City Auditor's Office

Cape Coral Fire Department Fleet Rolling Stock Audit

Report Issued: October 30, 2023

Audit Report No. 23-07

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TO: Mayor Gunter and Council Members

FROM: Andrea R. Russell, City Auditor

DATE: October 30, 2023

SUBJECT: Cape Coral Fire Department (CCFD) Fleet Rolling Stock Audit

The City Auditor's Office has completed the audit of the CCFD Fleet Rolling Stock. The audit was conducted in conformance with Generally Accepted Government Auditing Standards by the authority granted through City Ordinances 28-02 and 79-10.

We would like to express our sincere appreciation to the CCFD command staff, the CCFD Fleet Coordinator and the Public Works Fleet Manager for the courtesy, cooperation and proactive attitude extended to the team members during the audit. If you have any questions or comments regarding this audit, please contact Andrea Russell at 242-3380.

C: Michael Ilczyszyn, City Manager
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Kimberly Bruns, City Clerk
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EXECUTIVE SUMMARY

The City Auditor's Office conducted a performance audit of the CCFD Fleet Rolling Stock. This audit is included in the City Auditor's updated approved FY23 Audit Plan.

Based on the test work performed and the audit recommendations noted below, we concluded the department has policies and procedures in place; however, we identified several areas that need improvement to achieve department objectives in a more efficient manner. These areas are discussed in further detail in the Findings and Recommendations section.

- Frontline and unassigned frontline apparatus inventories
- Apparatus issue tracking
- Preventative maintenance performance

While controls over these processes need improvement, no material control deficiencies were noted.

BACKGROUND

CCFD is a full-service fire agency with a mission to protect and serve the community through risk reduction and prompt emergency response. In the early 1960's, residents began to recognize the need for a fire department within the City. At this time, emergencies were covered by the North Fort Myers and Fort Myers departments. The response time was 30-45 minutes. In 1963, the City completed construction on the first fire station and by 1965 had a fully operational Volunteer Fire Department. Cape Coral was incorporated in 1970 and began providing fire services as part of government services in 1971.

In 2022, CCFD handled 30,061 (12% increase from 2021) emergency responses including fire suppression, emergency medical services, motor vehicle crashes, hazardous materials response, marine search and rescue, missing persons, fire alarm activation, and animal assistance. Average response time, including dispatch, turn out, and travel, was nine minutes and 27 seconds.

CCFD has five divisions: Operations, Logistics, Professional Standards, Fire Prevention, and Emergency Management. The Division of Logistics maintains the CCFD fleet and facilities. The City currently has 12 operating stations, with one additional station scheduled to be open by April 2024. Currently, CCFD has 24 frontline and eight unassigned frontline apparatuses with acquisition costs totaling approximately $12.3 million. Apparatuses include engines, ladders, rescues, hazardous material apparatus, tenders[1], and brush trucks.

CCFD works in conjunction with the Public Works Fleet Management Division (Fleet) for preventative and scheduled maintenance, as well as acquisition and disposal of apparatuses. Fleet tracks maintenance and repair history of apparatuses in their Asset Management software system. CCFD records needed repairs or other issues relating to apparatuses in a separate Asset Tracking software.

AUDIT OBJECTIVES

To determine if preventative and scheduled maintenance and repairs are performed in a timely manner to minimize downtime of CCFD apparatuses.

To determine if unassigned frontline apparatus and vehicle inventories are adequate to meet CCFD needs.

STATEMENT OF AUDITING STANDARDS

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

[1] A tender carries water to a fire scene when there are no fire hydrants in the area.

FINDINGS AND RECOMMENDATIONS

FINDING 2023-01: CCFD Frontline and Unassigned Frontline Apparatus Acquisition Schedule Needs Revision

Rank: High

Condition:

The City's Fleet Replacement Policy is established through a 15-point system. The Fleet Asset Management software assigns points in three categories: age; mileage or hours; and life-to-date maintenance costs. The maximum for each category is five points. Once an asset[2] reaches 15 points it should be replaced. CCFD and Fleet worked in conjunction to determine the useful life for Fire apparatus detailed in Fleet Policies and Procedures Policy No: FA-006. FA-006 states that frontline apparatuses, such as pumpers and aerial ladder platforms, have a useful life of ten years. After the expiration of the ten years of useful life, an apparatus may be placed in unassigned frontline apparatus status for an additional five years, or until the vehicle reaches 100,000 miles, whichever occurs first. In addition, vehicles and apparatus receive a maximum of five points when maintenance costs reach 50% of the acquired cost of the vehicle. This section is double weighted to flag "lemon" equipment, which is equipment deemed to have excessive repairs.

