CITY OF TALLAHASSEE
OFFICE OF THE CITY AUDITOR

T. Bert Fletcher, CPA
City Auditor

August 16, 2013

Inquiry into the Status of Fire Hose Apparatus and Hose Inventory Processes

Our inquiry disclosed the need for enhancements and improvements to help ensure Fire apparatus are always adequately equipped to respond to fire and rescue events. No incidents were identified where the noted deficiencies adversely impacted the public's or firefighters' health, safety, or welfare.

HIGHLIGHTS

Highlights of City Auditor Report #1324, a report to the City Commission and City management

WHY THIS AUDIT WAS CONDUCTED

This inquiry was conducted after allegations were received from a Fire employee that the Fire apparatus inventory, inspection, and repair processes, and hose testing and inventory records were not adequate. These allegations were discussed with City management, including the Fire Chief. Based on those discussions, City management and the Fire Chief concurred that this inquiry be conducted. (A Fire apparatus is defined as a Fire vehicle and all related equipment and supplies.)

To address these allegations, we conducted audit procedures to answer the following four questions:

1) Are required apparatus inventories and inspections performed and documented in accordance with Fire standard operating procedures (SOP #803) and good business practices, and are appropriate actions taken based on the results of those inventories and inspections?
2) Are repairs on vehicles and equipment used for fire response and rescue activities timely and adequately performed, and is equipment maintained in accordance with department standards?
3) When primary vehicles are temporarily taken out of service is applicable equipment and supplies appropriately transferred to reserve vehicles; and when reserve units are returned is applicable equipment and supplies appropriately transferred back to the primary vehicle; and are the transfers of equipment and supplies during those events adequately documented; furthermore is equipment and supplies on reserve units properly accounted for by the department?
4) Are the Fire Department's processes and procedures for inspecting and testing fire hoses adequate to ensure proper and suitable hoses are placed on vehicles used for fire response and rescue activities?

WHAT WE RECOMMENDED

We provided recommendations to improve the apparatus inventory and inspection and hose inventory and testing processes and documentation of those processes.

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WHAT WE CONCLUDED

There were no major indications that (a) fire vehicles were inadequately equipped and/or supplied to properly perform their assigned functions or (b) firefighters were not aware of where equipment and supplies were stored/located on their assigned vehicles. However, the results of our inquiry procedures showed the need for enhancements and improvements to the apparatus inventory and inspection process.

Specifically, we noted (a) a lack of adequate evidence to clearly demonstrate apparatus inventories and inspections were always performed and documented in accordance with established department requirements; (b) instances where equipment and supplies on vehicle inventory records were not located on the assigned vehicles; (c) instances where equipment and supplies located on a vehicle were not on the inventory records established for those vehicles; and (d) instances where equipment and supplies were stored in locations on a vehicle that were different from the storage location indicated on the inventory records. Many of the identified instances were attributed to the lack of updated and appropriate check sheets used by Fire personnel in the inventory and inspection process. In regard to this matter, Fire management indicated they were aware of these issues prior to this inquiry and had already assigned staff to begin making improvements to the apparatus inventory and inspection process, including enhancement of forms and tracking of records.

We did not find evidence to support that vehicle repairs or equipment repairs were not performed in a timely manner. We also did not identify any major damage to the chassis, frame, tires, or bumpers of the vehicles we observed. Furthermore, for vehicles reviewed, the required levels of fuel, water, foam, and air were maintained.

Regarding the use of reserve vehicles, Fire management has not developed a policy or procedures regarding the usage of reserve vehicles to ensure accountability for the equipment and supplies maintained on reserve vehicles. Our inquiry results indicated that Fire station personnel are not required to document reserve vehicle usage and in three of five instances could not provide documentation to support the equipment and supplies transferred to and from the reserve vehicles when the primary vehicle was temporarily taken out of service.

We noted significant deficiencies in accounting for and tracking fire hoses. Those deficiencies adversely impacted the Fire's hose testing process. Accordingly, we cannot provide assurance that all hoses used on Fire vehicles have been properly tested, are in satisfactory working condition, and are properly accounted for in the Fire's inventory records. Notwithstanding the identified deficiencies, we did not identify any incidents that adversely impacted the public's or firefighters' health, safety, or welfare.

Inquiry into

CITY OF TALLAHASSEE
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Status of Fire Apparatus and Hose Inventory Processes

Report #1324 ***August 16, 2013***

Summary

The purpose of this report is to communicate the results of our inquiry into the status of the Fire Department's (Fire) apparatus inventory, inspection, and repair processes, and hose testing and inventory processes. Our inquiry disclosed the need for enhancements and improvements to help ensure Fire apparatus are always adequately equipped to respond to fire and rescue events. No incidents were identified where the noted deficiencies adversely impacted the public's or firefighters' health, safety, or welfare.

This inquiry was conducted after allegations were received from a Fire employee that the Fire apparatus inventory, inspection, and repair processes, and hose testing and inventory records were not adequate. These allegations were discussed with City management, including the Fire Chief. Based on those discussions, City management and the Fire Chief concurred that this inquiry be conducted. (A Fire apparatus is defined as a Fire vehicle and all related equipment and supplies.)

To address these allegations, we conducted audit procedures to answer the following four questions:

1) Are required apparatus inventories and inspections performed and documented in accordance with Fire standard operating procedures (SOP #803) and good business practices, and are appropriate actions taken based on the results of those inventories and inspections?

2) Are repairs on vehicles and equipment used for fire response and rescue activities timely and adequately performed, and is equipment maintained in accordance with department standards?

3) When primary vehicles are temporarily taken out of service is applicable equipment and supplies appropriately transferred to reserve vehicles; and when reserve units are returned is applicable equipment and supplies appropriately transferred back to the primary vehicle; and are the transfers of equipment and supplies during those events adequately documented; furthermore is equipment and supplies on reserve units properly accounted for by the department?

4) Are the Fire Department's processes and procedures for inspecting and testing fire hoses adequate to ensure proper and suitable hoses are placed on vehicles used for fire response and rescue activities?

We concluded the following for each of the previously stated questions.

1) There were no major indications that (a) fire vehicles were inadequately equipped and/or supplied to properly perform their assigned functions or (b) firefighters were not aware of where equipment and supplies were stored/located on their assigned vehicles. However, the results of our inquiry procedures showed the need for enhancements and improvements to the apparatus inventory and inspection process. Specifically, we noted:

   - Lack of adequate evidence to clearly demonstrate apparatus inventories and inspections were always performed and documented in accordance with established department requirements.

   - Instances where equipment and supplies on vehicle inventory records were not located on the assigned vehicles.

   - Instances where equipment and supplies located on a vehicle were not on the inventory records established for those vehicles.

- Instances where equipment and supplies were stored in locations on a vehicle that were different from the storage location indicated on the inventory records.

Many of the identified instances were attributed to the lack of updated and appropriate check sheets used by Fire personnel in the inventory and inspection process. In regard to this matter, Fire management indicated they were aware of these issues prior to this inquiry and had already assigned staff to begin making improvements to the apparatus inventory and inspection process, including enhancement of forms and tracking of records.

2) We did not find evidence to support that vehicle repairs or equipment repairs were not performed in a timely manner. We also did not identify any major damage to the chassis, frame, tires, or bumpers of the vehicles we observed. Furthermore, for vehicles reviewed, the required levels of fuel, water, foam, and air were maintained.

3) Fire management has not developed a policy or procedures regarding the usage of reserve vehicles to ensure accountability for the equipment and supplies maintained on reserve vehicles. Our inquiry results indicated that Fire station personnel are not required to document reserve vehicle usage and in three of five instances could not provide documentation to support the equipment and supplies transferred to and from the reserve vehicles when the primary vehicle was temporarily taken out of service.

