



**Commission on  
Fire Accreditation  
International**

# **Accreditation Report**

**Charleston Fire Department  
1451 King St. Extension  
Charleston, SC 29405**

**This report was prepared on July 11, 2015  
by the  
Commission on Fire Accreditation International  
for the  
Charleston Fire Department**

**This report represents the findings  
of the peer assessment team that visited the  
Charleston Fire Department  
on May 25-29, 2015**

**Peer Assessment Team  
Cindy Bonham, Team Leader  
Derek Hyde, Peer Assessor  
Jeff Lutz, Peer Assessor  
Robert Whitaker, Peer Assessor**

## TABLE OF CONTENTS

EXECUTIVE REVIEW.....	3
CONCLUSIONS.....	8
RECOMMENDATIONS.....	9
OBSERVATIONS.....	16
Category I — Governance and Administration.....	16
Category II — Assessment and Planning.....	16
Category III — Goals and Objectives.....	19
Category IV — Financial Resources.....	19
Category V — Programs.....	20
Criterion 5A – Fire Suppression.....	20
Criterion 5B – Fire Prevention / Life Safety Program.....	24
Criterion 5C – Public Education Program.....	25
Criterion 5D – Fire Investigation Program.....	27
Criterion 5E – Technical Rescue.....	28
Criterion 5F – Hazardous Materials (Hazmat).....	31
Criterion 5G – Emergency Medical Services (EMS).....	34
Criterion 5H – Domestic Preparedness Planning and Response.....	36
Criterion 5J – Marine and Shipboard Rescue and Fire Fighting Services.....	37
Category VI — Physical Resources.....	38
Category VII — Human Resources.....	41
Category VIII — Training and Competency.....	43
Category IX — Essential Resources.....	44
Criterion 9A – Water Supply.....	44

Criterion 9B – Communication Systems ..... 45  
Criterion 9C – Administrative Support Services and Office Systems ..... 46  
Category X — External Systems Relationships ..... 47

**EXHIBITS**

- Charleston Fire Department Organizational Chart
- Summary Rating Sheet (For Commission Use Only)

# **EXECUTIVE REVIEW**

## **PREFACE**

The Charleston Fire Department recently received candidate status. On March 17, 2015, the department asked the Commission on Fire Accreditation International (CFAI) for a site visit to determine if it could be recommended for accreditation. On March 25, 2015, the CFAI appointed a peer assessment team. The peer team leader approved the department's documents for site visit on April 16, 2015. The peer assessment team conducted an onsite visit of the Charleston Fire Department on May 25-29, 2015.

In preparation for the onsite visit, each team member was provided access and reviewed the self-assessment manual, standards of cover (SOC), community risk analysis, and strategic plan posted by the Charleston Fire Department on the Center for Public Safety Excellence (CPSE) SharePoint site. All exhibits were made available on Power DMS. This documentation represented a significant effort by the staff of the department and other community agencies. The department did not use a consultant to assist it with completing the documents required for accreditation.

## SUMMARY

The CFAI has completed a comprehensive review and appraisal of the Charleston Fire Department based upon the eighth edition of the *Fire & Emergency Service Self-Assessment Manual (FESSAM)*. The commission's goals are to promote organizational self-improvement and to award accreditation status in recognition of good performance. The peer assessment team's objectives were to validate the department's self-assessment study, identify and make recommendations for improvement, issue a report of findings, and conclude if the department is eligible for an award of accreditation.

The peer assessment team followed CFAI processes and the Charleston Fire Department demonstrated that its self-study accreditation manual, community risk analysis, SOC, and strategic plan met all core competencies and criteria. The peer assessment team recommends accredited agency status for the Charleston Fire Department from the Commission on Fire Accreditation International.

The department's success in meeting expectations is strongly tied to integrated processes for its standards of cover, strategic plan, and budget process. The SOC processes have evolved, and appropriate adjustments have been made through the implementation of necessary improvements, to match available resources to the fire and non-fire risks and related expectations in the community. The SOC appropriately identifies that the Charleston Peninsula and West Ashley have metro and urban density populations while James, Johns, and Daniel Islands have suburban density populations. The Cainho Peninsula possesses a rural population density. There are appropriate benchmark goals and actual baseline performance statements in place that identify and measure all components of the total response time continuum.

Following a detailed assessment and analysis, the peer assessment team believes by consensus that the alarm handling time, turnout time, and travel time for the first-due and effective response force components of the total response time continuum, as contained in the SOC, are in line with the industry best practices identified in the eighth edition of the *FESSAM*.

The peer assessment team identified opportunities for improvement that are captured in the recommendations section and in the observations and performance section of the report. These recommendations flowed from discussions, interviews, and a review of department-supplied documentation to support its self-assessment conclusions. The department demonstrated its keen desire to immediately implement plans to address opportunities for improvement. The best example is the plan to aggressively pursue integrating risk information possessed by the department with the computer aided dispatch, to enable higher risk dispatches to happen automatically.

The peer assessment team observed a strong commitment by the department to the CFAI accreditation process. The department has used the accreditation model to validate the vast changes for improvement made in recent years. The department uses a "three deep" approach to succession planning and the accreditation manager is no exception. The department is committed to allowing members to act as peer assessors for CFAI. These approaches ensure continuity, more direct access to best practices with other similar organizations, and the engagement of a broader spectrum of the department.

The peer assessment team had meetings with the mayor, and the officers of the firefighters' association; individually and collectively they expressed interest in the process. The mayor has been a driving force and supporter having been engaged and involved from the outset of the department's

journey towards accreditation. There is clearly a commitment to continue to follow and support the implementation of identified opportunities for improvement. It can be anticipated that all representatives will be strong supporters and network participants as the full benefits of going through the self-assessment process are realized and built on in the future.

## **Composition**

Charleston was legally chartered as a city in 1783. The city has experienced several great fires that destroyed large portions of the city. The first reference to a fire department was the Hand in Hand Fire Company in 1784. In 1870, the volunteer fire department consisted of 1,600 men. The department was organized into a paid department in 1882. Central Station has been in operation over one hundred years and is one of the longest continuously running fire stations in the nation.

The most recent census data indicates Charleston had a population of 120,083, with 109 square miles of land spread over Charleston and Berkeley counties, including 19 square miles of water and waterways. Commuters increase the population by approximately 33,000 people each day. Two cruise ships have started using Charleston as a departure port and this adds 2,000 more people when the ships are docked. The Charleston Area Convention and Visitors Bureau estimates that 4.76 million tourists visited the Tri-County area, with 1.76 million seeking lodging in the city of Charleston limits in 2013. The city operates under voluntary annexation that has created a unique situation in which there are pockets of outside agency public safety zones within the city. In order to ensure continuity of service, there are strong automatic aid relationships with adjoining fire departments including: St. Johns Fire Rescue, James Island Fire Department, St. Andrews Fire Department, and North Charleston Fire Department.

Charleston's commerce ranges between being the 4th largest container port on the east coast to being one of the top 10 travel destinations for the last 17 years. Conde Nast named Charleston as one of the top five destinations in the world for 2012 and 2013. There has been a 24.2 percent increase in population since the 2000 census. The department used CFAI's methodology of density analysis and found the composition of the city is about 36.9 percent metro-urban, 41.5 percent suburban, and 21.6 percent rural.