FA–006 applies the same criteria for light and medium trucks, construction equipment, and trailers to fire apparatus. CCFD apparatuses are complex and expensive pieces of machinery that require consistent routine maintenance to ensure they are operational to appropriately respond to emergencies. The FA-006 "maintenance to acquisition cost ratio" is also applied the same to fire apparatus as to smaller vehicles. Repair costs for apparatuses can be considerable, resulting in an apparatus accumulating the maximum of five points more quickly when maintenance costs reach 50% of the acquired cost of the vehicle.

The National Fire Protection Association (NFPA) 1901 Annex D Guidelines for First-Line[3] and Reserve[4] Apparatus states "…Fire departments should seriously consider the value (or risk) to fire fighters of keeping fire apparatus more than 15 years old in first-line service. It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve[4] status…." It is CCFD policy to keep apparatuses for ten years on the frontline and five years as unassigned frontline apparatus. In total, CCFD's useful life calculation aligns with NFPA best practices for 15-year frontline service; however, because of recent supply chain and production delays[5]; consideration should be given to update the schedule to ensure apparatuses are placed in service in a timely manner.

[2] Fleet refers to all vehicles, apparatus, equipment as assets.
[3] NFPA refers to frontline as First-Line
[4] CCFD does not use the term reserve. They refer to apparatus not currently assigned to a station that can be utilized when frontline apparatus is in for repairs as unassigned frontline apparatus.
[5] Recently the time to produce apparatus has increased from six months to two or more years.

In order to determine if unassigned frontline apparatuses were adequate to allow for performance of scheduled maintenance or larger repairs, we reviewed CCFD frontline apparatus inventory and compared it with CCFD's replacement plan. We noted the following:

Frontline Apparatus

- Three of 24 (13%) are overdue for placement into unassigned frontline apparatus in accordance with NFPA standards and exceeded their/the 10-year useful life as frontline apparatus, according to FA-006. (All three replacements were ordered on 11/1/2022.)
    - All three are older than 15 years and exceed max useful life and should be retired according to Fleet policy.[6]
- 16 of 24 (67%) are not scheduled to be replaced prior to exceeding their/the 10-year useful life. For example: asset #28109 is listed on CCFD's replacement plan to be replaced in 2029. The apparatus will be 13 years old at the time CCFD orders a replacement, which is three years past the Fleet policy. It's important to note that it takes two to three years to manufacture a fire apparatus; therefore, this apparatus may be 16 years old by the time of replacement.

Unassigned Frontline Apparatus

- Four of nine (44%) exceed 15-year useful life according to FA-006.
- Five of nine (56%) are not scheduled to be replaced prior to exceeding useful life according to FA-006.
- Eight of nine (89%) have maintenance and repair costs which exceed 50% of original acquisition cost (three replacements were ordered on 11/1/2022 and one replacement was ordered on 9/1/2023).
    - Two of the eight (25%) exceed 100% of acquisition cost.
- One of nine (11%) has mileage that exceeds 100,000.
- Seven of nine (78%) have between 75,000 and 100,000 miles.
- Six of nine (67%) have reached the maximum 15 points.

We noted during planning walkthroughs with CCFD that the aging unassigned frontline apparatus fleet has experienced numerous breakdowns, making them unavailable for when frontline apparatus is out of service. This in turn has resulted in delays of preventative and scheduled maintenance[7] for frontline vehicles. At times, there is no comparable replacement for frontline apparatus. For example, an unassigned frontline apparatus engine is used for a frontline apparatus ladder because there is only one unassigned frontline apparatus ladder, and it was already in use.

CCFD is currently waiting for seven apparatus deliveries; two were purchased in November 2021; four were purchased in November 2022; and one was ordered on September 1, 2023. Due to supply chain issues, there is a waiting period of over two years between ordering and receiving apparatus.

Criteria:

- Fleet policies and procedures FA–006

[6] One apparatus has a max point score of 15.
[7] See findings 2023-02 and 2023-03.

- NFPA 1901 Annex D
- CCFD apparatus replacement plan

Cause:
- Apparatus purchase/supply chain delays
- Scheduled apparatus replacements do not follow FA-006 and CCFD replacement schedule.
- Rising maintenance costs due to inflation
- Insufficient unassigned frontline apparatus inventory

Effect:
- Potential increased cost of maintenance due to keeping “lemons”/apparatus with score of 15.
- Potential aging apparatus not equipped with features required by fire apparatus standard NFPA 1901 Annex D.
- Delays in preventative and scheduled maintenance and repairs due to a lack of operational unassigned frontline apparatus vehicles or insufficient unassigned frontline apparatus vehicle inventory.