4) We noted significant deficiencies in accounting for and tracking fire hoses. Those deficiencies adversely impacted the Fire's hose testing process. Accordingly, we cannot provide assurance that all hoses used on Fire vehicles have been properly tested, are in satisfactory working condition, and are properly accounted for in the Fire's inventory records. Notwithstanding the identified deficiencies, we did not identify any incidents that adversely impacted the public's or firefighters' health, safety, or welfare.

We provided the following recommendations to improve the apparatus inventory and inspection and hose inventory and testing processes.

- The current inventory check sheets should be updated and be specific to each individual apparatus (including reserve apparatus) to ensure all applicable and appropriate equipment and supplies for each vehicle are properly represented on the check sheets (e.g., as to description, quantity, and location). A process should be implemented to periodically update the check sheets as requirements change.

- A process should be implemented to ensure all required apparatus inventory check sheets are properly completed, submitted, and retained according to Fire SOP 803 "Apparatus Check Sheets."

- A policy and/or written procedures should be developed and implemented addressing transfers of equipment and supplies between primary and reserve vehicles, including a process for documenting such transfers.

- A policy and/or written procedures should be developed and implemented to account for the usage of the reserve vehicles and the equipment and supplies expected to be maintained on the reserve vehicles.

- The hose inventory and testing processes should be revised to ensure all Fire hoses are properly accounted for and tested.

- A comprehensive hose inventory process should be developed and immediately performed to account for all department hoses and testing should be performed on those hoses that were not tested in fall 2012. Additionally, histories of test results for individual hoses should be maintained.

Note: In June and July 2013 (subsequent to our audit fieldwork), the Fire Department conducted a comprehensive inventory whereby each hose located at each station and on each vehicle was identified and accounted for in the department's records. Each identified hose was tested in connection with that process. A new method was implemented to specifically mark each hose in a manner that showed the hose had been tested and whether it passed the test. Fire management indicated their intent to reemphasize to Fire personnel to use only those hoses that are marked as successfully passing the annual test on fire vehicles.

Fire management developed an action plan to address those recommendations. That action plan is included as Appendix A to the report.

We would like to express our appreciation for the assistance and cooperation provided by Fire staff throughout this inquiry.

Scope, Objectives, and Methodology

The Office of the City Auditor is an independent appraisal activity within the City organization for the review of operations as a service to the City Commission and to management. Accordingly, we periodically respond to requests from City management to independently review allegations of violations of established internal control policies or procedures.

This inquiry was conducted after allegations were received from a Fire employee that the Fire apparatus inventory, inspection, and repair processes, and hose testing and inventory records were not adequate. These allegations were discussed with City management, including the Fire Chief. Based on those discussions, City management and the Fire Chief concurred that this inquiry be conducted. The specific allegations addressed in this inquiry are summarized as follows:

(Note: For purposes of this audit, an apparatus is defined as a specific Fire vehicle and related equipment and supplies maintained on the vehicle.)

- First allegation: Numerous fire apparatus inventories (records) do not correctly and accurately reflect actual equipment on applicable fire vehicles. This includes instances where equipment is located on a vehicle but not accounted for on the apparatus inventory record (check sheet) for that vehicle, and instances where equipment is reflected on the apparatus inventory check sheet for a vehicle but not located on that vehicle.
- Second allegation: Inspections required during shift changes, for the purpose of verifying applicable equipment and supplies were located on specific Fire vehicles, were not adequately performed and/or appropriate actions were not taken when those inspections indicated discrepancies (differences between records and observed items). Furthermore, documentation supporting those required inspections was not always adequate.
- Third allegation: Repairs (for both vehicles and equipment) were not always timely completed and in some instances needed repairs were not performed. Similarly, equipment was not always maintained in accordance with department requirements. For example, required levels of water were not always maintained in tanker trucks and required levels of air were not always maintained in specialized breathing units for firefighters.
- Fourth allegation: Appropriate equipment was not always properly transferred between fire vehicles when primary vehicles were temporarily taken out of operation for repairs or maintenance and replaced by reserve (backup) vehicles. Also, accounting of equipment on reserve units was not always adequate.
- Fifth allegation: The process for inspecting and testing fire hoses (used to fill tankers and/or connect to hydrants for firefighting) was not adequate and, in some instances, resulted in defective (e.g., "worn out") hoses being retained/placed on vehicles.

To address those allegations, we designed audit procedures to answer the following questions (audit objectives).

1) Are required apparatus inventories and inspections performed and documented in accordance with Fire standard operating procedures (SOP #803) and good business practices, and are appropriate actions taken based on the results of those inventories and inspections *(first two allegations)*?

2) Are repairs on vehicles and equipment used for fire response and rescue activities timely and adequately performed, and is equipment maintained in accordance with department standards *(third allegation)*?

3) When primary vehicles are temporarily taken out of service is applicable equipment and supplies appropriately transferred to reserve vehicles; and when reserve units are returned is applicable equipment and supplies appropriately transferred back to the primary vehicle; and are the transfers of equipment and supplies during those events adequately documented; furthermore is equipment and supplies on reserve units properly accounted for by the department *(fourth allegation)*?

4) Are the Fire Department's process and procedures for inspecting and testing fire hoses adequate to ensure proper and suitable hoses are placed on vehicles used for fire response and rescue activities *(fifth allegation)*?

To make the determinations necessary to answer those questions we performed the following audit procedures:

- During selected dates in May 2013, conducted interviews of selected Fire Department management and staff.
- Obtained an understanding of the apparatus inventory and inspection process and reviewed related records used in that process (e.g., inspection check sheets).
- With the assistance of Fire station engineers and company officers, performed eight apparatus inventory inspections on selected dates in May 2013; one each at seven selected Fire stations and one for an apparatus (vehicle and related equipment and supplies) maintained in reserve status. Appendix B to this report provides a brief description and picture of each type of vehicle reviewed.
- Determined the availability and content of apparatus inventory and inspection records for selected dates within the period October 2012 through March 2013.
- Obtained an understanding of the vehicle and equipment repair/maintenance process; observed the physical condition and status of fire vehicles and equipment at stations selected for visit during other audit procedures.
- Judgmentally selected a sample of eight repair work orders recorded during the period October 2012 through March 2013, and inquired of company officers and engineers to determine if the repair requests were addressed satisfactorily and timely.
- Obtained an understanding of the process for transferring equipment and supplies from primary to reserve units (and vice versa) when primary units are being repaired and/or undergoing maintenance services; determined what records are maintained to document that transfer process; and judgmentally selected a sample of five instances during April and May 2013 where reserve vehicles were placed into service and reviewed available documentation showing items transferred between the primary and reserve vehicles.
- Obtained an understanding of the process for accounting for and testing fire hoses.
- During selected dates in May 2013, identified 51 hoses located on 20 Fire vehicles at 12 Fire stations and determined if records showed those hoses had been tested and accounted for in Fire's hose inventory records.
- Reviewed Risk Management claims from October 2011 through June 2013 and Human Resource safety incident reports from October 2012 through June 2013 to determine whether they had been any accidents or damages caused by faulty hoses.

We conducted this inquiry in accordance with the International Standards for the Professional Practice of Internal Auditing and Generally Accepted Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our inquiry audit objectives.

