Chesapeake VIRGINIA

CHESAPEAKE FIRE DEPARTMENT

PERFORMANCE AUDIT

JULY 1, 2014 THROUGH JUNE 30, 2015

CITY OF CHESAPEAKE, VIRGINIA
AUDIT SERVICES DEPARTMENT

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June 30, 2015

The Honorable Alan P. Krasnoff and
Members of the City Council
City of Chesapeake
City Hall – 6th Floor
Chesapeake, Virginia 23328

Dear Mayor Krasnoff and Members of the City Council:

We have completed our review of the Chesapeake Fire Department (CFD) for June 1, 2014 to June 30, 2015. Our review was conducted for the purpose of determining whether the Department was providing services in an economical, efficient, and effective manner, whether its goals and objectives were being achieved, and whether it was complying with applicable City and Department policies and procedures related to the various divisions of the CFD. All divisions of the Fire Department, including Suppression and Emergency Medical Services (EMS), Training, Prevention, Hazardous materials, and Emergency Preparedness, were subject to evaluation.

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

The CFD provided essential services for the City of Chesapeake (City). Its primary purpose included fire prevention and suppression; emergency medical services; hazardous materials (HAZMAT); technical rescue; educational outreach programs; training for firefighters, paramedic and recruits; Fire Building Code enforcement for both commercial and residential structures; and emergency management.

For Fiscal Year (FY) 2014-2015, the CFD had an operating budget in excess of $45.7 million and an authorized compliment of approximately 426 full-time sworn positions and 19 full-time civilian positions. Approximately $43.5 million or 94.9% was appropriated to the Fire Suppression and Emergency Medical Services operating budget. The Training Division was apportioned $198,557 or 0.44% of operating budget; Fire Prevention was allocated $1.37 million or 3.01% of the budget and HEAT and Emergency Management Operations received a combined total of $751,593 or 1.65% of the budget. The Department also received funds from Federal, State, and City sources.

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To conduct this audit, we reviewed and evaluated City and CFD policies and procedures, and operations documents and reports, both internal and external. We also evaluated various aspects of the CFDs operations, conducted surveys of other local stations, and conducted extensive site visits within the CFD. We discussed these audit areas and conducted interviews with the Fire Chief, Senior, Division and Battalion Chiefs, EMS personnel and other support service staff.

Based on our review, we determined that CFD continues to deliver effective fire and emergency services to the citizens of Chesapeake. However, we did identify several areas of concern that needed to be addressed. Those areas included CFD personnel staffing challenges, EMS coverage and support challenges, CFD's training facility and faculty, Telestaff scheduling and KRONOS timekeeping systems, aging of the Fire Fleet, segregation of federal grant functions and fiscal administration, fire inspections, and EMS ambulance fees.

This report, in draft, was provided to the Department officials for review and response. Their comments have been considered in the preparation of this report. These comments have been included in the Managerial Summary, the Audit Report, and Appendix A. The CFD management, supervisors, and staffs were very helpful throughout the course of this audit. We appreciated their courtesy and cooperation on this assignment.

Sincerely,

Jay Poole

Jay Poole
City Auditor
City of Chesapeake, Virginia

C: Jim Baker, City Manager
Edmund Elliott, Fire Chief

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Managerial Summary

A. Introduction, Background, Scope

We have completed our review of the City of Chesapeake (City) Fire Department (CFD) for the period July 1, 2014 to June 30, 2015. Our review was conducted for the purpose of evaluating whether CFD was providing services in an economical, efficient, and effective manner, whether their goals and objectives were being achieved, and whether they were complying with applicable City policies and procedures. The audit included review and evaluation of procedures, practices, and controls of the various divisions of the CFD on a selective basis. All divisions of the Fire Department, including Suppression and Emergency Medical Services (EMS), Training, Prevention, Hazardous materials, and Emergency Preparedness, were subject to evaluation. With the assistance of CFD, we identified performance information that was relevant to the department's operations. We also identified and addressed any additional problem areas as requested by the CFD or determined from the audit itself.

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 conclusion 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.

For FY2015, the CFD had an overall budget in excess of $45.7 million and a budgeted workforce of approximately 426 full-time sworn positions and 19 full-time civilian positions FY2015. The CFD served more than 231,000 citizens within the City's 353 square miles.

To conduct this audit, we reviewed and evaluated City and Department policies and procedures, and operational documents and reports both internal and external. We evaluated personnel data related to staffing. We accessed PeopleSoft expenditures to determine overtime. We conducted site visits of all 15 fire stations, the training and recruit facilities, warehouse facilities and participated in "ride-a-longs" with EMS medic and fire inspection operations. We conducted in-depth interviews with the Chief of the 1st Battalion/Acting Chief of Support Services, Fire and Emergency Medical Services Operations management, Support Services, Fire Prevention Management and Inspectors, the Account Supervisor, and various other fire and EMS personnel. We analyzed work order information from the Central Fleet Management regarding the heavy vehicle Fire Fleet as well as the City's 20 year vehicle replacement plan. We also analyzed EMS

Ambulance fees over a five-year timeframe and compared the fees with other localities.

Major Observations and Conclusions

Based on our review, we determined the Fire Department had accomplished its overall mission of providing rapid response to fires, medical emergencies, rescues, hazardous material incidents, natural and man-made disasters, as well as fire department support services. However, we did identify several significant issues that needed to be addressed. These issues were personnel staffing challenges, EMS coverage and support challenges, training facility and faculty limitations, Telestaff Scheduling and KRONOS Timekeeping issues, aging of the fire fleet, segregation of federal grant functions and fiscal administration, fire inspections staffing challenges, and EMS ambulance fees.

This report, in draft, was provided to Fire Department officials for review and response. Their comments have been considered in the preparation of this report. These comments have been included in the Managerial Summary, the Audit Report, and Appendix A. Fire and EMS Department management, supervisors, and staffs were very helpful throughout the course of this audit. We appreciated their courtesy and cooperation on this assignment.

B. Performance Information

The core mission of the CFD was to improve the quality of life by providing responsive and caring service. According to the CFD 2014 Annual Report, the CFD was a complex, multi-faceted, service delivery machine, with many moving parts and gears. In 2014, the CFD responded to more than 28,000 calls for emergency service, plus thousands more customer contacts through business inspections, fire code compliance and public education programs. The department was responsible for managing a 430 person department and a 45 million dollar budget, strategic planning, conducting criminal investigations, training firefighters and paramedic personnel, preparing the City for weather events and disasters, and many other aspects of protective services. The CFD roles and responsibilities included fire prevention and suppression, emergency medical services, hazardous materials, technical rescue, the training division, fire building code enforcement for both commercial and residential structures, and emergency management.

1. Citizen Satisfaction

The CFD provided essential services for the City and continued to deliver effective fire and emergency services to the citizens of Chesapeake. A research firm, Continental Research Associates, Inc., conducted 323 interviews from October 1st through October 29th 2014 to learn how Chesapeake residents felt about their community and the services provided by the City. In this survey, released in October 2014, the CFD had the highest

score for the level of satisfaction of any City department or service ranked in the survey. Specifically, the survey showed that 43% and 56.7% of the survey respondents were "very satisfied" and "satisfied" with CFD services, respectively, indicating an overall 99.7% satisfaction rating. The CFD also scored the highest average mean rate of 3.43 (out of a possible 4.0) in 2014. This was an increase from the CFD's average mean rate of 3.34 in 2006.

2. CFD Call Volume Trends from 2010 to 2014

From FY 2010 to FY 2014, the CFD averaged over 26,000 emergency calls a year. The call volume grew from 24,825 in 2010 to 28,154 in 2014, a 13.41% growth increase. This increase was primarily due to increases in EMS Calls, False Calls, and other general calls addressed by the Fire Department.

3. History

The CFD was formed in 1963 with the merger of the City of South Norfolk and Norfolk County. The Department melded together several independent fire companies that had been providing service to the local communities since 1892. The Department has grown to 15 fire stations since that beginning and boasts over 400 well trained firefighters divided into three battalions, three shifts, and an administrative section.

4. Initiatives

There were also many innovative initiatives taking place within the CFD. Four of those initiatives were:

- ***Tri-City Automatic Aid Plan***
- ***Mobile Integrated Health Care***
- ***ACCELA City-wide Initiative***
- ***New World City-wide Program Initiative***

Details are provided in the report.

5. Grants

Over the years, CFD had been aggressive in obtaining Federal and State grants through the efforts of its firefighters and paramedics. To their credit, firefighters had become the grant writers and administrators of Federal and State grants awarded to the City totaling in excess of $13 million.

6. Fire Prevention

The Fire Prevention Division streamlined its processes by implementing the MobileEyes Inspections System. MobileEyes will work with ACCELA by updating the status of permits issued as a result of a fire inspections plans review, annual inspections, and re-inspections. Fire Inspectors would continue to use the MobileEyes software to manage their daily schedules and to assist with documenting code compliance and non-compliance based on the Statewide Fire Prevention Code (SFPC) requirements for commercial businesses.

7. Upward trend in EMS calls, the recession, and departmental changes

Since the mid-1990's the City's population has continued to grow. The Fire Department's EMS calls was expected to increase with the rise of the aging population. Beginning in 2013, the City transitioned to a new three-year budget cycle. During that time, CFD completed a long-range replacement schedule for fire stations and capital facilities. Also in 2013, all Advanced Life Support (ALS) personnel were reassigned to Engine Companies. Medic Units would be staffed with EMT-Basics or Enhanced Firefighters to address the high volume of less serious EMS calls. Due to the shortage of ALS personnel, ALS paramedic/firefighters would be reassigned to Fire Engines to address more serious calls along with fire calls. The goal was to save wear and tear on the engines and keep them more readily available. CFD made further adjustments by hiring civilian, part-time EMT-Basics to staff two additional medic units to only be used during peak demand hours to address less serious calls.

C. Operational Issues

CFD was experiencing significant staffing, coverage and budgetary challenges. These challenges included CFD personnel staffing challenges based on NFPA and OSHA safety standards, EMS coverage and support challenges, CFD's training facility and faculty, Telestaff scheduling and KRONOS timekeeping system issues, aging of the Fire Fleet, Segregation of Federal grant functions and fiscal administration, Fire Inspections, and EMS ambulance fees.

1. Personnel Staffing Challenges

Finding - CFD was experiencing a chronic shortage of firefighter and paramedic personnel resulting in (1) engines being staffed at less than the four-person crew required by NFPA 1710 5.2.3, and (2) overtime expenses in excess of $3.7 million for the period FY 2012 through FY 2014.

Recommendation - The City should prioritize making changes to expedite the Human Resources – Fire Entrance Process, on-going advertisements for firefighter EMTs and paramedic/firefighter I positions, and create hiring incentives for new firefighters and paramedics.

Response - Level of Agreement: CFD agrees with this finding, but with consideration given to some additional factors noted below.

The staffing challenges the Fire Department faces are connected with a number of factors identified in the Audit report. National studies have shown the increased safety, efficiency and effectiveness that a 4-member company provides over a 3-member crew. While there is certainly agreement with the results of those studies, only firefighting operations were considered. With the Chesapeake Fire Department being a Fire-based EMS delivery system there is an added value of a fourth person on each company, especially when one of those firefighters is also cross-trained as a paramedic. This will insure Advance Life Support (ALS) care is available to our patients, in cases such as sudden cardiac arrest, when an engine company arrives on the scene prior to arrival of the medical transport unit. The Department's long-term goal is to staff all Engines and Ladders with 4 members, with each Engine staffed and equipped with ALS capabilities. There is also an anticipated need to increase the capabilities of transport Medic Units to meet the service demands of both the increasing population of the City, as well as the healthcare and medical emergencies of an aging customer base as the baby boomer generation reaches senior citizen status. The audit report recommends increasing the number of ambulances and converting our part-time units to full time status. While there will certainly come a point in time where additional ambulances will be needed, we have been successful in maximizing current staffing resources by targeting peak-time demand call load. Given the City's current financial situation, we see this as a much less expensive and more effective use of staffing than a wholesale increase in the complement for around the clock coverage. The four-person, Advance Life Support (ALS) engine companies noted in this report will provide a viable safety backstop for EMS delivery. (Note: The full text of the Fire Department response is included in the body of the audit report.)

2. EMS Coverage and Support Challenges

Finding - The EMS Division did not have enough funded positions to support all of the critical functions required of Chesapeake's EMS services.

Recommendation - As more paramedics become available through the new hire process, the CFD should consider reactivating supervisory paramedic coverage in EMS 2.

Response - Level of Agreement: CFD agrees with this finding.

The Department agrees with the assessment findings that the Field Medical Officer positions (3) for the Second Battalion should be reinstituted as additional paramedic staffing becomes available. In an effort to manage a growing EMS system administratively, the decision was made to temporarily defer filling these positions in order to address other system-wide needs. As vacancies are being filled, there is a greater need for clinical supervision in the field to insure quality patient care is being provided. The Field Medical Officer position also delivers clinical back-up and support to these new providers. (Note: The full text of the Fire Department response is included in the body of the audit report.)

3. CFD Training Facility and Faculty

Finding - The lack of a modern training facility, faculty, and a permanent training location, significantly contributed to a cycle of firefighter shortages. Frontline staff were temporarily reassigned to the training facility from field operations in order to staff the recruit schools as well as conduct needed repairs to classroom facilities. Recruit schools had also been postponed due to CFD's need to reassign personnel to address staffing shortages in field operations.

Recommendation - The CFD should work with the City to consider development alternatives for a Joint Public Safety Training Facility which addresses the CFD's need for a permanent location and upgraded facility, with space and props needed to train firefighters and paramedic firefighters.

Response - Level of Agreement: CFD strongly agrees with this finding.

The Training Division is responsible for all of the training needs, requirements and maintenance of training records for all 400 sworn personnel positions. This includes training new recruits as well as maintaining the knowledge, skills and abilities of our incumbent members. In addition to training our department, we also coordinate CPR education for a number of other City Departments. As indicated in the audit report, this is accomplished with only 3 budgeted positions. To conduct recruit schools and accomplish a minimal amount of in-service training, firefighters are taken out of the

field and assigned to the Training Division. Reassigning these firefighters creates vacancies in field operations, which results in either an increase in overtime to cover those vacancies or a reduction below the minimum staffing requirements and/ or service delivery capabilities.

The Department lacks a dedicated training facility, which has been identified as a critical Public Safety need for many years. The current arrangement with the U.S. Navy has helped us over the years; however, it does not meet the needs or expectations of a modern training facility. The quality and frequency of the training that can be conducted has suffered due to these restrictions. While this agreement does provide a space to use and the accessibility of some props associated with the facility, we must abide by the Navy's policies and procedures. This has hampered our Department on many occasions. (Note: The full text of the Fire Department response is included in the body of the audit report.)

4. Telestaff Scheduling and KRONOS Timekeeping Issues

Finding - The City's implementation of Workforce Central (WFC) KRONOS caused another layer of cumbersome, labor intensive activity for the CFD. The lack of an interface between the KRONOS timekeeping system and the CFD's Telestaff Scheduling system created inefficiencies in the CFD's scheduling process.

Recommendation - The City's IT Department recommended (and Audit Services concurred) that the new Kronos/Telestaff integration processes should be revisited and tested to determine if the new features meet the CFD's scheduling and timekeeping synchronization needs.

Response - Level of Agreement: CFD agrees with this finding.

It is the goal of the Fire Department to obtain this interface for efficiency with employee data sharing, roster actions, and timecard management. The recent updates to the Kronos Telestaff interface with WFC Kronos appear to bring improved functionality between the two systems. With system integration, the Fire Department will likely reduce the workload for manual entries, in turn reducing the possibilities of inconsistencies within the data. Coincidently, the Fire Department, Police Department, and Department of Information Technology are currently working on a Telestaff interface within the Computer Automated Dispatch (CAD) and Records Management System (RMS) project; this interface delivers Telestaff roster information directly to run reports.

The Fire Department, in conjunction with the Department of Information Technology, will work to identify functional requirements and funding alternatives for

implementation and sustainment of maintenance costs while being vigilant in verifying the end result will provide a true return on investment (ROI). (Note: The full text of the Fire Department response is included in the body of the audit report.)

5. Aging of the Fire Fleet

Finding - The CFD experienced excessive heavy equipment downtime and continued to rely upon an older, less reliable, and rapidly deteriorating reserve fleet to provide city-wide operational coverage, resulting in lost opportunity costs in excess of $2.6 million.

Recommendation - The CFD should work with the City to develop a vehicle replacement plan that takes advantage of resale values of Fire vehicles, and forgoes future repair costs to maintain older, rapidly deteriorating fire equipment.

Response - Level of Agreement: CFD strongly agrees with this finding.

The Fire Department works closely with Central Fleet to maintain, repair and replace apparatus. Funding for new/replacement apparatus comes from the Central Fleet budget and is not included in the Fire Department's expenditures. The Fire Department submits annual requests for vehicle replacement to Central Fleet and they determine what units (throughout the City) will be funded for replacement. Their budget must serve the needs for all of the City's vehicle purchases. Over the years the Central Fleet's budget has not been adequate to replace the Fire apparatus at a consistent and acceptable rate to avoid the high repair costs, excessive out of service time, and lost opportunity costs. (Note: The full text of the Fire Department response is included in the body of the audit report.)

6. Segregation of Federal Grant Functions and Fiscal Administration

Finding – The CFD lacked a Fiscal Administrator. In addition, at the onset of this audit, CFD had unreconciled differences netting approximately $521,695 between the City's financial expenditure records and Grant reimbursements to the City.

Recommendation - The CFD should focus on improving its fiscal and grants administration by renewing its request for a Fiscal Administrator. This action would improve fiscal and grants reporting and reconciliation processes for the CFD.

Response - Level of Agreement: CFD agrees with this finding.

As mentioned in the report, the Fire Department has been very aggressive in competing for, and being awarded, over $13 million in grants over the past several years. This funding has greatly enhanced Fire, EMS and Emergency Management capabilities at both the City and regional levels. In 2014, unreconciled differences of

$521,695 between financial expenditures and grant reimbursements were discovered. The Department contracted the services of an independent CPA to review the differences and assist with reconciling all of the balances. The consultant completed the work in early 2015; accounting for and reconciling nearly all of the differences in grant expenditures. Working together, the Fire Department and Finance Department completed the work and reconciled 100% of the remaining differences accounting for all the funds. This entire process greatly improved the daily working partnerships between Finance and the Fire Department, which continues today as normal business operations. (Note: The full text of the Fire Department response is included in the body of the audit report.)

7. Fire Inspections

Finding - The Fire Prevention Division did not have adequate staffing levels to complete its goal of performing 100% of annual inspections for commercial businesses in FY 2014. Instead, the CFD completed only 3,865 of 6,668 (or 57%) of the commercial business inspections.

Recommendation - Since dollar losses due to fire remains elevated, the CFD and the City should review program staffing needs for the Fire Prevention Division to reduce safety risks to firefighters, paramedics, and citizens as well as fire losses.

Response - Level of Agreement: CFD agrees with this finding.

Staffing

Over the past 6 years, there has been an intentional and focused direction to enhance the efficiency and effectiveness of Fire Prevention site inspections throughout the City. In terms of life safety and property conservation, this has been both to prevent fires from occurring, and to minimize the impact when they do occur. This report indicates that the Fire Department has been successful toward that goal. Thousands of serious fire and building code violations have been discovered and corrected during this timeframe.

Inspections – Percentage Completed

In the Fall 2010, the Fire Prevention Office began using our current inspection records management system, MobileEyes. Prior to MobileEyes, inspection records were entered and maintained in the inspection section of our fire records management system, FirePoint. Initially, all inspection data was transferred from FirePoint to MobileEyes. It was later found that inaccurate data, such as duplicate occupancies and incorrect occupant use groups, were included in the data transfer. Some of the percentage of completed inspection data contained in Table 11 is a

result of the inaccurate data currently in MobileEyes. Training will be conducted regarding updating the occupant information during each inspection and verifying that duplicate entries are deleted. This training will occur in early Fall of 2015. Once this is implemented the accuracy of the data in MobileEyes will improve. (Note: The full text of the Fire Department response is included in the body of the audit report.)

8. EMS Ambulance Fees

Finding – Chesapeake's EMS Ambulance Fees were well below that of other Virginia cities and counties. In FY 2014, the total amount of ambulance fees collected by the City was approximately $4.6 million and only subsidized 16% of the cost of EMS Services valued at approximately $28 million.

Recommendation – Once EMS Ambulance fees are increased, the City should designate the revenues to address system operational and personnel needs in response to increasing demand for firefighter/paramedic services.

Response - Level of Agreement: CFD agrees with this finding.

In 2015, the City Council approved the increase to EMS Transport Fees as listed previously to bring CFD to the median of the 13 City/County report published by the Budget Office. This suggestion was made by CFD to bring the agency in line with the local market value and the Center for Medicare Services (CMS) Ambulance Fee Schedule. EMS Transport Fees are billed though the City Treasurer's Office and all funds collected go to the General Fund. The Department is currently working with City Administration and local healthcare systems to insure the increase does not place an undue burden on City residents that do not have the financial means to pay their EMS Transport Fee through debt forgiveness for charity care. (Note: The full text of the Fire Department response is included in the body of the audit report.)

CHESAPEAKE FIRE DEPARTMENT

PERFORMANCE AUDIT

JUNE 1, 2014 TO JUNE 30, 2015

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A. Objective, Scope, and Methodology

We have completed our review of the City of Chesapeake (City) Fire Department (CFD) for the period July 1, 2014 to June 30, 2015. Our review was conducted for the purpose of evaluating whether CFD was providing services in an economical, efficient, and effective manner, whether their goals and objectives were being achieved, and whether they were complying with applicable City policies and procedures. The audit included review and evaluation of procedures, practices, and controls of the various divisions of the CFD on a selective basis. All divisions of the Fire Department, including Suppression and Emergency Medical Services (EMS), Training, Prevention, Hazardous materials, and Emergency Preparedness, were subject to evaluation. With the assistance of CFD, we identified performance information that was relevant to the department's operations. We also identified and addressed any additional problem areas as requested by the CFD or determined from the audit itself.

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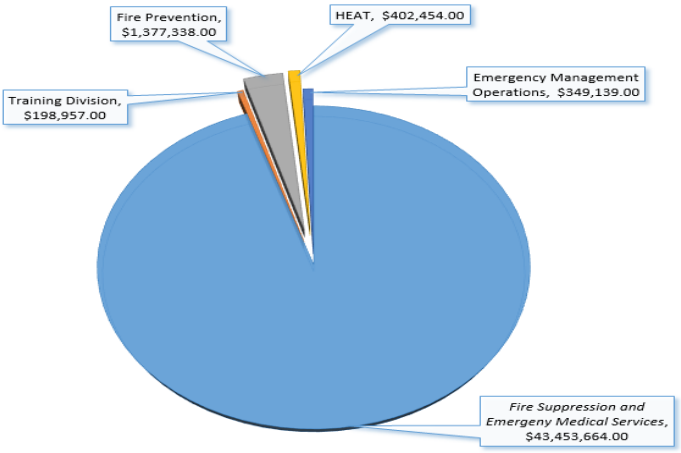
2014-2015 CFD Budget



[1] City of Chesapeake FY2014-15 Budget. CFD added 16 part-time EMTs for the part-time medic units.
[2] U.S. Census Bureau
[3] Chesapeake, 2015

Major Observations and Conclusions

Based on our review, we determined that the Fire Department had accomplished its overall mission of providing rapid response to fires, medical emergencies, rescues, hazardous material incidents, natural and man-made disasters, as well as fire department support services. However, we did identify several significant issues that needed to be addressed. These issues were personnel staffing challenges, EMS coverage and support challenges, training facility and faculty limitations, Telestaff Scheduling and KRONOS Timekeeping issues, aging of the fire fleet, segregation of federal grant functions and fiscal administration, fire inspections staffing challenges, and EMS ambulance fees.

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Methodology

To conduct this audit, we reviewed and evaluated City and Department policies and procedures, and operational documents and reports both internal and external. We evaluated personnel data related to staffing. We accessed PeopleSoft expenditures to determine overtime. We conducted site visits of all 15 fire stations, the training and recruit facilities, warehouse facilities and participated in a “ride-a-long” with medic and fire inspection operations. We conducted in-depth interviews with the Chief of the 1st Battalion/Acting Chief of Support Services, Fire and Emergency Medical Services Operations management, Support Services, Fire Prevention Management and Inspectors, the Account Supervisor, and various other fire and EMS personnel. We analyzed work order information from the Central Fleet Management regarding the heavy vehicle Fire Fleet as well as the City’s 20 year vehicle replacement plan. We also analyzed EMS Ambulance fees over a five-year timeframe and compared the fee with other localities.

B. Performance Information

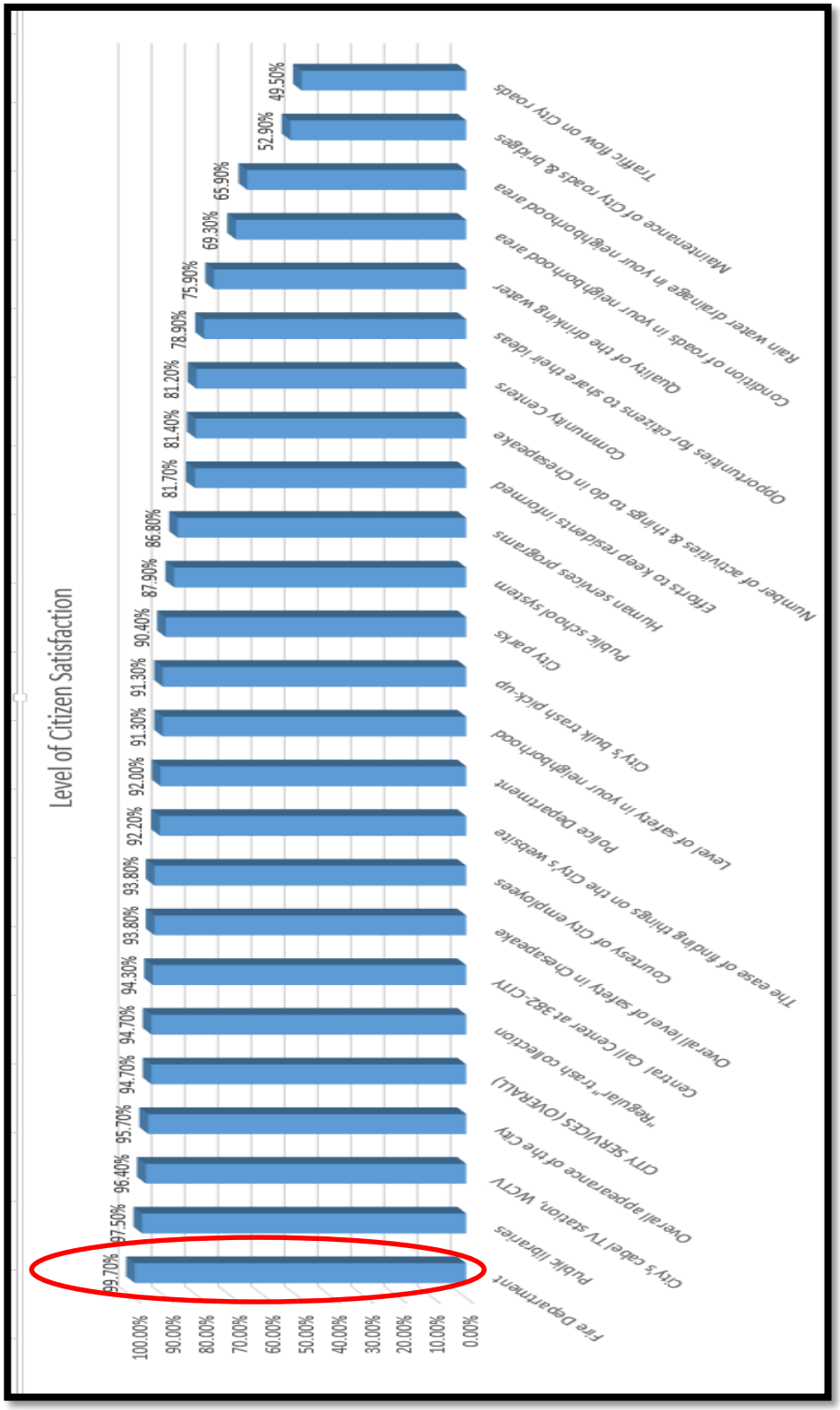
According to the CFD 2014 Annual Report, "the Chesapeake Fire Department is a complex, multi-faceted, service delivery machine, with many moving parts and gears. In 2014, the CFD responded to more than 28,000 calls for emergency service, plus thousands more customer contacts through business inspections, fire code compliance and public education programs." Appendix M on pages 100-101 of this report contains operational responses from CFD's 2014 Annual Report.

