not available to approve, the mechanic's time is wasted.

Cause

- The parts person was newly appointed to this position and has since left.
- A new person has been placed in the Parts Department and is now in training.
- Absence of a written policy and procedure to follow slows down the purchase requisition process.

Effect

- Mechanics time is inefficient waiting for parts.
- Emergency vehicles are out of service for extended periods.

Recommendations:

- 3.1. Fire & Rescue management should document and implement a policy and procedure that would streamline the purchase requisition process.
- 3.2. Fire & Rescue management should document and implement a policy and procedure that outlines emergency purchases and other uncommon contingencies.
- 3.3. Fire & Rescue management should work with Purchasing & Contracts to streamline the process of purchasing commonly used parts.
- 3.4. Fire & Rescue management should document and implement a procedure requiring the shop foreman to provide a list of critical parts normally used to ensure they are in stock at the appropriate levels.

4. Lack of Outsourcing Oversight

Criteria

Emergency vehicles are vital to the city's Fire & Rescue department. Having a sufficient quantity of vehicles available for Fire & Rescue is priority one. When repairs are necessary and cannot be performed by the maintenance shop outsourcing is employed. NRS 332 and city Purchasing and Contracting policies govern the process of purchases that would include outsourcing.

Condition

Costs for outsourcing the maintenance of emergency vehicles amounted to approximately \$612,000 in FY 2015. The shop foreman said there is no written policy or procedure concerning outsourcing and he has never been asked to prepare one. The shop foreman uses his own criteria for outsourcing vehicle maintenance.

Cause

- No written policies or procedures to follow before outsourcing vehicle for maintenance.
- The shop foreman made the decision based upon his own criteria.

Effect

- Potential for an inadequate supply of emergency vehicles to support Fire and Rescue's primary mission of fighting fires and rescuing people.

Recommendations:

- 4.1. Fire & Rescue management should document and implement a policy outlining the criteria needed for outsourcing vehicle maintenance.
- 4.2. Fire & Rescue management should discuss the possibility of sharing work with the division of Fleet Services to ensure the sufficiency of emergency vehicles.
- 4.3. Fire & Rescue management should document and implement workflow procedures for the mechanics and consider cross-training and rotation of duties to best utilize available resources.
- 4.4. Fire & Rescue management should document and implement a procedure to periodically analyze the rationale for outsourced vehicles to determine if there is a trend that can be corrected by providing additional training, obtaining certifications, or investing in specialized tools for the mechanics.

5. Non-compliance with City's Refrigerant Compliance Plan

Criteria

“Any units of the city using or dispensing refrigerants must comply with the City's Refrigerant Compliance Plan.” (City of Las Vegas Refrigerant Compliance Plan)

Condition

According to the Public Works Environmental Officer and personnel interviews, the Fire Maintenance Shop is not in compliance to the City's Refrigerant Compliance Plan. The person designated to oversee the department's compliance never attended the required training classes and has not used the Refrigerant Compliance Manager Software (RCM) to submit required reports.

Cause

- The Fire & Rescue vehicle maintenance shop foreman said the plan doesn't apply to them.

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- The administrative support assistant employee who was given access to RCM did not attend training classes.

Effect

- Noncompliance with Sections 608 of the Clean Air Act Amendments as codified in 40 CFR Part 82 rules and regulations. Under the Act, EPA is authorized to assess fines of up to \$37,500 per day for any violation of these regulations.

Recommendation:

- 5.1. Fire & Rescue management should consult with the environmental officer and direct the personnel involved with refrigerants to comply with the City's Refrigerant Compliance Plan.

MANAGEMENT RESPONSE

1. Deficiency in Management Controls over Parts

Recommendation 1.1

Fire & Rescue management should document and implement a process that will ensure vehicle parts are properly recorded and tracked in RTA.

Management Plan of Action: The department will develop policies and procedures which include parts ordering, inventory tracking (usage, ordering, disposal) for use in the Ron Turley and Associates (RTA) system. Once policy and procedures are developed, affected personnel will be trained on the appropriate use of the RTA Parts Module. The department will further implement a quality assurance and improvement process to ensure ongoing compliance and accuracy of current and future inventory.

Estimated Date of Completion: September 28, 2017

Recommendation 1.2

Fire & Rescue management should ensure vehicle parts are tagged and organized in the parts room.

Management Plan of Action: The department will develop policies and procedures that will govern internal and external identification and organizational processes for all parts in RTA and Fire Shop Parts Room.

Estimated Date of Completion: July 28, 2017

Recommendation 1.3

Fire & Rescue management should conduct periodic physical inventory counts of the vehicle parts at least annually.

Management Plan of Action: The department will develop policies and procedures governing physical inventory which include physical controls and segregation of duties for inventory counts. The department plans to conduct section based inventories on a weekly basis and an annual inventory. These sections will be inventoried multiple times per year.

Estimated Date of Completion: July 28, 2017

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Recommendation 1.4

Fire & Rescue management should document and implement procedures outlining how to track, organize, and maintain the inventory of vehicle parts in the parts room.

Management Plan of Action: Please Note: The department is certain this area can be addressed by implementing recommended changes outlined in Sections 1.1; 1.2 and 1.3 of this Management Plan of Action.

Estimated Date of Completion: July 28, 2017

Recommendation 1.5

Fire & Rescue management should document and implement a procedure on how to dispose of parts taken off vehicles and identify obsolete or excess parts for public auction or to be sold as scrap.

Management Plan of Action: The department will develop policies, procedures and controls related to vehicle parts that should be scrapped, auctioned or repurposed.

Estimated Date of Completion: July 28, 2017

Recommendation 1.6

Fire & Rescue management should document and implement procedures on how employees should account for cores and when they should be returned to the vendor for credit.