The city crosses the Ashley River to the west and the Cooper River to the east. Elevation is generally flat. Marsh areas surround the riverbanks and low-lying areas. The soil is sandy to sandy loam and the drainage varies from good to poor. There are limited ways to get across the rivers and marsh areas. Interstates 26 and 526 provide access across the jurisdiction. Due to this limited access, traffic can be a challenge and there are also drawbridges which can hamper access.

The department responded to a total of 19,030 emergencies in 2014 including: 631 fire calls (3.3 percent); 10,718 emergency medical service (EMS) calls (56.3 percent); and 7,681 miscellaneous calls (40.4 percent). The fire department has managed to evolve with the growth of building stock and related population; it is now a career service staffed by a minimum of 84 uniformed personnel on a daily basis working out of 15 fire stations.

In 2015, the Insurance Services Office (ISO) visited the city to rate its public protection classification. The outcome of the visit was a lowering of the public protection classification from Class 3 to Class 1.

## **Government**

Strong mayor form of government  
Mayor and 12 council members  
Fire Chief

## **Fire Department**

15 fire stations  
338 uniform and 23 civilian personnel  
3 shift 24-48 system

## **Staffed Resources**

16 engine companies  
2 ladder companies  
2 tower companies  
4 battalion chiefs

## **Cross-staffed Resources**

1 fireboat  
1 hazardous materials unit  
1 air unit

## **Non-staffed Units**

Multiple ready reserve apparatus

Daily Minimum Staffing (All Stations): 84

## CONCLUSIONS

The self-study manual produced by the Charleston Fire Department was of high quality. The manual represented a significant effort by the staff of the department to produce and present a quality document.

- The Charleston Fire Department demonstrated that all core competencies were met and received a credible rating.
- The Charleston Fire Department demonstrated that all applicable criteria were met and received a credible rating.
- The peer assessment team recommends accredited agency status for the Charleston Fire Department from the Commission on Fire Accreditation International.

## RECOMMENDATIONS

The peer assessment team conducted an exit interview with the agency consisting of the fire chief, and most all of the staff that participated in the self-assessment study. The purpose of the meeting was to review the team's findings and recommendations. The department was given an opportunity to respond to any errors in findings of fact.

### Strategic Recommendations

Strategic recommendations were developed from information gathered from the onsite assessment visit and the evaluation of the criteria and core competencies.

### **Category II – Assessment and Planning**

#### **Criterion 2B: Fire Risk Assessment and Response Strategies**

#### **Criterion 2C: Non-Fire Risk Assessment and Response Strategies**

##### Core Competencies

2B.5 Agency baseline and benchmark total response time objectives for fire response conform to industry best practices as prescribed on page 70-71 for first due and effective response force (ERF).

2C.5 Agency baseline and benchmark total response time objectives for non-fire incident response conform to industry best practices as prescribed on page 71 for first due and effective response force (ERF).

- It is recommended that the department pursue capturing the public safety answering point times from Berkeley County to portray the response performance more accurately.
- It is recommended that the department work to develop a system to share data automatically with other agencies in order to capture the service level provided within the city, regardless of the agency responding.

#### **Criterion 2C: Non-Fire Risk Assessment and Response Strategies**

##### Core Competency

2C.1 Each planning zone and population area is analyzed and non-fire risk factors evaluated in order to establish a standards of cover.

It is recommended that the department use fire prevention inspections and permitting to enhance the risk assessment, especially with regard to hazardous materials.

## **Category III – Goals and Objectives**

### **Criterion 3A: Goals and Objectives**

Core Competency

3A.1 The agency publishes general organizational goals directed toward achieving the agency's long-range plans. Corresponding specific objectives are published to implement these goals and incorporate the measurable elements of time, quantity, and quality.

It is recommended that the department work to use the strategic plan to integrate budget performance objectives, internal goals, public needs, and accreditation recommendations.

## **Category IV – Programs**

### **Criterion 5B: Fire Prevention/Life Safety Program**

Core Competency

5B.3 The program has adequate staff with specific expertise to meet the fire prevention/life safety program goals and objectives.

It is recommended that the department develop and implement a risk-based inspection frequency schedule that is correlated with the risk assessment found in the standards of cover and provide adequate staffing to the meet the goals and objectives of the agency.

### **Criterion 5C: Public Education Program**

Criterion

5C.4 The public education program targets specific risks and risk audiences as identified through incident, demographic, and program data analysis.

It is recommended that the department develop and implement specific risk reduction strategies targeted at school-aged children.

### **Criterion 5G: Emergency Medical Services (EMS)**

Core Competency

5G.4 Standard operating procedures or general guidelines, and standing orders/protocols, are in place to direct EMS response activities and to meet the stated level of EMS response.

It is recommended that the department and its medical director work to align department protocols with those of the county EMS agencies to ensure improved continuity of care.

## **Criterion 5H: Domestic Preparedness Planning and Response**

Core Competency

5H.4 Current standard operating procedures or general guidelines are in place to direct domestic preparedness planning and response activities.

It is recommended that the agency develop and adopt standard operating procedures that will bridge the gap between the emergency operations plan (EOP) and fire department operations during large-scale emergencies. Following the formal adoption of the city's EOP, the agency should begin the process of expanding operational procedures for domestic preparedness activities.

## **Criterion 5J: Marine and Shipboard Rescue and Fire Fighting Services**

Core Competency

5J.6 An appraisal is conducted, at least annually, to determine the effectiveness of the marine and shipboard fire fighting and rescue program.

It is recommended that the department regularly review the practice of placing an engine out of service while the crew is performing boat operations and how this impacts the meeting of performance measures.

## **Category VI – Physical Resources**

### **Criterion 6B: Fixed Facilities**

Core Competency

6B.4 Facilities comply with federal, state/provincial and local codes and regulations.

- It is recommended that the agency continue to seek funding and plan for facility replacement and renovation projects that will meet the federal, state, and local, codes and provide a safe working environment for responders.
- It is recommended the department review its current practices related to general maintenance and cleaning of its facilities.

## **Category IX – Essential Resources**

### **Criterion 9A: Water Supply**

Criterion Statement

9A The water supply resources are reliable and capable of distributing adequate volumes of water and pressures to all areas of agency responsibility. All areas meet fire flow requirements for emergencies.

- It is recommended that the department develop a plan to identify areas within the city where fire hydrants are unable to deliver the required fire flows.
- It is recommended that the department develop a plan to provide fire suppression crews information in the field on available water supply for all fire hydrants within the service delivery area.

## **Category X – External Systems Relationships**

### **Criterion 10B: External Agency Agreements**

Core Competency

10B.1 External agency agreements are current and support organizational objectives.

It is recommended that the department establish a formal review timeline to determine the operational effectiveness of external agency agreements and ensure that they continue to support organizational objectives.

### **Specific Recommendations**

Specific recommendations were developed from the appraisal of performance indicators in each of the ten categories.

## **Category II – Assessment and Planning**

### **Criterion 2B: Fire Risk Assessment and Response Strategies**

#### **Criterion 2C: Non-Fire Risk Assessment and Response Strategies**

##### Performance Indicators

2B.3 The maximum or worst fire risk(s) in each planning zone is/are identified and located, i.e., hazards that require the maximum amount of fire protection resources or that would result in the greatest loss of life or property; the key or special hazard risk in each planning zone is identified and located, i.e., hazards, which if destroyed would be a critical or essential economic loss to the community (this also could include cultural, environmental, or historical loss); the typical or routine risks in each planning zone are identified, i.e., those risks most common to the planning zone; the remote or isolated risks in each planning zone are identified, i.e., those risks most distant from other risks as to be almost unique to the planning zone; and/or other locally adopted equivalencies are utilized to identify fire risk.