RECOMMENDATION:

2023-01: Analyze unassigned frontline apparatus inventory in consideration of current inventory, new stations coming online and growth in the department, and update the replacement and unassigned frontline apparatus schedule to establish an inventory that will meet department needs.

Management Response and Corrective Action Plan:

2023-01 Select one of these boxes: ☒ **Agree** ☐ **Partially agree*** ☐ **Disagree***
***For partially agree or disagree a reason must be provided as part of your response:**

2023-01 Annually, as part of the budget submission, the CCFD will analyze unassigned frontline apparatus inventory in consideration of current inventory, new stations coming online and growth in the department, and update the replacement and unassigned frontline apparatus schedule to establish an inventory that will meet department needs.

2023-01 **Management Action Plan Coordinator:** CCFD Chief

2023-01 **Anticipated Completion Date:** 05/30/2024

FINDING 2023-02: CCFD Fleet Apparatus Issue Tracking Needs Improvement

Rank: High

Condition:

CCFD Fleet utilizes a software program to track items that need attention in the stations; inventory needs and mechanical issues on apparatus. Public Works Fleet utilizes a separate software to track work orders, repairs, and maintenance on all City vehicles including CCFD

vehicles, equipment, and apparatus. CCFD software and Fleet software do not interface with each another. Previously, CCFD would communicate needed repairs on apparatus by way of phone call, email, or drive-up to the Fleet facility. There was no formal system to document or track work requested. On 2/16/2023, at the request of Fleet, CCFD began preparing Vehicle/Small Engine Request Forms (SRF) to document necessary repairs already recorded in the CCFD software. According to the procedure, SRFs are completed by the CCFD Fleet Coordinator and are used by Fleet to complete work orders in the Fleet system. The SRF should be attached as support for the items on the Fleet work order. If work is needed after-hours, an Overtime (OT) Request Form is completed and attached to the workorder by the after-hours Fleet mechanic.

We reviewed a total of 39 work orders for five apparatus from 2/16/2023 through 7/31/2023. We were unable to trace work orders from the CCFD software to Fleet software for 11 (28%) of the work orders tested. Of the 36 work orders[8] required to have an SRF or OT request form, 15 (42%) did not have an SRF or OT request attached to the work order. Currently, only one CCFD employee reviews and submits SRFs.

Of the 15 reviewed that did not have an SRF, we were unable to determine if all repairs were addressed by Fleet for four (27%) of the work orders. This is because the notes left by mechanics in the Fleet software did not clearly align with issues noted on SRFs from the CCFD software. The CCFD Fleet Coordinator informed us that for two of the four work orders, not all repairs were complete. The additional work needed was not noted in the Fleet software notes for the apparatuses. The repairs were not completed at the time of audit testing because of delays getting necessary parts, or CCFD Fleet needed the apparatus back in service due to lack of unassigned frontline apparatuses available. After consulting with the CCFD Fleet Coordinator, it was determined that these uncompleted repairs were considered non-emergency and the apparatuses were sufficiently operational to put back in service.

As part of testing, we attempted to determine the average time it takes CCFD to notify Fleet of issues on apparatus; however, we were unable to determine the time due to several factors including:

- Work orders with numerous requests. We noted as many as 18 repair requests[9] on one work order.
- Notes on SRF, CCFD software system, or Fleet work order stating “communicated to Fleet”; however, no record of communication was documented.
- Duplicate alerts in the CCFD software.

Although initially it appeared to be an adequate way of tracking issues and repairs from CCFD’s software to Fleet’s software, the use of SRFs do not seem to be providing the intended benefit. Often, the SRFs we tested were not signed or dated, further complicating tracking between the CCFD and Fleet systems.

[8] Call outs to stations during regular hours do not require SRFs or OT requests. This accounts for the difference in work orders tested and work orders required to have SRF or OT request forms.

[9] This is due to an accumulation of non-urgent repairs on apparatus. Non-urgent repairs are not communicated in a timely manner to Fleet.

Other observations noted during our testing that should be addressed to improve the maintenance process include:

- Work order numbers are not entered for tracking in CCFD software by CCFD.
- No formal communication from Fleet to CCFD about repairs, maintenance, or status when sent to a third-party vendor.
- No formal process of identifying urgent vs. nonurgent repairs.
- Notes in Fleet software are not recorded on workorder, or workorder items repaired do not agree to notes. For example, we noted while reviewing one work order the note field indicated preventative maintenance was not completed because not enough hours were on apparatus to indicate it was needed; yet the detail of work performed in the work order for billing purposes indicated that the preventative maintenance was performed.
- We noted several instances where it appeared the same apparatus was taken to Fleet several times and either issues were not addressed, or deemed no issue, and no repairs were made.