Management Plan of Action: The department will develop policies and procedures at identify all parts that require and have a core and the process that tracks the core life (initial and end use) from initial purchase through vendor crediting.

Estimated Date of Completion: December 29, 2016

Recommendation 1.7

Fire & Rescue management should document and implement a procedure and policy on the use of RTA and VMRS codes for the shop.

Management Plan of Action: The department will be conducting a complete systems assessment of RTA which July include a complete modification of its current system functionality and data/ vehicle information being recorded in Facility 50 of RTA. The proposed reconfiguration of the system will allow the department to clean up its current data and vehicle information and place it into a new facility within system. This process

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will assist the department in having cleaner data and information related to vehicle maintenance, repairs, and warranties. In tandem, the department will develop policies and procedures that govern the creation, use and retirement of VMRS Codes.

Estimated Date of Completion: September 27, 2018

2. Inadequate Security over Parts Inventory

Recommendation 2.1

Fire & Rescue management should document and implement parts room access procedures.

Management Plan of Action: the department will develop policies and procedures to that identify authorized personnel allowed in the Fire Shop Parts Room as well as personnel that are approved to distribute parts and tool. The department will also explore a key card mechanism for all three (3) doors in the parts room that has time in and out tracking capability allowing for an audit trail in order to identify personnel entering and exiting the parts room.

Estimated Date of Completion: December 28, 2016

Recommendation 2.2

Fire & Rescue management should consider upgrading the existing surveillance cameras in the parts room to provide precise recording of date and time and imagery.

Management Plan of Action: Contingent upon funding availability the department will install cameras on the perimeter of the Fire shop, in the parts room and mechanic bays that record date, time and precise imagery

Estimated Date of Completion: December 28, 2016

Recommendation 2.3

Fire & Rescue management should consider installing surveillance cameras and an alarm system to deter unauthorized personnel from entry into the shop and to protect the emergency vehicles and contents of the maintenance shop.

Management Plan of Action: The department is certain this area can be addressed by implementing recommended changes outlined in Section 2.2 of this Management Plan of Action.

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Estimated Date of Completion: December 28, 2016

3. Inefficient Parts Purchasing Process

Recommendation 3.1

Fire & Rescue management should document and implement a policy and procedure that would streamline the purchase requisition process.

Management Plan of Action: The department will work closely with the Department of Purchasing and Contracts to develop policies and procedures in order to streamline the purchase requisition process including emergency purchases, and fast track vendor purchases for commonly used parts. The department will also re-train its affected personnel regarding purchasing processes and develop internal protocols to ensure ongoing compliance, internal, physical and financial controls as well as a segregation of duties.

Estimated Date of Completion: September 29, 2016

Recommendation 3.2

Fire & Rescue management should document and implement a policy and procedure that outlines emergency purchases and other uncommon contingencies.

Management Plan of Action: The department is certain this area can be addressed by implementing recommended changes outlined in Section 3.1 of this Management Plan of Action.

Estimated Date of Completion: September 29, 2016

Recommendation 3.3

Fire & Rescue management should work with Purchasing & Contracts to streamline the process of purchasing commonly used parts.

Management Plan of Action: The department is certain this area can be addressed by implementing recommended changes outlined in Section 3.1 of this Management Plan of Action.

Estimated Date of Completion: September 29, 2016

Recommendation 3.4

Fire & Rescue management should document and implement a procedure requiring the shop foreman to provide a list of critical parts normally used to ensure they are in stock at the appropriate levels.

Management Plan of Action: The department will develop policies and procedures that govern the ordering, tracking, and inventory and usage of commonly used parts in the Fire Shop. The department will keep on hand commonly used parts to reduce instances of emergency parts ordering and unnecessary expenditures.

Estimated Date of Completion: September 29, 2016

4. Lack of Outsourcing Oversight

Recommendation 4.1

Fire & Rescue management should document and implement a policy outlining the criteria needed for outsourcing vehicle maintenance.

Management Plan of Action: The department will develop policies and procedures and processes for outsourcing vehicle maintenance which includes periodic internal reviews of vehicle outsourcing policy and procedure compliance.

Estimated Date of Completion: September 29, 2016

Recommendation 4.2

Fire & Rescue management should discuss the possibility of sharing work with the division of Fleet Services to ensure the sufficiency of emergency vehicles.

Management Plan of Action: The department will meet with Fleet Services to explore feasibility of sharing services with the Fleet Services Division.

Estimated Date of Completion: July 31, 2017

Recommendation 4.3

Fire & Rescue management should document and implement workflow procedures for the mechanics and consider cross-training and rotation of duties to best utilize available resources.

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Management Plan of Action: The will explore the feasibility of cross training its mechanic shop employees and determine appropriate certifications needed for cross training to ensure personnel meet all certification requirements.

Estimated Date of Completion: May 31, 2016

Recommendation 4.4

Fire & Rescue management should document and implement a procedure to periodically analyze the rationale of outsourced vehicles to determine if there is a trend that can be corrected by providing additional training, obtaining certifications, or investing in specialized tools for the mechanics.

Management Plan of Action: The department is certain this area can be addressed by implementing recommended changes outlined in Section 4.1 of this Management Plan of Action.

Estimated Date of Completion: September 29, 2016

5. Non-compliance with City's Refrigerant Compliance Plan

Recommendation 5.1

Fire & Rescue management should consult with the environmental officer and direct the personnel involved with refrigerants to comply with the City's Refrigerant Compliance Plan.

Management Plan of Action: The department will develops internal policies and procedures outlining the city's refrigerant compliance policy which will include training and re-training of staff as well as an ongoing plan to ensure compliance

Estimated Date of Completion: May 31, 2016