2C.3 The maximum or worst non-fire risk(s) in each planning zone is/are identified and located; the key or special hazard risk in each planning zone is identified and located, i.e., hazards, which if destroyed would be a critical or essential economic loss to the community (this could also include cultural, environmental, or historical loss); the typical or routine non-fire risks in each planning zone are identified, i.e., those risks most common to the planning zone; the remote or isolated non-fire risks in each planning zone are identified, i.e., those risks most distant from other risks as to be almost unique to the planning zone; and/or other locally adopted equivalencies are utilized to identify non-fire risk.

It is recommended that identified target hazards are entered into the Computer Automated Dispatch (CAD), so that they are automatically marked as high-risk when a call comes in.

### **Criterion 2B: Fire Risk Assessment and Response Strategies**

2B.7 Fire protection suppression and detection systems are identified and being considered in the planning process.

It is recommended that the department complete a review of structures with automatic suppression systems and include this in their risk assessment.

## **Category V – Programs**

### **Criterion 5A: Fire Suppression**

##### Performance Indicator

5A.6 The agency's information system allows for documentation and analysis of its fire suppression response program and incident reporting capability.

It is recommended that the department attempt to remove the barriers towards sharing response data for automatic aid participants in the computer aided dispatch system and their records management system.

## **Criterion 5D: Fire Investigation Program**

Performance Indicator

5D.5 The agency establishes agreements for support from other agencies to aid in accomplishing the program goals and objectives.

It is recommended that the department work to formalize an agreement with the Charleston Police Department to allow for fire investigators to fully utilize their abilities and conduct thorough and complete investigations of potential arson crimes.

## **Criterion 5E: Technical Rescue**

Performance Indicator

5E.2 The agency defines and provides appropriate and adequate equipment to accomplish the stated level of response for technical rescue and to be compliant with local, state/provincial and national standards and mandates.

It is recommended that the department begin planning for funding of replacement of technical rescue response assets through its budget process.

## **Criterion 5F: Hazardous Materials (Hazmat)**

Performance Indicator

5F.2 The agency defines and provides appropriate and adequate equipment to accomplish the stated level of response for hazardous materials response and to be compliant with local, state/provincial and national standards and mandates.

It is recommended that the agency develop a cost recovery plan for the purposes of replacing stock and equipment used during hazardous materials operations.

## **Criterion 5H: Domestic Preparedness Planning and Response**

Performance Indicator

5H.8 The agency conducts and documents a vulnerability assessment and has operational plans to protect and secure the agency's specific critical infrastructure, including but not limited to materials and supplies, apparatus and facilities security, fuel, and information systems.

It is recommended that the department develop plans and timelines for the completion of a comprehensive vulnerability assessment.

## **Category VI – Physical Resources**

### **Criterion 6D: Apparatus Maintenance**

Performance Indicator

6D.6 The level of supervision is adequate to manage the program.

It is recommended that the department adopt standard performance expectations for the apparatus and equipment maintenance program to ensure that continuous improvement is maintained.

### **Criterion 6E: Tools and Small Equipment**

Performance Indicator

6E.2 Tools and equipment replacement is scheduled, budgeted, and implemented, and is adequate to meet the agency's needs.

It is recommended that the agency develop and adopt a formal plan to inventory and replace equipment in a systematic and consistent manner.

## **Category X – External Systems Relationships**

### **Criterion 10A: External Agency Relationships**

Performance Indicator

10A.4 A conflict resolution process exists between the organization and external agencies with whom it has a defined relationship.

It is recommended that the department pursue the development of a conflict resolution process, with the assistance of the city's legal department, to ensure the agency has an effective methodology for resolving potential conflict in the future.

## OBSERVATIONS

### **Category I — Governance and Administration**

The City of Charleston operates within a strong mayor form of municipal government. The fire chief is one of 12 department heads reporting to the mayor. The mayor has weekly meetings with all department heads and individual meetings with each department head every other week. The fire chief provides a written weekly update to the mayor and provides an agenda and supporting information for the one-on-one meetings.

The governing body and/or agency manager is legally established to provide general policies to guide the agency, approved programs and services, and appropriated financial resources. The city was legally chartered by South Carolina as a municipality in 1783. The Charleston Fire Department was legally established by a general ordinance on January 1, 1882. In 1978, city council ratified an ordinance that established the fire department to be managed by the chief of the department, who is appointed by the mayor, with approval of city council.

The established administrative structure provides an environment for achievement of the agency's mission, purposes, goals, strategies, and objectives. Compliance with legal requirements for the city of Charleston is the responsibility of the office of corporation counsel located within the executive department. They work with all departments to ensure compliance. The department utilizes this office with regards to policy changes or communications.

### **Category II — Assessment and Planning**

The Charleston Fire Department has embraced the use of the CFAI self-assessment process to logically and rationally define and align its self-assessment manual, community risk hazard analysis, standards of cover (SOC), and strategic plan. The department has established an internally-fed strategic plan, and assigned staff to provide support to the overall accreditation process. The mayor's office is also involved in the strategic planning. The efforts of the department have produced a comprehensive and integrated approach that is appropriate, acceptable, and affordable as it relates to the identified needs of the community.

The agency collects and analyzes data specific to the distinct characteristics of the community served and applies the findings to organizational planning. An analysis of the jurisdiction identifies 16 management zones. Six of the zones are categorized as metropolitan, five as urban, three as suburban, and one as rural population density. The peninsula/downtown area is metropolitan. The West Ashley area is urban, while James Island, Johns Island, and Daniel Island are suburban. The Cainhoy Peninsula area is classified as rural. The department has completed a comprehensive analysis of the risk within the various population densities. The results of the analysis and the associated identified needs are integrated into the SOC.

The department assesses the nature and magnitude of the hazards within its jurisdiction and develops appropriate response coverage strategies. Each significant fire and non-fire risk is categorized and listed to permit future analysis and study in determining standards of cover and related services. Special attention is paid to identify, analyze and develop strategies for non-fire or limited fire risks that gain importance due to cultural, economic, environmental, or historical value.

The benchmark service level objectives incorporated into the SOC are based on local needs and circumstances and industry standards and best practices adopted from the: *Commission on Fire Accreditation International (CFAI) Fire & Emergency Service Self-Assessment Manual (FESSAM), eighth edition; CFAI Standards of Cover, fifth edition); National Fire Protection Association (NFPA) 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems; NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments; Insurance Services Office (ISO); Fire Protection Research Foundation; and the National Institute of Standards and Technology (NIST).*

The department has developed standards that are appropriate, acceptable, and affordable in relation to the identified needs of the community. The department's comprehensive evaluation and planning process provides very detailed information related to both the fire and non-fire risks in each of its 16 planning zones. This information was used to identify appropriate responses capable of efficiently, effectively, and safely addressing the risks within the current capabilities of the department's delivery system.

The department evaluates risk based on occupancy type but aside from Tier II reporting, does not have a permitting process in place with regards to hazardous materials. Fire companies document hazardous contents within structures but it is recommended that the department use fire prevention inspections and permitting to enhance the risk assessment, especially with regard to hazardous materials.

The department's assessment and planning process, used to develop its SOC, has considered the overall fire risk it protects; its areas of responsibility; the demographics of the city; the economic indicators influencing its ability to deliver services; the historical fire loss data; and the available water supply for certain occupancies. Each fire company is responsible for continually assessing the changing fire risk within its area. Ultimately, the department has used the results of its various processes to determine the appropriate deployment of resources to address the identified risks. This comprehensive approach has ensured the establishment of an appropriate and effective SOC strategy for fire risks.