> *The members of this 430-person department were also busy managing a 45-million dollar budget, strategic planning, conducting criminal investigations, training our personnel, preparing the City for weather events and disasters, and many other aspects of protective services. Through the leadership and work of many, all of these parts come together to meet the core mission of the CFD, "improving the quality of life by providing responsive and caring service"…*
>
> ***Chesapeake Fire Department 2014 Annual Report***

1. Citizen Satisfaction

The CFD provided essential services for the City and continued to deliver effective fire and emergency services to the citizens of Chesapeake. A research firm, Continental Research Associates, Inc., conducted 323 interviews from October 1st through October 29th 2014 to learn how Chesapeake residents felt about their community and the services provided by the City. In this survey, released in October 2014, the CFD had the highest score for the level of satisfaction of any City department or service ranked in the survey. Specifically, the survey showed that 43% and 56.7% of the survey respondents were "very satisfied" and "satisfied" with CFD services, respectively, indicating an overall 99.7% satisfaction rating. The CFD also scored the highest average mean rate of 3.43 (out of a possible 4.0) in 2014. This was an increase from the CFD's average mean rate of 3.34 in 2006.

2014 Citizen Satisfaction Levels



Source: 2014 Citizen Survey conducted by Continental Research Associates, Inc.

2. CFD Call Volume Trends from 2010 to 2014

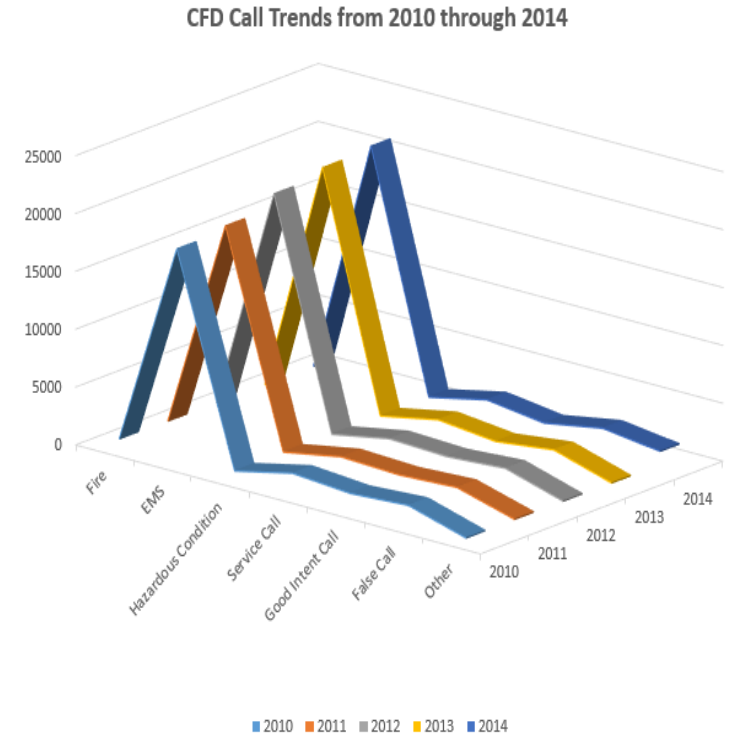
From FY 2010 to FY 2014, the CFD averaged over 26,000 emergency calls a year. The call volume grew from 24,825 in 2010 to 28,154 in 2014, a 13.41% growth increase. This increase was primarily due to increases in EMS Calls, False Calls, and other general calls addressed by the Fire Department.

According to the Virginia Fire Information Reporting System (VFIRS) and the CFD 2014 Annual report, CFD responded to various types of calls as indicated in the table and graph below:

Chesapeake Fire Call Trends from 2010 through 2014

Year	Fire Calls	EMS Calls	Hazardous Condition Calls	Service Calls	Good Intent Calls	False Calls	Other	Total	Aid Given	Fire Exp	Dollar Loss Due to Fire
2010	694	18,480	615	1,770	1,372	1,686	208	24,825	71	32	$10,108,382
2011	629	18,874	654	1,590	1,377	1,635	214	24,973	48	33	$ 6,327,533
2012	627	20,050	585	1,548	1,342	1,684	183	26,019	55	34	$12,547,172
2013	569	20,717	569	1,590	1,050	1,673	154	26,322	42	27	$8,003,940
2014	575	20,983	593	1,716	1,046	1,949	1,292	28,154	*	*	$ 6,884,734

Source: 2014 Chesapeake Fire Department (CFD) Annual Report. 2014 and Firepoint system. 2010 through 2013 data comes from the Virginia Fire Reporting Information System (VFIRS). * Items not yet reported through the VFIRS.



Source: Virginia Fire Information Reporting System (VFIRS) and the Chesapeake Fire Department. (This chart does not include calls for Aid Given and Fire Explosions for FY2014.)

3. History

The CFD was formed in 1963 with the merger of the City of South Norfolk and Norfolk County. The Department melded together several independent fire companies that had been providing service to the local communities since 1892. The Department has grown to 15 fire stations since that beginning and boasts over 400 well trained firefighters divided into three battalions, three shifts, and an administrative section.

In the Mid-1990's, the City consolidated EMS personnel into the ranks of the CFD structure to address a Federal Labor Standards Act (FLSA) overtime issue with EMS personnel. When this reorganization took place, the two department missions evolved into a combined mission. Field employees could alternate between Medic Units and the Heavy Fire equipment, while still maintaining the CFD's goal of fire prevention, suppression, and the delivery of emergency medical care services.

For FY 2015, the CFD had an overall budget in excess of $45.7 million and a budgeted workforce of approximately 426 full-time sworn positions and 19 full-time civilian positions.[4] The CFD served more than 231,000[5] citizens within 353 square miles.[6] CFD's roles and responsibilities included the following:

- **Fire prevention and suppression.** Fire Suppression provided rapid response to fires, rescues, hazardous material incidents, natural and man-made disasters, mutual aid assistance to neighboring departments and related emergencies to reduce life and property loss**.**

- **Emergency Medical Services.** Emergency Medical Services (EMS) was consolidated with Fire Suppression as all personnel were trained and certified to perform dual roles. The EMS function provided services that included all aspects of pre-hospital patient care from rapid response to assessment, treatment and transport of the sick and injured.

- **Hazardous Materials.** The Hazardous Environmental Action Team identified and eliminated dangerous hazards to persons and the environment associated with the illegal storage, handling, and use and disposal of hazardous materials and other environmental contaminates. The program was supported by fees for fire inspections, operational fire core permits, cost recovery for response to hazardous material releases and penalties imposed by the courts.

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[4] City of Chesapeake FY2014-15 Budget. CFD added 16 part-time EMTs for the part-time medic units.
[5] U.S. Census Bureau
[6] Chesapeake, 2015

- **Technical Rescue.** CFD's Technical Rescue Team was part of the Division of Special Operations and included members from fire Station 15, as well as members of Ladder Co. 2, Ladder Co. 5, and Ladder Co. 12, who received training in Rope Rescue, Trench Rescue, Confined Space Rescue, Vehicle Rescue, and Structure Collapse Rescue. Members from Station 15 were also part of the Tidewater Regional Technical Rescue Team or TRTRT. This team included highly trained firefighters and rescue personnel from the Tidewater cities of Chesapeake, Norfolk, Portsmouth, Virginia Beach, Franklin, the Norfolk Naval Base, and the Little Creek Amphibious Base. The TRTRT was organized to serve Southeastern Virginia.

- **Training Division.** This Division trained newly hired recruits as well as provided ongoing Fire/EMS training to all members of the Fire Department. CFD was tasked with cross training all new recruits. The training was rigorous and demanding. Training included both classroom and practical hands-on training that mimicked real live fire conditions as closely as possible in an academy setting. The curriculum was designed to assure quality training and a smooth transition from the classroom to field assignments.

- **Fire Building Code enforcement for both commercial and residential structures.** The Fire Prevention Division provided fire safety inspections, code education, preconstruction plan review, and investigative services to reduce the probability, frequency, and severity of fires, explosives, hazardous materials and the corresponding deaths, injuries and loss of property. The staff educated Chesapeake citizens and businesses in fire safety codes. They also reviewed preconstruction plans to ensure compliance with applicable building and fire codes.

- **Emergency Management.** Emergency Management coordinated the City's emergency preparedness, mitigation, response, and recovery efforts from a natural or man-made disaster.

4. <u>Initiatives</u>

There were also many innovative initiatives taking place within the CFD.[7] The following highlights four of those initiatives:

- The ***Tri-City Automatic Aid Plan*** will allow Chesapeake Firefighters to work with Virginia Beach and Norfolk firefighters along the borders of the three cities. The intent is to have the closest engines respond to a

[7] Fire Chief Elliott published the First CFD Annual Report issued February 12, 2015 which highlighted statistical and financial data, as well as current and future program initiatives of the CFD.

structure fire regardless of city lines. The Tri-City Automatic Aid Plan was created to allow faster responses to structural fires. Stations 14 in Greenbrier, Station 3 in Indian River, and Station 1 in South Norfolk are participating in the agreement. The program went live on May 4, 2015 and is working very well.

- ***Mobile Integrated Health Care***. This initiative was still in development during the audit. The intent of this program was to address non-emergency calls to minimize the number of transports to the hospitals and to initiate transport agreements with other healthcare providers.

- ***ACCELA City-wide Initiative.*** This initiative will promote transparency on the status of permits issued by the Department of Development and Permits and the Fire Prevention Division. Citizens and user departments will have the ability to view permit status through this web-based software. The ACCELA program also enables two-way communication and real-time updates to citizen requests.

- ***New World City-wide Program Initiative.*** New World will replace the obsolete Tiburon Computer Aided Dispatch (CAD) system used by the Fire and Police 911 Call Center. This program was also in development and was anticipated to streamline dispatching operations. For instance, mapping capabilities should show a dispatcher the location of a fire vehicle closest to a Fire/EMS call incident. The goal of the software is to provide accurate and secure information for dispatchers, officers in the field, firefighters, EMS, corrections officers, and command staff so that mission critical data entered into the system can be easily and securely available when needed.

5. <u>Grants</u>

Over the years, CFD had been aggressive in obtaining Federal and State grants through the efforts of its firefighters and paramedics. To their credit, firefighters had become the grant writers and administrators of Federal and State grants awarded to the City totaling in excess of $13 million[8]. Two examples of purchases made by grants were the Fire Prevention trailer and hydraulic lift stretcher systems.

- ***The Fire Prevention Trailer.*** In 2012 the CFD received a grant to purchase a trailer for fire prevention response. The trailer was used to transport equipment and supplies to aid in investigative incidents. The Fire

[8] The grants awarded to the City were accumulated over several years. The total in excess of $13 million was obtained from records provided by the City's financial grant accountant. The $13 million does not include such items as donations, State Fire Programs, Four for Life, and Charitable Gift Trust which are also CFD accounts managed in Fund 228, used for grant funds accounting.

Prevention trailer was funded through an Assistance to Firefighters Grant (AFG) EMW-2010-FP-00889. The total cost was $13,469.00 with FEMA paying 80% or $10,776.00. The City paid 20% or $2,693.00.

- ***Automatic hydraulic lift systems and hydraulic lift stretchers*** for the ambulances called ***Stryker Stretchers.*** The hydraulic stretchers were purchased to decrease back injuries to firefighter. According to the City's Risk Manager, the number of back injuries was starting to decrease in FY 2015 compared to prior years, resulting in a decline in the number of workers compensation claims filed. Stryker stretchers were funded through an AFG grant, EMW-2012-FO-03662. Total cost was $518,730.00. FEMA paid $414,984.00 and the City paid $103,746.00. $88,685.50 of the City's portion was funded through Capital Project 1571700200 and the remainder of the purchase from operating budget funds.

Interior and Exterior Views of the Fire Prevention Trailer

These supplies are used to aid in investigations of suspicious deaths and injuries caused by fire.

Medic 12 with the Stryker Automatic Stretcher

This is a view inside Medic 12 with a Stryker and Power Load which replaces the older stretcher that firefighters and paramedics used to manually lift patients. Stryker units were purchased with grant funds. The number of back injuries was starting to decrease this year due to the use of these Stryker units. It should be noted that while it helped reduced the number of back injuries, manual lifting could not always be avoided especially when patients had fallen or needed to be lifted from tight areas.

6. Fire Prevention

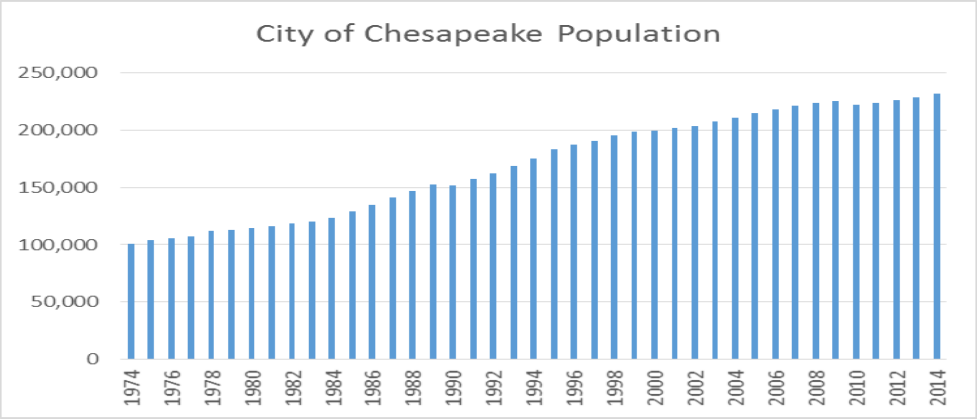
Automated MobileEyes Inspections System. The Fire Prevention Division streamlined its processes by implementing the MobileEyes Inspections System. MobileEyes will work with ACCELA by updating the status of permits issued as a result of a fire inspections plans review, annual inspections, and re-inspections. Fire Inspectors would continue to use the MobileEyes software to manage their daily schedules and to assist with documenting code compliance and non-compliance based on the Statewide Fire Prevention Code (SFPC) requirements for commercial businesses.

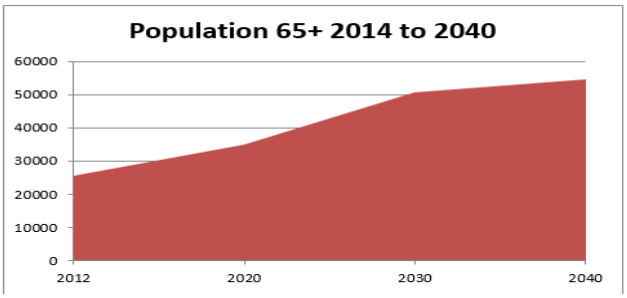
The Inspectors used the software to create checklists of items that needed inspection. With MobileEyes, Inspectors were able to easily capture electronic signatures and electronically send final inspection reports to the Fire Prevention Division, the City Treasurer (for billing purposes), and the business owner.

In compiling the inspection reports, the inspector had the ability to consult the Statewide Fire Prevention Code, or its quick reference guide in MobileEyes, if needed, and could call a senior inspector to confirm or verify facts or a course of action. Firefighters on the fire engines could also access information from the MobileEyes software regarding fire inspections.

7. Upward trend in EMS calls, the recession, and departmental changes

Since the mid-1990's the City's population has continued to grow. The Fire Department's EMS calls were expected to increase with the rise of the aging population.





Projected Population	US (1,000s)	Virginia	Chesapeake
Number of persons aged 65+ in 2012	40,229	1,062,505	25,446
Proportion of persons aged 65+ in 2012	13.00%	25.3%	11.1%
Number of persons aged 65+ in 2040	79,719	2,990,547	54,588
Proportion of persons aged 65+ 2040	21.0%	28.4%	17.1%
Growth rate in number of persons aged 65+ from 2012 to 2040	98.2%	181.5%	114.5%
Growth rate in proportion of persons aged 65+ from 2010 to 2030	61.5%	12.4%	146.0%
Growth rate in population overall	22.5%	28.6%	39.4%

Sources: U.S. Census Bureau, the Weldon Cooper Population Center, COC Chesapeake 55 and Better Comprehensive Plan

Beginning in 2013, the City transitioned to a new three-year budget cycle. During that time, CFD completed a long-range replacement schedule for fire stations and capital facilities. Also in 2013, all Advanced Life Support (ALS) personnel were reassigned to Engine Companies. Medic Units would be staffed with EMT-Basics or Enhanced Firefighters to address the high volume of less serious EMS calls. Due to the shortage of ALS personnel, ALS paramedic/firefighters would be reassigned to Fire Engines to address more serious calls along with fire calls. The goal was to save wear and tear on the engines and keep them more readily available. CFD made further adjustments by hiring civilian, part-time EMT-Basics to staff two additional medic units to only be used during peak demand hours to address less serious calls.[9]

The Commonwealth of Virginia's Office of Emergency Medical Services (OEMS) reported that the Commonwealth would discontinue the "Enhanced" designation and replace it with another designation aligned with the national EMS certification registry. However, the timeframe had not been determined. Based on the messages received from the OEMS and CFD, and with the concurrence of CFD's Operational Medical Director, a decision was made to allow the Enhanced certifications to expire as they came due for renewal. The final Enhanced certifications held within the CFD expired in late February 2015. ALS Intermediate and Paramedic certifications would replace the Enhanced certifications.

Firefighters holding the Enhanced Basic Life Support (BLS) Certification were granted the opportunity to attain the ALS certification fully funded by CFD. Thirteen incumbent firefighters made the transition. It was anticipated that this new structure would help make up for the vacant ALS positions. The goal was to assign one ALS intermediate or paramedic to each Engine and Medic Unit.

[9] Medic 11 and Medic 24 were placed into service 0900-2100 (from 9am to 9pm).

Recruit Class 27/28 graduates will be the first ALS designated personnel to be assigned to the battalions. However, CFD still anticipates the need for paramedic members. (Refer to Appendix C on page 75 for further information regarding Class 27/28 timeline and staffing).

C. Operational Issues

CFD was experiencing significant staffing, coverage and budgetary challenges. These challenges included CFD personnel staffing challenges based on NFPA and OSHA safety standards, EMS coverage and support challenges, CFD's training facility and faculty, Telestaff scheduling and KRONOS timekeeping system coordination, aging of the fleet, Federal, State, and City grant functions and fiscal administration, Fire Inspections, and EMS Ambulance Fees.

1. Personnel Staffing Challenges

Finding - CFD was experiencing a chronic shortage of firefighter and paramedic personnel resulting in (1) engines being staffed at less than the four-person crew required by NFPA 1710 5.2.3, and (2) overtime expenses in excess of $3.7 million[10] for the period FY 2012 through FY 2014.

The following excerpts illustrated the recommended and mandated safe and efficient manpower levels for firefighting operations.

> *5.2.3 Operating Units (Staffing requirements necessary for safe, effective, and efficient emergency operations.) Fire companies whose primary functions are to pump and deliver water and perform basic firefighting at fires, including search and rescue, shall be known as engine companies. Engine, ladder or truck companies shall be staffed with a minimum of four on-duty personnel.*
>
> ***National Fire Protection Association (NFPA) 1710 5.2.3 Staffing Requirements***
>
> *"The firefighters' "two-in/two out" regulation" – Two firefighters inside a [structural fire] must have direct visual or voice contact between each other and direct, voice, or radio contact with [two] firefighters outside the structure.*
>
> ***Occupational Safety and Health Administration (OSHA) Fire Fighters' Two-in/Two-out Regulation 1910.134(g)(4)***
>
> *A landmark residential fire study shows how crew sizes and arrival times influenced saving lives and property. Performed by a broad coalition in the scientific, firefighting, and public-safety communities, the study found that four-person firefighting crews*

[10] Includes overtime from program code 32100 Fire Suppression and EMS division only. Overtime in other divisions were not included in this figure.

were able to complete 22 essential firefighting and rescue tasks in a typical residential structure 30 percent faster than two-person crews and 25 percent faster than three-person crews.

"Fire risks grow exponentially. Each minute of delay is critical to the safety of the occupants and firefighters, and is directly related to property damage." – Averill

2010 National Institute of Standards and Technology (NIST) Landmark Residential Fire Study

On June 12, 2014, contrary to the NFPA staffing standard, the CFD made a change to its staffing practice as a result of the firefighter shortage.

Before June 12th [2014] we [CFD] would hire back the allowable hours of overtime, and if we were still short we would begin taking these units out of service (Engine 24, Engine 28, Medic 7). After June 12th we changed that practice - now after we have hired back the allowable hours of overtime, which is dictated by budgetary restrictions, we start to reduce all of the four person companies down to three. We don't take Engine 24, Engine 28 or Medic 7 out of service unless all of the 4 person companies are cut down to three.

Chesapeake Fire Department

Between July 2014 and December 2014, CFD was not able to meet its required four member staffing on the 10 mandatory four-member engines. Per NFPA and NIST, all Engine Companies should have been staffed with four Firefighters each. This equated to an hourly deficit of 15,547 personnel hours or 35% of the time. Engines 28 and 24 were placed out-of-service (OOS) for a total of 630.50 hours due to staffing shortages reported for the same time frame.

Table 1: Equipment Out-of-Service Report due to Personnel Shortages
July 2014 through December 2014

Master 2014/2015	Engines Running Short AM	Engines Running Short PM	Total Number of Days per Month
July	967	598	31
August	2,000	1,764	30
September	1,230	984	30
October	1,570	1,032	31
November	1,128	948	30
December	1,656	1,670	31
Totals	**8,551**	**6,996**	**183**

Analysis

- ***There were 10 engines that required 4 firefighters each.***
- ***There was a total of 43,920 available personnel hours assigned to these engines. (10 engines x 24 hours per day x 183 total days for 6 months)***
- ***These ten engines were understaffed a total of 15,547 personnel hours or 35% of the time over this 6 month period. (8551+6996)/43,920 =35%***

Master 2014/2015	Engine 28 OOS hours	Medic 7 OSS hours	Engine 24 OSS hours	Total Number of Days per Month
July	0	0	0	31
August	0	0	24	30
September	120	0	142.5	30
October	24	0	0	31
November	12	0	0	30
December	164	0	144	31
Totals	**320**	**0**	**310.5**	**183**

Analysis

- ***There was a total of 13,176 available personnel hours assigned to these three vehicles. (3 vehicles x 24 hours per day x 183 total days for 6 months)***
- ***These vehicles were taken completely out-of-service for a total of 630.5 hours or approximately 5% of the time over the 6 month period. (320+310.5)/13,176=5%***

Source: Chesapeake Fire Department

To illustrate the staffing challenge, Paramedic/Firefighter Trainee Classes 27/28 commenced training November 1, 2014 with an expected graduation date in the Summer of 2015. (Refer to Appendix C on page 75 for Classes 27/28 timeline.) Using Classes 27/28 as a test case, there was only a 17% acceptance rate of applicants since only 20 applicants commenced training out of 115 applicants who applied. These 20 graduates were not sufficient to meet program personnel requirements for each Battalion (see Tables 2, 3, and 4), and all Battalions remained below the minimum staffing requirements. Given existing trends, i.e. the staffing requirements, anticipated attrition, retirements, voluntary job separation, etc., it would take over four years to satisfy manpower objectives as indicated in Table 4 (optimum staffing level).

Table 2 below shows that, on October 1, 2014, the minimum staffing level was 97 on-duty firefighters each day – a deviation from NFPA 1710. CFD required a minimum of 27 new firefighter trainees in order to meet the minimum CFD standard.

Table 2: Minimum CFD Staffing Needs as of October 1, 2014 without EMS 2

Current Staffing*		
Assigned to Each Shift (Oct 1, 2014)		115
Minimum required to staff each day		97
What impacts daily staffing (Average Daily)**		
Annual Leave	15	
Long Term Sick Leave	6	
(WC, Cancer, FMLA, Military, etc..)		
Sick Leave- Daily	6	
Average Total Out	27	
Total Available per Day		88
Short each day on average		9
Total additional needed for 3 shifts		**27**
Anticipate hiring 33 ALS Technicians- not expected to be released to function until late spring/early summer		

Source: Chesapeake Fire Department

*Medic 11 and Medic 24 staffed by part-time members – not included in the analysis
**Many other factors also impact daily staffing such as in-service training, recruit school training, temporary duty assignments, deployments, physicals, meetings, etc…

Table 3: CFD Staffing Needs as of October 1, 2014 with EMS 2 back in-service

To Staff apparatus at 4 members and put EMS 2 back in-service*		
Required to staff each day		108
Additional members to staff 4 person companies and EMS 2		11
What impacts daily staffing (Average Daily)**		
Annual Leave	15	
Long Term Sick Leave	6	
(WC, Cancer, FMLA, Military, etc..)		
Sick Leave- Daily	7	
Average Total Out	28	
Required to staff each day		136
Available staff (based on 33 additional ALS Tech)		126
Total additional needed per day		10
Additional needed to complement for 3 shifts		30

Source: Chesapeake Fire Department
*Medic 11 and Medic 24 staffed by part-time members – not included in the analysis
**Many other factors also impact daily staffing such as in-service training, recruit school training, temporary duty assignments, deployments, physicals, meetings, etc…

Table 4: CFD Staffing Needs as of October 1, 2014 with EMS2 back in-service, and specialty equipment fully staffed

To Staff apparatus at 4 members, put EMS 2 back in-service, and staff specialty equipment*		
Required to staff each day		116
Additional members for 4 member staffing, EMS 2, and Specialty Equipment		19
What impacts daily staffing (Average Daily)**		
Annual Leave	15	
Long Term Sick Leave	6	
(WC, Cancer, FMLA, Military, etc..)		
Sick Leave- Daily	7	
Average Total Out	28	
Required to staff each day		144
Available staff (based on additional 33 ALS Tech)		126
Total additional needed per day		18
Additional needed to complement for 3 shifts		54

Source: Chesapeake Fire Department
*Medic 11 and Medic 24 staffed by part-time members – not included in the analysis
**Many other factors also impact daily staffing such as in-service training, recruit school training, temporary duty assignments, deployments, physicals, meetings, etc…

In January 2015, 10 of the 17 Engines included in the Fleet are mandatory four person staffing. The other seven Engines have either a Ladder or an additional Engine at the same station (Engines 2, 4, 24, 5, 8, 28, 12). These units are staffed at a minimum of three firefighters- with the theory that both units will arrive on the scene with six people about the same time. CFD's long term objective is to have these units also staffed at four members - however today's minimum staffing for these seven Engines are three Firefighters.

Chesapeake Fire Department

CFD continued to experience a shortage of firefighter/EMS personnel primarily due to (1) delays in the Human Resources Firefighter Entrance Process, (2) the lack of a continuous firefighter recruit training program, and lack of training faculty for the CFD Training Division. In addition, vacancies resulted from various types of employee leave. Personnel shortages were also attributable to emerging issues such as (3) an aging firefighting and paramedic staff, (4) other external factors and the allure of opportunities in the private sector, etc., which would continue to affect the future number of paramedics/firefighters. Other Hampton Roads municipalities were competing for the same talent pool of qualified firefighter/EMT-B and paramedic/firefighter personnel.

The CFD addressed many of these vacancy issues in its responses to our 2008 audit report; however, the staffing shortages continued.

(1) Delays in the Human Resources Firefighter Entrance Process.

At the time of the audit, Administrative Regulation (AR) 2.25 Fire Entrance Selection Processes Policy dated April 14, 2010, was undergoing a review for modification. The goal of the new AR 2.25 was to speed up the CFD hiring process. Although the advertisement and recruit class for the Firefighter Paramedics were well underway, the advertisement for the Firefighter EMT-B vacancies were postponed until the new AR 2.25 was approved. Human Resources postponed the advertisement for Firefighter EMT-B positions until February 13, 2015, approximately 11 months after AR 2.25 went under review. Consequently, CFD's search for new firefighter EMT-B trainees[11] was also postponed. (Refer to Appendix D on page 76 for Firefighter/EMT Advertisement Timeline.)

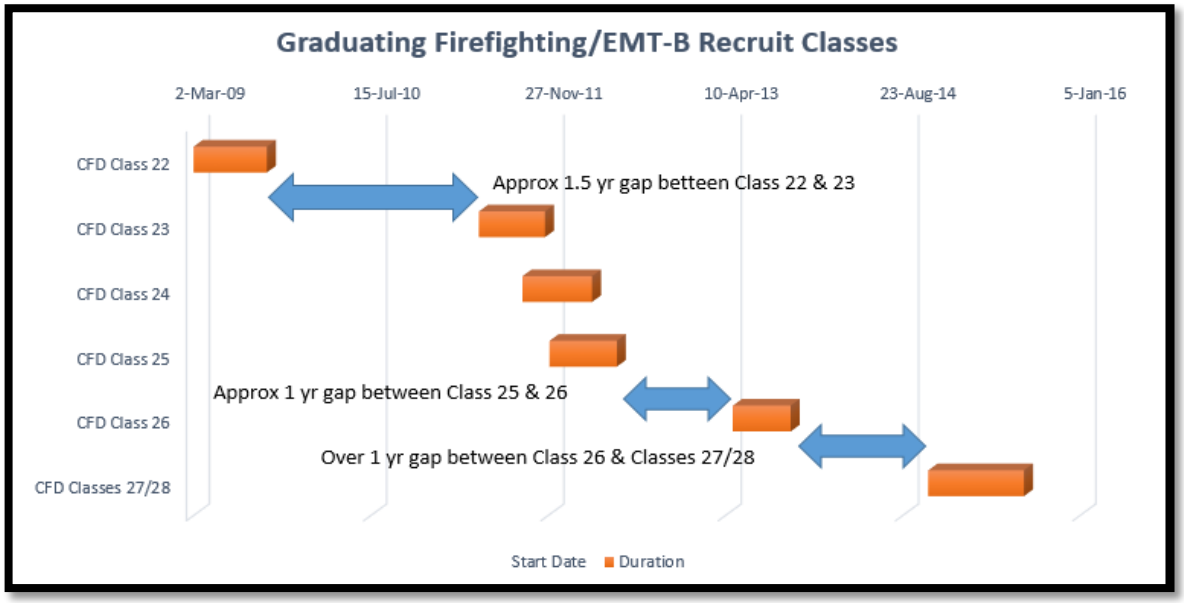
[11] CFD needs four types of firefighters to address fire and EMS calls. Those positions include Firefighter/EMT-B, Firefighter Paramedics, Paramedic Firefighter (or ALS paramedic technicians with firefighter 1 training), and Part-time EMT-B or Part-time paramedics. Part-time paramedics/EMT-B are used during peak hours and are limited to EMS paramedic responsibilities.