Apparatus Inventories and Inspections

Overview. There were no major indications that (1) fire vehicles were inadequately equipped and/or supplied to properly perform their assigned functions or (2) firefighters were not aware of where equipment and supplies were stored/located on their assigned vehicles. However, the results of our inquiry procedures showed the need for enhancements and improvements to the apparatus inventory and inspection process. Specifically, we noted:

- Lack of adequate evidence to clearly demonstrate apparatus inventories and inspections were always performed and documented in accordance with established department requirements.
- Instances where equipment and supplies on vehicle inventory records were not located on the assigned vehicles.
- Instances where equipment and supplies located on a vehicle were not on the inventory records established for those vehicles.

- Instances where equipment and supplies were stored in locations on a vehicle that were different from the storage location indicated on the inventory records.

These areas are addressed in more detail in the following paragraphs within this section of the inquiry report.

Background. The Fire Department established a standard operating procedure (SOP) governing fire apparatus inventory records and inspections, SOP #803 "Apparatus Check Sheets." That SOP outlines the inventories and inspections that should be performed, the staff that should perform those inventories and inspections, and where the related documentation (check sheets) should be submitted and retained. A general description of this process is described in the following paragraphs.

Pursuant to the established procedures, an apparatus check sheet is created for each fire vehicle (e.g.., firefighting or rescue vehicle). For each vehicle, the apparatus check sheet should list each piece of equipment and applicable supplies that should be maintained on that vehicle, as well as location the pieces of equipment and supplies are to be stored on the vehicle (e.g., front cab, rear cab, various compartments located throughout the vehicle, etc.). Examples of equipment include hoses, chain saws, ladders, axes, backboards, extrication tools, various small tools (hammers, pliers, wrenches, etc.). Examples of supplies include medical items, duct tape, caution tape, straps, lubricants, etc.

The specific equipment and supplies that should be placed on a vehicle depends on the type and purpose of the vehicle (apparatus). Different apparatus include, for example, aerial trucks (large extension ladders), tankers (hold large quantities of water or fire repressing foam), pumpers (pump water from fire hydrants), brush trucks (relatively smaller trucks used in remote areas), and HazMat vehicles (respond to hazardous material incidents). [See fire apparatus reviewed in this inquiry in Appendix B.] Accordingly, inventory check sheets are customized based on the type and purpose of the specific apparatus. Inventory check sheets may be further customized if appropriate. For example, if there are two different models of aerial trucks, the check sheet for one model may show slightly different equipment and/or supplies than the other model, and/or might show equipment and supplies as stored in locations different from the other model. The Deputy Chief of Operations must approve changes to the inventory (equipment and supplies) established for an apparatus.

At the beginning of each shift, the assigned engineers (drivers) for each apparatus located at the Fire stations are responsible for inspecting and inventorying the equipment and supplies on the vehicles using the applicable check sheets. The purpose of those inspections and inventories are to ensure the apparatus are ready for continued active service. Specifically, the inspections and inventories help ensure (1) all required equipment and supplies are on the vehicles in the appropriate locations, (2) equipment and supplies are in good working order, (3) temporary drivers are familiar with the location of equipment and supplies during their shifts. The company officers for the Fire stations are responsible for ensuring the engineers perform the required inventories and inspections for each vehicle. *(Note: While the more critical apparatus are inventoried and inspected at each daily shift change, certain apparatus such as brush trucks, boats, and trailers are inventoried and inspected weekly.)*

Each item listed on the apparatus check sheet is to be inspected and addressed in the inventory. Discrepancies and issues (missing/damaged items) are to be noted on the check sheet forms. Appropriate actions are to be taken to restore items (equipment and supplies) to the proper status and locations. Items found on the apparatus that are not listed on the check sheet (not part of the inventory established for that apparatus) are to be removed from the apparatus and returned to the proper location within the Fire station. Items on the check sheet that are not located during the inspection process are to be reported and investigated as appropriate.

The procedures provide that the name of the employee completing the form, the related shift, and the date the form was completed are to be included on the completed check sheets. The completed check sheets are to be emailed to the battalion chiefs who are to store the completed forms in the applicable "Apparatus Inventory Folder" located on the City's network.

The shift battalion chiefs are responsible for ensuring staff complies with these procedures.

Procedure No. 1
Comparison of Equipment and Supplies on Inventory Check Sheet to Equipment and Supplies on the Vehicles

To evaluate the apparatus inventory and inspection process, we re-performed inventories and inspections of eight different Fire apparatus; one each at seven different Fire stations and one in reserve status. For each apparatus, we requested a copy of the inventory check sheet that should have been submitted to the applicable battalion chief the prior evening (i.e., at the beginning of the shift). Using that check sheet (when available, and a blank check sheet from the common drive when not available), we re-performed the inventory and inspection with the engineer responsible for completing and submitting the check sheet. At most stations, the company officer also participated in the re-performed inventory and inspection.

Our audit procedures included determining whether equipment and supplies were on the applicable vehicles at locations indicated on the check sheets and verifying equipment and supplies observed on the vehicles were included on the check sheets; inquiring about and observing the functionality and working condition of the equipment and supplies; observing the operation of pumps, ladders, generators, and most motorized tools (we did not observe operation of tools such as the Holmatro, i.e., "jaws of life"); and observing levels of fuel, air, water, and foam.

Issue: For the active apparatus, we observed that 98% of the non-medical items and 78% of the medical items listed on the inventory check sheets were located on the apparatus. For the one reserve apparatus, we observed that 60% of the non-medical items listed on the check sheet were located on the apparatus. In the majority of instances, the completed check sheets did not note the applicable items as not present on the vehicles. We tested over 1800 individual equipment and supply items (1,312 non-medical items and 523 medical items) listed on apparatus inventory check sheets to determine if the items were located on the selected apparatus (seven active and one reserve apparatus).

The more significant instances where we found items on the apparatus inventory check sheet but not on the vehicle are shown in Table 1 below. In response to our inquiries, Fire personnel stated that some of these items were not applicable to the vehicle and other items were outdated, thereby implying those items should be removed from the check sheets. Examples include where the check sheet listed Basic Life Support (BLS) supplies when the vehicle had Advanced Life Support (ALS) supplies instead. Another example was where the check sheet listed outdated ALS supplies including bite sticks, paper bag, set of restraints, pulse oximeter/probe, calcium chloride, and ammonia inhalants.

Note: In Table 1, the lower valued (under $100) equipment and supplies are shown in black font, while the more expensive items are shown in red font with an "*". Items that are not installed on the vehicle were not considered as not present on the vehicle.

Table 1
Examples of Equipment and Supplies
On Inventory Check Sheets But Not Located on Vehicle