Although we did not consider these observations exceptions to test attributes, when considered in aggregate with exceptions, they are indicative that the process needs improvement to clarify communication and roles and responsibilities to ensure apparatus are repaired in a timely manner and all repairs, issues, and concerns are addressed.

Criteria:

- SRFs for repairs
- CCFD tracking software
- Fleet software

Cause:

- Lack of defined policies and procedures
- Communication issues for repairs between CCFD and Fleet
- Failure to complete SRFs

Effect:

- Potential for incomplete repairs
- Potential apparatus breakdown
- Potential fire station going offline because of inadequate unassigned frontline apparatuses.
- Unclear status for vehicles sent to third party vendors

RECOMMENDATION:

2023-02: Develop a procedure to track issues noted in CCFD asset software with work orders in Fleet asset software to ensure repairs are completed in a timely manner.

Management Response and Corrective Action Plan:

2023-02 Select one of these boxes: ☒ **Agree** ☐ **Partially agree*** ☐ **Disagree***

***For partially agree or disagree a reason must be provided as part of your response:**

2023-02 The CCFD will develop a procedure to track issues noted in CCFD asset software with work orders in Fleet asset software to ensure repairs are completed in a timely manner.

2023-02 **Management Action Plan Coordinator:** CCFD Chief

2023-02 **Anticipated Completion Date:** 05/30/2024

FINDING 2023-03: Apparatus Preventative Maintenance is Not Performed in Accordance with Policy

Rank: High

Condition:

CCFD apparatuses are complex and expensive pieces of machinery and require consistent maintenance to ensure they are operational to appropriately respond to emergencies. Preventive maintenance (PM) for CCFD apparatus is performed every six months or 6,000 miles, whichever comes first; however, this policy is not formally documented. Public Works Fleet is responsible for performing PM and monitors PM reporting. According to Fleet Policy FA-012, Bi-Monthly Preventative Maintenance Reports and Departmental Follow-Up, Fleet distributes reports twice monthly on the first and 15th day of the month to individual departments showing vehicles and other assets[10] due for maintenance. In addition, Fleet Policy FA-011, Preventative Maintenance of City Assets, requires vehicles, apparatuses, and other equipment receive or schedule service from Fleet within 30 days of the report notification date. National Fire Protection Association (NFPA) 1911, Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency vehicles, Annex C, Developing a Preventive Maintenance Program, provides best practices and encourages fire apparatus to undergo preventative maintenance as required by the manufacturer.

Test Results

We utilized a report from the Fleet Asset Management software (Fleet software) to determine if PMs were performed in accordance with Fleet and CCFD policies; however, it appears the report is inaccurate and incomplete. We noted several work orders/PMs that were displayed in the asset work order history in the Fleet software but were not included on the report. During the scope of the audit, CCFD had 38 apparatuses that required PM. We determined 122 PMs were due during our scope for the 38. Nine of the 122 (7%) PMs were not completed. Of the 113 PMs completed, 46 (41%) were not completed within 30 days.

PM is important to reduce or eliminate the need for expensive repairs in the future. During testing, we observed that when PMs were late, there were often multiple work orders between

[10] Other assets can include generators, mowers, vessels, equipment, and machinery.

PM services that required several other repairs. In order to reduce apparatus downtime, PM could have been performed while the apparatus was already in for repairs.

Criteria:

- NFPA 1911, Annex C
- FA-012
- FA-011
- Fire apparatus manufacturer's warranty maintenance requirements

Cause:

- Lack of documented CCFD policies
- Non-compliance with FA-011 and FA-012

Effect:

- PMs are not performed.
- Potential for CCFD apparatus to be out of service and unable to respond to a call.
- Potential void to manufacturer warranty due to lack of PM or PM not performed in a timely manner.
- Potential liability to the City due to CCFD apparatus lack of functionality.

RECOMMENDATIONS:

2023-03a: Document an apparatus preventative maintenance schedule to comply with apparatus manufacturers' schedule for recommended preventative maintenance.

2023-03b: Utilize third party vendors to perform preventative maintenance when necessary to ensure it is performed in accordance with manufacturers' schedule.

Management Response and Corrective Action Plan:

2023-03a Select one of these boxes: ☒ **Agree** ☐ **Partially agree*** ☐ **Disagree***
***For partially agree or disagree a reason must be provided as part of your response:**

2023-03a The CCFD will create *and* document an apparatus preventative maintenance schedule to comply with apparatus manufacturers' schedule for recommended preventative maintenance. Additionally, the CCFD will create contracts with, and utilize, third party vendors to perform preventative maintenance when necessary to ensure it is performed in accordance with manufacturer schedule.