A third party vendor was recently briefed by the CFD on eligibility requirements to adequately screen the applicants. Since this method had not been implemented before, time will tell if this new HR Fire Entrance Process will satisfy the EMS staffing requirements. (Refer to Appendix F on page 78 and 79 for excerpts of relevant changes to AR 2.25.)

(2) Lack of a continuous firefighter recruit training program and training faculty

Finding 3 of this report entitled, "CFD Training Facility and Faculty," addressed in detail issues with the recruit training program and a faculty shortage. Figure A below illustrates the lapses in time between Firefighter Trainee Graduating Classes which contributed to the shortage of firefighters and paramedics.

Figure A
Time Lapses between Firefighter Trainee Graduating Classes



Note: See Appendix E on page 77 for more detailed dates on the Firefighter Trainee Graduate Classes

(3) Emerging Issue: An Aging Firefighter and Paramedic Staff

Sixty-six firefighters/EMS personnel were eligible to retire[12] as of October 16, 2014. As of March 27, 2015, 23 had terminated employment in FY 2014-15, creating more firefighter and paramedic vacancies. An additional three were anticipated to terminate their employment in the near future.

[12] Sworn police, fire and sheriff's employees may retire with full benefits at age 50 with 25 years of service under the Retirement System – Chesapeake Employee Handbook.

Table 5: Numbers of firefighter/EMS personnel eligible to retire as of October 16, 2014

Job Titles	Total Eligible to Retire
Administrative Support Staff	5
Deputy Fire Chief	1
Deputy Fire Marshalls	4
Division Chiefs	2
EMS Officer	1
Fire Battalion Chief	7
Fire Captain	9
Fire Chief	1
Fire Lieutenant	14
Fire Marshal	1
Fire Fighter Specialist	11
Firefighter EMT	5
Firefighter Paramedics	3
Senior Firefighter	2
Total	**66**

The CFD incurred approximately $20,000 in costs to train and provide equipment to certify them at a Firefighter/EMT-B level. To increase the certification level to Paramedic status, increased the costs another $12,000.

(4) Other External Factors that Affected Firefighter and Paramedic Shortages

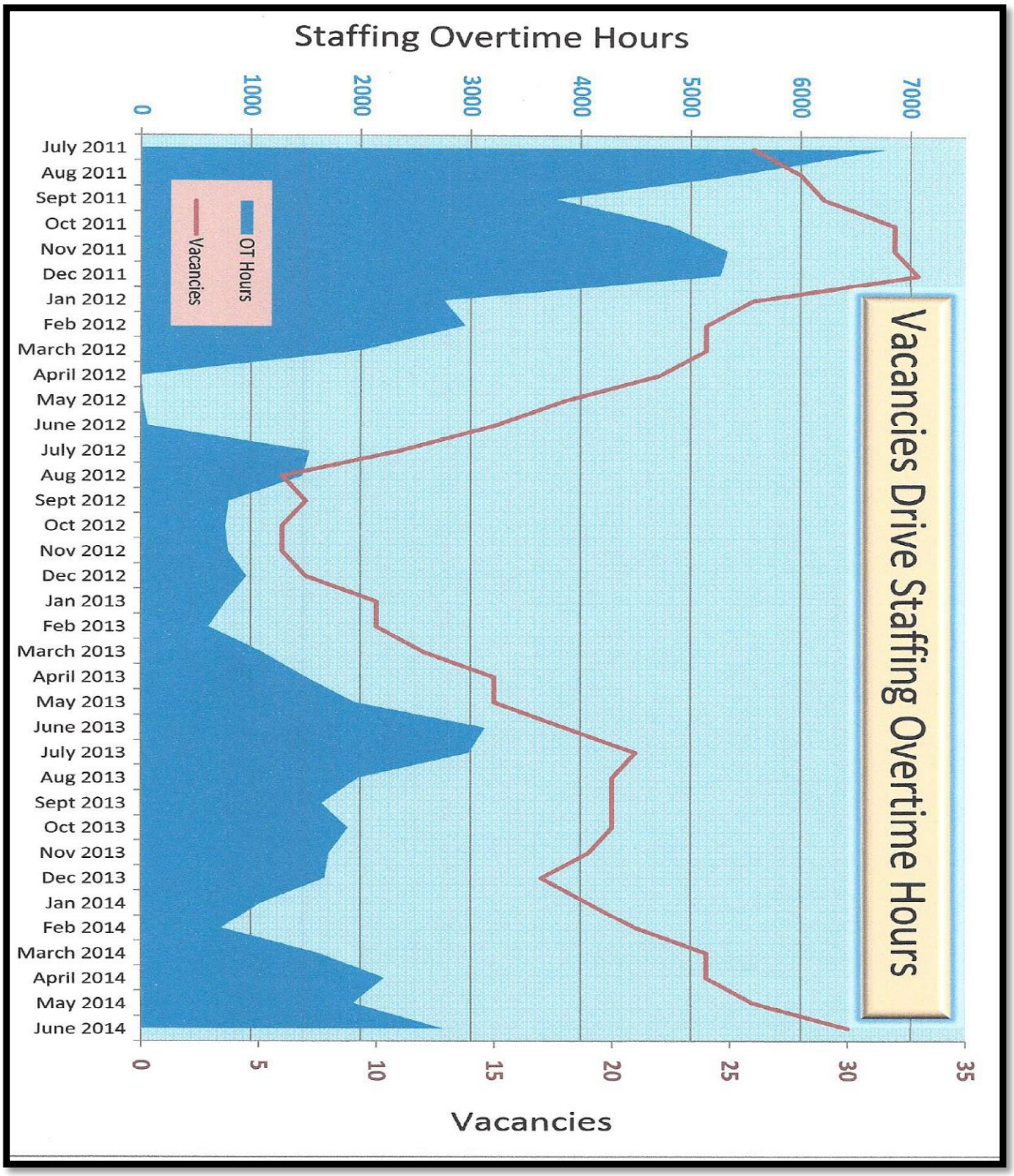
As mentioned earlier, external factors such as age of firefighters, the allure of opportunities in the private sector, etc., continued to affect the future shortage of paramedics/firefighters. Other Hampton Roads municipalities were competing for the same talent pool of qualified firefighter/EMT-B and paramedic/firefighter personnel.

Baby Boomers made up 50 of the 66 personnel (or 83%) eligible to retire as of October 16, 2014. Additionally, the demand for EMT-Bs and paramedics was projected by the Bureau of Labor Statistics to grow 23% from 2012 to 2022, much faster than the average for all occupations, due to age related health emergencies in the growing middle-aged and elderly population and other types of emergencies. Normal attrition was also considered. The average attrition rate of City of Chesapeake Fire Employees between FY2009 and FY2014 was 5.59%. CFD was fully aware of this situation and anticipated that the attrition rate would drastically increase in the years ahead as firefighters and EMS personnel reached retirement eligibility or sought more lucrative employment in the private sector.

Figure B shows that increases in vacancies resulted in increased staffing overtime hours for the period beginning July 2011 through June 2014. It should be noted in April, May, and June 2012, CFD reached a critical point that significantly increased risk to the safety of firefighters, paramedics, and citizens. CFD was directed not to exceed budgeted overtime, and consequently was not authorized to hire back firefighters in order to backfill

positions. Many engines were placed out-of-service at that time resulting in unsafe staffing levels.

Figure B: Vacancies and Overtime Hours July 2011 through June 2014



Source Chesapeake Fire Department

Recommendation - The City should prioritize making changes to expedite the Human Resources – Fire Entrance Process, on-going advertisements for firefighter EMTs and paramedic/firefighter I positions, and create hiring incentives for new firefighters and paramedics.

In order to address the issues discussed regarding:

1. Delays in the Human Resources Firefighter Entrance Process,
2. Lack of a continuous firefighter recruit training program and unfunded training facility,
3. Emerging issues of an aging firefighter and paramedic staff, and
4. Other external factors,

CFD together with the City should:

1. Consider running continuous firefighter training programs with start times between classes of less than a year, using an adequately staffed faculty.
2. Fund a permanent training facility,
3. Review the pay structure to ensure that pay rates are competitive with other local departments and similar jobs in the private sector.

When more firefighter and paramedic staff become available through the new hire process, the CFD should increase staffing to the minimum of four firefighters for all engines and ladders based on NFPA standard 1710. Also, when funding becomes available, the CFD should consider increasing the complement of ambulances and change the part-time Medic Units to full-time status in order to keep up with the increasing demand for EMS calls to adequately address the needs of an aging population.

Management Response

1. **Personnel Staffing Challenges**
   Level of Agreement: CFD agrees with this finding, but with consideration given to some additional factors noted below.

The staffing challenges the Fire Department faces are connected with a number of factors identified in the Audit report. National studies have shown the increased safety, efficiency and effectiveness that a 4-member company provides over a 3-member crew. While there is certainly agreement with the results of those studies, only firefighting operations were considered. With the Chesapeake Fire Department being a Fire-based EMS delivery system there is an added value of a fourth person on each company, especially when one of those firefighters is also cross-trained as a paramedic. This will insure Advance Life Support (ALS) care is available to our patients, in cases such as sudden cardiac arrest, when

an engine company arrives on the scene prior to arrival of the medical transport unit. The Department's long-term goal is to staff all Engines and Ladders with 4 members, with each Engine staffed and equipped with ALS capabilities. There is also an anticipated need to increase the capabilities of transport Medic Units to meet the service demands of both the increasing population of the City, as well as the healthcare and medical emergencies of an aging customer base as the baby boomer generation reaches senior citizen status. The audit report recommends increasing the number of ambulances and converting our part-time units to full time status. While there will certainly come a point in time where additional ambulances will be needed, we have been successful in maximizing current staffing resources by targeting peak-time demand call load. Given the City's current financial situation, we see this as a much less expensive and more effective use of staffing than a wholesale increase in the complement for around the clock coverage. The four-person, Advance Life Support (ALS) engine companies noted in this report will provide a viable safety backstop for EMS delivery.

The Fire Department's budgeted training staff consists of only 3 funded positions to conduct all of the training and required recertification for the Department (including conducting recruit schools). To accomplish recruit school training, firefighters from operations must be taken from the field and temporarily assigned to Training. This results in additional overtime costs to backfill an already short-staffed department. This cyclical challenge has resulted in delays in conducting academies to quickly bring recruits into the Department. A permanent, funded training staff is needed to break this recurring cycle. With a funded training staff, recruit schools could be run consecutively with little break in between. This has multiple benefits including reducing overtime, reducing the number of vacancies, and conducting smaller recruit schools. Training will be addressed further in Section 3.

Firefighters currently have minimum service obligations once they receive their training. Incumbent Firefighters who achieve their Paramedic certification agree to maintain that certification for a period of 6 years. New recruits sign a Memorandum of Understanding (MOU) stating that if they leave the City of Chesapeake within 3 years, the City can recoup expenses associated with their training.

The Department of Human Resources, the Public Safety Departments and various employee groups have been active in reviewing the compensation rates and benefits to insure that our City remains competitive with other jurisdictions to attract and retain the best talent pool. This process and commitment should continue into the future.

Additions to the complement have been identified in the audit report to address the staffing needs of the Department. These additional positions will be considered in future budget processes, beginning in FY 2017,

understanding that there are limitations of financial resources and competing needs within the Department and the City.

Regarding the staffing shortages and units out of service noted in this report, a significant change in policy recently occurred which has greatly alleviated both of those issues. Historically, Public Safety departments were not permitted to augment the operating budget's overtime account with vacancy savings from the salary account, and all vacancy savings were automatically diverted back to the City's general fund. Obviously, higher numbers of vacancies within the Fire Department result in increased overtime expenditures to insure the minimum staffing requirements are met. Recently, the City Manager changed that long-standing practice and now allows department heads to manage their overtime line item accounts, as well as the salary account, including the reallocation of any vacancy savings. This new latitude has greatly improved our ability to insure minimum daily staffing is met and has decreased the time engine companies and medic units are out of service due to tight budget constraints.

2. EMS Coverage and Support Challenges

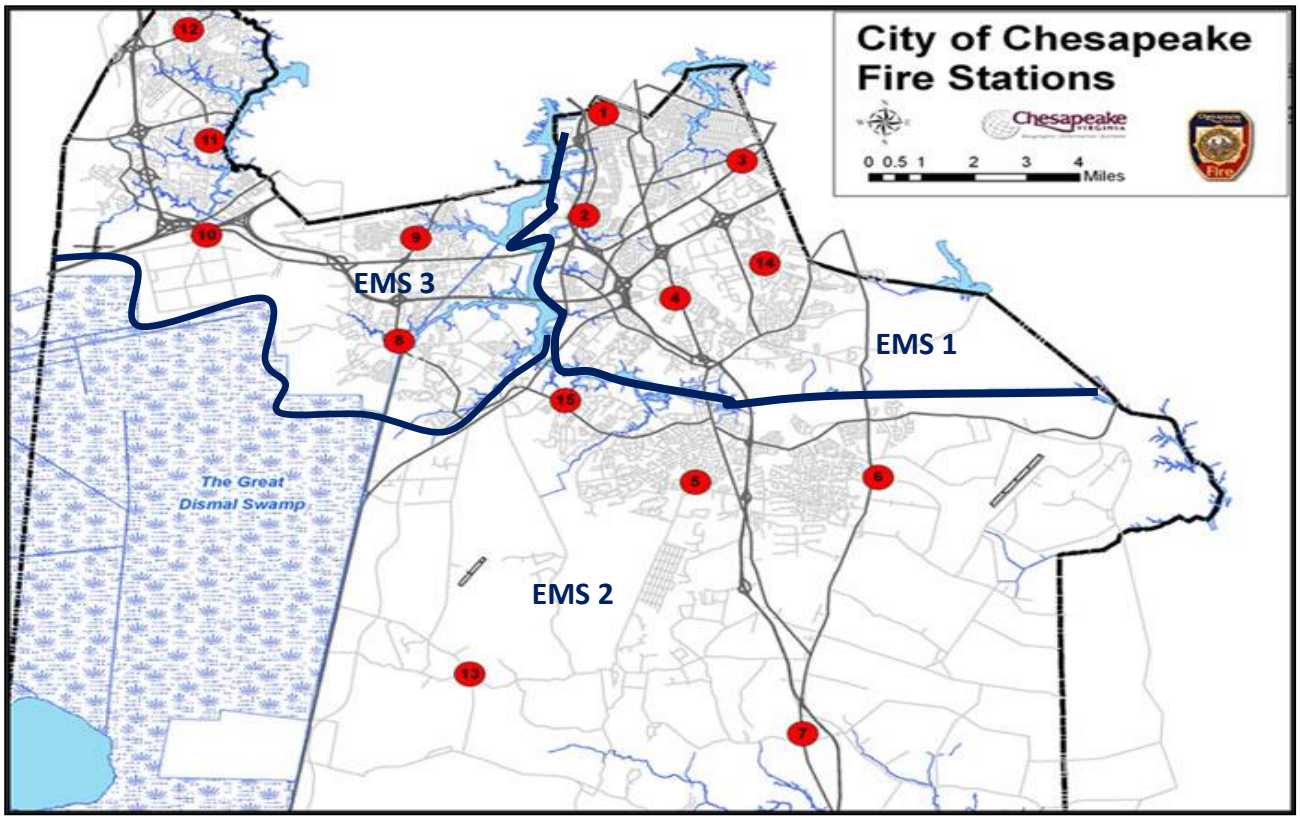
Finding - The EMS Division did not have enough funded positions to support all of the critical functions required of Chesapeake's EMS services.

> *The fire department's EMS for providing a first responder with AED (automatic electronic defibrillator) shall be deployed to provide for the arrival of a first responder with AED company within a 240-second (or 4 minutes) travel time to 90 percent of the incidents as established in Chapter 4.*
>
> *When provided, the fire department's EMS for providing ALS shall be deployed to provide for the arrival of an ALS company within a 480-second (or 8 minutes) travel time to 90 percent of the incidents provided a first responder with AED or BLS unit arrived in 240 seconds or less travel time as established in Chapter 4.*
>
> *Personnel deployed to ALS emergency responses shall include a minimum of two members trained at the emergency medical technician-paramedic level and two members trained at the emergency medical technician-basic level arriving on scene within the established travel time.*

NFPA 1710 5.3.3.3. Service Delivery Deployment

On December 1, 2012, the Fire Department temporarily (and indefinitely) eliminated Field Medical Officer/Paramedic coverage in EMS 2 (the southern part of the City.) At the time, EMS 2 responded to the fewest calls for service in comparison to EMS 1 and EMS 3. Due to lower call volumes, the Paramedic Officers were transferred to administrative support positions created within the department to support the changes to the Fire/EMS deployment model.

Figure C
Shows the City's EMS Coverage



EMS 1 and EMS 3 were reassigned to cover EMS 2's calls in addition to existing station coverage. The remaining EMS 2 personnel were reassigned to EMS Central Administration. These personnel, three highly skilled paramedics, were transferred from EMS 2 to perform central administrative support roles such as:

- Coordinating EMS inventory supplies,
- Scheduling part-time members,
- Coordinating ALS recruitment,
- Supporting special projects.
- Medical equipment procurement, maintenance and inspections
- Volunteer management
- Special event staffing
- Ambulance design, procurement, and inspection
- Patient care report and review
- Recruitment and retention
- Public Access Defibrillator Program

Also, paramedic supervisory support was discontinued in EMS 2 because of a decrease in personnel due to retirements.

As a result of EMS 2's closure, there was a corresponding increase in the calls for EMS 1 and EMS 3 to respond to areas which were formerly the responsibility of EMS 2. Table 6 illustrates the number of responses decreasing across all EMS zones. However, beginning in 2013, EMS 1 and EMS 3 experienced an increase in response times due to the additional distances traveled. Paramedics servicing EMS 1 and EMS 3 were responsible for duplicating responses in EMS 2 as well as their own areas of responsibility. The number of calls responded to decreased because of the distance travelled as shown in the table below.

Table 6: EMS 1, 2, and 3 response times

	2010	2011	2012	2013	2014 (Up to Oct 6th)
EMS-1 Response Times Average (Min.)	10.9	11	11	12.4	12.5
EMS-1 Number Responses	1509	1426	1571	1368	1085
EMS-2 Response Times Average (Min.)*	11.7	11.7	11.6		
EMS-2 Number Responses *	621	677	642		
EMS-3 Response Times Average (Min.)	10.8	10.7	10.6	11.3	12
EMS-3 Number Responses	857	1066	844	612	450
	* Out of Service December 1, 2012				

Source: Chesapeake Fire Department

At the end of December 2014, the CFD reported Field Medical Officers (FMOs) in EMS-1 responded to a total of 1,428 medical incidents. FMOs in EMS-3 responded to a total of 648 medical incidents. (Refer to Appendix M, pages 100 -101)

Recommendation – As more paramedics become available through the new hire process, the CFD should consider reactivating supervisory paramedic coverage in EMS 2.

Reactivating EMS 2 would allow for timely supervisory paramedic response for EMS 1, 2, and 3 calls to address the growing demand for EMS patient care throughout the City. Additionally, the CFD should work with the City to review the unfunded EMS administrative support positions, with the goal of eventually filling them.

Management Response

2. EMS Coverage and Support Challenges
Level of Agreement: CFD agrees with this finding.

The Department agrees with the assessment findings that the Field Medical Officer positions (3) for the Second Battalion should be reinstituted as additional paramedic staffing becomes available. In an effort to manage a growing EMS system administratively, the decision was made to temporarily defer filling these positions in order to address other system-wide needs. As vacancies are being filled, there is a greater need for clinical supervision in the field to insure quality patient care is being provided. The Field Medical Officer position also delivers clinical back-up and support to these new providers.

To help support our insufficient Training staff (addressed in Section 3), Field Medical Officers have also been used to deliver training programs to their respective Battalion stations. This has been a challenge with only two Field Medical Officers and has created gaps in the training of new devices, procedures, and medical trends. Having a third Field Medical Officer in place would help alleviate some of these gaps. It is intended to transfer that position back into field operations as soon as possible.

However, eliminating the current administrative positions to place the Field Medical Officers back into service is not recommended and would prove to be detrimental to the EMS System as a whole. There is a great need for the existing administrative positions as well as several others to meet current system needs and demands, future delivery models, increasing state and federal legislative requirements, and the rapidly changing state of healthcare financing practices. The Department has worked with Human Resources to identify these positions, and has created job descriptions and classification codes for them. However, adequate funding to create these positions within the Department has not been identified. These positions will be included for consideration in future operating budgets.

3. CFD Training Facility and Faculty

Finding - The lack of a modern training facility, faculty, and a permanent training location, significantly contributed to a cycle of firefighter shortages. Frontline staff were temporarily reassigned to the training facility from field operations in order to staff the recruit schools as well as conduct needed repairs to classroom facilities. Recruit schools had also been postponed due to CFD's need to reassign personnel to address staffing shortages in field operations.

> *The Training Division is tasked with cross training of all new recruits. Recruit training is rigorous and demanding. This basic training includes both classroom and practical hands-on training that mimics the street as close as possible in an academy setting. The training division develops curriculum that assures the highest quality training and assures a smooth transition from the classroom to field duty assignments.*
>
> ***City of Chesapeake CFD Training Division Website***

The NFPA established standards for the number of instructors and other personnel that were required to be present during various training activities. The Virginia Department of Fire Programs (VDFP) had incorporated these standards in its Programs Fire Instruction Manual required to be followed by all Virginia fire departments. These standards required that for moderate risk level training, such as hose line work and fire extinguisher training, there be a student/instructor ratio of no more than 10:1. For high risk level training such as burn buildings, confined spaces, and elevation changes, the standards mandated a student/instructor ratio of no more than 5:1. Not included in those ratios were additional personnel required to be present during training such as an EMS BLS responder, an incident commander, and a safety officer.

The CFD indicated that it would not go below the NFPA and VDFP student/instructor ratios. However, the CFD, for a large portion of its training, actually had a lower ratio. For certain live fire trainings, such as hose line company training, the ratio could be a low as 2:1 or 4:1.

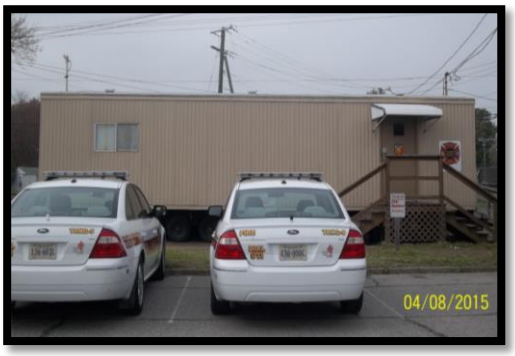
> *For recruit schools, even for the moderate and lower risk training, we try and keep a much lower student/instructor ratio. Hands on training needs close supervision and instruction to make sure they understand and acquire the lifesaving skills we are trying to teach them. Even for the moderate and lower risk training it is very easy to get hurt. A higher instructor/student ratio helps prevent this.*
>
> ***Chesapeake Fire Department***

CFD lacked a permanent training facility, yet, CFD was responsible for providing Firefighter and EMS training mandated by local, state, and national training standards for Firefighters and Paramedics. The entire premise of CFD's training facility was based on a series of short-term stopgap arrangements that resulted in long-term challenges. Although CFD had developed good relationships with the U.S. Navy, a change in leadership and military priorities could require the CFD to relocate its training facilities.

- **The CFD training facilities are located on military property.** In order to comply with training requirements, CFD had a temporary arrangement with the U.S. Navy to use the St. Juliens Creek Annex in Portsmouth, VA to conduct its required training. The facility is officially known as the Navy Region Mid-Atlantic Fire & Emergency Services Southside Regional Fire Academy. This arrangement has helped CFD with its short-term requirements. However, this arrangement did not adequately meet CFD's long-term training needs to expand its training facilities to include sufficient classrooms, storage, lunch/break room space, running water, bathroom facilities, and a burn building/flashover simulator needed to adequately train firefighters and paramedic firefighters. As mentioned earlier, CFD had developed good relationships with the Navy; however, a change in leadership and military priorities could require the CFD to relocate its training facilities.

- **Classroom trailer facilities had exceeded their useful life.** CFD training was held in four small classroom trailers. Trailer 1 was used for faculty office and storage space. Trailers 2 and 4 were used for firefighter and EMS training, and Trailer 3 was used as a combined break/lunch room, and storage room for new and unlaundered recruit Personal Protective Equipment (PPE) gear, which emitted a constant odor of smoke. The trailers were borrowed from the Chesapeake Public Schools and were previously utilized as mobile classrooms. Because of funding issues, CFD had no choice but to continue using these temporary structures. Some of the issues identified by the CFD in 2007 include rotting and uneven floors, walls, ceiling tiles, ramps, and stairs due to water and mold damage. Firefighters had been tasked with fixing these problems. In 2015, CFD continued to face the same challenges since the same mobile classroom trailers were still required to be used for training. Repairs continued to be necessary due to the age and the condition of the trailers.

Pictures of CFD Classroom Trailer Issues



The photo above shows CFD Trailer 1. The photo below shows a door handle with decayed molding.

The photos above and below show rotting floors and a wall that had to be fixed (photo taken in 2007)

Source: Chesapeake Fire Department

- **High staff-to-student ratio.** There were only three funded positions responsible for training the entire department. When recruit classes were in session, firefighters were reassigned from field operations to teach continuing education to new recruits and incumbent firefighters. Firefighters and paramedics were also pulled from field operations and temporarily assigned to train the newly hired recruits; thereby reducing staffing on the apparatuses and creating overtime for the department.

- **Limited Training Props.** There were very few training props for the CFD recruit school on the St. Juliens Creek Annex property. Examples of props in use included metal door frames and windows, a shipping container used to train firefighters in confined spaces, and a structure built by CFD firefighters to practice firefighter maneuvers, safety and rescue tactics. The limited supply of props hindered the training classes by potentially limiting the variety of training examples available, and by limiting the repetitive exercise on each prop. Nearly all other props were property of the U.S. Navy or other fire departments.

Photos of Props

Both structures above were built by CFD firefighters for firefighter training purposes. If CFD were required to vacate the premises, the CFD's structure would have to remain on the military property.

Both the trailer and the worm (shown above) are used for confined space training. These props are not the property of the CFD.

Source: Chesapeake Fire Department

- **The CFD Training Space is limited.** Firefighter recruits used the breakroom for storing their personal protective gear (PPE) along the walls. At times, training was also held in the same break room. CFD provided hand sanitizer and paper towels for recruits since there was no running water to the CFD trailers. Bathroom facilities were also limited and located in the Navy's training building. There were approximately 20 seats available for a class.

CFD Training Facilities

Photo of metal window frames door props

This is one of two training rooms. An uneven floor (not shown in photo) is covered w/ carpet.

Break Room is used for storing PPE gear, training room purposes, and breaks.

Another view of the break room with PPE gear. Used PPE gear is also stored on another wall.

Source: Chesapeake Fire Department

This situation existed because a priority had not been placed on developing a new training facility due to previous budgetary constraints. CFD had to transfer personnel from Fire Suppression and paramedic staff assigned to Fire Stations in order to assist the three faculty staff in teaching classes. However, recruit training classes at times were postponed due to personnel shortages within the Fire Suppression Division. This situation contributed to delays in the recruit training process.

Unless a permanent location and facility with adequate faculty staffing is secured, The CFD would have to continue to degrade field operations in order to conduct training. The training would also continue to be limited, held in substandard trailers, and held on property where its use, despite good relations, was subject to the Navy's discretion.

Recommendation – The CFD should work with the City to consider development alternatives for a Joint Public Safety Training Facility which addresses the CFD's need for a permanent location and upgraded facility, with space and props needed to train firefighters and paramedic firefighters.

Additionally, the CFD should work with the City to prioritize hiring permanent full-time faculty for the Recruit School and conduct on-going recruit training for Firefighters and EMS personnel. This action would limit the need to have field firefighters temporarily assigned to the Recruit School thereby maintaining safe staffing levels in their engine companies. A fully functional and adequately staffed recruit training facility will bring more firefighters to the department, keep engine companies operating at safe staffing levels, and help minimize overtime in the City.