Vehicle/Station (type of vehicle) (2)	Equipment and Supplies On Inventory Check Sheet But Not on Vehicle
1410 / Station 1 (Tanker)	Of the approximate 117 non-medical and 66 medical equipment and supply items on the check sheet, we noted the following two items that were not present on the vehicle: • 1000 feet of 5 inch firefighting hose on top of the vehicle (instead, the vehicle actually only held approximately 400 feet per Fire personnel) • 1 Hydraulic tank (installed on the vehicle to facilitate water pumping. Fire personnel reported a hydraulic tank was not installed on this particular vehicle.)
1506 / Station 3 (Aerial Ladder Platform/Ladder)	Of the approximate 212 non-medical and 117 medical equipment and supply items on the check sheet, we noted six items not present on the vehicle. The more significant items that were not present on the vehicle included: • 1 power takeoff outrigger and ladder (installed on the vehicle to operate and provide power to the aerial ladder; these had been removed from the vehicle for repair but were not marked as not present on the check sheet) • Miscellaneous supplies (1 foam adapter and 1 extension cord)
1508 / Station 4 (Aerial Ladder Platform/Ladder)	Of the approximate 187 non-medical equipment and supply items on the check sheet, we noted six items not present on the vehicle. The more significant items that were not present on the vehicle included: • 1 battering ram tool (not used any longer per Fire personnel; estimated cost of $275) * • 1 personal rescue tool kit (included interchangeable tool bits to penetrate most barriers; no longer used per Fire personnel)
1315 / Station 6 (Brush)	Of the approximate 27 non-medical and 92 medical equipment and supply items on the check sheet, we noted two non-medical and 42 medical items that were not present on the vehicle. The more significant items that were not present on the vehicle included: • 1 log book • 1 emergency road reflector kit • Miscellaneous supplies (paper bags, 1 start triage kit) • 1 AED LP 500 (automated external defibrillator; estimated cost of $500) * • 1 airway bag 02 caddy (some of the supplies intended to be stored in this bag were in other places in the vehicle)
12009 / Station 9 (Pumper)	Of the approximate 258 non-medical equipment and supply items on the check sheet, we noted three items not present on the vehicle. The more significant items that were not present on the vehicle included: • 1 advanced life saving (ALS) pediatric bag (no specific bag like this, instead, pediatric supplies were found throughout other bags located on the vehicle) • 1 hand light (estimated cost of $150) *
1309 / Station 13 (Rescue)	Of the approximate 73 non-medical and 59 medical equipment and supply items on the check sheet, we noted three non-medical and two medical items that were not present on the vehicle. The more significant items that were not present on the vehicle included: • 1 hot spotter (small hand tool that is no longer used per Fire personnel) • 1 portable gas ventilation fan (estimated cost of $2,500) * • 1 personal rescue tool kit (included interchangeable tool bits to penetrate most barriers; no longer used per Fire personnel)
1222 / Station 15 (Pumper)	Of the approximate 201 non-medical and 189 medical equipment and supply items on the check sheet, we noted one non-medical item and 32 medical items that were not present on the vehicle. The more significant items that were not present on the vehicle included: • 1 ALS pediatric bag (no specific bag like this; instead, pediatric supplies were found throughout other bags located on the vehicle) • 1 pediatric extras box (no such box was known to Fire personnel) • 1 black jump bag (medical bag for BLS; instead, this was an ALS vehicle with ALS supplies)

	• Miscellaneous ALS medical supplies that were not used anymore per Fire personnel and should be removed from the check sheet such as bite sticks, paper bag, set of restraints, pulse oximeter/probe, calcium chloride, and ammonia inhalants
1249 / Reserve Vehicle at Station 4 – Reserve area (Pumper)	Of the approximate 237 non-medical equipment and supply items on the check sheet, we noted the following 97 (40%) items were not present on the vehicle: • Most large equipment items and higher cost supplies and tools, such as self-contained breathing apparatus (SCBA), holmatro rams and related equipment, portable radios, hand lights, chain saw, excalibur saw. *(see note below)* • All medical supplies *(see note below)* *Note: There is not an inventory check sheet listing the items to be maintained on vehicles in "reserve status." The current inventory check list for reserve vehicles consists of all of the items that would be required of the vehicle if it were in "active status." Fire management reported it is normal operating procedure for the reserve vehicles <u>not</u> to be fully equipped. It is the applicable engineer's responsibility to ensure that the needed items are transferred from the active Fire vehicle that is being taken out of service to the reserve unit that is being placed into service. The engineer is to document all items transferred onto the apparatus inventory check sheet so there can be a complete subsequent transfer of items back to the primary vehicle when it is placed back into service.*

Notes: (1) Estimated costs are replacement value based on current retail costs. The actual cost would most likely be lower because of the City's competitive bidding process used to procure these items.

(2) Appendix B to this report provides a brief description and picture of the type of each type of vehicle included in our inquiry.

At each Fire station, the engineer and company officer stated that the vehicles had the appropriate and necessary equipment and supplies to effectively perform fire and rescue activities when called upon. They acknowledged that the inventory check sheets were outdated and should be revised to reflect current needs and circumstances. They also indicated the check sheet should be properly customized for each Fire apparatus.

In regards to reserve apparatus, Fire personnel noted that it is normal operating procedures for reserve apparatus to not be fully equipped and supplied when not in use. Accordingly, when reserve apparatus are placed into active status, the assigned engineers are required to transfer equipment and supplies from their primary apparatus to the reserve apparatus, thereby making the reserve apparatus properly equipped to respond to fire and rescue activities. Engineers are to record all items transferred. When the reserve apparatus is returned, those records are to be used by the "next" engineer to identify items to transfer back to the primary apparatus.

<u>Issue: We observed approximately 110 items on the vehicles that were not on the inventory check sheets (89 instances were non-medical items and 21 instances were medical items).</u> Most additional items found on the vehicles not on the check sheets could be classified as extra supplies. However, there were some equipment and tools observed on the vehicles that were not on the inventory check sheets that Fire personnel indicated should be included on the applicable vehicle (and therefore should be added to the related check sheets). Examples of extra supplies and needed equipment that were not on the apparatus inventory check sheet but were present on the vehicles are shown in Table 2 below.

Note: In Table 2, extra supplies and lower valued items (under $100) are shown in black font, while the more expensive items are shown in red font with an "*". Some of the more expensive equipment includes a reciprocating saw ("sawzall" tool), a gas ventilating fan, extra self-contained breathing apparatus (SCBAs) and SCBA cylinders, back board with straps, portable radios, and extra nozzles. We estimated that the total value of the more expensive items found on seven re-inventoried vehicles (but not on the related check sheets) was approximately $38,320.

Table 2
Examples of Items on the Vehicles but Not Included on the Inventory Check Sheets

Vehicle/Station	Item On Vehicle but Not on Inventory Check Sheet	Estimated Cost of More Significant Items (1)
1410 / Station 1 (Tanker)	We found approximately seven items (four non-medical items and three medical items) on this vehicle that were not on the inventory check sheet, including: • 3 extra SCBA tanks (self-contained breathing apparatus) valued at approximately $790 each (7 on the vehicle, but only 4 on inventory check sheet) * • Various tools (addition hammer, pliers, screw drivers, and wrenches) • 1 extra cold pack	$2,370
1506 / Station 3 (Aerial Ladder Platform/Ladder)	We found approximately nine items (five non-medical items and four medical items) on this vehicle that were not on the inventory check sheet, including: • 2 extra quick straps • Various wrenches • 1 extra pike pole (a pole with a hook on the end) • 1 reciprocating saw ("sawzall")	$ 450
1508 / Station 4 (Aerial Ladder Platform/Ladder)	We found approximately 13 non-medical items on this vehicle that were not on the inventory check sheet, including: • 1 extra emergency blanket • 3 extra infrared camera batteries • 1 pike pole with multipurpose head (a pole with two hooks on the end) • 1 portable gas ventilation fan * • 1 extra safety belt • 5 extra stoke basket clamps	$2,500
1315 / Station 6 (Brush)	We found approximately 14 non-medical items (no additional medical items) on this vehicle that were not on the inventory check sheet, including: • 2 extra 1-inch hoses • 2 extra nozzles, valued at approximately $950 each * • 1 extra SCBA * • 1 extra strainer and 3-inch hard section strainer pipe (additional piping) * • 1 back board and straps *	$1,900 $4,700 $ 300 $ 200
12009 / Station 9 (Pumper)	We found approximately 11 non-medical items on this vehicle that were not on the inventory check sheet, including: • 2 extra portable radios with shoulder microphones valued at approximately $4,500 each * • 1 extra road reflective triangle • 2 extra sprinkler stops (used to stop building sprinklers) • 2 extra hose adapters (used to attach hoses with different size connections) • 1 extra fill hose (10 foot 3-inch hose used to fill the vehicle tanks) • 1 flapper (small tool used for extinguishing minor fires in rural areas) • 1 extra bag of dry oil (used to absorb oil)	$9,000
1309 / Station 13 (Rescue)	We found approximately 16 items (15 non-medical items and one medical item) on this vehicle that were not on the inventory check sheet, including: • 1 extra Department of Transportation manual and map book • 1 extra portable radio * • 1 dry chemical extinguisher • 1 water backpack • 1 extra SCBA with harness and 1 additional extra SCBA cylinder * • 1 scoop shovel • 1 extra strainer and 3-inch hard section strainer pipe *	$4,500 $5,500 $ 300