In the development of the SOC, careful consideration was also given to the non-fire risks in the community. The non-fire risks include technical rescue, hazardous materials, marine, and emergency medical services. The department has completed an analysis and evaluation of the related service demands for each of these risk types. Appropriate performance objectives are contained in the SOC relative to the response of adequate personnel within an appropriate time frame. The SOC utilizes automatic aid agreements that are used to fulfill their response objectives. These units are included in their effective response data.

The key to keeping the SOC strategy effective is the department's ongoing commitment to: continually measuring the gap between benchmark and baseline times; identifying contributing factors to those gaps; and developing remedies, through appropriate recommendations, to make continuous improvements. The department uses data generated by its records management system and computer aided dispatch system to create reports that assist in assessing its past performance within these planning areas. The results are used to update and revise the SOC document as needed.

The department's practice is to document alarm handling as the time interval from the receipt of the alarm at the primary public service answering point (PSAP) in Charleston County until the beginning

of the transmittal of the response information via voice or electronic means to emergency response facilities or the emergency response units in the field. An area of Charleston lies within Berkeley County and calls received within Berkeley County are counted from when the alarm is acknowledged at the communication center in Charleston County until the beginning of the transmittal of the response information via voice or electronic means to emergency response facilities or the emergency response units in the field. Calls from Berkeley County make up less than three percent of the total calls that Charleston Fire Department responds to however, it is recommended that the department pursue capturing the PSAP times from Berkeley County to portray the response performance more accurately.

Additionally, the city of Charleston is unique in its boundaries due to residents being able to voluntarily annex themselves into the city. Because of this, there are many pockets of public safety districts interspersed throughout a significant area, particularly in West Ashley. As a result of this, St. Andrews Fire Department runs a significant number of calls within the city of Charleston. These units are recorded as far as data analysis for fulfillment of an effective response force, however this is done manually. It is recommended that the department work to develop a system to share data automatically with other agencies in order to capture the service level provided within the city, regardless of the agency responding.

Following a detailed assessment and analysis, the peer assessment team believes by consensus that the alarm handling time, turnout time, and travel time for the first-due and effective response force components of the total response time continuum, as identified in the standards of cover, are in line with the industry best practices identified in the eighth edition of the *Fire & Emergency Service Self-Assessment Manual (FESSAM)*.

The department does a thorough job of analyzing the make-up of the community and the structures within it to develop a comprehensive risk assessment. There is an identified challenge of finding accurate sprinkler data to incorporate into this analysis. It is recommended that the department complete a review of structures with automatic suppression systems and include this in their risk assessment.

A large number (111) of target/special hazards were identified in the risk assessment process, but, this information is not linked to their computer aided dispatch system. It is recommended that identified target hazards be flagged in the Computer Automated Dispatch (CAD) so that high-risk responses are ensured. It is recommended that identified target hazards are entered into the Computer Automated Dispatch (CAD), so that they are automatically marked as high-risk when a call comes in.

A strategic plan for 2013-2015 is in place and, along with the budget, is guiding the activities of the department. The plan is submitted to the mayor and city council. The strategic plan has supported the department's efforts to align with the mission and vision of the city and the needs of the community. An internal committee made up of members of all ranks and representing all divisions within the department developed the plan. The published plan is available electronically, in hard copy, and on the department's webpage.

The plan consists of 8 general organizational goals and 37 specific objectives. The plan is reviewed and progress noted on a quarterly basis in an access database. The kickoff for the next strategic plan has already occurred. It will be a four-year plan and be aligned with the performance objectives submitted during the budget process along with more participation from the community. The plan will also tie into the self-assessment manual and recommendations given in the accreditation report.

The effectiveness of the current strategic plan has been assessed and improvements are planned for the next plan. An example of this is realizing to keep the number of goals and objectives to an achievable amount.

### **Category III — Goals and Objectives**

A vision statement, a mission statement, a set of core values, and established goals and objectives, guides the Charleston Fire Department. The related performance measures are stated in the city's annual adopted budget document and serve to establish the benchmarks of the department's goals and objectives. These statements, goals, objectives, and performance measures are also integrated within the strategic plan. The development and maintenance of this document ensures the department retains an alignment with the mission and vision of the city and the needs of the community it serves.

The agency has established general goals and specific objectives that direct the agency's priorities in a manner consistent with its mission and appropriate for the community it serves. The annual goals and objectives for each major division of the department are developed, analyzed, and published as part of the city's yearly budget process. To ensure alignment with the goals of the city, divisions must indicate which of the city-specified strategic goals their particular program affects. Performance measures for the goals and specific objectives of the major divisions are published in the annual budget document. There is an effort to create objectives that are focused more on outcomes than outputs.

As previously stated, the next strategic plan will be a four-year plan instead of a three-year plan. The department will reevaluate the mission and value statements to ensure that they are still applicable to where the department is currently. It is recommended that the department work to use the strategic plan to integrate budget performance objectives, internal goals, public needs, and the accreditation recommendations. This would allow for seamless goals and objectives and make the monitoring of progress easier.

A management process is utilized for implementation of goals and objectives. The department has a management process in place that requires quarterly updates on the process of each goal and objective. The accreditation manager is responsible for keeping up with the documentation process. The fire chief closely monitors the progress of the goals and ensures they are remaining on schedule.

Processes are in place to measure and evaluate progress towards completion of specific objectives and overall system performance. The goals and objectives are re-examined and modified periodically. The fire chief reviews and approves quarterly updates that identify progress towards completion of the goals and objectives. The chief also continuously monitors the applicability of the goals and objectives to ensure they stay in line with the mission and vision of the department and the city. The progress and/or issues are discussed at senior/command staff meetings and then the information is passed on to the rest of the department.

### **Category IV — Financial Resources**

The Charleston Fire Department works with a dedicated budget analyst from the budget and finance department to develop the budget. Internal staff participates in the development of the department budget. The processes to be followed during the development and approval stages of these budgets are clearly articulated in various city and fire department policies and procedures.

Financial planning and resource allocation is based on agency planning involving broad staff participation. The department follows and complies with all policies, guidelines, and processes for budget preparation, which is provided to all city departments by the budget and finance department in June of each year. Each division within the Charleston Fire Department develops its own budget and submits it to the fire chief for review. The fire chief works with the dedicated budget analyst to prioritize requests and verify costs. All city department budgets are then submitted to the chief financial officer for review and approval. Three hearings occur with city council to review, make recommendations and vote to adopt the final budget. The public is also able to attend these hearings and make comment.

Financial management of the agency exhibits sound budgeting and control, proper recording, reporting and auditing. The peer assessment team confirmed that the city is in receipt of the most currently available Certificate of Achievement for Excellence in Financial Reporting (certificate) from the Government Finance Officers Association of the United States and Canada (GFOA) for its Comprehensive Annual Financial Report (CAFR). The department has submitted its most recent GFOA certificate and CAFR as prima facie compliance with this criterion.

Financial resources are appropriately allocated to support the established organizational mission, the stated long-term plan, goals and objectives, and maintain the quality of programs and services. The Charleston Fire Department has experienced tremendous change since the 2007 Sofa Super Store fire. The city, mayor, and council have been very supportive of the fire department's needs during this time that also coincided with the recession. The department's budget has nearly doubled since 2007. The department is able to maintain current levels of service and equipment. There is a capital plan in place to add two new stations, relocate one station, and modernize two stations that are over 125 years old.