Management Response

3. CFD Training Facility and Faculty
Level of Agreement: CFD strongly agrees with this finding.

The Training Division is responsible for all of the training needs, requirements and maintenance of training records for all 400 sworn personnel positions. This includes training new recruits as well as maintaining the knowledge, skills and abilities of our incumbent members. In addition to training our department, we also coordinate CPR education for a number of other City Departments. As indicated in the audit report, this is accomplished with only 3 budgeted positions. To conduct recruit schools and accomplish a minimal amount of in-service training, firefighters are taken out of the field and assigned to the Training Division. Reassigning these firefighters creates vacancies in field operations, which results in either an increase in overtime to cover those vacancies or a reduction below the minimum staffing requirements and/ or service delivery capabilities.

The Department lacks a dedicated training facility, which has been identified as a critical Public Safety need for many years. The current arrangement with the U.S. Navy has helped us over the years; however, it does not meet the needs or expectations of a modern training facility. The quality and frequency of the training that can be conducted has suffered due to these restrictions. While this agreement does provide a space to use and the accessibility of some props associated with the

facility, we must abide by the Navy's policies and procedures. This has hampered our Department on many occasions.

These findings were documented in a prior report completed in 2008 by Tecton Architects (Public Safety Facility Designers). The report detailed the training needs of all three Public Safety agencies (Sheriff, Police and Fire). The report recommended a joint Public Safety training facility that took advantage of shared spaces that the three departments could utilize. The report also identified spaces that would be unique to each department to fulfill those training needs specific to each organization's mission. The Fire Department will revisit the report, along with the Sheriff's Office and Police Department and identify any updates to the original recommendations. The facility will again be presented to City Administration to be included in the Capital Improvement Budget.

A position analysis has also been conducted for the Training Division. This analysis identified the needed positions to address both incumbent and recruit training. This report will be reviewed again and recommendations will be made to add these positions to the complement. These additions to the complement will address several concerns and have multiple positive results including: providing personnel to train both our recruit and incumbent members, reducing overtime due to backfilling field positions, and allowing the Department to conduct concurrent recruit schools to quickly fill firefighter vacancies resulting in additional reductions in overtime costs. Position recommendations will be made in future budget processes.

4. Telestaff Scheduling and KRONOS Timekeeping Issues

Finding - The City's implementation of Workforce Central (WFC) KRONOS caused another layer of cumbersome, labor intensive activity for the CFD. The lack of an interface between the KRONOS timekeeping system and the CFD's Telestaff Scheduling system created inefficiencies in the CFD's scheduling process.

Telestaff accommodated 24-hour shift schedules used by the CFD and other public safety offices in the City. The CFD's firefighters were exempt from the standard FLSA overtime requirement and instead were required to comply with the FLSA Special 7(k) rule[13] which required overtime to be calculated in excess of 56 hours worked. A customized parameter was set in the KRONOS system by Human Resources to address this firefighter overtime calculation requirement.

The CFD utilized the Telestaff scheduling system to assign firefighter/ EMTs/paramedics to the engines, ladders, and medic units. CFD firefighter/ EMT-B/paramedics and paramedic/firefighters operated three shifts (A, B, and C). Each shift consisted of a 21-day rotation or 168 hours. Each individual was required to work 24 hour shifts and could be called back for overtime not to exceed 36 hours over a 24-hour shift to compensate for vacancies.

The Telestaff system used by the CFD was a stand-alone system and did not interface with the City's KRONOS timekeeping system. Monitoring actual versus scheduled time for over 400 firefighters and paramedics was tedious and time-consuming for the CFD, especially since employee scheduling (assigned in Telestaff) and employee leave and attendance data (approved in KRONOS) were not automatically updated or synchronized between the two systems.

This situation occurred because, even though in June 2013 the CFD, the City's Information Technology (IT) Department, and WFC KRONOS representatives discussed the possibility of integrating the COC KRONOS system with the Telestaff system, since the acquisition was so new at the time, the CFD decided not to proceed with integration based on concerns about the functionality of the interface and how it would affect their business processes. Also, WFC KRONOS had not yet fully worked through their issues with the development of the new interfaces.

In the Fall of 2014, CFD revisited the Telestaff KRONOS interface issues; however, they were still not resolved. Thus, the KRONOS system did not interface with CFD's scheduling system. Instead, it caused redundancy and additional supervisory hours to manage employee schedules and overtime.

[13] Also referred to FLSA, §207K eligible in the COC AR Regulation 2.08.

Recommendation - The City's IT Department recommended (and Audit Services concurred) that the new Kronos/Telestaff integration processes should be revisited and tested to determine if the new features meet the CFD's scheduling and timekeeping synchronization needs.

As of March 2015, Kronos had developed the following interfaces that could be purchased from WFC as "standard, out of the box," with professional service hours as required to implement them.

Key integration points provided by WFC KRONOS were:

1. **Person Interface.** Synchronized employee data between the WFC KRONOS system and the Telestaff system nightly.
2. **Schedule Interface.** Sent Telestaff roster information to WFC KRONOS' Schedule Editor and/or Timecard.
3. **Punch.** Allowed Telestaff users to see up-to-date attendance information every 5-15 minutes during a shift start window.
4. **Accrual.** Allowed Telestaff users to see Accrual balances

If this newly developed interface is conducive to CFD and the City's needs, the City should pursue the interface to synchronize data between the Telestaff and KRONOS system. This action will reduce the CFD man-hours dedicated to scheduling and managing overtime.

Management Response

4. Telestaff Scheduling and KRONOS Timekeeping Issues
Level of Agreement: CFD agrees with this finding.

It is the goal of the Fire Department to obtain this interface for efficiency with employee data sharing, roster actions, and timecard management. The recent updates to the Kronos Telestaff interface with WFC Kronos appear to bring improved functionality between the two systems. With system integration, the Fire Department will likely reduce the workload for manual entries, in turn reducing the possibilities of inconsistencies within the data. Coincidently, the Fire Department, Police Department, and Department of Information Technology are currently working on a Telestaff interface within the Computer Automated Dispatch (CAD) and Records Management System (RMS) project; this interface delivers Telestaff roster information directly to run reports.

The Fire Department, in conjunction with the Department of Information Technology, will work to identify functional requirements and funding alternatives for implementation and sustainment of maintenance costs while being vigilant in verifying the end result will provide a true return on investment (ROI).

5. Aging of the Fire Fleet

Finding - The CFD experienced excessive heavy equipment downtime and continued to rely upon an older, less reliable, and rapidly deteriorating reserve fleet to provide city-wide operational coverage, resulting in lost opportunity costs in excess of $2.6 million.

> *It is the policy of the City of Chesapeake to provide and maintain a safe and healthful working environment and to follow operating practices that will safeguard all employees and the public.*
>
> ***City of Chesapeake, VA Administrative Regulation 1.19***

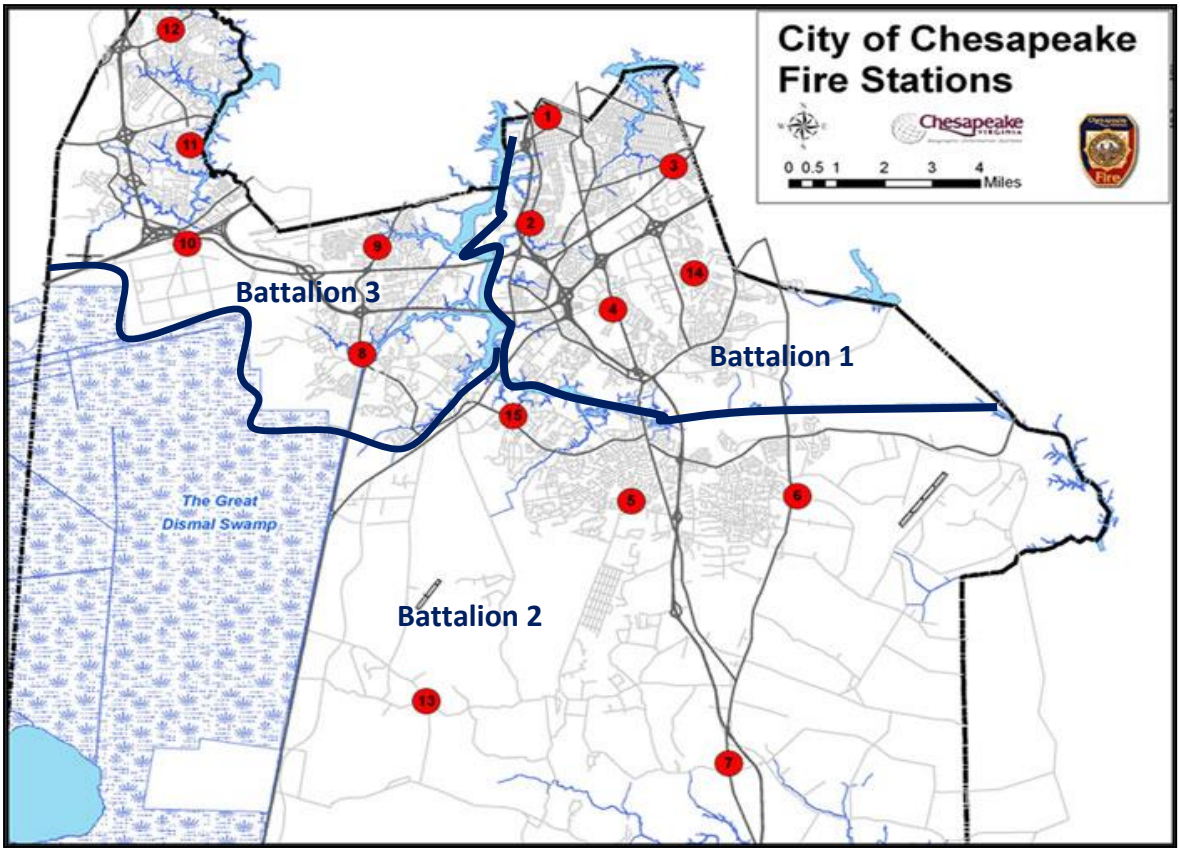
During the period beginning July 1, 2013 through January 9, 2015, CFD vehicle downtime was as high as 54% (see Tables 10 and 11.) Seven of the 30 fire trucks were inoperable 30% of the time due to repairs and routine periodic maintenance. Faulty equipment resulted in frequent high-level repositioning by management for engines to provide city-wide operational coverage, and lost opportunity costs in excess of $2.6 million.

The equivalent heavy equipment availability rate ranged from 70% to a low of 46% of the time for those vehicles. Two of four ladder trucks (Ladder's 2 and 101) fell into this category. Both were available for service only 59% and 67% of the time, respectively. Ladder 12 availability was 80% and Ladder 5 availability was 86%. It should be noted that Ladder's 12 and 5 were required to fill the operational gap created by Ladder 2.

Equipment downtime significantly contributed to the logistical challenge of fire engines and medic units being placed out of position[14]. The boundaries that would divide the three Battalions were blurred. Engines as well as Medic Units crossed boundaries in order to maintain full EMS/Fire coverage throughout the entire city.

[14] Vehicles were also placed out of position for other reasons such as repairs, equipment addressing other calls, etc.,

Figure D
Map of Battalion 1 (Stations 1,2,3,4,14);Battalion 2 (Stations 5,6,7,10, 13, and Battalion 3 (Stations 5,6,7,13,15)



Source: Chesapeake Fire Department

Table 7: FIRE TRUCKS
Percentage of Vehicle Downtime (DT) Reported by Central Fleet Work Order History Beginning July 1, 2013 through January 9, 2015

Station ID	Unit ID	Reserve Status	Total Down Time in Hours	Downtime in Days	% of Downtime	Ranking
8	ENGINE 8	N	7256.51	302	54%	1
8	ENGINE 106	Y	7109.83	296	53%	2
1	ENGINE 101	Y	7051.52	294	53%	3
2	LADDER 2	N	5503.75	229	41%	4
11	ENGINE 102	Y	5142.04	214	39%	5
12	LADDER 101	Y	4394.13	183	33%	6
15	ENGINE 15	N	4058.37	169	30%	7
13	ENGINE 105	Y	3566.90	149	27%	8
1	ENGINE 1	N	3267.21	136	25%	9
14	ENGINE 107	Y	3220.05	134	24%	10
4	ENGINE 24	N	3099.42	129	23%	11
14	ENGINE 14	N	2898 98	121	22%	12
3	ENGINE 3	N	2869.22	120	22%	13
12	LADDER 12	N	2723.24	113	20%	14
4	ENGINE 4	N	2530.52	105	19%	15
5	ENGINE 5	N	2132.59	89	16%	16
10	ENGINE 10	N	1991.20	83	15%	17
5	HAZMAT 5	N	1975.37	82	15%	18
5	LADDER 5	N	1905.00	79	14%	19
6	ENGINE 103	Y	1465.61	61	11%	20
9	COMMAND 9	N	1457.12	61	11%	21
2	ENGINE 2	N	1281.73	53	10%	22
6	ENGINE 6	N	1134.18	47	9%	23
13	ENGINE 13	N	1085.61	45	8%	24
7	ENGINE 7	N	951.30	40	7%	25
8	ENGINE 28	N	879.04	37	7%	26
15	SQUAD 15	N	751.23	31	6%	27
12	ENGINE 12	N	707.33	29	5%	28
9	ENGINE 9	N	531.24	22	4%	29
11	ENGINE 11	N	275.46	11	2%	30
3	SUPPORT 1 (REHAB)	N	0.33	0	0%	31
		Totals	83,216.03	3,467.33		

Source of Data: Central Fleet Work Order History and Chesapeake Fire Department Apparatus Inventory List

Key
DT between 40% to 50%
DT between 30% and 39%
DT between 20% and 29%
DT below 20%

Table 8: MEDIC UNITS
Percentage of Vehicle Downtime Reported by Central Fleet Work Order History Beginning July 1, 2013 through January 9, 2015

Station Location	Medic Unit #	Reserve Status during pd under review?	Being Replaced after period under review?	Total Down Time in Hours	Downtime in Days	%of Downtime	Ranking
3	MEDIC 3	N	N	4230.91	176	32%	1
11	MEDIC 11	N	N	3938.33	164	30%	2
9	MEDIC 9	N	N	3754.28	156	28%	3
15	MEDIC 103	Y	Y	3039.87	127	23%	4
15	MEDIC 15	N	N	2963.47	123	22%	5
8	MEDIC 8	N	Y	2864.47	119	22%	6
14	MEDIC 14	N	N	2726.66	114	20%	7
1	MEDIC 1	N	Y	2700.74	113	20%	8
4	MEDIC 4	N	N	2417.27	101	18%	9
4	MEDIC 24	N	N	1678.21	70	13%	10
5	MEDIC 5	N	N	1648.05	69	12%	11
12	MEDIC12	N	N	1395.44	58	10%	12
2	MEDIC 102	Y	Y	1350.34	56	10%	13
2	MEDIC 2	N	N	1333.58	56	10%	14
	MEDIC (New Unit)*	N	N	1132.81	47	9%	15
5	MEDIC 101	Y	Y	929.54	39	7%	16
	MEDIC (New Unit)**	N	Y	494.51	21	4%	17
12	MEDIC 104	Y	N	477.35	20	4%	18
7	MEDIC 7	N	N	377.63	16	3%	19
6	MEDIC 6	N	N	321.56	13	2%	20
			Totals	39,775.02	1,657		

Source of Data: Central Fleet Work Order History and Chesapeake Fire Department Apparatus Inventory List. Note: *Replaces Medic 101, **Replaces Medic 102. The Simlab Unit was not included in this analysis. Medic 2 was removed from the Central Fleet records prior to November 2014; however, downtime incurred for this vehicle was still reported for the purpose of this report.

Battalions 1 and 3 experienced the most days with heavy vehicles inoperable due to repair and maintenance from July 1, 2013 through January 9, 2015. (Refer to Appendix H-1 on page 82.) Appendix H-2 and H-3 also on page 82 showed the types of fire trucks that were unavailable for service due to breakdowns. Fire Engines experienced the highest number of out-of-service hours (56,942). Ladder Trucks experienced the second highest number of out-of-service hours (14,526).

Central Fleet tracked the level of equipment reliability by assigning an Equipment (EQ) Point Rank score which could be compared to standard minimum and maximum class points established for each equipment classification type. Central Fleet's EQ Point Rank formula (refer to Appendix J on page 84) was based on the age (or number of months a vehicle was in service), usage (meter reading), reliability score, and repair score. The higher the score, the less reliable the vehicle. The cumulative score (or EQ Point Rank), would be determined based on the sum of the scores in each category described in Appendix J.

Appendix K-1 through K-14 on pages 85-98 show the top 14 fire trucks with downtime ranging from 20% to 100% for the period under review. It also showed the purchase price, service life, EQ ratings, diminishing returns, opportunity costs, and total maintenance costs through 1/9/2015 for each apparatus. These charts include the eight fire trucks included in Table 9. Appendix I-1 and I-2 on page 83 have also been included and highlights the analysis of Medic Unit downtime.

As highlighted within the red, yellow and blue in Table 7, Audit Services analyzed the top 14 of 31 Trucks (or 45% of the fire trucks in the fleet) with a history of out-of-service downtime ranging from as low at 20% to a high of 54%. Table 9 highlights the top eight vehicles in this category with the most adverse financial burden and EQ Point Rank score factors.

Table 9: Fire Engines and Ladders with the Highest EQ Point Rank Score in the Aging Fleet (as of January 9, 2015)

Vehicle ID#	Unit ID#	No. of Years in Service	EQ Point Rank (Reliability Rating)	Class Max Point	EQ Point Rank as a % of Max Class Point established by Central Fleet	Downtime Rate from 7/1/13 thru 1/9/2015
F757	LADDER 101	**17**	39.9	39.9	100%	33%
F753	ENGINE 101	**22**	54.3	54.3	100%	53%
F764	ENGINE 107	**21**	46.6	46.6	100%	24%
F700	ENGINE 1	**11**	26.5	26.5	100%	25%
F744	ENGINE 102	**25**	53.1	53.3	99.62%	39%
F794	ENGINE 106	**12**	25.0	26.5	94.34%	53%
F745	ENGINE 105	**23**	43.7	54.3	80.48%	27%
F759	LADDER 2	**10**	31.0	39.9	77.69%	41%

Table 10: Financial Impact of Maintaining an Aging Fleet

Vehicle ID#	Unit ID#	No. of Years in Service	Opportunity Cost[15]	Additional Comments
F757	LADDER 101	**17**	$435,248	This apparatus is in its 17th year of service to the City and is still active. It has a current resale value in 2015 of $20,345.
F753	ENGINE 101	**22**	$403,773	Engine 101 began experiencing diminishing returns in its 8th year of service but remained in reserve/active status until its 22nd year of service when it was finally retired in 2014.
F764	ENGINE 107	**21**	$376,594	Diminishing returns for this apparatus began in its 9th year of service to the City. It remains in active service to the City and currently has a resale value of $0.
F700	ENGINE 1	**11**	$256,252	This vehicle is in its 11th year of service and is active. The purchase price was $491,594. It has a current value in 2015 of $63,309.
F744	ENGINE 102	**25**	$469,491	This vehicle is in its 25 year of service to the City and is still currently active. The purchase price was $193,908. Its current value to date is $0.
F794	ENGINE 106	**12**	$229,556	This vehicle is in its 12th year of service and is still active. The purchase price was $349,986. Its current resale value in 2015 is $37,410.
F745	ENGINE 105	**23**	$186,232	F745 was eventually retired in its 23rd year of service in 2014. Its resale value in 2014 was $0.
F759	LADDER 2	**10**	$281,881	This vehicle is in its 10th year of service. Its purchase price was $902,335. Its resale value in 2015 is $140,007.
TOTAL OPPORTUNITY COST			**$2,638,957**	

[15] **Opportunity cost** is defined as the vehicle's resale value that the city could have recouped had the equipment sold prior to the year it begins to experience diminishing returns + the cumulative repair costs incurred beginning in the year of its diminishing returns**.**
Diminishing returns occurs the year when cumulative repair costs begin to exceed the vehicle's resale value. Data and calculations in this table were based on CFD Vehicle Inventory Records, Central Fleet Work Order History, and Central Fleet's 20-year unfunded Replacement Plan Records.

This situation occurred because Central Fleet lacked funding to replace an aging fleet. Consequently, it made the needed repairs to vehicles that should have instead been retired or resold and then replaced.

Recommendation - The CFD should work with the City to develop a vehicle replacement plan that takes advantage of resale values of Fire vehicles, and forgoes future repair costs to maintain older, rapidly deteriorating fire equipment.

The City should strive to take advantage of the resale value of fire vehicles and associated equipment prior to the expiration of their useful lives, potentially maximizing the City's ROI on fire vehicles and associated equipment and minimizing repair costs. A newer fleet would potentially help the CFD minimize vehicle downtime, lower fuel costs by being more fuel efficient, and potentially increase safety to firefighters, paramedics, and citizens by having more reliable vehicles available to respond to emergency calls. Response times would also decrease as there would be more vehicles ready and capable of responding.

Management Response

5. Aging of the Fleet
Level of Agreement: CFD strongly agrees with this finding.

The Fire Department works closely with Central Fleet to maintain, repair and replace apparatus. Funding for new/replacement apparatus comes from the Central Fleet budget and is not included in the Fire Department's expenditures. The Fire Department submits annual requests for vehicle replacement to Central Fleet and they determine what units (throughout the City) will be funded for replacement. Their budget must serve the needs for all of the City's vehicle purchases. Over the years the Central Fleet's budget has not been adequate to replace the Fire apparatus at a consistent and acceptable rate to avoid the high repair costs, excessive out of service time, and lost opportunity costs.

A priority list of apparatus that needs to be replaced has been developed. However, the funding mechanism to fund the replacement plan does not exist. In early 2015 the decision was made to include the Fire Department's heavy equipment replacement cost in the Central Fleet's capital budget and remove it from the operating budget. It is believed that by moving these large purchases into the capital budget, they can be planned for and funded more readily.

One of the 2015 goals for the Fire Department is to research national best practices relating to heavy vehicle replacement plans, as well as funding mechanisms to sustain and support those plans. A work group has been convened to continue this research over the summer, with recommendations being made to City Administration in Fall 2015.

6. Segregation of Federal Grant Functions and Fiscal Administration

Finding – The CFD lacked a Fiscal Administrator. In addition, at the onset of this audit, CFD had unreconciled differences netting approximately $521,695 between the City's financial expenditure records and Grant reimbursements to the City.

Criteria

> ***Just as accounting functions must have segregation of duties to avoid improprieties such as embezzlement, direct program personnel working on federal awards must have limitation of their sphere of responsibilities to afford a system of checks and balances… such as proposals, billing/draws, and operations.***
>
> ***Greater Washington Societies of CPAs***
>
> ***Delegation includes assigning responsibility, granting authority, and exacting accountability. Obviously, only that authority legitimately possessed can be delegated. But delegation does not mean abdication. The superior remains responsible, and so delegation must be accompanied by accountability with some sort of control and feedback.***
>
> ***Sawyer's Internal Auditing – by Lawrence B. Sawyer, JD, CIA, PA***
> ***Assisted by Glenn E. Sumners, DBA, CPA***

The CFD lacked a Fiscal Administrator. Instead, grants reporting, drawdowns, fiscal administration, and payroll responsibilities were transferred to one of CFD's support services personnel who was originally hired to only supervise ambulance billing activities[16]. The position was subsequently reclassified to an Account Supervisor position responsible for performing numerous accounting activities and preparing reports. However, the position was not intended to perform the higher level accounting work of a Fiscal Administrator.

Also, in FY 2015, there were unreconciled differences of $521,695 between the CFD's City grant records and grant reimbursements. CFD recognized this deficiency and hired a financial consultant to address this issue. The review was completed in early 2015 with most of the differences accounted for and reconciled.

Although the CFD received the most grants of all municipal departments, the CFD's Support Services Division did not have the required skill sets needed

[16] Billing Activities were transferred to the City Treasurer several years ago.

to manage both grant activities and other financial responsibilities. Instead, responsibility for the management and program oversight of the grants were spread among the CFD's firefighters, paramedics, emergency management, and CFD support services personnel.

This situation occurred because an independent evaluation of the fiscal staff had not been performed in this area to determine if the fiscal classifications were sufficient to address the growing fiscal and grant administrative needs of the department. As a result, the CFD was still without the skill set of a Fiscal Administrator for overall oversight of grants activities and financial reporting requirements. A budget request was made to address the need for a Fiscal Administrator position in the FY 2016 budget, but the position was not filled.

Recommendation - The CFD should focus on improving its fiscal and grants administration by renewing its request for a Fiscal Administrator. This action would improve fiscal and grants reporting and reconciliation processes for the CFD.

Improved fiscal administration for the CFD's general operating funds and grant funds would provide for accurate reporting for decision making purposes. It would also improve the accuracy and timeliness of grants reporting, thereby reducing the risk of questioned or disallowed grant costs.

Management Response

6. Segregation of Federal Grant Functions and Fiscal Administration Level of Agreement: CFD agrees with this finding.

As mentioned in the report, the Fire Department has been very aggressive in competing for, and being awarded, over $13 million in grants over the past several years. This funding has greatly enhanced Fire, EMS and Emergency Management capabilities at both the City and regional levels. In 2014, unreconciled differences of $521,695 between financial expenditures and grant reimbursements were discovered. The Department contracted the services of an independent CPA to review the differences and assist with reconciling all of the balances. The consultant completed the work in early 2015; accounting for and reconciling nearly all of the differences in grant expenditures. Working together, the Fire Department and Finance Department completed the work and reconciled 100% of the remaining differences accounting for all the funds. This entire process greatly improved the daily working partnerships between Finance and the Fire Department, which continues today as normal business operations.

To improve the tracking of grants and their overall administration, a specific process was developed to manage them from "cradle to grave." The process details specific benchmarks, time frames and reporting

requirements. This process will assist grant managers and City staff with improving the accuracy and timeliness of grant reporting and should avoid any reconciliation errors in the future.

An evaluation of Fire Department's Support Staff was conducted and the Department identified the need for more fiscal support and oversight. This would better equip the Department with preparing and managing the budget, as well as providing oversight of the large number of grants that the Department is awarded. As identified in this report, the position of Fiscal Administrator was requested; however it was not funded in the FY 2016 budget. This request may be considered again in the FY 2017 budget, after reassessing the effectiveness of personnel changes and process improvements made in the Support Services Division over the last 12 months.

7. Fire Inspections

Finding - The Fire Prevention Division did not have adequate staffing levels to complete its goal of performing 100% of annual inspections for commercial businesses in FY 2014. Instead, the CFD completed only 3,865 of 6,668 (or 57%) of commercial business inspections.

Fire Prevention utilized a two-fold approach to public fire safety by combining enforcement and regulation of the City fire code with a community business based public education program. On the enforcement side, the Fire Prevention Division worked closely with city building code inspectors to ensure all new commercial and residential construction within the City met the established fire code. Their work included testing and approval of fire protection systems, plans review of new sprinkler systems, fire alarms, etc., and reviewing architectural plans for "Life Safety Code" compliance.

> *The Fire Official is authorized to inspect all structures and premises for the purpose of ascertaining and causing to be corrected any conditions liable to cause fire, contribute to the spread of fire, interfere with firefighting operations, danger life or property, or to determine any violations of the provisions or intent of the Virginia Statewide Fire Prevention Code (SFPC). The SFPC regulates and sets the standard requirements for an inspection in accordance with Section 106 and requires Fire Code Operational permits as approved in accordance with Section 107.*
>
> ***Statewide Fire Prevention Code Section 106 and 107***

Fire Prevention Division Compliance requirements. The City had adopted the SFPC, and the Fire Prevention Division was responsible for enforcing code compliance with the SFPC. Local amendments to 2012 SFPC were adopted by the City Council in January 2015. The SFPC established statewide standards to safeguard life and property from fire or explosion hazards arising from improper maintenance and unsafe storage and use of substances, materials and devices, including fireworks, explosives and blasting agents.

Annual Fire Inspections. After the Department of Development and Permits (DDP) issued a certificate of occupancy, fire inspectors were responsible for performing annual inspections for commercial buildings to ensure they were being properly maintained. Fire inspectors also handled citizen inquiries, issued fire code operational permits, and investigated environmental crimes within the City. The amount of time an inspection took depended on the extensiveness of violations discovered and the open-ended nature of the inspection report. Fire inspectors were required to identify and note any violations on the annual inspections reports. Fire code permits were issued

after routine annual fire inspections were completed and the facilities were in compliance with all Statewide Fire Prevention Code regulations.

One of the goals of fire inspections was to educate property owners and occupants of any fire hazards that were found in commercial properties. As of December 31, 2014, there were 6,668 commercial buildings in the fire inspections database including Schools and other City facilities. State and Federal facilities, located on state or federal property were not inspected, as they were not under the City's jurisdiction. However, if the building or property was leased or rented they do come under the local jurisdiction and would be subject to inspections.