	• 1 sledge hammer • 1 extra hydrant wrench • 2 spanner wrenches (used to assist in disconnecting hoses)	
1222 / Station 15 (Pumper)	We found approximately 40 items (27 non-medical items and 13 medical items) on this vehicle that were not on the inventory check sheet, including: • 1 extra portable radio * • 1 extra map book • Several extra biodegradable bags • 1 extra spare oxygen cylinder • Extra miscellaneous BLS medical supplies (1 extra adult "ambu" bag, extra pediatric "ambu" bag, 2 extra boxes of medical gloves) • 1 extra cord reel adapter (used to rewind cords) • 2 extra broom handles • 1 big scoop shovel • 1 high rise bag with extra spanner wrenches and adapters • 1 extra smooth bore nozzle * • 2 extra double adapters (1 male and 1 female) * • 1 extra nozzle * • 1 extra 10 foot pole • Extra miscellaneous tools (allen wrench set, wrenches, window punch)	$4,500 $ 900 $ 300 $ 900
1249 / Reserve Vehicle at Station 4 – Reserve area (Pumper)	We did not find any items on the vehicle that were not on the inventory check sheet for this vehicle.	
Total estimated cost of additional items on vehicles that were not on the apparatus check sheet		**$38,320**

Note (1): Estimated costs are replacement value based on current retail costs. The actual cost would most likely be lower because of the City's competitive bidding process used to procure these items.

Issue: While not widespread, we noted the apparatus check sheets sometimes showed equipment and supplies listed in a different location than where the equipment and supplies were located on the vehicle. The apparatus check sheet lists the items that are supposed to be located in each compartment on the Fire vehicle. For example, typically, the front cab contains maps and radios; the rear cab contains SCBAs, hand lights and radios; a particular side compartment contains the tool box, spare hoses and specific nozzles and adapters; another side compartment contains equipment such as axes, claw tool, bolt cutters, and shovels; and another side compartment contains either Basic Life Support (BLS) or Advance Life Support (ALS) medical supplies.

One purpose of the engineer's inventory and inspection at the beginning of each shift is to ensure the apparatus has the necessary equipment and supplies for the station's fire and rescue responses during the next 24 hours. If the engineer is temporarily assigned to a different station, this inventory and inspection process also provides the engineer with an orientation as to where the equipment is located on the vehicle so she/he is prepared during a response.

During our inquiry, we noted that the apparatus check sheets sometimes had various equipment and supplies listed in locations different from where the equipment and supplies were actually located on the vehicle. Examples included:

- The check sheet indicated a splint should be located in a specific bag, but on the vehicle it was located in a vehicle compartment or in a different bag.
- The check sheet indicated a 10 foot, 2 ½-inch hose should be located in a right side compartment, but on the vehicle the hose was located in a left side compartment.

Fire personnel reported that because all apparatus are not exactly the same, some equipment and supplies that fit better in certain compartments on one vehicle may fit better in a different compartment on another vehicle. To facilitate response preparedness under those circumstances, the inventory check sheets should accurately reflect the

actual storage location for each apparatus. However, as described above, we found the apparatus inventory check sheets have not been updated to reflect the actual compartment in which some equipment and supplies are stored.

Issue: One of the eight stations could not provide evidence that an inventory and inspection had been performed on one vehicle at the beginning of the shift. During our evaluation of the apparatus inventory and inspection process, we requested a copy of the apparatus inventory check sheet that was prepared at the beginning of the shift for the day we re-performed the inventory and inspection of each applicable vehicle. We obtained the check sheet from either the battalion chief or from Fire station personnel. At one station, Fire personnel were unable to provide a copy of the apparatus inventory check sheet performed the prior evening at the beginning of the shift. While the company officer stated the inventory and inspection had been performed, documentation was not provided to support it had been performed. *(Note: See Procedure No. 2 issue on page 11 where this matter is discussed further.)*

Conclusion Procedure No. 1. Fire management reported that over the years they have tried to standardize vehicles to be equipped with the same equipment and supplies to make it easier and more efficient for firefighters to transition between stations. However, management and station personnel acknowledge that different stations sometimes need different equipment based on the applicable service area's needs regarding structures, population demographics, and geographic features. For example, equipment and supplies needed for the downtown area where there are relatively tall buildings (e.g., 20 stories) is different from equipment and supplies more appropriate to residential areas where buildings are generally lower in height.

Because of the different needs stated above, it is not reasonable to use one standardized apparatus inventory check sheet for each type of vehicle throughout the department.

The previously described issues indicate, at a minimum, that check sheets currently used for the inventory and inspection process are not accurate. Accordingly, the effectiveness of that process has been limited. Until updated and appropriate check sheets are prepared, made available, and used in the required inventory and inspection process, the Fire Department cannot adequately document that staff is ensuring required equipment and supplies are on vehicles in the appropriate locations and that determinations were made that all applicable items are in good working condition. Furthermore, the lack of accurate and appropriate check sheets makes it more difficult for temporary drivers to determine if the apparatus is properly equipped.

In regard to this matter, Fire management indicated they were aware of these issues prior to this inquiry and had already assigned staff to begin making improvements to the apparatus inventory and inspection process, including enhancement of forms and tracking of records.

Recommendation Procedure No. 1. We recommend Fire management update the current inventory check sheets specific to each individual apparatus to ensure all applicable and appropriate equipment and supplies for each vehicle are properly represented on the check sheets (e.g., as to description, quantity, and location). A process should be implemented to periodically update the check sheets as requirements change.

Procedure No. 2
Enforcement of Daily Vehicle Inventory Reports

As stated previously in the background section on pages 4 and 5 of this report, SOP #803, "Apparatus Check Sheets," requires engineers to use the online inventory check sheet to document the results of the daily inventory and inspection process and email the completed sheet to their respective battalion chiefs (based on battalion and shift). The battalion chiefs are to review the inventory check sheet and store the check sheet in a specified folder on the City's common network drive which is accessible to specified Fire management personnel.

To determine whether check sheets were being submitted and retained as required in the SOP, we requested copies of the submitted inventory check sheets for eight different stations for selected dates between October 2012 and March 2013. Four stations were selected from each of the two battalions (eight stations total). For the selected stations and dates, there should have been 58 apparatus inventory check sheets completed at the beginning of the shift, submitted to the battalion chiefs, and stored on the City's network.

Issue: There was not adequate evidence to support inventory check sheets are consistently completed and submitted by the responsible engineers. The results of our testing showed that

the battalion chiefs do not have a consistent and effective method for storing the completed check sheets. Of the 58 check sheets that should have been submitted for the dates included in our review, the applicable battalion chiefs only provided emails with completed checklists attached for two vehicles. Management reported that the other 56 check sheets had been completed but had not been retained.

Some battalion chiefs indicated they copied the submitted check sheets into a common folder using the same file name each time. Because they used the same file name, each time they saved the check sheet, it overwrote the previously saved file, thereby deleting the file of the previously completed check sheets. Therefore, those battalion chiefs did not retain a history of submitted check sheets.