## **Category V — Programs**

### **Criterion 5A – Fire Suppression**

The Charleston Fire Department is a full-service fire and rescue organization designed to provide essential public safety and emergency services to a growing population base. To meet the needs of its residents, the department currently staffs 16 engines, 2 ladders, 2 towers, 4 battalion chiefs, a fireboat, a hazardous materials unit, and an air unit from 15 fire stations. The pump capacity of all engines is a minimum of 1,250 gallons per minute.

The department operates a 3-shift system and has established a minimum staffing benchmark of 84 firefighters per shift, per day. The department maintains a minimum of four firefighters per company on all front-line companies.

The department relies upon external resources to make up its effective response force for some responses, depending on geographic area; the department has automatic aid agreements with four other departments. The North Charleston Fire Department, James Island Public Service District, St. Andrews Public Service District and St. John's Fire District provide three firefighters per apparatus through a seamless, automatic aid system with the city of Charleston. All five of the departments are dispatched through the Charleston County Consolidated 911 Dispatch Center. The department also has mutual aid agreements with a number of surrounding communities that do not participate in the automatic aid program. Additionally, resources from the South Carolina firefighter mobilization plan are available to the Charleston Fire Department. The firefighter mobilization plan is a state-wide

mutual aid plan that can be implemented at any time at the request of an incident commander, chairman of the South Carolina firefighter mobilization committee, or the South Carolina fire marshal. The peer assessment team verified and validated that the department(s) supplying these resources have the internal capacity to respond to other communities and that the alarm handling, firefighter turnout, and travel times of the incoming resources are in line with the industry best practices identified in the eighth edition of the *Fire & Emergency Service Self-Assessment Manual (FESSAM)*. The departments conduct approximately 30 joint training sessions per year.

The automatic aid participants work from one common set of standard operating guidelines that are regularly updated to reflect current practices. The participating departments regularly have their battalion chiefs participate in incident command/management training on a regular basis to ensure critical functions of incident command are accomplished and standardized between the five automatic aid departments.

The agency operates an adequate, effective, and efficient fire suppression program directed toward controlling and/or extinguishing fires for the purposes of protecting people from injury or death, and reducing property loss. The department completes a comprehensive review of all standard operating procedures (SOPs) related to the program at least every five years. These reviews assure the continued introduction of industry best practices and lessons learned from local emergency responses. The SOPs are developed by administrative staff and reviewed by suppression personnel before implementation. A plan is in place to ensure all personnel are made aware of and receive training on additions or changes made to SOPs.

The department has adopted an incident management system and routinely uses it during all emergency responses, regardless of the size or complexity of the incident. The department has adopted and follows the expectations of the National Incident Management System (NIMS). All five auto-aid departments use the department's incident command/management system, which ensures standardization of incident command activities at incidents in which those agencies respond to together.

The Charleston Fire Department conducts appraisals to determine the effectiveness of its fire suppression program through a series of reports submitted via the chain of command and after action reviews and critiques. The fire chief and other command staff members review daily, monthly, and quarterly reports that detail responses and provide information regarding compliance with performance indicators. The department also conducts mandated after action reviews (AAR's) using the National Fallen Firefighter Foundation's template, in addition to post-incident reviews and full critiques.

The agency's information system allows for documentation and analysis of its fire suppression response program and incident reporting capability. However, the five departments that participate in the automatic aid agreement do not share response data. This results in department staff being required to do a significant amount of manual data collection and analysis in order to produce performance reports required to evaluate the effectiveness of programs. It is recommended that the department attempt to remove the barriers towards sharing response data for automatic aid participants in the computer aided dispatch system and Charleston Fire Department's records management system.

The department's response and deployment standards are based upon the metro, urban, suburban, and rural population densities, and the fire demand of the community. Fifteen fire stations provide

citywide coverage; department staffing is based upon station location, incident type, and frequency. The targeted service level objectives in the standards of cover benchmark statements are based on industry standards and best practices, as identified earlier in this report in Category II – Assessment and Planning. The objectives have been approved and adopted by fire department management. The department’s benchmark service level objectives are as follows:

For 90 percent of all low risk fires, the total response time for the arrival of the first-due unit, staffed with 4 firefighters, shall be: 7 minutes and 30 seconds in metro and urban areas; 8 minutes and 30 seconds in suburban areas; and 10 minutes and 30 seconds in the rural areas. The first due unit shall be capable of: performing size-up and establishing command, deploying a hand line, establishing a minimum fire flow of 250 gallons per minute (gpm), initiating fire attack by protecting life exposures first, then property exposures; and performing search and rescue for an imminent life threat. The first-due unit is considered the effective response force (ERF) for low risk fires.

For 90 percent of all moderate risk structure fires, the total response time for the arrival of the effective response force (ERF) staffed with a minimum of 16 firefighters and officers shall be: 11 minutes and 30 seconds in metro and urban areas; 13 minutes and 30 seconds in suburban areas; and 15 minutes and 30 seconds in the rural areas. The ERF for shall be capable of: establishing an uninterrupted water supply, deploying at minimum, four hand lines and an elevated water stream, providing a rapid intervention crew, performing vertical and horizontal ventilation, performing search and rescue, and completing salvage and overhaul. These operations shall be done in accordance with Charleston Fire Department standard operating procedure 201.01, *Safe Structural Firefighting*, while providing for the safety of responders and the general public.

For 90 percent of all high risk structure fires, the total response time for the arrival of the effective response force (ERF) staffed with a minimum of 19 firefighters and officers shall be: 11 minutes and 30 seconds in metro and urban areas; 13 minutes and 30 seconds in suburban areas; and 15 minutes and 30 seconds in the rural areas. The ERF for high risk shall be capable of: establishing an uninterrupted water supply, deploying at minimum, four hand lines and an elevated water stream, providing a rapid intervention crew, performing vertical and horizontal ventilation, performing search and rescue, completing salvage and overhaul, and deploying a second elevated water stream. These operations shall be done in accordance with Charleston Fire Department standard operating procedure 201.01, *Safe Structural Firefighting*, while providing for the safety of responders and the general public.

The department’s baseline statements reflect actual performance during 2012 to 2014. The department relies on the use of automatic aid from neighboring fire departments to provide its effective response force complement of personnel. These resources are immediately available as part of a seamless response system. The department’s actual baseline service level performance is as follows:

For 90 percent of all low risk fires, the total response time for the arrival of the first-due unit, staffed with 4 firefighters, is: 7 minutes and 31 seconds in metro and urban areas; 7 minutes and 20 seconds in suburban areas; and 11 minutes and 45 seconds in rural areas. The first due unit is capable of: performing size-up and establishing command, deploying a hand line, establishing a minimum fire flow of 250 gpm, initiating fire attack by protecting life exposures first then property exposures, and performing search and rescue for an imminent

life threat. The first-due unit is considered the effective response force (ERF) for low risk fires.

For 90 percent of all moderate risk structure fires, the total response time for the arrival of the effective response force (ERF) staffed with a minimum of 16 firefighters and officers is: 13 minutes and 16 seconds in metro and urban areas; and 14 minutes and 50 seconds in suburban areas. The ERF for is capable of: establishing an uninterrupted water supply, deploying at minimum, four hand lines and an elevated water stream, providing a rapid intervention crew, performing vertical and horizontal ventilation, performing search and rescue, and completing salvage and overhaul. These operations are done in accordance with Charleston Fire Department standard operating procedure 201.01, *Safe Structural Firefighting*, while providing for the safety of responders and the general public.