Target number of inspections per month. Nine FTE Fire Marshals each had a goal of performing 12 business inspections per month. Two FTE Inspectors were each required to inspect 60 businesses a month. This target number did not include re-inspections which could be time consuming. Three part-time inspectors were required to perform 80 inspections each month. They focused on smaller and the quickest inspections.

Table 11 shows that CFD was only able to complete 3,865 of 6,668 (or 57.96%) of inspections. Chesapeake did complete more than the average in a sample of inspections from Chesapeake, Newport News, and Virginia Beach combined in the Business and Mercantile commercial categories. However, Chesapeake fell below the average for completed inspections for all other categories combined (except for the Utility category which did not have comparative data from the other localities). The CFD's Fire Prevention Division had insufficient staffing levels to inspect the growing number of businesses in Chesapeake.

Table 11: Percentage of Completion Comparisons

CHESAPEAKE				Sample Average	Newport News	Virginia Beach
Commercial Property (Listed by Type)	Total required to be Inspected	Total Actually Inspected	Percentage Completed	Sample Average	Percentage Completed	Percentage Completed
Assembly	826	464	56.17%	57.88%	64.16%	57.45%
Businesses	2671	1673	62.64%	40.91%	52.38%	29.04%
Educational	172	138	80.23%	91.06%	93.94%	98.19%
Factory	137	54	39.42%	47.21%	40.00%	51.82%
High Hazard	81	16	19.75%	23.29%	60.00%	25.00%
Institutional	53	18	33.96%	52.71%	58.62%	56.92%
Mercantile	1055	812	76.97%	64.67%	69.97%	57.05%
Residential	374	70	18.72%	38.30%	67.37%	42.21%
Storage	1106	494	44.67%	38.18%	57.14%	32.35%
Utility	193	126	65.28%			
TOTALS	**6668**	**3865**	**57.96%**		**58.59%**	**39.87%**

Audit Services attempted to gather inspection data from the Virginia Beach, Norfolk, Suffolk, Newport News, and Hampton fire departments to compare with the CFD's annual inspections. Only Virginia Beach, Norfolk, and Newport News participated in the survey. However, since Norfolk was unable to provide its total number of businesses, we were unable to include Norfolk's full data in our comparison.

As noted on page 5 (refer to the Fire Call Trends Chart), dollar losses due to fires decreased as a result of CFD's fire prevention and inspections efforts as noted in the table below. However, if the Fire Prevention Division continues to be unable to meet its annual inspection goal, the safety risks to firefighters, paramedics, and citizens, as well as dollar losses due to fire cannot be further reduced.

Table 12
Dollar Loss Due to Fire from 2010 to 2014

YEAR	DOLLAR LOSS DUE TO FIRE
2010	$10,108,382
2011	$ 6,327,533
2012	$12,547,172
2013	$8,003,940
2014	$ 6,884,734

Source: 2014 Chesapeake Fire Department (CFD) Annual Report. 2014 and Firepoint system. 2010 through 2013 data comes from the Virginia Fire Reporting Information System (VFIRS).

Recommendation - Since dollar losses due to fire remains high, the CFD and the City should review program staffing needs for the Fire Prevention Division to reduce safety risks to firefighters, paramedics, and citizens as well as fire losses.

Improved staffing could potentially reduce the number of commercial business fire calls for the Fire Suppression Division. Additionally, the City should continue to allow the revenues generated from inspections to flow back to the Fire Inspections operations, to help facilitate the improved staffing.

Management Response

7. Fire Inspections
Level of Agreement: CFD agrees with this finding.

<u>Staffing</u>

Over the past 6 years, there has been an intentional and focused direction to enhance the efficiency and effectiveness of Fire Prevention site inspections throughout the City. In terms of life safety and property conservation, this has been both to prevent fires from occurring, and to minimize the impact when they do occur. This report indicates that the Fire Department has been successful toward that goal. Thousands of serious fire and building code violations have been discovered and corrected during this timeframe.

The Fire Prevention Division is responsible for numerous tasks including performing Fire and Life safety inspections, reviewing development plans, overseeing systems tests, and conducting investigations. One Deputy Fire Marshal has been assigned to the eBUILD project since its inception in Fall 2013. Due to the eBUILD assignment, the Fire Prevention office was allowed to back-fill the vacancy with a special project employee. A retired Deputy Fire Marshal was hired to fill this vacancy and given the responsibility of reviewing site plans to insure planned developments were in compliance with the Statewide Fire Prevention Code and the Public Facilities Manual. This position has proven to be invaluable to the City of Chesapeake and its business partners.

As we approach the end of the eBUILD project, the special project back-fill position will be deleted from our allotted positions. With the special project position deleted, a Deputy Fire Marshal or Fire Inspector will be assigned the responsibility of site plans review, severely hindering their ability to complete other tasks, such as Fire and Life Safety Inspections. A permanent, part-time site plans review position would allow for continuity in the plans review process and eliminate the requirement of having a Deputy Fire Marshal or Fire Inspector assigned to complete site plans review. Creating and maintaining a permanent, part-time site plans review position is of high importance to the Fire Prevention Office and other City staff involved in planning and economic development. Now that we fully realize the value of this part-time position, and know development and construction is on the upward trend, the retention of this part-time position will be considered as a request in the FY 17 budget process.

Two additional part-time Fire Inspectors will be added to the Fire Prevention Office in the next two fiscal years, one in FY16 and one in FY17. These added positions will increase the number of part-time Fire Inspector positions in the Fire Prevention Office to five, and increase our projected Fire and Life Safety Inspections. The addition of one more part-

time Fire Inspector to the FY18 complement would assist the Fire Prevention Division in inspecting the majority of the commercial occupancies in the City annually.

The addition of a second, mid-level supervisor (Lieutenant) to the Fire Prevention Office is also needed to manage the inspection program and insure that all commercial structures are inspected. Currently, nine Deputy Fire Marshals, two full-time Fire Inspectors, and three part-time Fire Inspectors report to one Captain/Assistant Fire Marshal. The Fire Prevention Office has many areas of responsibility such as inspections, investigations, plans review, special events and fire protection system testing. With the expected addition of two part-time inspectors over the next two years, dividing the supervision of these areas of responsibility between two mid-level supervisors allows for better oversight and a more manageable span of control.

The Fire Department continues to transition from the traditional Fire Prevention model to the more contemporary model of All-Hazards Community Risk Reduction. Additions to complement will be considered in future budget requests to enhance the capabilities needed to make, and keep, the City as safe as possible.

<u>Inspections – Percentage Completed</u>

In the Fall 2010, the Fire Prevention Office began using our current inspection records management system, MobileEyes. Prior to MobileEyes, inspection records were entered and maintained in the inspection section of our fire records management system, FirePoint. Initially, all inspection data was transferred from FirePoint to MobileEyes. It was later found that inaccurate data, such as duplicate occupancies and incorrect occupant use groups, were included in the data transfer. Some of the percentage of completed inspection data contained in Table 11 is a result of the inaccurate data currently in MobileEyes. Training will be conducted regarding updating the occupant information during each inspection and verifying that duplicate entries are deleted. This training will occur in early Fall of 2015. Once this is implemented the accuracy of the data in MobileEyes will improve.

Currently, the Fire Prevention Office has a work group assigned to develop a plan of pre-scheduling Fire and Life Safety Inspections with businesses. Many of our current inspections are completed without pre-scheduling. Our main objective is to make the inspection process less stressful for the business community. Additionally, we believe prescheduling and advising businesses of the most common violations found prior to their inspection will reduce the need for time consuming re-inspections.

8. EMS Ambulance Fees

Finding – Chesapeake's EMS Ambulance Fees were well below that of other Virginia cities and counties. In FY 2014, the total amount of ambulance fees collected by the City was approximately $4.6 million and only subsidized 16% of the cost of EMS Services valued at approximately $28 million.[17]

Audit Services reviewed five years of EMS Ambulance Fees for 13 cities and counties published annually by the Chesapeake Budget Office[18], including Alexandria, Chesapeake, Chesterfield County, Fairfax County, Hampton, Henrico County, Newport News, Norfolk, Portsmouth, Prince William County, Richmond, Suffolk, and Virginia Beach. The following information is based on a review of the 2011-2015 data collected:

- 11 of the 13 (85%) charged ambulance fees.
- Of the 11, Chesapeake charged the lowest fee at $395 per Advanced Life Support (ALS) 5-mile transport call. All others that charged an ambulance fee started their ALS 5-mile charge at $700 and above. Fairfax County charged the highest fee at $860, and Newport News and Hampton tied at the mid-range price of $805 per call.
- The average fee was $761.58 per ALS 5-mile transport.
- Virginia Beach and Henrico County, did not charge ambulance fees. Instead, EMS services for Virginia Beach and Henrico County were funded by general fund revenues in those localities.
- Prince William County funded its EMS services through a $0.0597/$100 Real Estate Tax for FY 2011 and FY 2012. In FY 2013, the county began charging ambulance fees. Their ALS 5-Mile transport fee was $750 and remained the same in FY 2015.
- Richmond Ambulatory Authority did not increase its ambulance fees over the five-year period under review. Their ALS 5-Mile transport fee stayed the same at $700 per transport.
- Of the 13 municipalities listed in Table 12, seven increased their rates over the five-year period under review. Those included Chesterfield County, Fairfax County, Newport News, Norfolk, Portsmouth, and Suffolk. Hampton showed a change of 1.26%. Alexandria and Chesapeake saw no change in the ALS 5-mile transport fees. Suffolk increased their fee 73.47% between FY 2011 and FY 2015.
- Chesapeake had the second largest land area in square miles of the seven municipalities that comprised Hampton Roads, refer to Table 12. CFD had the following equipment complement:

[17] The cost of EMS Services in FY2014 was equivalent to this: (20,983 EMS calls/28,154 total calls) x $37,405,358 in total expenses for Firefighter and EMS Services program code 32100.

[18] Source of Data: "Thirteen City/County Comparisons" reports for FYs 2011 through FY2015 researched and published by the City of Chesapeake Budget Department.

- 17 Medic Units distributed to the fire stations (Medic Units #11 and 24 were designated as peak-hours vehicles only (9AM – 9PM)); Of the 17:
  - Four were in the reserve fleet; however, 2 new units FQ059 and FQ 060 were newly purchased to replace medic units 101 and 102. Medic unit 103 was anticipated to be replaced also in 2015.
  - 13 were in the active fleet. Medic unit 8 was anticipated to be replaced also in 2015.
  - One was not staffed

- Once EMS ambulance fees were collected by the City Treasurer, those funds were redistributed to the general fund.

Without a robust vehicle replacement plan or an enhanced revenue stream, the trending increase in service delivery was not sustainable.

Table 12
ALS 5-Mile Rate Change from FY2011 Compared to FY2015

Locality	***Land Area Sq. Miles****	***FY2011***	***FY2015***	***Difference***	***% Increase in price***
Alexandria		$ 725.00	$ 725.00	$ -	0.00%
Chesapeake	341	$ 395.00	$ 395.00	$ -	0.00%
Chesterfield County		$ 617.50	$ 849.00	$ 231.50	37.49%
Fairfax County		$ 725.00	$ 860.00	$ 135.00	18.62%
Hampton	51	$ 795.00	$ 805.00	$ 10.00	1.26%
Henrico County		City Revenue			
Newport News	69	$ 516.25	$ 805.00	$ 288.75	55.93%
Norfolk	54	$ 670.00	$ 855.00	$ 185.00	27.61%
Portsmouth	34	$ 599.00	$ 783.83	$ 184.83	30.86%
Prince William County		Not comparable			
Richmond (Authority)		$ 700.00	$ 700.00	$ -	0.00%
Suffolk	400	$ 490.00	$ 850.00	$ 360.00	73.47%
Virginia Beach	249	City Revenue			

Source: *Land Area Square Miles reported in the 2010 US Census Bureau

(Refer to Appendix L on page 99 for a visual comparison of ambulance fees from the 13 localities.)

- In order to supplement EMS activities, some cities became creative by increasing revenues within EMS. Three municipalities (Richmond Ambulatory Authority, Chesterfield County, and Suffolk offered their citizens the option to purchase an annual subscription fee to assist with out-of-pocket expenses that a patient may incur (such as co-pays and deductibles.)

- The Richmond Ambulatory Authority's "Lifesaver" subscription program costs $49/year per individual or $79/year per family
- Chesterfield's "EMS Passport Subscription Program" costs $29/year per individual or $59/year per family
- Suffolk's "EMS Passport Subscription Service" cost $60/year for the entire family. Non-residents family members residing in Suffolk could also receive the benefit for $60/year.

This situation occurred because CFD's EMS Ambulance Fees had been raised only three times since the rates were first established in July of 1989. Historical rates follow:

RATE HISTORY

Date	FY	$/ ALS	% +	$/ BLS	% +
07/01/89	1990	$ 75.00		$ 50.00	
07/01/91	1992	$ 150.00	100%	$ 100.00	100%
06/15/97	1998	$ 200.00	33%	$ 100.00	0%
07/01/02	2003	$ 395.00	98%	$ 275.00	175%

As a result of the situation, the City experienced stagnant growth in EMS Ambulance Fee which did not adjust with the growing demands and costs of EMS services within the City. As mentioned earlier, in 2014, the total ambulance fees collected by the city was approximately $4.6 million and only subsidized 16% of the cost of EMS services valued at approximately $28 million.

May 12, 2015, the City approved an increase in ALS and BLS rates to be effective July 1, 2015 so they would be more in line with other localities. The new rate structures follow:

Charges for ambulance services
Chesapeake City Code Sec. 82-2.
100 1416040200 EMS Fees

Description	Service	Current	Proposed
Emergency Medical Service (EMS) Fees	Basic Life Support (BLS)	$275	$470
	Advanced Life Support Level 1	$395	$570
	Advanced Life Support Level 2	$395	$750
	Mileage Charge	$2.50	$10

Recommendation – Once EMS Ambulance fees are increased, the City should designate the revenues to address system operational and personnel needs in response to increasing demand for firefighter/paramedic services.

CFD should also work with the City to determine the feasibility of offering citizens the option to purchase an annual subscription. This fee would assist citizens with out-of-pocket expenses such as co-pays and deductibles. Under most plans reviewed, the amount paid by the insurance company was all that a subscription customer was charged. For subscription customers that did not have insurance, a percentage discount, such as 20%, was applied reducing the overall bill. This option would assist citizens by offering another layer of protection from unexpected medical/emergency fees and may provide an additional stable revenue stream needed to support firefighter and paramedic EMS operating expenses.

Management Response

8. EMS Ambulance Fees
Level of Agreement: CFD agrees with this finding.

In 2015, the City Council approved the increase to EMS Transport Fees as listed previously to bring CFD to the median of the 13 City/County report published by the Budget Office. This suggestion was made by CFD to bring the agency in line with the local market value and the Center For Medicare Services (CMS) Ambulance Fee Schedule. EMS Transport Fees are billed though the City Treasurer's Office and all funds collected go to the General Fund. The Department is currently working with City Administration and local healthcare systems to insure the increase does not place an undue burden on City residents that do not have the financial means to pay their EMS Transport Fee through debt forgiveness for charity care.

As stated in the audit report, the stagnant growth in EMS fees has not kept up with service demands for the City. Funding for equipment replacement and modernization, vehicle replacement and staffing to meet operational and administrative needs has largely gone unmet. The Department recommends that a substantial percentage of the increase in ambulance fees should go towards modernizing the EMS system in terms of equipment, vehicles, personnel, and deployment strategies. Specifically, funding should be allocated to initiate and support a Mobile Integrated Healthcare Practice Program to meet the rising demands of an aging patient population that may be better managed at home versus being transported to the hospital. This program, developed in partnership with regional healthcare systems, other insurance payers, and Affordable Care Organizations, could bring additional revenue into the system to offset a dwindling reliance by CMS on fee for service payments.

The Department will also review the collection of transport fees. The CFD will insure billing practices meet current and rapidly changing local, state, and federal guidelines. The goal of the review will be to identify any potential improvements in our business practices.

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APPENDIX A

RESPONSE FROM

CHESAPEAKE FIRE DEPARTMENT

OFFICIALS

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Appendix A
CFD Management Response

Prelude

From the very onset of this internal audit, the Fire Department has welcomed any and all outside perspectives and recommendations on ways we can improve our internal processes and service delivery to our external customers. The City is just emerging from the worst financial recession in recent history and the Fire Department, along with all other departments, faced serious program and staffing cuts, and has had to make many difficult decisions during these past 6-7 years. This audit could not have come at a better time. The Fire Department will use the findings of this report as a tool to evaluate all areas of our operations in the spirit of continuous improvement, and to help establish goals for the future to best meet our mission of providing the highest quality service to citizens.

1. Personnel Staffing Challenges
Level of Agreement: CFD agrees with this finding, but with consideration given to some additional factors noted below.

The staffing challenges the Fire Department faces are connected with a number of factors identified in the Audit report. National studies have shown the increased safety, efficiency and effectiveness that a 4-member company provides over a 3-member crew. While there is certainly agreement with the results of those studies, only firefighting operations were considered. With the Chesapeake Fire Department being a Fire-based EMS delivery system there is an added value of a fourth person on each company, especially when one of those firefighters is also cross-trained as a paramedic. This will insure Advance Life Support (ALS) care is available to our patients, in cases such as sudden cardiac arrest, when an engine company arrives on the scene prior to arrival of the medical transport unit. The Department's long-term goal is to staff all Engines and Ladders with 4 members, with each Engine staffed and equipped with ALS capabilities. There is also an anticipated need to increase the capabilities of transport Medic Units to meet the service demands of both the increasing population of the City, as well as the healthcare and medical emergencies of an aging customer base as the baby boomer generation reaches senior citizen status. The audit report recommends increasing the number of ambulances and converting our part-time units to full time status. While there will certainly come a point in time where additional ambulances will be needed, we have been successful in maximizing current staffing resources by targeting peak-time demand call load. Given the City's current financial situation, we see this as a much less expensive and more effective use of staffing than a wholesale increase in the complement for around the clock coverage. The four-person, Advance Life Support (ALS) engine companies noted in this report will provide a viable safety backstop for EMS delivery.

The Fire Department's budgeted training staff consists of only 3 funded positions to conduct all of the training and required recertification for the Department (including conducting recruit schools). To accomplish recruit school training, firefighters from operations must be taken from the field and temporarily assigned to Training. This results in additional overtime costs to backfill an already short-staffed department. This cyclical challenge has resulted in delays in conducting academies to quickly bring recruits into the Department. A permanent, funded training staff is needed to break this recurring cycle. With a funded training staff, recruit schools could be run consecutively with little break in between. This has multiple benefits including reducing overtime, reducing the number of vacancies, and conducting smaller recruit schools. Training will be addressed further in Section 3.

Firefighters currently have minimum service obligations once they receive their training. Incumbent Firefighters who achieve their Paramedic certification agree to maintain that certification for a period of 6 years. New recruits sign a Memorandum of Understanding (MOU) stating that if they leave the City of Chesapeake within 3 years, the City can recoup expenses associated with their training.

The Department of Human Resources, the Public Safety Departments and various employee groups have been active in reviewing the compensation rates and benefits to insure that our City remains competitive with other jurisdictions to attract and retain the best talent pool. This process and commitment should continue into the future.

Additions to the complement have been identified in the audit report to address the staffing needs of the Department. These additional positions will be considered in future budget processes, beginning in FY 2017, understanding that there are limitations of financial resources and competing needs within the Department and the City.

Regarding the staffing shortages and units out of service noted in this report, a significant change in policy recently occurred which has greatly alleviated both of those issues. Historically, Public Safety departments were not permitted to augment the operating budget's overtime account with vacancy savings from the salary account, and all vacancy savings were automatically diverted back to the City's general fund. Obviously, higher numbers of vacancies within the Fire Department result in increased overtime expenditures to insure the minimum staffing requirements are met. Recently, the City Manager changed that long-standing practice and now allows department heads to manage their overtime line item accounts, as well as the salary account, including the reallocation of any vacancy savings. This new latitude has greatly improved our ability to insure minimum daily staffing is met and has decreased the time engine companies and medic units are out of service due to tight budget constraints.

2. EMS Coverage and Support Challenges
Level of Agreement: CFD agrees with this finding.

The Department agrees with the assessment findings that the Field Medical Officer positions (3) for the Second Battalion should be reinstituted as additional paramedic staffing becomes available. In an effort to manage a growing EMS system administratively, the decision was made to temporarily defer filling these positions in order to address other system-wide needs. As vacancies are being filled, there is a greater need for clinical supervision in the field to insure quality patient care is being provided. The Field Medical Officer position also delivers clinical back-up and support to these new providers.

To help support our insufficient Training staff (addressed in Section 3), Field Medical Officers have also been used to deliver training programs to their respective Battalion stations. This has been a challenge with only two Field Medical Officers and has created gaps in the training of new devices, procedures, and medical trends. Having a third Field Medical Officer in place would help alleviate some of these gaps. It is intended to transfer that position back into field operations as soon as possible.

However, eliminating the current administrative positions to place the Field Medical Officers back into service is not recommended and would prove to be detrimental to the EMS System as a whole. There is a great need for the existing administrative positions as well as several others to meet current system needs and demands, future delivery models, increasing state and federal legislative requirements, and the rapidly changing state of healthcare financing practices. The Department has worked with Human Resources to identify these positions, and has created job descriptions and classification codes for them. However, adequate funding to create these positions within the Department has not been identified. These positions will be included for consideration in future operating budgets.

3. **CFD Training Facility and Faculty**
   Level of Agreement: CFD strongly agrees with this finding.

The Training Division is responsible for all of the training needs, requirements and maintenance of training records for all 400 sworn personnel positions. This includes training new recruits as well as maintaining the knowledge, skills and abilities of our incumbent members. In addition to training our department, we also coordinate CPR education for a number of other City Departments. As indicated in the audit report, this is accomplished with only 3 budgeted positions. To conduct recruit schools and accomplish a minimal amount of in-service training, firefighters are taken out of the field and assigned to the Training Division. Reassigning these firefighters creates vacancies in field operations, which results in either an increase in overtime to cover those vacancies or a reduction below the minimum staffing requirements and/ or service delivery capabilities.

The Department lacks a dedicated training facility, which has been identified as a critical Public Safety need for many years. The current arrangement with the U.S. Navy has helped us over the years; however, it does not meet the needs or expectations of a modern training facility. The quality and frequency of the training that can be conducted has suffered due to these restrictions. While this agreement does provide a space to use and the accessibility of some props associated with the facility, we must abide by the Navy's policies and procedures. This has hampered our Department on many occasions.

These findings were documented in a prior report completed in 2008 by Tecton Architects (Public Safety Facility Designers). The report detailed the training needs of all three Public Safety agencies (Sheriff, Police and Fire). The report recommended a joint Public Safety training facility that took advantage of shared spaces that the three departments could utilize. The report also identified spaces that would be unique to each department to fulfill those training needs specific to each organization's mission. The Fire Department will revisit the report, along with the Sheriff's Office and Police Department and identify any updates to the original recommendations. The facility will again be presented to City Administration to be included in the Capital Improvement Budget.

A position analysis has also been conducted for the Training Division. This analysis identified the needed positions to address both incumbent and recruit training. This report will be reviewed again and recommendations will be made to add these positions to the complement. These additions to the complement will address several concerns and have multiple positive results including: providing personnel to train both our recruit and incumbent members, reducing overtime due to backfilling field positions, and allowing the Department to conduct concurrent recruit schools to quickly fill firefighter vacancies resulting in additional reductions in overtime costs. Position recommendations will be made in future budget processes.

4. Telestaff Scheduling and KRONOS Timekeeping Issues
Level of Agreement: CFD agrees with this finding.

It is the goal of the Fire Department to obtain this interface for efficiency with employee data sharing, roster actions, and timecard management. The recent updates to the Kronos Telestaff interface with WFC Kronos appear to bring improved functionality between the two systems. With system integration, the Fire Department will likely reduce the workload for manual entries, in turn reducing the possibilities of inconsistencies within the data. Coincidently, the Fire Department, Police Department, and Department of Information Technology are currently working on a Telestaff interface within the Computer Automated Dispatch (CAD) and Records Management System (RMS) project; this interface delivers Telestaff roster information directly to run reports.

The Fire Department, in conjunction with the Department of Information Technology, will work to identify functional requirements and funding alternatives for implementation and sustainment of maintenance costs while being vigilant in verifying the end result will provide a true return on investment (ROI).

5. **Aging of the Fleet**
   Level of Agreement: CFD strongly agrees with this finding.

The Fire Department works closely with Central Fleet to maintain, repair and replace apparatus. Funding for new/replacement apparatus comes from the Central Fleet budget and is not included in the Fire Department's expenditures. The Fire Department submits annual requests for vehicle replacement to Central Fleet and they determine what units (throughout the City) will be funded for replacement. Their budget must serve the needs for all of the City's vehicle purchases. Over the years the Central Fleet's budget has not been adequate to replace the Fire apparatus at a consistent and acceptable rate to avoid the high repair costs, excessive out of service time, and lost opportunity costs.

A priority list of apparatus that needs to be replaced has been developed. However, the funding mechanism to fund the replacement plan does not exist. In early 2015 the decision was made to include the Fire Department's heavy equipment replacement cost in the Central Fleet's capital budget and remove it from the operating budget. It is believed that by moving these large purchases into the capital budget, they can be planned for and funded more readily.

One of the 2015 goals for the Fire Department is to research national best practices relating to heavy vehicle replacement plans, as well as funding mechanisms to sustain and support those plans. A work group has been convened to continue this research over the summer, with recommendations being made to City Administration in Fall 2015.

6. **Segregation of Federal Grant Functions and Fiscal Administration**
   Level of Agreement: CFD agrees with this finding.

As mentioned in the report, the Fire Department has been very aggressive in competing for, and being awarded, over $13 million in grants over the past several years. This funding has greatly enhanced Fire, EMS and Emergency Management capabilities at both the City and regional levels. In 2014, unreconciled differences of $521,695 between financial expenditures and grant reimbursements were discovered. The Department contracted the services of an independent CPA to review the differences and assist with reconciling all of the balances. The consultant completed the work in early 2015; accounting for and reconciling nearly all of the differences in grant expenditures. Working together, the Fire Department and Finance Department completed the work and reconciled 100% of the remaining differences accounting for all the funds. This entire process greatly improved the daily working partnerships between Finance and the Fire Department, which continues today as normal business operations.

To improve the tracking of grants and their overall administration, a specific process was developed to manage them from "cradle to grave." The process details specific benchmarks, time frames and reporting requirements. This process will assist grant managers and City staff with improving the accuracy and timeliness of grant reporting and should avoid any reconciliation errors in the future.

An evaluation of Fire Department's Support Staff was conducted and the Department identified the need for more fiscal support and oversight. This would better equip the Department with preparing and managing the budget, as well as providing oversight of the large number of grants that the Department is awarded. As identified in this report, the position of Fiscal Administrator was requested; however it was not funded in the FY 2016 budget. This request may be considered again in the FY 2017 budget, after reassessing the effectiveness of personnel changes and process improvements made in the Support Services Division over the last 12 months.

7. **Fire Inspections**
   Level of Agreement: CFD agrees with this finding.

Staffing

Over the past 6 years, there has been an intentional and focused direction to enhance the efficiency and effectiveness of Fire Prevention site inspections throughout the City. In terms of life safety and property conservation, this has been both to prevent fires from occurring, and to minimize the impact when they do occur. This report indicates that the Fire Department has been successful toward that goal. Thousands of serious fire and building code violations have been discovered and corrected during this timeframe.

The Fire Prevention Division is responsible for numerous tasks including performing Fire and Life safety inspections, reviewing development plans, overseeing systems tests, and conducting investigations. One Deputy Fire Marshal has been assigned to the eBUILD project since its inception in Fall 2013. Due to the eBUILD assignment, the Fire Prevention office was allowed to back-fill the vacancy with a special project employee. A retired Deputy Fire Marshal was hired to fill this vacancy and given the responsibility of reviewing site plans to insure planned developments were in compliance with the Statewide Fire Prevention Code and the Public Facilities Manual. This position has proven to be invaluable to the City of Chesapeake and its business partners.

As we approach the end of the eBUILD project, the special project back-fill position will be deleted from our allotted positions. With the special project position deleted, a Deputy Fire Marshal or Fire Inspector will be assigned the responsibility of site plans review, severely hindering their ability to complete other tasks, such as Fire and Life Safety Inspections. A permanent, part-time site plans review position would allow for continuity in the plans review process and eliminate the requirement of having a Deputy Fire Marshal or Fire Inspector assigned to complete site plans review. Creating and maintaining a permanent, part-time site plans review position is of high importance to the Fire Prevention Office and other City staff involved in planning and economic development. Now that we fully realize the value of this part-time position, and know development and construction is on the upward trend, the retention of this part-time position will be considered as a request in the FY 17 budget process.

Two additional part-time Fire Inspectors will be added to the Fire Prevention Office in the next two fiscal years, one in FY16 and one in FY17. These added positions will increase the number of part-time Fire Inspector positions in the Fire Prevention Office to five, and increase our projected Fire and Life Safety Inspections. The addition of one more part-time Fire Inspector to the FY18 complement would assist the Fire Prevention Division in inspecting the majority of the commercial occupancies in the City annually.