Additionally, because the applicable battalion chiefs did not always retain the emails from the engineers with the submitted inventory check sheets, there was inadequate evidence to support which employees completed and submitted the check sheets. The process whereby inventory check sheets were completed using a departmental electronic spreadsheet (Excel) and stored on a computer also did not provide accountability of who completed and submitted the completed check sheets and when they were submitted. An email with the inventory check sheet attached would provide an electronic trail of who submitted the form on what date to the battalion chief.

Conclusion Procedure No. 2. Without sufficient documentation that the vehicle inventory and inspection process is working properly (i.e., check sheets are properly completed, reviewed, and retained), there is inadequate evidence to support the Fire Department is properly ensuring each apparatus used in Fire response and rescue activities contains the necessary equipment and supplies and that those items are in satisfactory working condition.

Recommendation Procedure No. 2. We recommend Fire management monitor and enforce the application of the SOP #803 to ensure apparatus inventory check sheets are properly completed, submitted, and retained.

Repairs and Maintenance

Overview. We did not find evidence to support that vehicle repairs or equipment repairs were not performed in a timely manner. We also did not identify any major damage to the chassis, frame, tires, or bumpers of the vehicles we observed. Furthermore, for vehicles reviewed, the required levels of fuel, water, foam, and air were maintained.

Background. Fire vehicles are generally repaired and maintained through the City's Fleet Management Department. Fire engineers or company officers can request repairs to their vehicles through various methods. The most common method utilized is to submit a Vehicle Repair Request Form through the City's internal website. When the forms are submitted, emails are automatically generated and sent to the Fleet supervisor and mechanic responsible for maintaining Fire vehicles, all battalion chiefs, and Fire Support Services staff.

When the engineer or company officer considers a condition to be serious enough that, without repair, it will impair the apparatus' operations or the firefighters' safety, they will exchange the vehicle for a reserve apparatus.

In regards to equipment, there are two forms on the internal website utilized by Fire engineers and company officers when requesting repairs. First, a Station and Equipment Repair Form can be submitted notifying Fire Support Services staff of the specific equipment and model number needing repair, along with a brief description of the issue. Second, if the reason that the equipment needs repair is due to damage, then a Lost, Stolen, Missing, or Damaged Report can be submitted to provide information related to the incident that caused damage to the equipment. When the forms are submitted, emails are automatically generated and sent to all battalion chiefs and Fire Support Services staff.

Fire Support Services staff is responsible for obtaining, repairing, and returning equipment to the applicable station. Upon receipt of the emailed forms, Support Services staff enters the information into a departmental electronic database (Access) used to track and monitor submitted repair forms. To keep the apparatus fully equipped, Support Services maintains spare equipment that can be used as replacements until the applicable item is repaired and returned to the station.

In regards to maintaining SCBA cylinders (tanks), the Fire Department has two vehicles with specialized equipment that are used to refill air in the SCBA tanks. In addition, there are two "cascade fill stations" (equipment that refills SCBA tanks) located at two Fire stations. When company officers determine the air level on a SCBA tank on a vehicle has fallen below a predetermined level, they replace

the SCBA tank with a spare tank located at the station. As needed, SCBA tanks are filled at one of the cascade fill stations. Alternatively, the empty tanks are delivered to a site where one of the specialized vehicles is located, refilled, and returned to the appropriate station.

The engineers are responsible for ensuring their assigned vehicles have an adequate supply of fuel, water, and foam. Fuel can be obtained from the Fleet fuel station, the Police Department fuel station, or smaller fuel tanks maintained at many of the Fire stations located throughout Leon County. Foam and water can be refilled at each fire station.

Procedure No. 3
Observing Vehicles and Inquiring of Staff

During our inquiry, we observed the physical condition of the vehicles reviewed during the re-inventory and inspection process as described in previous sections of this report. Specifically, we observed the fire apparatus' chassis, frame, tires, and bumpers. While we did observe some minor damage to one bumper and one chassis behind a bumper, the damage appeared to be cosmetic and did not appear to impair the functioning of either vehicle. See Figures 1 and 2 below.

Figure 1
Vehicle 12009 Back Bumper Damage

Figure 2
Reserve Vehicle 1249 Front Chassis Damage (behind bumper)

During our review of the apparatus inventory and inspection process, we also inquired of the engineers and company officers regarding their experiences with the vehicle repair process. The engineers and company officers expressed satisfaction with the timeliness and quality of Fleet's repairs. Some engineers and company officers noted they had the mechanic's direct cell phone number and had been encouraged to contact the mechanic directly when they encountered any vehicle issues.

Conclusion Procedure No. 3. No issues regarding vehicle repairs were identified. We did not find evidence to support that vehicle repairs were not performed in a timely manner. We also did not identify any major damage to the chassis, frame, tires, or bumpers of the vehicles we observed.

Procedure No. 4
Observing Equipment and Inquiring of Staff

During the re-inventory and inspection process as described in previous sections of this report, we also observed various equipment for selected apparatus. During that process, we observed the operation of pumps, ladders, generators, and most motorized tools. We also reviewed levels of fuel, water, foam, and air in applicable equipment and apparatus.

As noted above, Support Services staff receives the emailed repair request forms and enters the information into a departmental database used to track and monitor submitted repair work orders. We judgmentally selected a sample of eight repair work orders out of 85 work orders recorded during the period October 2012 through March 2013. For the sampled work orders we inquired of applicable company officers and engineers to determine if the

repair requests were addressed satisfactorily and in a timely manner.

Company officers and engineers reported that each of the eight work orders had been satisfactorily completed. They also stated that replacement equipment was provided when equipment was removed for repair.

Fire station personnel have not retained copies of repair requests submitted to Support Services staff. Therefore, we were unable to conduct audit tests to determine if all submitted repair requests had been properly received and processed by Support Services staff. Notwithstanding that circumstance, we did inquire of the engineers and company officers regarding their experiences with the overall equipment repair process. The engineers and company officers expressed satisfaction with the timeliness and quality of the equipment repair process as performed by Support Services.

Conclusion Procedure No. 4. No issues regarding equipment repairs were identified. No instances were identified where equipment appeared significantly damaged or did not appear to operate properly. Additionally, for both vehicles and equipment reviewed, the required levels of fuel, water, foam, and air were maintained. We did not find evidence to support that equipment repairs were not performed in a timely manner.

Equipment and Supply Transfers

Overview. Fire management has not developed a policy or procedures regarding the usage of reserve vehicles to ensure accountability for the equipment and supplies maintained on reserve vehicles. Our inquiry results indicated that Fire station personnel are not required to document reserve vehicle usage and in three of five instances could not provide documentation to support the equipment and supplies transferred to and from the reserve vehicles when the primary vehicle was temporarily taken out of service.

Background. When active apparatus (primary vehicles) need to be taken out of service for repairs and preventative maintenance, the Fire Department has six older vehicles in reserve status available to temporarily substitute for the primary vehicle. Those reserve vehicles are kept in a designated area behind Fire station 4. The Fire Department currently does not have a formal documented process for how those reserve vehicles are to be "checked out" and "checked back in."

As stated previously in the Table 1, Fire personnel noted that reserve apparatus were intentionally not fully equipped and supplied. Our review showed the one selected reserve vehicle was only equipped with 60% of the equipment required according to the applicable apparatus inventory check sheet. Under current practice, the applicable engineer is responsible for ensuring that the necessary equipment and supplies are transferred from the primary vehicle so the reserve vehicle is properly equipped to adequately perform fire and rescue activities. The engineer is to document all the items transferred from the primary vehicle to the reserve vehicle and communicate that information to the engineers on subsequent shifts. This process allows the engineer on duty when the primary vehicle is returned to service to accurately return the appropriate items from the reserve vehicle.