For 90 percent of all high risk structure fires, the total response time for the arrival of the effective response force (ERF) staffed with a minimum of 19 firefighters and officers is: 14 minutes and 33 seconds in metro and urban areas. The ERF for high risk is capable of: establishing an uninterrupted water supply, deploying at minimum, four hand lines and an elevated water stream, providing a rapid intervention crew, performing vertical and horizontal ventilation, performing search and rescue, completing salvage and overhaul, and deploying a second elevated water stream. These operations are done in accordance with Charleston Fire Department standard operating procedure 201.01, *Safe Structural Firefighting*, while providing for the safety of responders and the general public.

It was verified and validated by the peer assessment team that the Charleston Fire Department did not have sufficient fire suppression incidents, which required an effective response force to be assembled for rural moderate risk fires, and suburban and rural high risk fires, to provide reliable data. There are therefore no baseline service level performance statements provided for these types of calls.

The team also reviewed the available 2015 response time data and confirmed it is consistent with the provided information for 2012-2014.

Structure Fires - 90th Percentile Times - Baseline Performance			2012-2014	2014	2013	2012
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro/Urban	2:28 316 calls	2:17 147 calls	2:32 169 calls	4:34*
		Suburban	2:12 115 calls	1:35 47 calls	2:28 68 calls	4:34*
		Rural	3:27 42 calls	3:27 23 calls	3:08 19 calls	4:34*
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro/Urban	2:01 421 calls	1:57 143 calls	1:55 170 calls	2:19 108 calls
		Suburban	2:01 158 calls	1:47 49 calls	2:02 70 calls	2:09 39 calls
		Rural	2:03 46 calls	1:43 19 calls	2:17 19 calls	** 8 calls
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro/Urban	5:32 482 calls	5:12 144 calls	5:14 168 calls	6:26 170 calls
		Suburban	6:36 169 calls	5:10 47 calls	5:41 70 calls	8:31 52 calls
		Rural	10:10 61 calls	9:59 24 calls	10:13 20 calls	8:23 17 calls
<b>Low Risk Fire Calls</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro/Urban	7:31 220 calls	7:30 96 calls	7:29 124 calls	13:11* 77 calls
		Suburban	7:20 93 calls	7:18 36 calls	7:25 57 calls	13:59* 30 calls
		Rural	11:45 25 calls	** 9 calls	12:13 16 calls	** 6 calls
<b>Moderate Risk</b>	Total Response Time ERF <b>Concentration</b>	Metro/Urban	13:16 40 calls	13:48 19 calls	13:14 13 calls	17:16* 12 calls
		Suburban	14:50 11 calls	** 5 calls	** 3 calls	** 3 calls
		Rural	** 2 calls	** 1 call	** 0 calls	** 1 call
<b>High Risk</b>	Total Response Time ERF <b>Concentration</b>	Metro/Urban	14:33 56 calls	18:50 19 calls	15:15 15 calls	16:18* 20 calls
		Suburban	** 2 calls	** 0 calls	** 0 calls	** 2 calls
		Rural	** 1 call	** 0 calls	** 1 call	** 0 calls

\*2012 Alarm Handling: 9-1-1 Phone Pickup time was not entered in the fire department's RMS. Overall performance (not by incident type) from the dispatch center was reported as 4:34 or less, 90% of the time.

\*\*Less than 10 calls for analysis.

### **Criterion 5B – Fire Prevention / Life Safety Program**

The Charleston Fire Department (CFD) fire marshal division (FMD) enforces applicable codes through building permit requests, business license requests, and priority occupancy inspections (bars, nightclubs, large mercantile, and hotels/motels). The FMD also conducts fire investigations. The FMD is staffed with 13 total personnel, including a fire marshal, 2 deputy fire marshals, a community educator/public information officer (CE/PIO), 3 assistant fire marshals, 4 fire inspectors, a full-time administrative assistant, and a part-time administrative assistant. The FMD staff must achieve and retain appropriate certifications for each position and job function. The division assists fire suppression personnel with pre-fire plans, smoke alarm installations, neighborhood canvas programs, and fire investigations. The CFD has developed standard operating procedures for the fire

prevention/life safety programs provided by fire department personnel. Quarterly reports are developed from the records management system to report inspection, plan review, fire prevention program, and other life safety program workloads. Administrative personnel review monthly incident response reports to identify trends.

The agency operates an adequate, effective, and efficient program directed toward fire prevention, life safety, hazard risk reduction, the detection, reporting, and control of fires and other emergencies, the provision of occupant safety and exiting, and the provisions for first aid fire fighting equipment. The fire marshal division enforces the 2012 International Fire Code® (IFC), and referenced standards and codes within the IFC as adopted by the state of South Carolina as a minimum/maximum fire code for local enforcement.

The FMD utilizes memos, internal policies, and standard operating procedures to identify the procedures used for the code enforcement program. Inspections and re-inspection schedules vary on the occupancy and the severity of the violations. If violations are not remedied, a court summons is issued to ensure compliance with applicable fire code requirements. This process is new and has not been used frequently. The focus of the current code enforcement program has included permitted work, facilities receiving a new business license, complaints, and targeted occupancy inspections based on occupancy use or classification of the property, to help ensure standardized enforcement of the fire code requirements within these facilities. An established inspection schedule, as staffing is normalized to an appropriate level for a jurisdiction of comparable size, would provide consistent enforcement of codes to a larger cross-section of commercial occupancies within the city. An established risk-based inspection frequency schedule based on the agency risk-assessment identified in the standards of cover would also help prioritize inspection activities.

The FMD staff is required to have state and/or national certifications relating to each position and job function. Basic certification include International Code Council (ICC) Fire Inspector 1, South Carolina Resident State Fire Marshal, and Fire Fighter 2. Additional certifications, based on job descriptions and assigned roles, include ICC Fire Inspector 2 and Fire Plans Examiner.

Current staffing levels are inadequate to develop and maintain an inspection program for a jurisdiction of this size due to the amount of occupancies identified in the SOC as moderate to high risk. Staffing should be expanded in order to implement and sustain minimum inspection cycles for all occupancies based on the agency risk-assessment identified in the standards of cover. It is recommended that the department develop and implement a risk-based inspection frequency schedule that is correlated with the risk assessment found in the standards of cover and provide adequate staffing to the meet the goals and objectives of the agency.

An appraisal is conducted monthly and annually to determine the effectiveness of the fire prevention/life safety program. Administrative personnel review monthly incident response reports to identify trends. An annual incident response summary, including property and contents saved versus property and contents lost, civilian casualties, firefighter casualties, count of fire prevention programs, and count of fire safety inspections is completed to appraise the fire prevention programs that compile and cross check information that meet the department's needs.

#### **Criterion 5C – Public Education Program**

The Charleston Fire Department (CFD) has a public education program in place that is directed toward identifying and reducing specific risks in a manner consistent with the fire department's

mission. The CFD fire marshal provides direction and oversight to the community education programs and has assigned one community educator to develop and manage public education programs for the department. The CFD provides a variety of public education programs for individuals, businesses, and the community that include: apparatus and station tours; pre- and post-fire neighborhood canvasses; career day participation; community outreach events; smoke alarm installation; alarm battery replacement; emergency response and fire drill training; community parade participation; and a variety of safety presentations. Fire suppression personnel are provided community outreach resources to support the public education program.