The addition of a second, mid-level supervisor (Lieutenant) to the Fire Prevention Office is also needed to manage the inspection program and insure that all commercial structures are inspected. Currently, nine Deputy Fire Marshals, two full-time Fire Inspectors, and three part-time Fire Inspectors report to one Captain/Assistant Fire Marshal. The Fire Prevention Office has many areas of responsibility such as inspections, investigations, plans review, special events and fire protection system testing. With the expected addition of two part-time inspectors over the next two years, dividing the supervision of these areas of responsibility between two mid-level supervisors allows for better oversight and a more manageable span of control.

The Fire Department continues to transition from the traditional Fire Prevention model to the more contemporary model of All-Hazards Community Risk Reduction. Additions to complement will be considered in future budget requests to enhance the capabilities needed to make, and keep, the City as safe as possible.

Inspections – Percentage Completed

In the Fall 2010, the Fire Prevention Office began using our current inspection records management system, MobileEyes. Prior to MobileEyes, inspection records were entered and maintained in the inspection section of our fire records management system, FirePoint. Initially, all inspection data was transferred from FirePoint to MobileEyes. It was later found that inaccurate data, such as duplicate occupancies and incorrect occupant use groups, were included in the data transfer. Some of the percentage of completed inspection data contained in Table 11 is a result of the inaccurate data currently in MobileEyes. Training will be conducted regarding updating the occupant information during each inspection and verifying that duplicate entries are deleted. This training will occur in early Fall of 2015. Once this is implemented the accuracy of the data in MobileEyes will improve.

Currently, the Fire Prevention Office has a work group assigned to develop a plan of pre-scheduling Fire and Life Safety Inspections with businesses. Many of our current inspections are completed without pre-scheduling. Our main objective is to make the inspection process less stressful for the business community. Additionally, we believe prescheduling and advising businesses of the most common violations found prior to their inspection will reduce the need for time consuming re-inspections.

8. **EMS Ambulance Fees**
   Level of Agreement: CFD agrees with this finding.

In 2015, the City Council approved the increase to EMS Transport Fees as listed previously to bring CFD to the median of the 13 City/County report published by the Budget Office. This suggestion was made by CFD to bring the agency in line with the local market value and the Center For Medicare Services (CMS) Ambulance Fee Schedule. EMS Transport Fees are billed though the City Treasurer's Office and all funds collected go to the General Fund. The Department is currently working with City Administration and local healthcare systems to insure the increase does not place an undue burden on City residents that do not have the financial means to pay their EMS Transport Fee through debt forgiveness for charity care.

As stated in the audit report, the stagnant growth in EMS fees has not kept up with service demands for the City. Funding for equipment replacement and modernization, vehicle replacement and staffing to meet operational and administrative needs has largely gone unmet. The Department recommends that a substantial percentage of the increase in ambulance fees should go towards modernizing the EMS system in terms of equipment, vehicles, personnel, and deployment strategies. Specifically, funding should be allocated to initiate and support a Mobile Integrated Healthcare Practice Program to meet the rising demands of an aging patient population that may be better managed at home versus being transported to the hospital. This program, developed in partnership with regional healthcare systems, other insurance payers, and Affordable Care Organizations, could bring additional revenue into the system to offset a dwindling reliance by CMS on fee for service payments.

The Department will also review the collection of transport fees. The CFD will insure billing practices meet current and rapidly changing local, state, and federal guidelines. The goal of the review will be to identify any potential improvements in our business practices.

Appendix B
Case Study: Close Call

On November 23, 2014, Fire Department units were dispatched to a residential structure fire with reports of three people trapped inside. When the first fire engine arrived on scene, they found a three story home with heavy smoke and fire consuming the house. The firefighters rapidly assessed the situation and found a victim on the back porch. They quickly removed her to safety and confirmed she was the only one in the structure. They also helped remove and treat her injured dog who was inside the burning home. Another dog was later found deceased inside the building. During the course of the firefighting operation on the 3rd floor, a two member firefighting crew was unable to exit the structure due to fire blocking the stairwell. However, they were able to safely exit the structure by the elevated ladder that had been deployed to the 3rd floor window earlier in the incident. This ladder was placed there for just such an emergency. No one was injured in the incident, and the fire did not spread to any neighboring homes.

Interviews with Fire Department staff regarding this incident bring out two critical points that directly relate to this report.

- Due to the initial dispatch call indicating people possible trapped in the home, along with knowledge of the building's construction and the close proximity of the surrounding homes to each other, additional firefighters were called to the fire to help. Although the initial engines were staffed to the minimal Chesapeake Fire Department levels, the lack of four member crews on every engine and ladder was a consideration in calling for additional resources. However, that call took fire protection away from other areas of the City.
- The positioning of the ladder truck, and the deployment of the aerial device to the 3rd floor window early in the incident was done for the "just in case scenario". If a firefighter needed to exit the structure rapidly, they could use the aerial device for this. In this incident- the "just in case scenario" became reality. However, just a few weeks earlier, the ladder truck involved in this incident (Ladder 2) was out of service for repairs, as well as the City's only reserve ladder truck (Ladder 101). This resulted in the area not having a ladder truck with an aerial device. If this incident occurred during this time frame, the firefighters would not have been able to safely exit the structure.

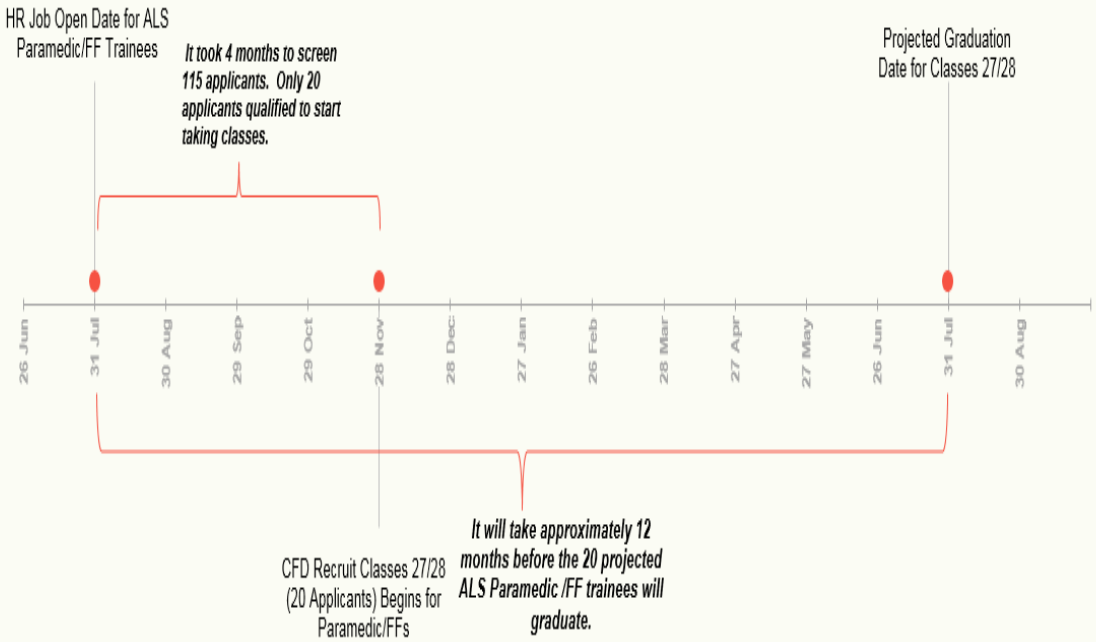
Photos of the Chesapeake Residential Structure Fire Where Two Firefighters Escaped the Evening of November 23, 2014

The photo above shows the residential structure after the fire. The photo below shows the adjacent home. The yellow arrows show the roof where firefighters were positioned to contain the fire while the two firefighters escaped from inside the burning building.

APPENDIX C

Figure B: ALS Firefighter/Paramedic Classes 27/28 Timeline

TIMELINE FOR ALS PARAMEDIC/FIREFIGHTER (FF) RECRUITS



TIMELINE DETAILS

DATE	MILESTONE	POSITION
7/28/2014	Job Open Date for ALS Paramedic/FF Trainee	10
11/3/2014	Recruit Classes 27/28 (20 Applicants) Begins	-10
7/31/2015	Projected Graduation Date for Classes 27/28	10

Adverse effects experienced by the CFD from not hiring Firefighter/EMT-Bs and Paramedic/Firefighters timely:

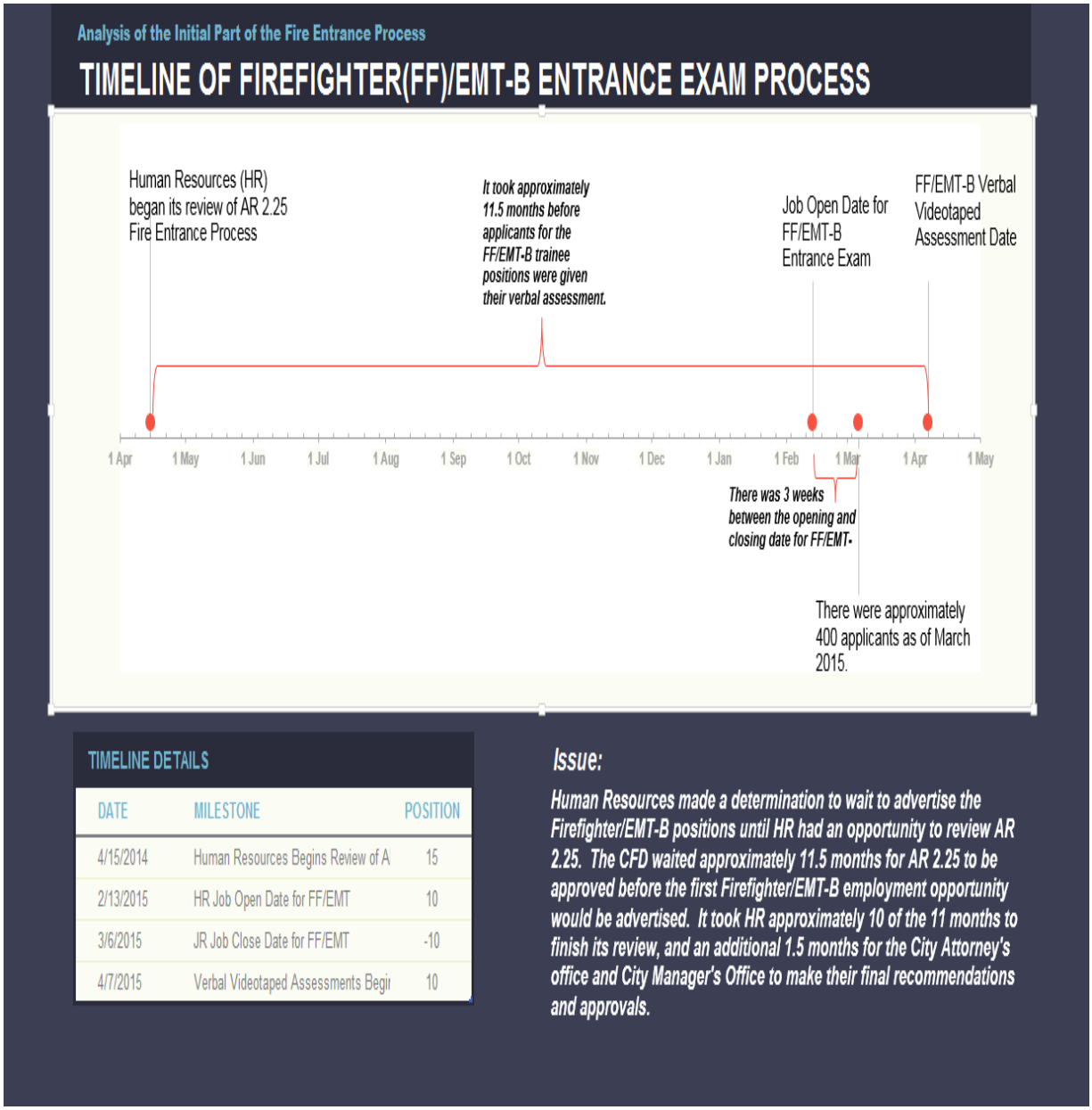
(1) Increased risk to firefighter and paramedic safety and decreased operational effectiveness.

(2) Staffing vacancies continues to occur which requires CFD to hireback existing firefighter/EMTs and paramedic/firefighters to backfill needed positions resulting in overtime to the City.

(3) When vacant positions were not filled, the salaries for those vacant positions at year-end would be transferred from the CFD budget and applied to other City expenses. CFD was not authorized to transfer the salaries of vacant positions in order to pay for additional overtime. This caused additional management time in determining where funding would come from to cover the backfill needs in an already stressed budget situation. However, in February 2015, the City Manager authorized CFD to use budgeted salaries of vacant firefighter positions for overtime.

Appendix D
Firefighter/EMT Entrance Exam Advertisement Timeline

The verbal videotaped assessment (which replaced the written exam) for the Firefighter/EMT applicants was only recently advertised in February with an opening date of February 13, 2015 to March 6, 2015. Human Resources reported 414 applicants who applied for the assessment.



On March 19, 2015, the Human Resources Department published its revised AR 2.25 Department of Human Resources and Fire Entrance Selection Policy dated 3/16/2015. Audit Services compared the new AR 2.25 policy dated March 16, 2015 to the superseded policy dated 4/10/2010. Table 2 outlines a summary of relevant excerpts from both AR 2.25 dated April 14, 2010 and March 16, 2015.

Appendix E
Timeline of Recruit Classes 22, 23, 24, 25, 26, 27, 28

Class	Start Date	Graduation Date	Number of Graduates
CFD Class 22	**March 2, 2009**	**September 25, 2009**	**17**
There was approximately 1.5 year gap between Class 44 and Class 47			
CFD Class 23	**May 16, 2011**	**November 18, 2011**	**16**
CFD Class 24	**September 16, 2011**	**March 30, 2012**	**12**
CFD Class 25	**December 1, 2011**	**June 8, 2012**	**23**
There was approximately a 1 year gap between Class 49 and Class 54			
CFD Class 26	**May 1, 2013**	**October 11, 2013**	**7**
There was approximately another 1 year gap between Class 26 and Classes 27/28			
CFD Classes 27 & 28*	**November 3rd, 2014**	**Late July 2015 (Projected)**	**20 (Projected)**

Note: * Due to the size of the class that began November 3, 2014, CFD split the group into two classes – Class 27 and Class 28. Splitting the group into two classes helped with the overall coordination. One group started EMS training and the other started their fire training. The classes then switched training sessions for complete coverage. Both Class 27 and 28 started November 3, 2014 and will graduate in late summer on the same day.

The following are the class numbers for Chesapeake that correlate with the Southside Regional Fire Academy (SRFA).

SRFA Class Number 44, CFD Class Number 22
SRFA Class Number 47, CFD Class Number 23
SRFA Class Number 48, CFD Class Number 24
SRFA Class Number 49, CFD Class Number 25
SRFA Class Number 54, CFD Class Number 26
SRFA Class Number 57, CFD Class Number 27
SRFA Class Number 58, CFD Class Number 28

Source: Chesapeake Fire Department

Appendix F

Summarized Excerpts from Administrative Regulation 2.25 4/14/2010 and 3/16/2015

	Steps	Responsible Department	AR Date	Description
1	**III. Responsibility**	Human Resources (HR)/Fire Department (CFD)	4/14/10	HR had oversight responsibility for administration of the Fire Entrance selection process. The Fire Chief had responsibility for specific examination and review procedures.
			3/16/15	The new AR 2.25 allows the Fire Chief to contract the services of a third party vendor to administer the Fire entrance selection process, and manage the entrance selection process from onset to completion with reporting requirements.
2	**IV. Candidate Eligibility**	Human Resources	4/14/10	Candidate must meet the following eligibility requirements: a. Be legally authorized to work in the U.S.; b. Be 18 years of age at the time of conditional offer; c. Be a high school graduate or possess a GED; and d. Possess a valid motor vehicle operator's license with an acceptable driving record.
			3/16/15	There was very little change to this section. However, it now includes a reference to the City's Driving Standards policy.
3	**V. Selection Process**	Fire Department	4/14/10	Points/weights were assigned to each phase of this process. The selection process include a written examination (35%), candidate physical ability test (CPAT) (Pass/Fail), assessment of credentials (30%), and panel interview (35%), as well as an optional interview with the Fire Chief (optional).
			3/16/15	This section no longer included points/weights assigned to each phase of this process. The reference to the written examination and candidate physical ability test (CPAT) were removed. The entire appendix which included specific references to points, criteria, and weights were removed.
4	**VI. Establishing the Eligibility List**	Human Resources		Firefighter-Training candidate will be placed on an eligibility list. They will be ranked based on combined scores from the Selection Process. The list is effective until a new eligibility list is established. Human Resources is the custodian of the eligibility list.
			3/16/15	Previous references to U.S. veterans were included in the former appendix and moved to this section. Veterans no longer have to pass all phases of the Fire Entrance Process. They only need to complete all phases of the process. One (1) point will be added to a veteran's overall score for an honorable discharge. Two (2) points will be added if a veteran has a service-connected disability.
5	**VII. Selecting Candidate for Hire**	Fire Department	4/14/10	A. Prior to extending conditional offers of employment, Fire Chief submits to the Director of HR a request detailing the vacancies to be filled. (Includes names of separating employees creating vacancies or other approved documents creating new vacancies. B. Fire Chief selects from among the top candidates on the eligibility list (provided by HR) each time there is a need to fill a vacancy. HR is required to provide the Fire Chief with an ***unranked*** alphabetical list of eligible candidates, consisting of top five (5) candidates for each requested vacancy or as close to ratio as the list of qualified candidates will permit. In instances where there is one vacancy to be filled, the top 10 candidates will be referred or as close to that number as the list of qualified candidates will permit.

				C. Upon written request from Fire Chief and approval of City Manager, CFD may over-hire by a specified number of positions.
			3/16/15	There is no change to this section except for the words, that the Fire Department, with the written approval of the City Manager may over-hire a specified number of positions "to proactively address historic turnover in the training academy.
6	**Post-Conditional Offer Process**	Human Resources	4/14/10	After Fire chief has extended a conditional offer of employment, the candidate must pass a four-part post-conditional offer process. This process includes: **a.** **Background Investigation conducted by CFD.** Includes employment history and education, driving record and credit standing, search of the National Sex Offender Public Website and Virginia State Department of Social Services' Child Protective Services Central Registry. Candidates undergo a fingerprint pre-screening for criminal history record via the Central Criminal Records Exchange from the FBI and the Virginia State Police. **b.** **Medical Examination** performed by a City-approved physician to determine if the person meets the physical demands for a Firefighter/EMT position. **c.** **Drug and Alcohol Test** in accordance with the City's A.R. 2.44. **d.** **Polygraph Examination** to determine the truthfulness of candidate response during preceding phases of selection process.
			3/16/15	Very few changes were made to this section except for the following references to illegal drugs, Marijuana, Drug and Alcohol Testing and polygraph examinations. Polygraph examinations used to be required for all candidates. Now it is only required at the discretion of the Fire Chief on an exception basis.

Appendix G
Daily Staffing Worksheet

The table below is used by the Battalion Chiefs to determine staffing.

Daily Staffing Worksheet			
Battalion	Current Personnel	Four person Company and EMS 2	Four Member Company, EMS 2 and Specialty Unit Staffed
BATT ONE			
BC 1	1	1	1
EMS 1	1	1	1
Engine 1	4	4	4
Medic 1	2	2	2
Engine 2	3	4	4
Ladder 2	3	4	4
Medic 2	2	2	2
Engine 3	4	4	4
Medic 3	2	2	2
Rehab 3	0	0	2
Engine 4	3	4	4
Engine 24	3	4	4
Medic 4	2	2	2
Engine 14	4	4	4
Medic 14	2	2	2
BATT TWO			
BC 2	1	1	1
EMS 2	0	1	1
Engine 5	3	4	4
Ladder 5	3	4	4
Medic 5	2	2	2
HazMat 5	0	0	2
Engine 6	4	4	4
Engine 7	4	4	4
Medic 7	2	2	2
Engine 13	4	4	4
Engine 15	4	4	4
Medic 15	2	2	2
Rescue 15	0	0	2

BATT THREE			
BC-3	1	1	1
EMS-3	1	1	1
Engine 8	3	4	4
Engine 28	3	4	4
Medic 8	2	2	2
Engine 9	4	4	4
Medic 9	2	2	2
Command 9	0	0	2
Engine 10	4	4	4
Engine 11	4	4	4
Engine 12	3	4	4
Ladder 12	3	4	4
Medic 12	2	2	2
	97	108	116
Medic 24	Staffed by Part time members		
Medic 11	Staffed by Part time members		

Source: Chesapeake Fire Department

Appendix H: Fire Apparatuses Downtime Analyses

Table H-1
Equipment Downtime by Battalion from 7/1/2013 thru 1/9/2015

Battalion	Number of Days Equipment was Inoperable	Total Hours Equipment was Out-of-Service
1	1,321.78	31,722.73
2	792.75	19,026.16
3	1,352.79	32,467.14

Table H-2
Breakdown of the total number of days Fire Equipment was Out of Service (7/1/2013 thru 1/9/2015)

Type of Equipment	Active Equipment	Reserve Apparatuses in an Active Status	Total Downtime Measured in Days
COMMAND UNIT	60.71		60.71
ENGINE	282.07	952.93	1,235.00
HAZMAT COMMAND	82.31		82.31
LADDER	422.17	183.09	605.26
PUC ENGINE	1,137.60		1,137.60
SQUAD	31.30		31.30
TELESQUIRT ENGINE	180.98	134.17	315.15
Grand Total	**2,197.14**	**1,270.19**	**3,467.32**

Table H-3
Total Hours Fire Apparatuses were Out of Service (7/1/2013 thru 1/9/2015)

EQUIPMENT TYPE	FLEET IN ACTIVE STATUS	RESERVE APPARATUS IN AN ACTIVE STATUS	TOTALS HOURS OUT OF SERVICE
COMMAND UNIT	1,457.12		1,457.12
ENGINE	6,769.73	22,870.29	29,640.02
HAZMAT COMMAND	1,975.37		1,975.37
LADDER	10,131.99	4,394.13	14,526.12
PUC ENGINE	27,302.3		27,302.3
SQUAD	751.23		751.23
TELESQUIRT ENGINE	4,343.49	3,220.05	7,563.54
Grand Total	**52,731.23**	**30,484.47**	**83,215.70**

Appendix I: Medic Unit Downtime Analyses

Table I-1:
Total Hours Medic Units were Out of Service
(7/1/2013 thru 1/9/2015)

Battalion	Number of Days Medic Units was Inoperable	Total Hours Medic Units were Out-of-Service
1	588.25	14,118.04
2	454.48	10,907.44
3	631.52	15,156.53

Table I-2:
Breakdown of the Total Number of Days and Hours Medic Units were Out of Service due to Maintenance and Repairs (7/1/2013 thru 1/9/2015)

Medic Unit#	Total Hours Inoperable	Total Downtime Measured in Days
MEDIC 1	2700.74	122.53
MEDIC 101	929.54	38.73
MEDIC 102	1350.34	56.26
MEDIC 103	3,039.87	126.66
MEDIC 104	477.35	19.89
MEDIC 11	3,938.33	164.10
MEDIC 14	2,726.66	113.61
MEDIC 15	2,963.47	123.48
MEDIC 24	3,011.79	125.49
MEDIC 3	4,230.91	176.29
MEDIC 4	2,417.27	100.72
MEDIC 5	1,648.05	68.67
MEDIC 6	321.56	13.40
MEDIC 7	377.63	15.73
MEDIC 8	2864.47	119.35
MEDIC 9	3754.28	156.43
MEDIC 12	1,395.44	58.14
MEDIC UNITS **	1,627.32	67.80
Grand Total	**39,775.02**	**1,657**

** At the time of the audit, these two Medic Units were purchased but not yet assigned Medic Unit numbers. These Units were scheduled to replace Medic Units 101 and 102.

Appendix J

Scoring Factors/ Flagship Fleet Management, LLC.
Vehicle Replacement Analysis

Age	Points are added to an equipment unit based on the time period for the in-service date and current date/time on the computer. The interval and point assigned are set by the user.
Usage	Points are assigned based on the current meter of the equipment and the meter class assignment. The range and points assigned are set for each meter class.
Reliability	Reliability compares repair cost in the third year of service and the last full year of service. The third year repair cost is divided by the last full service year to come up with this ratio.
Repair Cost	One to six points are assigned based on the total cumulative "to-date" repair cost divided into the original purchase price of the equipment.
1	One point is assigned if the cumulative equipment repair cost is between 0-20% of original cost.
2	Two points are assigned if cumulative equipment repair cost is between 20-40% or original cost.
3	Three points are assigned if cumulative equipment repair cost is between 40-60% of original cost.
4	Four points are assigned if cumulative equipment repair cost is between 60-80%.
5	Five points are assigned if cumulative equipment repair cost is between 80-100% of original cost
6	Six points are assigned if cumulative equipment repair cost is over 100% of original cost.

Source: Chesapeake Central Fleet Department

Appendix K-1: Ladder 101

As of 1/7/2015: This apparatus is in its 17th year of service to the City and is still active. It has a current resale value in 2015 of $20,345.

Purchase Price: $483,213 (1999)

Total Repair and Maintenance Cost thru 1/9/2015: $411,617

Year Diminishing Returns Began: Service Year (SY) 7

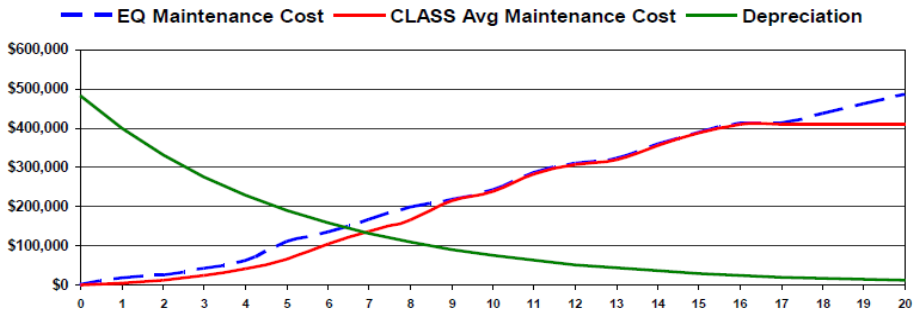
Opportunity Cost: $435,248

EQ Point Rank as a % of Max Class Point: 100%

Downtime Rate from 7/1/13-1/9/15: 33%

FIRE **Department: F - FIRE**

Equipment Number	F757	Class Min Point:	3.9	
Year/Make/Model	1999 / PIERCE / DASH R 2000	**EQ Point Rank:**	**39.9**	
In Service Date	4/14/1999	Class Max Point:	39.9	8758
Original Cost	$483,213			



Service Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2016	2016	2017	2018
Labor Hours	34	25	40	129	202	133	196	149	94	155	75	157	78	213	200	128				
Cumulative Maintenance Cost	17,462	25,530	42,333	59,999	110,377	134,352	166,902	197,497	216,585	241,752	285,446	309,229	320,790	357,941	388,674	411,618	411,618	435,831	460,043	484,256
Maintenance Cost - Class Avg. (8758)	4,520	11,933	24,247	42,542	65,983	103,725	135,560	165,883	214,716	239,883	283,578	307,360	318,922	356,073	386,806	409,749	409,749	409,749	409,749	409,749
Resale Val. (Orig. $483,213)	401,067	332,885	276,295	229,325	190,340	157,982	131,125	108,834	90,332	74,976	62,230	51,651	42,870	35,582	29,533	24,513	20,345	16,887	14,016	11,633
Use Miles	6,330	15,881	18,135	17,798	18,545	16,573	15,433	13,868	12,792	7,474	4,769	2,776	2,644	4,804	7,035	8,965	1,629			

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-2: Engine 101

This is an old picture of Engine 101 which used to be Engine 1. Engine 101 retired in December 2014.

As of 11/4/2014: Engine 101 began experiencing diminishing returns in its 8th year of service but remained in reserve/active status until its 22nd year of service when it was finally retired in 2014.