Procedure No. 5
Testing Equipment and Supply Transfers

During our inquiry, we interviewed Fire management, company officers, and engineers to obtain an understanding of the process for transferring equipment and supplies from primary to reserve units (and vice versa) when primary units are being repaired and/or undergoing maintenance services. We judgmentally selected five Fleet vehicle repair work orders during the period April 1, 2013, through May 31, 2013, where the primary vehicle was taken out of service and transfer of equipment and supplies to a reserve vehicle would have been necessary. The five work orders pertained to five primary vehicles assigned to five Fire stations.

For dates where reserve vehicles would have been utilized in these five instances, we inquired of company officers and engineers to identify the reserve vehicle used; requested a copy of the apparatus inventory check sheet for the reserve vehicle on the first day the reserve vehicle was in service; and requested a copy of the listing of equipment and supplies transferred from the primary vehicle to the reserve vehicle.

Issue: There is a lack of documentation to support the transfer of items (equipment and supplies) from the primary vehicles to the reserve vehicles and the subsequent return of those items to the primary vehicle. Fire management indicated that engineers are to perform an initial inventory and inspection on the reserve vehicle placed into service and record each item (equipment and supplies) transferred from the primary vehicle to the reserve vehicle. This initial inventory and inspection

assures the engineer that the vehicle is ready to respond to fire and rescue activities. The listing of items transferred provides the engineers, on each shift, a record of which items should be returned from the reserve vehicle to the primary vehicle when the primary unit is returned to active status.

As stated above, we chose five dates in April and May 2013 when primary vehicles were taken out of service for maintenance reasons (based on work orders). For those dates we asked the applicable engineers for a copy of the apparatus inventory check sheet and a listing of the items that were transferred from the primary vehicle to the reserve vehicle.

For the five work orders we reviewed, only one station (one work order) had a record (email listing) of the items transferred from the primary vehicle to the reserve vehicle. In the four remaining instances, the applicable stations indicated records were prepared showing items transferred; however, those records were not retained after the primary vehicle was placed back in service.

Issue: There is a lack of accountability for usage of reserve vehicles and lack of documented guidelines as to the equipment and supplies that should be maintained on reserve vehicles. As noted above, the Fire Department currently does not have a standard operating procedure addressing how reserve vehicles are to be "checked out" and "checked back in." Under current practices, Fire engineers generally deliver the applicable primary vehicle to the reserve storage area located behind Fire station 4 and select one of the available reserve vehicles, transfer the needed equipment and supplies, and drive the reserve vehicle back to the station. (Fleet obtains the primary vehicle from Fire station 4 in such instances. If the primary vehicle is not safe to operate, the engineer obtains and drives the reserve vehicle to the location of the primary vehicle and transfers the applicable equipment and supplies.) There is generally no record of which reserve vehicle is checked out and by whom and when the reserve vehicle is returned.

Inventories and inspections are to be performed when the reserve vehicles are in active status. When reserve vehicles are not in active service, Fire station 4 personnel reported they run the engines on a weekly basis (every Saturday). Fire management indicated that engineers are expected to report vehicle operating issues and repair needs after they utilize the reserve vehicle as needed.

We noted there is no policy addressing what equipment and supplies should be located on each reserve vehicle. Table 1 (page 7) showed that the apparatus inventory check sheet for the sampled reserve vehicle did not represent the equipment and supplies that Fire management expect to be maintained on the reserve vehicles. As noted in Table 1, we found that approximately 40% of the items on the check sheet were not located on the reserve vehicle.

Conclusion Procedure No. 5. Current Fire standard operating procedures and policies do not provide adequate accountability for the usage of reserve vehicles or the equipment and supplies that should be maintained on reserve vehicles. Furthermore, those current procedures and policies do not adequately address the process for documenting the transfer of equipment and supplies where primary vehicles are temporarily taken out of service and replaced with a reserve vehicle. Enhanced accountability for reserve vehicle usage and related equipment and supplies will reduce the risk that applicable assets are misplaced, lost, stolen, or misused without timely detection.

Recommendation Procedure No. 5. We recommend Fire management:

- Develop and implement a policy and/or written procedures addressing transfers of equipment and supplies between primary and reserve vehicles, including a process for documenting such transfers.
- Develop and implement a policy and/or written procedures to account for the usage of the reserve vehicles and the equipment and supplies expected to be maintained on the reserve vehicles.
- Update the apparatus inventory check sheets for the reserve vehicles to reflect the equipment and supplies that management expects to be located on the vehicles.

Fire Hose Testing and Inventory

Overview. The results of our inquiry showed significant deficiencies in the department's process to account for and track fire hoses. Those deficiencies adversely impacted the Fire's hose testing process. Accordingly, we cannot provide assurance that all hoses used on Fire vehicles have been properly tested, are in satisfactory working condition, and are properly accounted for in the

Fire's inventory records. Notwithstanding the identified deficiencies, we did not identify any incidents that adversely impacted the public's or firefighters' health, safety, or welfare.

Background. Fire hoses are located in various compartments on Fire vehicles. Backup fire hoses are stored in various other locations at the stations. Fire SOP #935, "Annual Hose Testing and Rotation" states, in part, that "all fire hose will be tested and rotated annually. Company officers will be responsible for ensuring (each) hose is tested and rotated in accordance with departmental procedure and that information is properly recorded on the Fire Hose Form and forward to the battalion chief responsible for hose inventory." The policy also provides detailed testing instructions and states that completed hose testing forms shall be forwarded to the Fire Special Operations Division.

Procedure No. 6
Verification of Fire Hose Inventory and Required Tests

To determine if Fire hoses were tested annually as required, we evaluated and analyzed the department's hose inventory records and results of the 2012 annual Fire's hose testing procedures.

Issue: The current hose inventory records are incomplete; those incomplete records contributed to a breakdown in the process to ensure all fire hoses were tested as required by policy in 2011 and 2012. The most recent annual fire hose tests were conducted in fall 2012 (September through November). In preparation of those annual tests, the designated battalion chief sent out a listing identifying the fire hoses that should be tested. Individual fire hoses were designated on that list by a unique identification number (ID) assigned to and marked on each hose. Because that list of hoses to be tested was extracted from an incomplete hose inventory (records), many hoses that should have been tested during that period were not designated to be tested. This circumstance and the resulting impact is explained further in the following paragraphs.

Prior to 2011, the Fire Department used a software application (Records Management System or RMS) to account for and track the department's fire hose inventory. The RMS showed the department's 2010 hose inventory consisted of 2,890 fire hoses. Because of Fire management's concerns with the accuracy of the RMS hose inventory, a battalion chief began tracking fire hoses in an electronic spreadsheet during 2011. The concerns with the RMS records included hoses being listed more than once and hoses being listed with incorrect IDs. *[Note: Our limited review of RMS hose records showed 25 hoses with blank hose IDs and 28 duplicated hose IDs, thereby supporting that the RMS hose data is not accurate.]*

As part of the efforts to obtain complete and correct hose inventory records in 2011, the designated battalion chief requested each Fire station to manually record for each hose, the unique hose ID and the results of the 2011 annual hose test. That information was then used to prepare the "new" hose inventory records in an electronic spreadsheet as noted previously. However, steps were not taken by Fire personnel to ensure that all hoses were identified, recorded, and tested as part of that process. The implications of not having such as control in place are noted below.