A public education program is in place and directed toward identifying and reducing specific risks in a manner consistent with the agency's mission. The fire department provides a variety of public education programs for individuals, businesses, and the community. Specific risks are determined by evaluating incident statistics and have been determined to include cooking fires, lack of working smoke alarms, and discarded smoking materials. Specific risk audiences include school age children, adults, seniors, and employees of the business community. Public education programs continue to be developed to support fire prevention and education to address these areas. The department offers public education programs directed toward specific risks and risk audiences: age-based curriculums delivered to school age children; business fire safety and emergency planning; high-risk residential emergency planning and safety; commercial kitchen canvas program; smoke alarm program, "After the Fire" neighborhood canvas, and the "Fire in the Streets" program. Two fire marshal division staff members are certified as Juvenile Firesetter Intervention Specialist II.

The majority of school age contacts are focused on the 3rd grade level during the month of October. This education should be expanded to include a broader age range of children and improve the number of contacts through expanded education efforts. The department does not have a formal juvenile firesetter program but continues to encounter youth who would benefit from this target training to reduce the risk of fires involving juveniles. It is recommended that the department develop and implement specific risk reduction strategies targeted at school-aged children

CFD standard operating procedures are current and identify public education programs that are available to the public. The CE/PIO develops, implements, and monitors the public education program. Public education lesson plans are in place as well as memorandums directing personnel on the procedures for public education programs. Fire suppression personnel that assist with public education programs are guided by the CE/PIO in content and approach to program delivery.

The FMD publishes annual reports that identify the number of public education programs conducted each year and this assists in appraising the educational efforts in comparison to the response history within the jurisdiction. The total number of programs is compared to the response data collected with the system to identify risk areas that may need further attention. Commercial structure fires, civilian fire injuries, and civilian fire deaths have remained consistent for the last four years. Trend analysis in 2012 revealed a higher frequency of apartment fires occurring within the jurisdiction. In mid-2013, members of the fire marshal division initiated meetings with apartment managers, reviewed and educated managers on safety concerns and self-inspection needs, and initiated an inspection program and curbed the rate of fire occurrence in these occupancies. This program has continued through 2014 due to the volume of apartments in the jurisdiction.

### **Criterion 5D – Fire Investigation Program**

The Charleston Fire Department (CFD) operates an adequate, effective and efficient fire investigation program. The fire investigation program provides origin and cause investigation and determination for fires, explosions, and other emergency situations that endanger life or property. The fire investigation program is managed by the fire marshal and includes fire marshal division (FMD) investigators and suppression personnel. FMD investigators include International Association of Arson Investigators Certified Fire Investigators (IAAI-CFI), certified Fire Investigation Technicians (IAAI-FIT), National Association of Fire Investigators Certified Fire and Explosion Investigators (NAFI-CFEI), and members in training. A suppression company, Engine 116, is undergoing training to assist with fire investigations as the fire investigation company (FIC). Company members conduct monthly in-station training and attend quarterly fire investigation training conducted by the FMD. The fire investigation team (FIT) consists of members from the FMD, members of the FIC, and department members who are interested in training in fire investigations, but are not assigned to either group. Fire investigators work with local, state, and federal agencies to complete fire investigations

The agency operates an adequate, effective and efficient program directed toward origin and cause investigation and determination for fires, explosions, and other emergency situations that endanger life or property. The 2012 International Fire Code® (IFC) provides specific responsibilities that include the origin and cause determinations of fires. The IFC is mandated for adoption in the state of South Carolina and the adoption is further supported through city ordinance. The Charleston Fire Department standard operating procedure (SOP) 606.01, *Fire Investigations-General*, further recognizes the responsibility of fire investigation within the fire marshal division (FMD). The FMD and its fire investigators are authorized by the South Carolina code of laws and the Charleston Fire Department SOPs to conduct investigations of fires

Trained and certified investigators from the fire marshal division utilize the scientific method, in accordance with SOP 606.01, to investigate and determine the origin and cause of all significant fires and explosions in Charleston. National Fire Protection Association (NFPA) publications – specifically NFPA 921, *Guide to Fire and Explosion Investigations*, Kirks Fire Investigation, and International Association of Arson Investigators (IAAI) publications provide professional guidance on the scientific method and technical information regarding the investigation of fires and explosions. Additional reference materials from the National Fire Academy (NFA), Bureau of Alcohol, Tobacco and Firearms (ATF), and the Federal Bureau of Investigations (FBI) are used for fire investigative techniques.

The FMD has three members certified as IAAI-CFI and cross-certified as NAFI-CFEI, two members certified as IAAI-FIT, and remaining division members are working toward the completion of their required IAAI CFI trainer online training, and planning to attend the two fire investigation programs at the National Fire Academy.

The program is adequately staffed, based on current investigation call volume and the ability of staff to respond to requests, with two fire investigators on call at all times, additional staff available on Engine 116, and additional FMD staff available as needed. At least one member on call is a certified FIT, with a CFI either on call, or available to assist the technician.

CFD standard operating procedure 606.01, *Fire Investigation – General* and 606.02, *Fire Investigation – Call Rotation*, are current and provide members of CFD with a procedure to follow

concerning fire investigations and the procedures to request further investigation by the FMD. The procedure identifies the primary fire investigation duties and responsibilities of the fire marshal division investigators and suppression personnel.

The fire marshal conducts an annual appraisal of the fire investigation program. Trends in fire cause, locations, and origins are identified and reported to the fire chief. Public education programs are tailored to trends in fire cause. Commercial kitchen fires caused by grease buildup were identified through fire investigations. A targeted fire prevention program was initiated at restaurants to reduce commercial kitchen fires.

The current FireHouse® records management system (RMS) provides limited case management criteria to appraise and monitor the program. Multiple paper-based strategies have been utilized through 2010 and 2011, which led to the creation of a database in 2012. The majority of the information was tracked for a short period as part of a task force, and then moved into the FireHouse RMS system. In 2013 and 2014 the use of the limited number of fields has been increased, and in 2015 the department established minimum elements that must be completed. These minimum elements have allowed for basic statistics and evaluation of case closure and case status by exporting data from FireHouse® to Excel. A summary of the cause reports for the department, the fire marshal division, and case closure status has been tracked for 2012, 2013, and 2014 and available in the fire cause and investigation case report summary.

The CFD has working relationships with the Charleston Police Department (CPD), Charleston County Sheriff's Office (CCSO), South Carolina Law Enforcement Division (SLED), and the Bureau of Alcohol, Tobacco and Firearms (ATF) for fire investigation support. The FMD has worked toward improving investigative relationships since the formation of the division in June of 2010. After formation of the office, members focused on conducting outreach with similar or support agencies such as the CPD and the coroner's office.

A draft memorandum of understanding (MOU) was initiated with CPD, but remains incomplete, regarding roles and responsibilities between the agencies and granting selected members of the office additional credentialing as law enforcement officers. The lack of additional law enforcement training and the inability to further resolve a criminal case or pursue the necessary actions as a law enforcement officer limits the ability of investigators to resolve some cases. Additional training and certification is needed in order to ensure a seamless approach to resolving criminal activities involving fire.

It is recommended that the department work to formalize an agreement with the Charleston Police Department to allow for fire investigators to fully utilize their abilities and conduct thorough and complete investigations of potential arson crimes.