Purchase Price: $304,342 (1993)	**Total Repair and Maintenance Cost thru 1/9/2015:** $365,820.68
Year Diminishing Returns Began: SY 8	**Opportunity Cost:** $403,773
EQ Point Rank as a % of Max Class Point: 100%	**Downtime Rate from 7/1/13-1/9/15:** 53%

FIRE — Department: F - FIRE

Equipment Number	F753	Class Min Point:	43.7
Year/Make/Model	1993 / PIERCE / ARROW	**EQ Point Rank:**	**54.3**
In Service Date	7/1/1993	Class Max Point:	54.3
Original Cost	$304,342		

503

Service Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2010	2010	2011	2012
Labor Hours			4	3	64	77	70	73	44	76	203	176	129	199	140	239	64	163	154	158
Cumulative Maintenance Cost	0	0	3,033	7,732	25,930	34,350	44,633	77,362	88,096	130,938	155,875	176,628	203,614	236,508	253,647	279,285	288,160	303,295	316,268	336,087
Maintenance Cost - Class Avg. (503)		0	3,033	7,732	12,522	16,446	25,245	46,229	59,955	84,176	95,358	108,606	126,046	154,240	169,047	189,129	207,073	220,801	234,424	247,129
Resale Val. (Orig. $304,342)	252,604	209,661	174,019	144,436	119,882	99,502	82,586	68,547	56,894	47,222	39,194	32,531	27,001	22,411	18,601	15,439	12,814	10,636	8,828	7,327
Use Miles	5,676	11,352	11,352	11,352	11,352	11,886	9,242	6,460	10,894	8,985	11,301	12,173	700	3,812	9,138	9,519	10,632	996	4,566	4,381

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-3: Engine 107

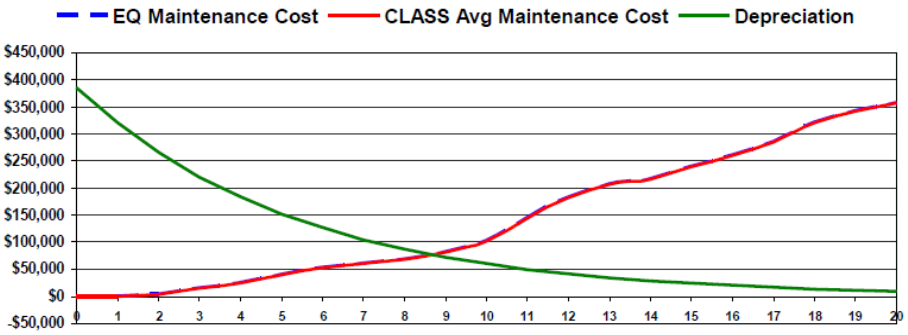
As of March 6, 2015, the Engine was of town being repaired.

As of 1/7/2015: Diminishing returns for this apparatus began in its 9th year of service to the City. It remains in active service to the City and currently has a resale value of $0.	
Purchase Price: $386,123 (1995)	**Total Repair and Maintenance Cost thru 1/9/2015:** $356,648.22
Year Diminishing Returns Began: SY 9	**Opportunity Cost:** $376,594
EQ Point Rank as a % of Max Class Point: 100%	**Downtime Rate from 7/1/13-1/9/15: 24%**

FIRE

Department: F - FIRE

Equipment Number	F764	Class Min Point:	46.6	
Year/Make/Model	1995 / PIERCE / TSQT65A	EQ Point Rank:	46.6	
In Service Date	8/9/1995	Class Max Point:	46.6	8750
Original Cost	$386,123			



Service Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2012	2012	2013	2014
Labor Hours		8	61	73	147	39	47	50	118	150	144	190	84	89	170	167	216	189	160	111
Cumulative Maintenance Cost	5	3,916	15,403	23,529	40,038	52,354	59,829	67,020	80,798	102,986	144,153	182,538	205,856	216,648	239,588	259,976	285,230	321,668	340,908	356,648
Maintenance Cost - Class Avg. (8750)	5	3,916	15,403	23,529	40,038	52,354	59,829	67,020	80,798	102,986	144,153	182,538	205,856	216,648	239,588	259,976	285,230	321,668	340,908	356,648
Resale Val. (Orig. $386,123)	320,482	266,000	220,780	183,247	152,095	126,239	104,779	86,966	72,182	59,911	49,726	41,273	34,256	28,433	23,599	19,587	16,257	13,494	11,200	9,296
Use Miles	5,330	12,792	12,792	11,250	9,898	13,820	10,163	14,104	14,906	12,734	9,011	10,270	12,271	15,881	12,649	97	9,215	7,369	5,796	5,234

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-4: Engine 1

As of 1/7/2015: This vehicle is in its 11th year of service and is active. It has a current value in 2015 of $63,309.

Purchase Price: $491,594 (2005)

Total Repair and Maintenance Cost thru 1/9/15: $244,964.50

Year Diminishing Returns Began: SY 8

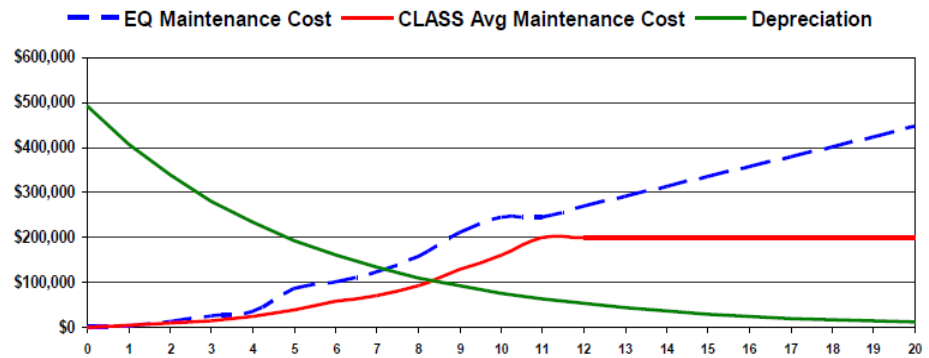
Opportunity Cost: $256,252

EQ Point Rank as a % of Max Class Point: 100%

Downtime Rate from 7/1/13-1/9/15: 25%

FIRE — Department: F - FIRE

Equipment Number	F700	Class Min Point:	12.8	
Year/Make/Model	2005 / PIERCE / QUANTUM	**EQ Point Rank:**	**26.5**	
In Service Date	8/29/2005	Class Max Point:	26.5	8753
Original Cost	$491,594			



Service Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2022	2022	2023	2024
Labor Hours	12	38	41	85	173	79	116	254	281	222										
Cumulative Maintenance Cost	1,261	11,122	23,394	34,536	84,649	99,432	122,112	155,861	209,661	244,965	244,965	267,234	289,504	311,773	334,043	356,312	378,582	400,851	423,121	445,390
Maintenance Cost - Class Avg. (8753)	3,757	8,685	15,779	25,030	39,981	58,301	71,475	93,708	129,217	161,293	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923
Resale Val. (Orig. $491,594)	408,023	338,659	281,087	233,302	193,641	160,722	133,399	110,721	91,899	76,276	63,309	52,546	43,614	36,199	30,045	24,938	20,698	17,180	14,259	11,835
Use Miles	5,214	10,549	11,845	13,492	7,842	10,890	11,277	13,174	13,046	14,331	157									

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-5: Engine 102

As of 1/7/2015: This vehicle is in its 25 year of service to the City and is still currently active. The purchase price was $193,908. Its current value to date is $0.

Purchase Price: $193,908 (1991)

Total Repair and Maintenance Cost thru 1/9/15: $433,076.34

Year Diminishing Returns Began: SY 8

Opportunity Cost: $469,491

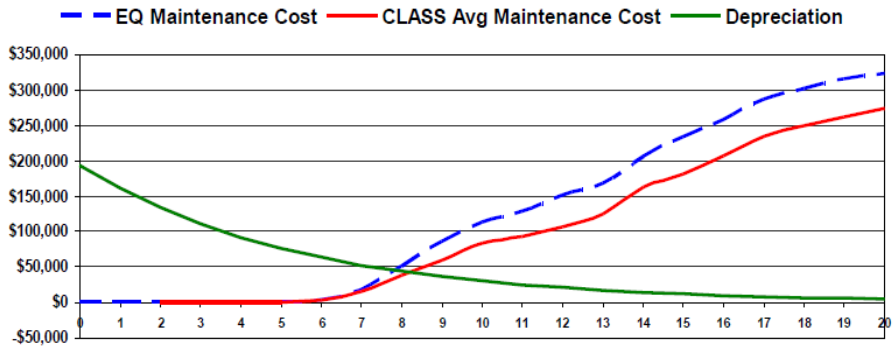
EQ Point Rank as a % of Max Class Point: 99.62%

Downtime Rate from 7/1/13-1/9/15: 39%

FIRE

Department: F - FIRE

Equipment Number	F744	Class Min Point:	53.1	
Year/Make/Model	1991 / PIERCE / ARROW	**EQ Point Rank:**	**53.1**	
In Service Date	6/1/1991	Class Max Point:	53.3	503
Original Cost	$193,908			



Service Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2008	2008	2009	2010
Labor Hours					1	6	140	124	50	121	62	182	179	188	136	100	166	106	92	72
Cumulative Maintenance Cost	0	0	0	0	559	3,948	16,205	50,930	86,078	112,109	127,880	151,316	167,711	206,084	232,168	256,638	285,527	300,991	314,509	322,721
Maintenance Cost - Class Avg. (503)		0	0	0	291	3,655	15,912	38,719	60,221	84,148	93,366	107,143	124,209	162,583	181,592	206,913	235,056	249,888	262,499	273,769
Resale Val. (Orig. $193,913)	160,948	133,587	110,877	92,028	76,383	63,398	52,620	43,675	36,250	30,088	24,973	20,727	17,204	14,279	11,852	9,837	8,165	6,777	5,625	4,668
Use Miles	5,208	8,928	8,928	8,928	8,928	8,928	8,928	8,202	6,804	9,838	8,637	10,480	10,328	8,945	5,551	9,102	10,090	10,627	11,185	4,597

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-6: Engine 106

As of 1/7/2015: This vehicle is in its 12th year of service and is still active. The purchase price was $349,986. Its current resale value in 2015 is $37,410.

Purchase Price: $349,986 (2004)

Total Repair and Maintenance Cost thru 1/9/15: $204,501.24

Year of Diminishing Returns: SY 7

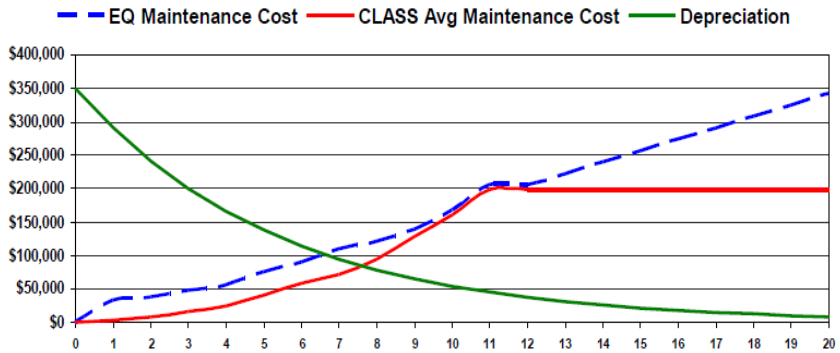
Opportunity Cost: $229,556

EQ Point Rank as a % of Max Class Point: 94.34%

Downtime Rate from 7/1/13-1/9/15: 53%

FIRE — Department: F - FIRE

Equipment Number	F794	Class Min Point:	12.8	
Year/Make/Model	2004 / FREIGHTLINE / EAGLE PUMPER	EQ Point Rank:	25.0	
In Service Date	3/30/2004	Class Max Point:	26.5	8753
Original Cost	$349,986			



Service Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2021	2021	2022	2023
Labor Hours	31	51	58	36	97	106	159	110	158	222	101									
Cumulative Maintenance Cost	32,918	37,886	47,708	55,835	75,216	89,371	109,484	120,805	138,023	166,871	204,501	204,501	221,543	238,585	255,627	272,668	289,710	306,752	323,794	340,835
Maintenance Cost - Class Avg. (8753)	3,757	8,685	15,779	25,030	39,981	58,301	71,475	93,708	129,217	161,293	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923
Resale Val. (Orig. $349,986)	290,488	241,105	200,117	166,097	137,861	114,425	94,972	78,827	65,426	54,304	45,072	37,410	31,050	25,772	21,391	17,754	14,736	12,231	10,152	8,426
Use Miles	4,378	8,815	11,282	12,124	10,615	9,223	4,089	2,515	5,000	1,939	3,158	0								

FIRE
Flagship, Fleet Replacement Analysis

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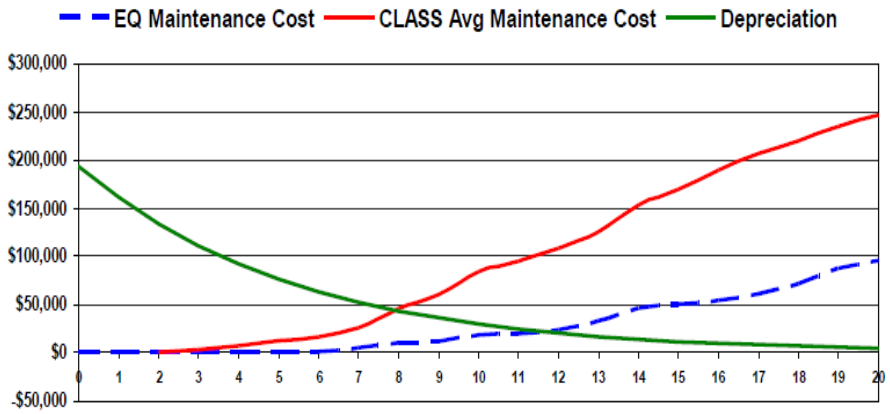
Appendix K-7: Engine 105

Picture not available. The Engine retired in December 2014.	
As of 11/4/2014: F745 was eventually retired in its 23rd year of service in 2014. Its resale value in 2014 was $0.	
Purchase Price: $193,908 (1991)	**Total Repair and Maintenance Cost thru 1/9/15:** $190,346.73
Year of Diminishing Returns: SY 12	**Opportunity Cost:** $186,232
EQ Point Rank as a % of Max Class Point: 80.48%	**Downtime Rate from 7/1/13-1/9/15:** 27%

FIRE

Department: F - FIRE

Equipment Number	F745	Class Min Point:	43.7	
Year/Make/Model	1991 / PIERCE / ARROW	**EQ Point Rank:**	**43.7**	
In Service Date	6/1/1991	Class Max Point:	54.3	503
Original Cost	$193,908			



Service Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2008	2008	2009	2010
Labor Hours					1	1	44	44	20	19	12	36	64	60	31	36	23	97	88	56
Cumulative Maintenance Cost	0	0	0	0	379	927	4,784	10,378	11,546	17,732	19,086	23,771	32,414	45,727	49,801	53,848	60,459	70,576	86,872	95,335
Maintenance Cost - Class Avg. (503)		0	3,033	7,732	12,522	16,446	25,245	46,229	59,955	84,176	95,358	108,606	126,046	154,240	169,047	189,129	207,073	220,801	234,424	247,129
Resale Val. (Orig. $193,908)	160,944	133,583	110,874	92,025	76,381	63,396	52,619	43,674	36,249	30,087	24,972	20,727	17,203	14,279	11,851	9,837	8,164	6,776	5,624	4,668
Use Miles	3,661	6,276	6,276	6,276	6,276	6,276	6,276	5,961	2,736	5,984	3,864	6,687	10,000	6,584	5,277	6,221	5,861	9,087	8,896	4,353

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-8: Ladder 2

As of 1/7/2015: This vehicle is in its 9th year of service. Its purchase price was $902,335. Its resale value in 2015 is $140,007.

Purchase Price: $902,335 (2006)

Year Diminishing Returns Began: SY 9

EQ Point Rank as a % of Max Class Point: 77%

Total Repair and Maintenance Cost thru 1/9/15: $273,114.17

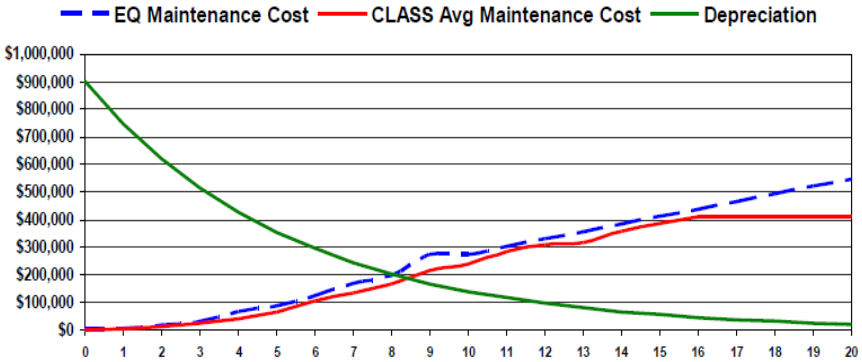
Opportunity Cost: $281,881

Downtime Rate from 7/1/13-1/9/15: 41%

FIRE

Department: F - FIRE

Equipment Number	**F759**	Class Min Point:	3.9	
Year/Make/Model	2006 / PIERCE / QUANTUM	**EQ Point Rank:**	**31.0**	
In Service Date	5/27/2006	Class Max Point:	39.9	8758
Original Cost	$902,335			



Service Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2023	2023	2024	2025
Labor Hours	40	55	45	239	141	188	227	125	343											
Cumulative Maintenance Cost	5,110	16,605	26,710	65,724	86,130	123,825	165,002	194,535	273,114	273,114	300,426	327,737	355,048	382,360	409,671	436,983	464,294	491,606	518,917	546,228
Maintenance Cost - Class Avg. (8758)	4,520	11,933	24,247	42,542	65,983	103,725	135,560	165,883	214,716	239,883	283,578	307,360	318,922	356,073	386,806	409,749	409,749	409,749	409,749	409,749
Resale Val. (Orig. $902,335)	748,938	621,619	515,943	428,233	355,433	295,010	244,858	203,232	168,683	140,007	116,206	96,451	80,054	66,445	55,149	45,774	37,992	31,534	26,173	21,723
Use Miles	13,447	15,781	14,500	13,652	14,914	15,601	15,647	11,733	10,232	0										

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-9: Engine 8

As of 1/7/2015: This vehicle is in its 7th year of service. Its purchase price was $572,216. Its resale value in 2015 is $155,277.

Purchase Price: $572,216 (2009)

Total Repair and Maintenance Cost thru 1/9/15: $58,861

Year Diminishing Returns Began: N/A

Opportunity Cost: $N/A

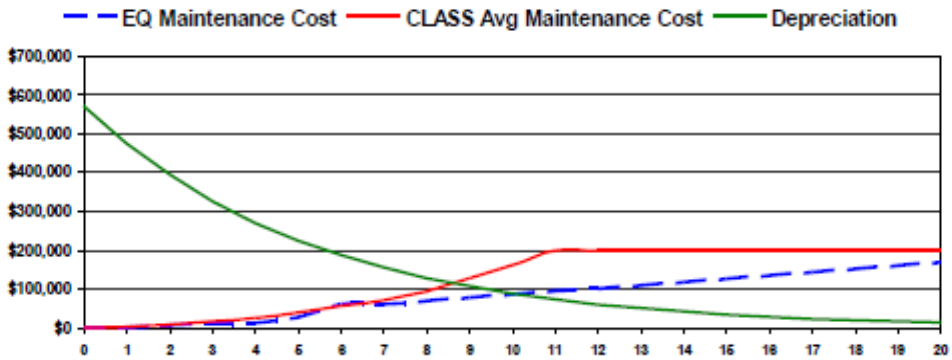
EQ Point Rank as a % of Max Class Point: 67.55%

Downtime Rate from 7/1/13-1/9/15: 54%

FIRE

Department: F - FIRE

Equipment Number	F7007	Class Min Point:	12.8	
Year/Make/Model	2009 / PIERCE / QUANTUM	EQ Point Rank:	17.9	
In Service Date	12/7/2009	Class Max Point:	26.5	8753
Original Cost	$572,216			



Service Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Labor Hours	10	38	18	27	56	155														
Cumulative Maintenance Cost	812	4,485	8,587	11,785	27,008	58,861	58,861	67,270	75,679	84,088	92,497	100,905	109,314	117,723	126,132	134,540	142,949	151,358	159,767	168,175
Maintenance Cost - Class Avg. ($753)	3,757	8,685	15,779	25,030	39,981	58,301	71,475	93,708	129,217	161,293	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923
Resale Val. (Orig. $572,216)	474,939	394,200	327,186	271,564	225,398	187,081	155,277	128,880	106,970	88,785	73,692	61,164	50,766	42,136	34,973	29,027	24,093	19,997	16,598	13,776
Use Miles	2,750	9,127	6,612	7,622	8,389	5,931	0													

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-10: Engine 14

As of 1/7/2015: This vehicle is in its 7th year of service. Its purchase price was $572,216. Its resale value in 2015 is $155,277.

Purchase Price: $572,216 (2009)

Year Diminishing Returns Began: N/A

EQ Point Rank as a % of Max Class Point: 66.04%

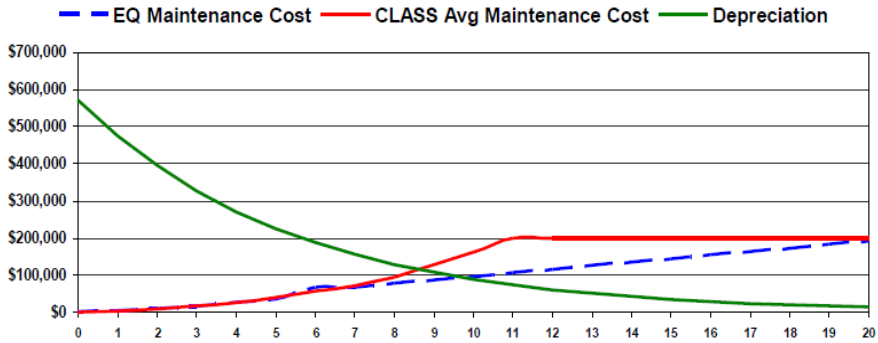
Total Repair and Maintenance Cost thru 1/9/15: $66,726

Opportunity Cost: N/A

Downtime Rate from 7/1/13-1/9/15: 22%

FIRE — Department: F - FIRE

Equipment Number	**F7000**	Class Min Point:	12.8	
Year/Make/Model	2009 / PIERCE / QUANTUM	**EQ Point Rank:**	**17.6**	
In Service Date	9/23/2009	Class Max Point:	26.5	8753
Original Cost	$572,216			



Service Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2026	2026	2027	2028
Labor Hours	16	49	33	49	39	177														
Cumulative Maintenance Cost	1,892	7,836	14,460	24,393	34,687	66,726	66,726	76,259	85,791	95,323	104,856	114,388	123,920	133,453	142,985	152,517	162,050	171,582	181,114	190,647
Maintenance Cost - Class Avg. (8753)	3,757	8,685	15,779	25,030	39,981	58,301	71,475	93,708	129,217	161,293	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923
Resale Val. (Orig. $572,216)	474,939	394,200	327,186	271,564	225,398	187,081	155,277	128,880	106,970	88,785	73,692	61,164	50,766	42,136	34,973	29,027	24,093	19,997	16,598	13,776
Use Miles	3,734	9,143	13,333	12,484	14,196	13,433	306													

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-11: Engine 3

As of 1/7/2015: This vehicle is in its 7th year of service. Its purchase price was $572,216. Its resale value in 2015 is $155,277.

Purchase Price: $572,216 (2009)

Year Diminishing Returns Began: N/A

EQ Point Rank as a % of Max Class Point: 59.62%

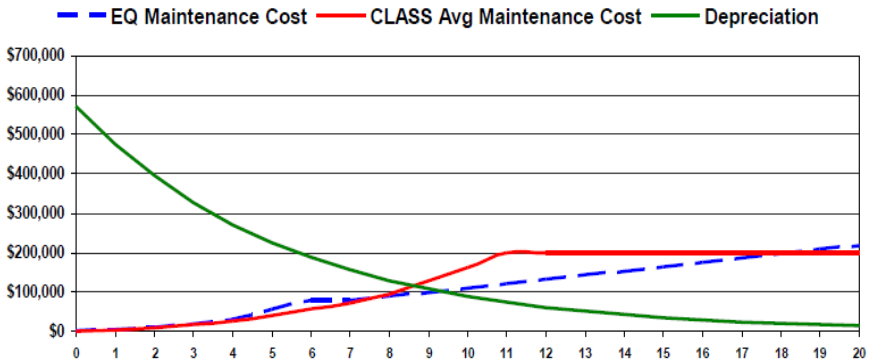
Total Repair and Maintenance Cost thru 1/9/15: $76,087

Opportunity Cost: N/A

Downtime Rate from 7/1/13-1/9/15: 22%

FIRE — Department: F - FIRE

Equipment Number	**F7009**	Class Min Point:	12.8	
Year/Make/Model	2009 / PIERCE / QUANTUM	**EQ Point Rank:**	**15.9**	
In Service Date	9/21/2009	Class Max Point:	26.5	8753
Original Cost	$572,216			



Service Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2026	2026	2027	2028
Labor Hours	37	37	54	80	159	94														
Cumulative Maintenance Cost	3,029	7,750	17,252	29,586	53,909	76,067	76,067	86,934	97,801	108,668	119,535	130,401	141,268	152,135	163,002	173,869	184,735	195,602	206,469	217,336
Maintenance Cost - Class Avg. (8753)	3,757	8,685	15,779	25,030	39,981	58,301	71,475	93,708	129,217	161,293	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923
Resale Val. (Orig. $572,216)	474,939	394,200	327,186	271,564	225,398	187,081	155,277	128,880	106,970	88,785	73,692	61,164	50,766	42,136	34,973	29,027	24,093	19,997	16,598	13,776
Use Miles	4,726	10,928	13,540	13,504	14,875	15,535	320													

FIRE
Flagship, Fleet Replacement Analysis

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Fire K: Engine 24

As of 1/7/2015: This vehicle is in its 7th year of service. Its purchase price was $572,216. Its resale value in 2015 is $155,277.

Purchase Price: $572,216 (2009)

Year Diminishing Returns Began: N/A

EQ Point Rank as a % of Max Class Point: 52.08%

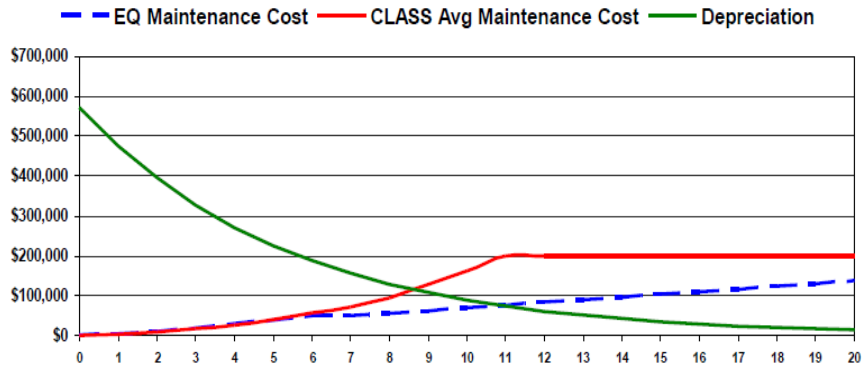
Total Repair and Maintenance Cost thru 1/9/15: $47,444

Opportunity Cost: N/A

Downtime Rate from 7/1/13-1/9/15: 23%

FIRE — Department: F - FIRE

Equipment Number	F7003	Class Min Point:	12.8	
Year/Make/Model	2009 / PIERCE / QUANTUM	EQ Point Rank:	13.8	
In Service Date	10/30/2009	Class Max Point:	26.5	8753
Original Cost	$572,216			



Service Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2026	2026	2027	2028
Labor Hours	28	58	36	41	34	50														
Cumulative Maintenance Cost	2,366	8,716	16,573	28,507	35,714	47,444	47,444	54,222	61,000	67,778	74,555	81,333	88,111	94,889	101,666	108,444	115,222	122,000	128,777	135,555
Maintenance Cost - Class Avg. (8753)	3,757	8,685	15,779	25,030	39,981	58,301	71,475	93,708	129,217	161,293	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923
Resale Val. (Orig. $572,216)	474,939	394,200	327,186	271,564	225,398	187,081	155,277	128,880	106,970	88,785	73,692	61,164	50,766	42,136	34,973	29,027	24,093	19,997	16,598	13,776
Use Miles	5,097	14,511	12,579	7,801	9,992	11,905	0													

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-13: Engine 15

As of 1/7/2015: This vehicle is in its 7th year of service. Its purchase price was $572,216. Its resale value in 2015 is $155,277.