The battalion chief used the same 2011 hose inventory records to identify department hoses for testing in 2012. Listings of hoses were prepared and distributed to each station with instructions that each hose be tested, results recorded, and any additional hose not on the listing be added to the hose listing along with the related testing results. Those additional hoses identified by that process were incorporated into the 2012 hose testing results and added to the hose inventory records. Our review showed the 2012 hose inventory and test records accounted for 1,159 hoses (1,120 passed the test and 39 failed). That amount is 1,731 less than the hoses indicated by RMS hose inventory records (2,890).

To assess the completeness of the 2012 hose inventory records, we judgmentally selected 51 hoses physically located in the front, side, or top compartment of 20 active Fire vehicles at 12 Fire stations. We traced the IDs for those selected hoses to the 2012 hose test results and inventory records.

Table 3 below shows that of the 51 selected hoses 31 (61%) passed the 2012 annual test, one (2%) failed the 2012 test, and there was no record of 18 (35%) hoses having been tested in 2012. Those 18 hoses also were not accounted for in the 2012 inventory records (i.e., the electronic spreadsheet).

Table 3
Audit Analysis - Hose Testing

Hose Testing Results	Totals	Percent
Hoses documented as passed test	31	61%
Hose documented as failed test (1)	1	2%
Hoses with no record of being tested	18	35%
Hoses without a legible ID (2)	1	2%
Total hoses analyzed	**51**	**100%**

Notes: (1) After being notified that our audit analysis showed the hose was documented as having failed its test, the Fire Department retested this hose subsequent to our audit fieldwork. The Fire Department provided evidence the retest showed the hose passed, thereby indicating the initial test results had likely been recorded in error.

(2) Without a legible ID, the hose could not be vouched to the 2012 test results or inventory records.

Conclusion Procedure No. 6. Based on our analytical review, the Fire Department cannot assure that the all hoses used on Fire vehicles have been properly tested, are in satisfactory working condition, and are properly accounted for in the department's inventory records.

Recommendations Procedure No. 6. We recommend the Fire Department revise the hose inventory and testing processes to ensure all Fire hoses are properly accounted for and tested annually. Measures should be taken to ensure only reliable hoses (i.e., hoses that passed annual tests) are utilized on the City's Fire vehicles.

We also recommend Fire management develop and perform a comprehensive hose inventory to account for all department hoses and perform testing on those hoses that were not tested in fall 2012. Histories of test results for individual hoses should also be maintained.

In June and July 2013 (subsequent to our audit fieldwork), the Fire Department conducted a comprehensive inventory whereby each hose located at each station and on each vehicle was identified and accounted for in the department's records. Each identified hose was tested in connection with that process. Of the more than 1,800 hoses identified and tested, over 100 did not pass and were consequently removed from service and disposed. In addition, a new method was implemented to specifically mark each hose in a manner that showed the hose had been tested and whether it passed the test. Fire management indicated their intent to reemphasize to Fire personnel to only use those hoses that are marked as successfully passing the annual test on Fire vehicles.

Overall Conclusion

This inquiry was conducted after allegations were received from a Fire employee that the fire apparatus inventory, inspection, and repair processes; and hose testing and inventory records were not adequate. These allegations were discussed with City management, including the Fire Chief. Based on those discussions, City management and the Fire Chief concurred that this inquiry be conducted.

To address the allegations in this inquiry report, we answered four questions related to apparatus inventory, inspection, and repair processes; and hose testing and inventory processes.

Throughout the report, we provided recommendations to Fire management for ways to improve the apparatus inventory and inspection and hose inventory and testing processes. Fire management developed an action plan to address these recommendations in Appendix A.

We would like to express our appreciation for the assistance and cooperation provided by Fire staff throughout this inquiry.

Appointed Official's Response

City Manager Response:

The City Auditor's Office has conducted a thorough and detailed audit of the Fire Department's fire apparatus and hose inventory processes. Auditing staff and Fire Department staff worked together closely in an effort to accurately and effectively address any issues. I have reviewed the findings and various recommendations and I am confident all recommendations will be met in a timely manner. We recognize the importance of detailed documentation and records and believe these recommendations will have a positive impact on Fire Department operations. It should be noted that Fire Department processes regarding apparatus inventory were already under evaluation and that no incidents were identified where the noted deficiencies adversely impacted the public's or firefighters' health, safety, or welfare. Additionally, fire department personnel developed a master hose inventory and retested all fire hose ensuring 100% compliance. I would like to thank again the City Auditor, as well as staff that were involved with this audit.

Appendix A – Management's Action Plan

Action Steps	Responsible Employee	Target Date
A. Objective: ***To improve the apparatus inventory and inspection processes***		
1) Update the current inventory check sheets specific to each individual apparatus to ensure all applicable and appropriate equipment and supplies for each vehicle are properly represented on the check sheets (e.g., as to description, quantity, and location).	Gatlin/Roberts	12/31/2013
2) Develop and implement a process to periodically update the check sheets as requirements change.	Gatlin/Roberts	12/31/2013
3) Implement a process to ensure all required apparatus inventory check sheets are properly completed, submitted, and retained.	Gatlin/Roberts	12/31/2013
B. Objective: ***To improve the accountability for reserve vehicles and the equipment and supplies maintained on reserve vehicles***		
1) Update the current inventory check sheets specific to reserve apparatus to ensure all applicable and appropriate equipment and supplies for each vehicle are properly represented on the check sheets (e.g., as to description, quantity, and location).	Gatlin/Roberts	03/31/2014
2) Develop and implement a policy or written procedure to account for usage of reserve vehicles.	Gatlin/Roberts	03/31/2014
3) Assign responsibility to ensure inventories and inspections are regularly performed on the reserve vehicles to verify they are equipped and supplied as expected and in proper working condition.	Gatlin/Roberts	03/31/2014
4) Develop and implement a process or written procedure addressing transfers of equipment and supplies between primary and reserve vehicles, and for documenting those transfers.	Gatlin/Roberts	03/31/2014
C. Objective: ***To improve the accounting for and tracking of hose inventory and annual testing process***		
1) Revise the hose inventory and testing processes to ensure all Fire hoses are properly accounted for and tested annually.	Gatlin/Roberts	09/30/2013
2) A comprehensive hose inventory should be performed to account for all department hoses and testing should be performed on those hoses that were not tested in fall 2012.	Gatlin/Roberts	Completed
3) Perform an internal review to verify the recently completed hose inventory and test records in Step C.2.	Gatlin/Roberts	09/30/2013
4) Implement a process to record and maintain a history of test results for individual hoses.	Gatlin/Roberts	09/30/2013

Appendix B – Fire Apparatus Included in the Inquiry

Tanker (Vehicle 1410)- primary purpose of transporting and/or pumping large amounts of water. Most tankers have an on-board pumping system.

Aerial Ladder Platform/Ladder (Vehicles 1506 and 1508) – primary purpose is for accessing higher structures to distribute water or for rescue operations. The ladders can extend up to 75 feet and 100 feet, respectively.

Rescue (Vehicle 1309) – A smaller vehicle with basic fire and rescue response equipment.

Pumpers (Vehicles 12009, 1222, 1249) – An all around fire engine; its primary purpose is pumping large amounts of water and providing rescue capabilities.

Brush (Vehicle 1315) - These are usually trucks with off-road capabilities for traversing rough terrain in order to reach the fire.

Copies of this Inquiry (Report #1324) may be obtained at the City Auditor's web site (http://www.talgov.com/auditing/index.cfm) or via request by telephone (850 / 891-8397), by FAX (850 / 891-0912), by mail or in person (City Auditor, 300 South Adams Street, Mail Box A-22, Tallahassee, FL 32301-1731), or by e-mail (auditors@talgov.com).

This Inquiry was conducted by:
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