2023-03a Management Action Plan Coordinator: CCFD Chief

2023-03a Anticipated Completion Date: 05/30/2024

2023-03b Select one of these boxes: ☒ **Agree** ☐ **Partially agree*** ☐ **Disagree***
***For partially agree or disagree a reason must be provided as part of your response:**

2023-03b	The CCFD will create contracts with, and utilize, third party vendors to perform preventative maintenance when necessary to ensure it is performed in accordance with manufacturer schedule.
2023-03b	**Management Action Plan Coordinator:** CCFD Chief
2023-03b	**Anticipated Completion Date:** 05/30/2024

SCOPE AND METHODOLOGY

Based on the work performed during planning and the assessment of risk, the audit covers CCFD Fleet Rolling Stock policies and procedures for the period of October 1, 2021, to July 31, 2023. To evaluate the fleet process and controls in place, we reviewed CCFD and Public Works Fleet policies, and procedures as well as NFPA best practices.

To achieve our audit objectives, we conducted interviews and walkthroughs with key staff to gain an understanding of the CCFD fleet process. Original reports and Public Works Fleet software records were used as evidence for testing. Sample size and selection were based on the CAO Sample Methodology. We used judgmental sampling methodology for sample selection. We tested a sample of workorders for five apparatuses for scheduled maintenance and 122 preventative maintenance and repair services due for 38 apparatuses. We also analyzed and compared current and planned frontline and unassigned frontline inventories to current and future departmental needs.

To achieve the audit objectives, we evaluated and relied on information from the City's Fleet Asset Management software as it relates to workorders of CCFD apparatuses. We also utilized data from CCFD's Asset Tracking software to identify issues and repairs noted in the Fleet software. The CCFD software is used as a repository of information for issues on vehicles, apparatuses and items in each fire station. No additional data reliance testing was deemed necessary. We determined the data was sufficiently reliable for the purpose of testing the audit objectives.

Unless specifically stated otherwise, based on our selection methods and testing of transactions and records, we believe that it is reasonable to project our results to the population and ultimately draw our conclusions for testing, findings, and recommendations on those results. Additionally, for proper context, we have presented information concerning the value and/or size of the items selected for testing compared to the overall population and the value and/or size of the exceptions found in comparison to the items selected for testing.

APPENDIX A

Finding Classification
Findings are grouped into one of three classifications: High, Medium or Low. Those findings that are categorized as low are not included in the report but rather are communicated separately to management. Classifications prioritize the findings for management to address and also indicate the level of testing required to determine if a finding's Corrective Action Plan is fully implemented in accordance with recommendations and Management's Response.

High: A finding that is ranked as "High" will have a significant impact on the organization. It is one that *prevents* the achievement of a substantial part of significant goals or objectives, or noncompliance with federal, state or local laws, regulations, statutes or ordinances. Any exposure to loss or financial impact for a High finding is considered *material*. Examples include direct violation of City or Department policy, blatant deviation from established policy and procedure, such as actions taken to circumvent controls in place, material non-compliance with federal, state or local laws, regulations, statutes or ordinances, or an area where significant cost savings could be realized by the Department or the City through more efficient operations.

High findings require immediate management attention and should take management's priority when considering implementation for corrective action.

Medium: A "Medium" finding is one that *hinders* the accomplishment of a significant goal or objective or non-compliance with federal, state or local laws, regulations, statutes or ordinances, but can't be considered as preventing the accomplishment of the goal or objective or compliance with federal, state or local laws, regulations, statutes or ordinances. Exposure to loss or potential or actual financial impact is *significant but not material* to the Department or City. Examples include lack of monitoring of certain reports, insufficient policies and procedures, procedure in place or lack of procedure that can result in *potential* noncompliance with laws and or regulations.

Medium findings require management attention within a time frame that is agreed upon by the Department and the City Auditor. Priority for implementation of management's corrective action should be considered in light of other High or Low findings.

Low: A "Low" finding is one that warrants communication to management but is one that isn't considered as hindering the accomplishment of a significant goal or objective and isn't causing noncompliance with federal, state or local laws, regulations, statutes or ordinances. Financial impact or risk of loss is minimal to none; however, low findings can *hinder the effectiveness or quality of department operations and thus are communicated to management separately. Low ranked findings are not included in the final audit report.*

The City Auditor's Office will not follow up on the status of Low findings communicated to Management.