Purchase Price: $572,216 (2009)

Total Repair and Maintenance Cost thru 1/9/15: $40,512

Year Diminishing Returns Began: N/A

Opportunity Cost: N/A

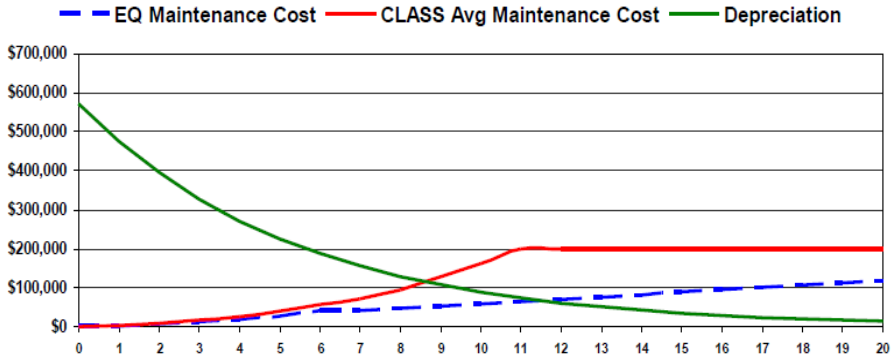
EQ Point Rank as a % of Max Class Point: 50.19%

Downtime Rate from 7/1/13-1/9/15: 30%

FIRE

Department: F - FIRE

Equipment Number	**F7005**	Class Min Point:	12.8	
Year/Make/Model	2009 / PIERCE / QUANTUM	**EQ Point Rank:**	**13.3**	
In Service Date	11/24/2009	Class Max Point:	26.5	8753
Original Cost	$572,216			



Service Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2026	2026	2027	2028
Labor Hours	8	31	30	24	50	80	1													
Cumulative Maintenance Cost	744	4,555	10,303	15,807	25,906	40,387	40,512	46,299	52,087	57,874	63,661	69,449	75,236	81,024	86,811	92,598	98,386	104,173	109,961	115,748
Maintenance Cost - Class Avg. (8753)	3,757	8,685	15,779	25,030	39,981	58,301	71,475	93,708	129,217	161,293	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923	198,923
Resale Val. (Orig. $572,216)	474,939	394,200	327,186	271,564	225,398	187,081	155,277	128,880	106,970	88,785	73,692	61,164	50,766	42,136	34,973	29,027	24,093	19,997	16,598	13,776
Use Miles	2,137	8,132	8,408	9,265	8,824	9,326	184													

FIRE
Flagship, Fleet Replacement Analysis

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Appendix K-14: Ladder 12

As of 1/7/2015: This vehicle is in its 9th year of service. Its purchase price was $956,842. Its resale value in 2015 is $178,872.

Purchase Price: $956,842 (2007)

Year Diminishing Returns Began: N/A

EQ Point Rank as a % of Max Class Point: 45.36%

Total Repair and Maintenance Cost thru 1/9/15: $131,318

Opportunity Cost: N/A

Downtime Rate from 7/1/13-1/9/15: 20%

FIRE — Department: F - FIRE

Equipment Number	F701	Class Min Point:	3.9	
Year/Make/Model	2007 / PIERCE / QUANTUM	**EQ Point Rank:**	**18.1**	
In Service Date	7/2/2007	Class Max Point:	39.9	8758
Original Cost	$956,842			

Service Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2024	2024	2025	2026
Labor Hours	16	85	59	87	74	107	142	89												
Cumulative Maintenance Cost	2,182	15,072	22,522	43,376	61,827	76,670	110,882	131,318	131,318	145,909	160,500	175,090	189,681	204,272	218,863	233,454	248,045	262,636	277,227	291,817
Maintenance Cost - Class Avg. (8758)	4,520	11,933	24,247	42,542	65,983	103,725	135,560	165,883	214,716	239,883	283,578	307,360	318,922	356,073	386,806	409,749	409,749	409,749	409,749	409,749
Resale Val. (Orig. $956,842)	794,179	659,168	547,110	454,101	376,904	312,830	259,649	215,509	178,872	148,464	123,225	102,277	84,890	70,459	58,481	48,539	40,287	33,438	27,754	23,036
Use Miles	9,925	10,276	10,341	10,041	10,777	10,775	9,667	11,777	165											

FIRE
Flagship, Fleet Replacement Analysis

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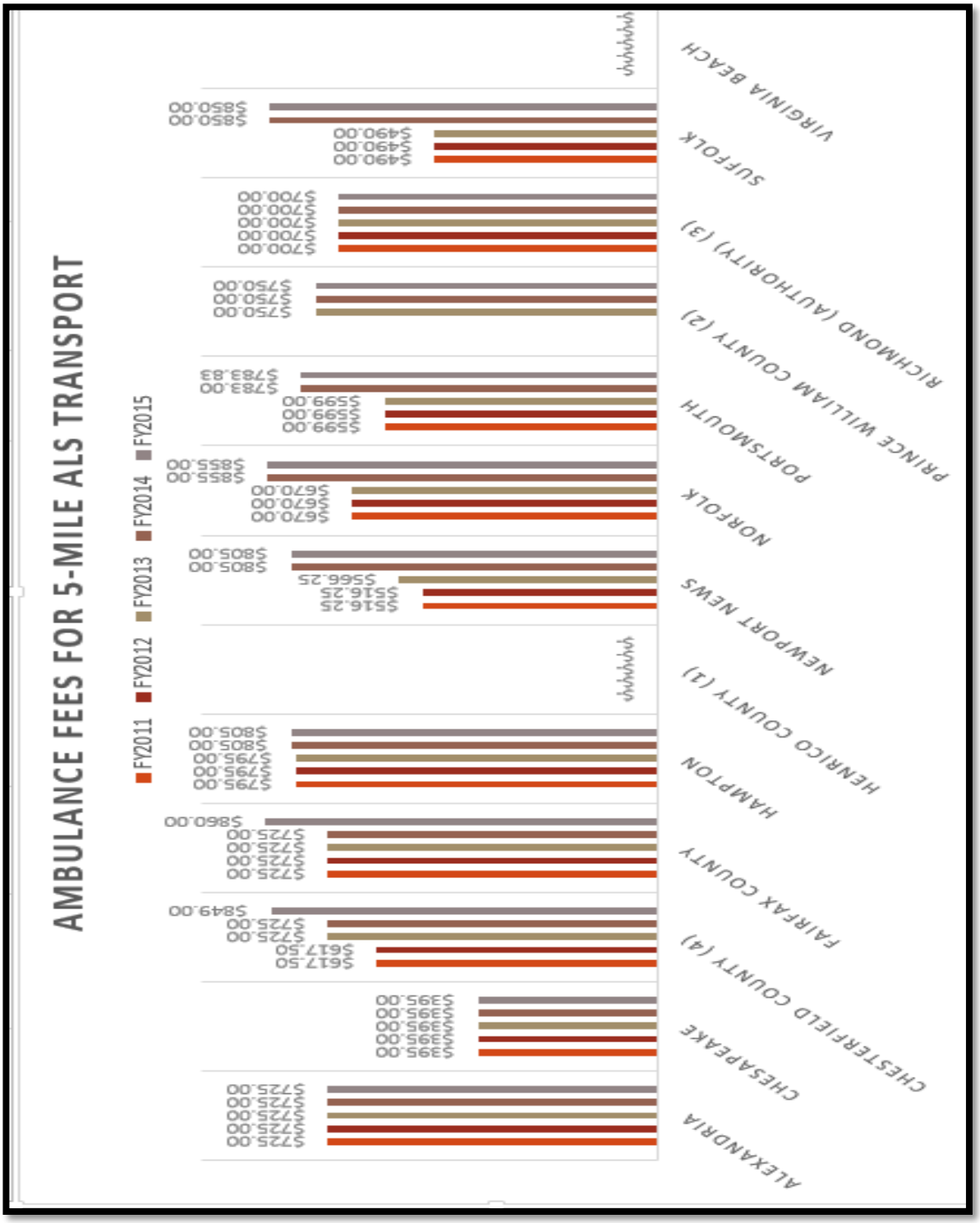
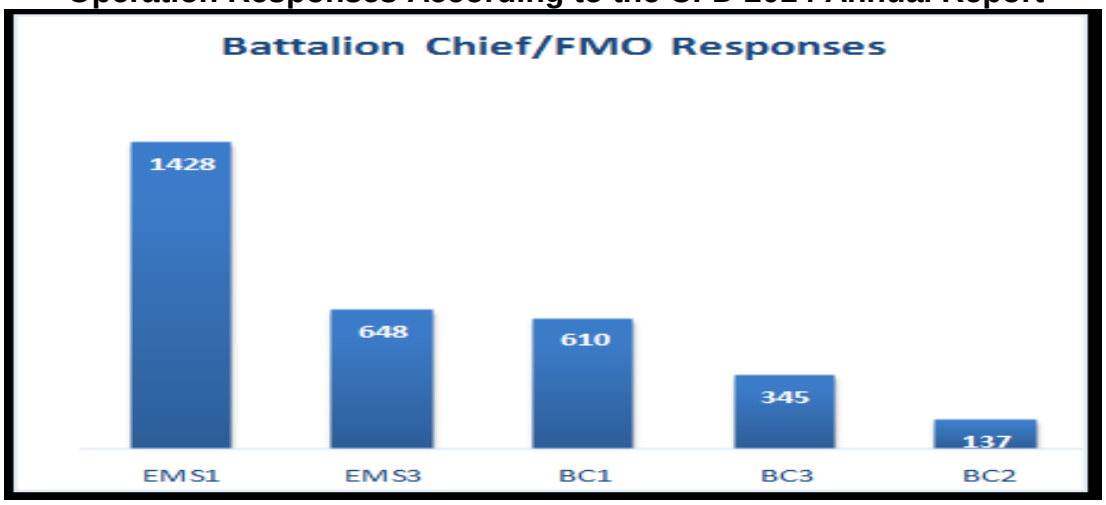
Appendix L: Comparison of Ambulance Fees for 13 Localities

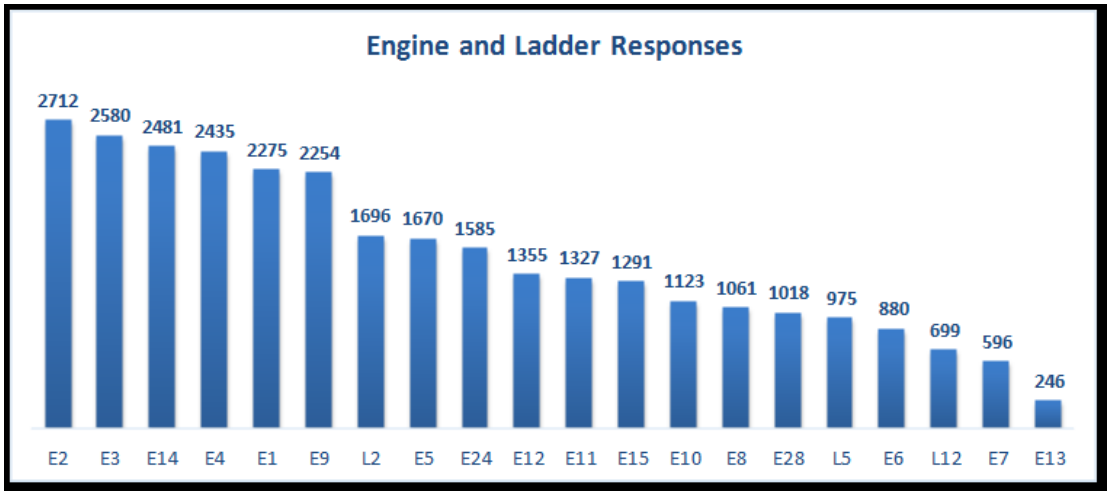


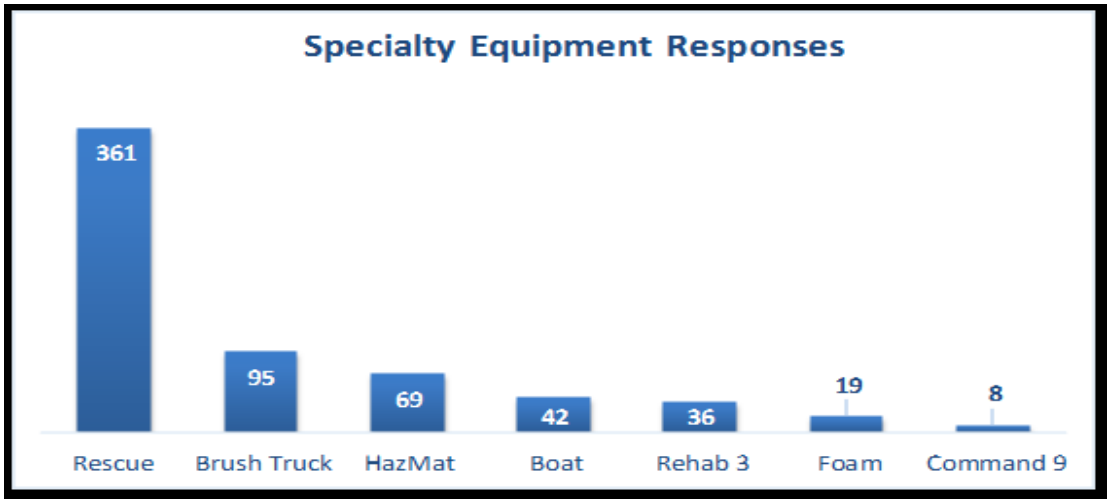
Source: Comparative Data extracted from the COC Budget Department "Thirteen City/County Comparisons" FY2011 through FY2015 reports.

Appendix M

Operation Responses According to the CFD 2014 Annual Report

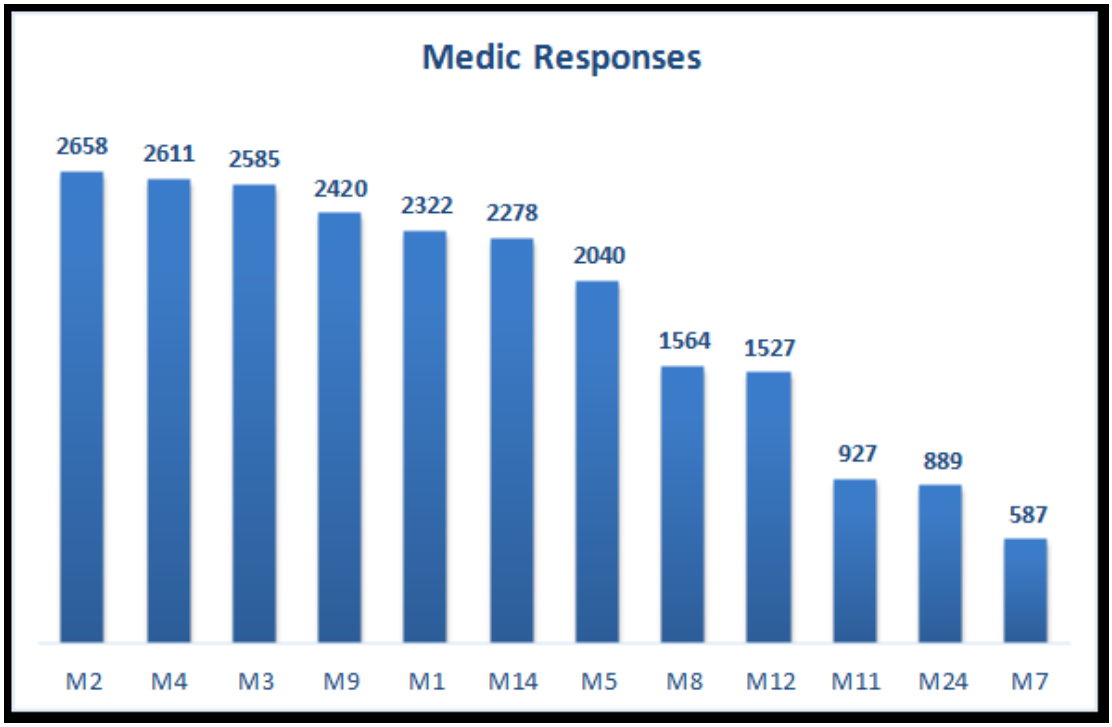


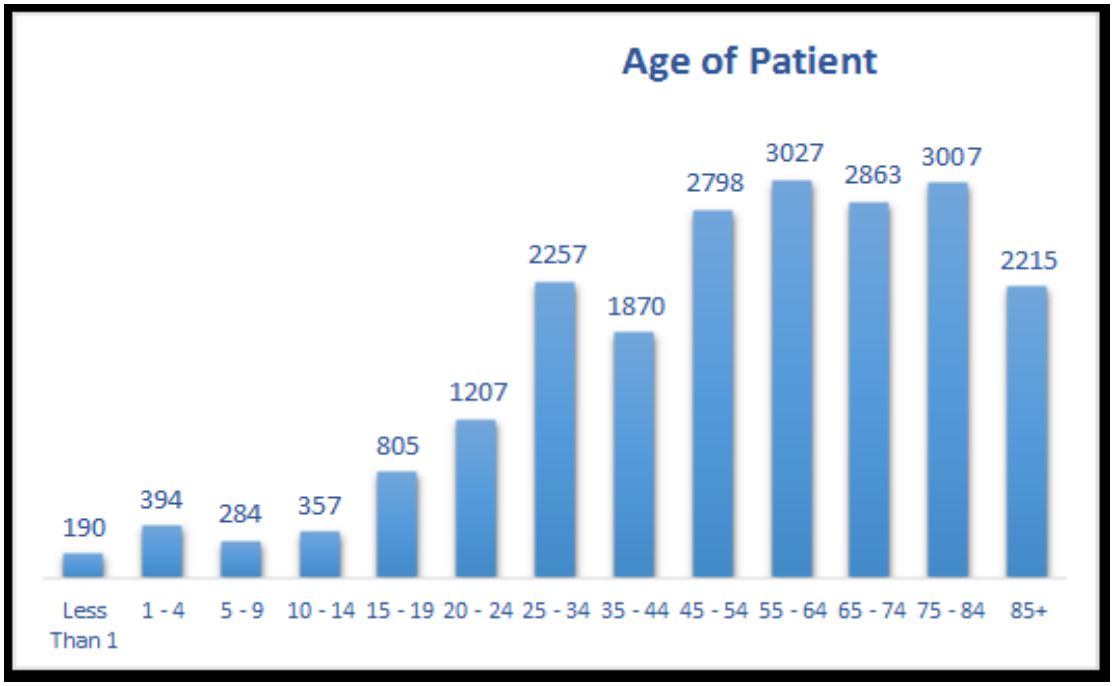




Source: Chesapeake Fire Department

Operation Responses According to the CFD 2014 Annual Report (Cont'd)





Source: Chesapeake Fire Department

APPENDIX N
Fire Prevention Division - Additional Audit Notes

The SFPC provided for the administration and enforcement of these regulations. It also established regulations for obtaining permits for the manufacturing, storage, handling, use, or sale of explosives.

The following were occupancy types that could be inspected:

- Assemblies (such as theaters, civic centers, recreation centers, skating rinks, churches, amusement parks, stadium, mercantile/grocery stores)
- Educational facilities (schools and colleges),
- Factory/Industry (light industry/manufacturing, lumber yards, wood shops),
- Factory/light industry (gas and bulk storage, hazardous production, marinas, miscellaneous hazards, mercantile/service stations),
- Institutional (jails/correctional facilities, nursing homes, hospitals, day care centers),
- Malls (e.g., Greenbrier and Chesapeake Square),
- Residential (hotel/motel and multi-family), and
- Storage (individual storage, repair garages, car dealers, warehouses, storage and transfer).

According to the 2013 Virginia Fire Information Reporting System's (VFIRS) Annual Report dated July 11, 2014, 83.8% of structure fires reported by commercial businesses without an Automatic Extinguishing System in place experienced a total fire loss of $154 million in 2013.

Exhibit W: Structure Fires Dollar Loss Summary by Automatic Extinguishing System (AES), Presence by Property Use, Virginia 2013

Note: The Unknown presence of an AES was not included in this diagram.
Source: 2013 Virginia Fire Incident Reporting System (VFIRS) May 2014 Report

Staffing and Training Requirements. The Virginia Department of Housing and Community Development required fire inspectors to be certified (known as "1031 Fire Inspector certification"), which involved four weeks, or 160 hours, of training administered by the Virginia Department of Fire Programs (VDFP) including a four hour test. Within 12 months of appointment, inspectors were required by the State Department of Housing and Community Development to attend a three day "core" class. The State required fire inspectors to have 16 hours every two years to retain certification.

In addition, the CFD required its sworn Fire Marshals to also hold the "1033 Fire Investigator" certification which required the same pre-requisites as the 1031 certification. This class was also four weeks or 40 hours long and required 40 hours of recertification training every two years.

Fire Marshals and Inspectors were required to have fire operations and suppression experience prior to becoming an inspector. The SFPC also required inspectors to have general knowledge in at least one of the following areas: fire protection, firefighting,

electrical, building, plumbing or mechanical trades. According to officials in Fire Prevention Division, it was critical that a fire inspector have the knowledge and experience of fire behavior and tactical operations obtained through fire suppression experience in order to be an effective fire inspector or fire plan reviewer. For example, if fire system or building structural plans were reviewed and the construction sites inspected solely by civilians without involvement from fire inspectors, fire-related issues could be overlooked, which could potentially cause operational issues for Fire Operations and costly renovations after construction. The Fire Marshal considered a fire inspector to be proficient after two years of conducting fire inspections.

CFD Fire Marshals had law enforcement authority and were required to have Fire Arms Training. Fire Inspectors did not have the same authority and were unarmed. All CFD Fire Marshals and inspectors were experienced firefighters and were also required to maintain certifications in firefighter levels I and II and EMT training. Inspectors were required to maintain their firefighting continuing education and EMS training. Firefighter levels I and II taught firefighting basics such as building materials, construction, and suppression operations. Building structures range from non-combustible to very combustible. Inspectors were required to know about fire behavior on all items. They were also required to perform "practicals" or hands-on training as well as on-line video training and testing.

Inspectors were required to use the Automated MobileEyes Inspections System to report for each inspection:

- the business/occupant name,
- business owner name, emergency contact name, after hours contact
- business address and suite#,
- business use code,
- inspector name,
- date of inspection,
- SFPC section and title and descriptions of the violations.
- MobileEyes also requires the federal ID# (a step not necessary for SFPC purposes.)

Annual Fire Inspections. After the Department of Development and Permits (DDP) issued a certificate of occupancy, fire inspectors were responsible for performing annual inspections for commercial buildings to ensure they were being properly maintained. Fire inspectors also handled citizen inquiries, issued fire code operational permits, and investigated environmental crimes within the City. The amount of time an inspection took depended on the extensiveness of violations discovered and the open-ended nature of the inspection report. Fire inspectors were required to identify and note any violations on the annual inspections reports. Fire code permits were issued after routine annual fire inspections were completed and the facilities were in compliance with all Statewide Fire Prevention Code regulations. Here were a few examples of what inspectors were looking for:

- The amount and location of hazardous material must not exceed allowable amounts as specified in the SFPC.
- Fire protection equipment, such as portable fire extinguishers, sprinkler systems, fire pumps, fire alarms and other safety equipment must be in good

working order. In addition, all current test records for this equipment must be kept on site and available for review by the inspector.

- Fire exits must be properly marked and maintained.
- Emergency lights and emergency generators must be tested regularly to ensure proper operation.
- Outlets and plugs cannot be overloaded.
- Fire Extinguishers must be available on the commercial premises.
- Inspections are also required outside the parameter of a commercial building. There should be proper placement of electrical outlet covers, electrical covers should cover parking lot street light posts, fire lanes should be painted, signs should be visible for fire lanes, and fire hydrants must be 150 feet from buildings. Inspectors also look for potential fire hazards regarding waste management and outside areas.

One of the goals of fire inspections was to educate property owners and occupants of any fire hazards that were found in commercial properties. As of December 31, 2014, there were 6,668 commercial buildings in the fire inspections database including Schools and other City facilities. State and Federal facilities were not inspected as they were not under the City's jurisdiction.

If an inspection could not be conducted, the inspector would leave a business card to arrange an appointment. Re-inspections were often conducted by appointment. The number of annual fire inspections performed daily could vary significantly depending on the complexity of the facility inspected and interruptions by other requests for service or re-inspections. The duration of these inspections could vary from 15-30 minutes for an office to over several hours or days based on the size and complexity of the business. The inspector conducted the annual fire maintenance inspection along with a representative from the business. The business representative could be asked to resolve high-hazard/immediate violations during the inspection, such as a locked exit door. During the inspection, documents would be reviewed to affirm the last preventative maintenance and servicing for the fire protection systems (e.g., fire alarm system, sprinkler system, fire extinguishers, and range-hood system).

Once the electronic report was complete and the inspector had discussed code violations (if any) with the business representative, at the close of the inspection, the inspector would obtain an electronic signature of the business representative on the report. The inspector would explain that an invoice would be mailed to the business representative along with the inspection report within 24 to 48 hours of the inspection. Inspection data would automatically be captured into the fire inspections database after the fire inspector synced the daily reports from his or her computer with the Fire Prevention database.

Inspectors reported to the office daily to plan their daily inspections. If a re-inspection was required, any permits would be issued only after the violations had been resolved after the re-inspection.

Re-inspections. A Business owner was given a timeframe for a future re-inspection date to resolve previously reported violations. If there continued to be code violations that had not been corrected, then by the third re-inspection, the inspector had the authority to charge

$50 for each subsequent re-inspection. Inspectors had the option to re-inspect the business frequently, if necessary.

The Statewide Fire Prevention Code provided fire inspectors discretion in setting deadlines for compliance. If a serious violation was discovered, the inspector could take the appliance out of service as a “red tag” issue, which would require resolution and re-inspection prior to being placed back into service. Likewise, the inspector could invoke a fire watch if there were problems with the building’s fire protection system or alarm system.

Inspection Fees. Fire inspectors were charged to identify any conditions liable to cause fire, contribute to the spread of fire, interfere with firefighting operations, endanger life or property, or to determine any violations of the provisions or intent of Statewide Fire Prevention Code. Depending on the nature of their business, some commercial establishments could have multiple operational permits. Operational permitting, in conjunction with annual fire inspections, ensured that fire and life safety requirements were maintained to facilitate the safe and expedient evacuation of occupants in the event of an emergency.

In Chesapeake, the cost for initial annual inspection was $50. An additional fee of $50 could be applied for a 4th and subsequent re-inspection if violations were not resolved.

Target number of inspections per month. Nine FTE Fire Marshals each had a goal of performing 12 business inspections per month. Two FTE Inspectors were each required to inspect 60 businesses a month. This target number did not include re-inspections which can be time consuming. Three part-time inspectors were required to perform 80 inspections each month. They focus on smaller and the quickest inspections.

On November 19, 2014, COC Audit Services staff accompanied one fire inspector to observe one annual fire maintenance inspection and three re-inspections.

Differences between how the city building codes and city fire codes function. While the building code requires new construction to meet current regulations requiring on site fire suppression systems, the fire code acts more like a maintenance regulation. This is implemented through annual inspection and permitting. Some examples are the inspection of establishments for "Public Assembly" such as bars, night clubs, sports arenas, restaurants and churches, inspections for verification of code compliance items in businesses, schools, hospitals, and nursing homes. Fire Prevention also issues permits called the operational permits. The goal of the division is to inspect on an annual basis, every building in the city where the public works, plays, or spends time. Private residences are not inspected except for residential daycare service, day nurseries, or nursing home businesses.

Coordination Efforts between the Department of Development and Permits (DDP) and Fire Prevention Fire Inspectors. The CFD Fire Prevention Division coordinates with the DDP to provide full fire inspections after a building plans review. Fire Prevention provides one designated Fire Marshal whose role is to perform a plans review to ensure that fire systems are functional for fire operations and meet the SFPC requirements.

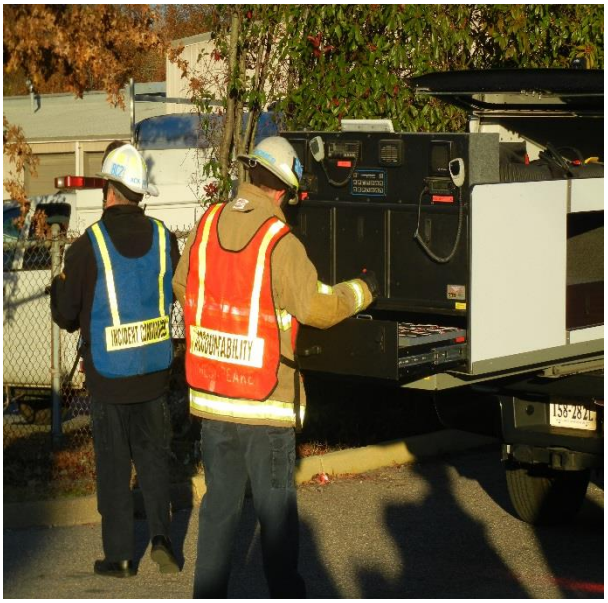
According to the CFD, in 2002 the City conducted a study named “Operation Streamline.” As a result of this study many processes were modified which enabled the city to shorten and streamline the plan review process. A major item identified as impeding the timely review of plans was the lack of sufficient personnel in the Building Official’s Office and Fire Prevention Division. In order to fund additional plan review personnel, a plan review fee schedule was approved by the City of Chesapeake City Council. The plan became effective July 1, 2007.

Appendix O
Photos Taken at the Scene of the Chesapeake Public Works Warehouse Fire that Occurred November 19, 2014

Two Ladder Trucks and one Telesquirt were used to assist in controlling the hazardous fire in the Public Works warehouse. Firefighters were observed outside of the structural building and entering the structure. All firefighters were equipped with their personal protective equipment (PPE) gear and SCBA air tanks.

Public Works Warehouse Fire Photos (Continued)

Public Works Warehouse Fire Photos (Continued)



The Incident Commander, Accountability Officer, and Rehab Officer (not pictured here) were observed monitoring the firefighting activity and tracking all firefighters on scene.

The photo above shows Medic Units and the Rehab Truck on site of the Public Works Warehouse fire to assist firefighter and paramedics battling the fire.