### **Criterion 5E – Technical Rescue**

The Charleston Fire Department provides a wide range of technical rescue programs to its residents including, but not limited to: vehicle extrication, urban search and rescue, high and low angle rescue, confined space rescue, and structural collapse rescue. The department has thirty members on South Carolina Task Force (SCTF) III, a Federal Emergency Management Agency (FEMA) type II team, which is based in Charleston and provides structural collapse and urban search and rescue capability at the technician level. Technical rescue assets are deployed on the department's four ladder companies and a trailer. Technical rescue personnel are assigned to the four ladder companies and

one other engine company. All suppression personnel are trained to the awareness level in all technical rescue disciplines as part of Firefighter I and II certification and receive basic auto extrication training. Members of the department's special teams receive additional training in their area of specialty.

The agency operates an adequate, effective, and efficient program directed toward rescuing trapped or endangered persons from any life-endangering cause, e.g., structural collapse, vehicle accidents, swift water or submersion, confined space, cave-in, trench collapse, fire, etc. The department describes what is expected of its members during technical rescue incidents through the use of standard operating procedures (SOP). The procedures are updated and reviewed annually. Training on the procedures is provided to the applicable members and is properly documented and recorded.

The department uses a number of methods to evaluate the effectiveness of the technical rescue program. Monthly reviews of incident types are compared to previous year's data to determine whether the program is meeting the community needs. Critiques are conducted of incidents that require technical rescue response. The department also participates in operational readiness exercises that are evaluated by South Carolina Task Force III, which assists the department in evaluating the effectiveness of the program.

The department has been able to leverage significant grant funding for its technical rescue assets. However, these assets are beginning to come to the end of their life cycle. It is recommended that the department begin planning for funding of replacement of technical rescue response assets through its budget process.

The department's response and deployment standards are based upon the metro, urban, suburban, and rural population densities, and the technical rescue demands of the community. Fifteen fire stations provide citywide coverage; department staffing is based upon station location, incident type, and frequency. The targeted service level objectives in the standards of cover benchmark statements are based on industry standards and best practices, as identified earlier in this report in Category II – Assessment and Planning. The objectives have been approved and adopted by fire department management. The department's benchmark service level objectives are as follows:

For 90 percent of all technical rescue calls, the total response time for the arrival of the first-due unit, staffed with a minimum four firefighters and officers, shall be: 7 minutes and 30 seconds in metro and urban areas; 8 minutes and 30 seconds in suburban areas; and 10 minutes and 30 seconds in rural areas. The first-due unit will be capable of: performing scene size-up, establishing command, identifying strategy and tactics for rescuing victim(s), requesting specialized equipment and personnel to assist with rescue if needed, and rescue the victim(s) while providing for the safety of first responders. The first-due unit is considered the effective response force (ERF) for low risk technical rescue.

For 90 percent of all moderate risk technical rescue calls, the total response time for the arrival of the effective response force, staffed with a minimum of eight firefighters and officers shall be: 11 minutes and 30 in metro and urban areas; 13 minutes and 30 seconds in suburban areas; and 15 minutes and 30 seconds in rural areas. The effective response force will be capable of: performing scene size-up, establishing command, identifying strategy and tactics for rescuing victim(s), requesting specialized equipment and personnel to assist with rescue if needed, and rescue the victim(s) while providing for the safety of first responders.

For 90 percent of all high risk technical rescue calls, the total response time for the arrival of the effective response force, staffed with a minimum of 17 firefighters and officers shall be: 11 minutes and 30 in metro and urban areas; 13 minutes and 30 seconds in suburban areas; and 15 minutes and 30 seconds in rural areas. The effective response force will be capable of: performing scene size-up, establishing command, identifying strategy and tactics for rescuing victim(s), requesting specialized equipment and personnel to assist with rescue, and rescue the victim(s) while providing for the safety of first responders.

The department's baseline statements reflect actual performance during 2012 to 2014. The department relies on the use of automatic aid from neighboring fire departments to provide its effective response force complement of personnel. These resources are immediately available as part of a seamless response system. The department's actual baseline service level performance is as follows:

For 90 percent of all technical rescue calls, the total response time for the arrival of the first-due unit, staffed with a minimum four firefighters and officers is 7 minutes and 48 seconds in metro and urban areas. The effective response force is capable of: performing scene size-up, establishing command, identifying strategy and tactics for rescuing victim(s), requesting specialized equipment and personnel to assist with rescue if needed, and rescue the victim(s) while providing for the safety of first responders. The first-due unit is considered the effective response force (ERF) for low risk technical rescue.

For 90 percent of all moderate risk technical rescue calls, the total response time for the arrival of the effective response force, staffed with a minimum of 8 firefighters and officers is 11 minutes and 03 minutes in metro and urban areas. The effective response force is capable of: performing scene size-up, establishing command, identifying strategy and tactics for rescuing victim(s), requesting specialized equipment and personnel to assist with rescue if needed, and rescue the victim(s) while providing for the safety of first responders.

For 90 percent of all high risk technical rescue calls, the total response time for the arrival of the effective response force, staffed with a minimum of 17 firefighters and officers is 14 minutes and 54 seconds in metro and urban areas. The effective response force is capable of: performing scene size-up, establishing command, identifying strategy and tactics for rescuing victim(s), requesting specialized equipment and personnel to assist with rescue, and rescue the victim(s) while providing for the safety of first responders.

It was verified and validated by the peer assessment team that the Charleston Fire Department did not have sufficient technical rescue incidents, which required a first-due response or an effective response force to be assembled in suburban or rural areas for 2012-2014, to provide reliable data. There are therefore no baseline service level performance statements provided for the first-due unit or the effective response force in suburban or rural areas in this report.

The team also reviewed the available 2015 response time data and confirmed it is consistent with the provided information for 2012-2014.

Technical Rescue Calls - 90th Percentile Times - Baseline Performance		2012- 2014	2014	2013	2012	
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro/Urban	3:53 114 calls	3:03 56 calls	4:12 60 calls	4:34*
		Suburban	4:20 24 calls	** 6 calls	3:59 18 calls	4:34*
		Rural	** 9 calls	** 4 calls	** 1 call	4:34*
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro/Urban	1:58 126 calls	1:53 52 calls	1:51 56 calls	1:38 42 calls
		Suburban	1:43 37 calls	** 7 calls	2:34 17 calls	1:33 15 calls
		Rural	** 9 calls	** 3 calls	** 1 call	** 2 calls
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro/Urban	4:40 136 calls	4:24 52 calls	4:50 57 calls	5:20 53 calls
		Suburban	5:59 42 calls	** 7 calls	6:05 17 calls	4:04 18 calls
		Rural	16:47 12 calls	** 4 calls	** 1 call	** 3 calls
<b><u>Low Risk</u></b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro/Urban	7:48 49 calls	6:32 25 calls	8:07 24 calls	11:37*
		Suburban	** 6 calls	** 2 calls	** 4 calls	** 8 calls
		Rural	** 3 calls	** 1 call	** 1 call	** 1 call
<b><u>Moderate Risk</u></b>	Total Response Time ERF <b>Concentration</b>	Metro/Urban	11:03 17 calls	11:02 9 calls	11:50 9 calls	16:33 14 calls
		Suburban	** 5 calls	** 1 call	** 4 calls	** 3 calls
		Rural	** 10 calls	** 3 calls	** 4 calls	** 2 calls
<b><u>High Risk</u></b>	Total Response Time ERF <b>Concentration</b>	Metro/Urban	14:54	**	**	**
		Suburban	**	**	**	**
		Rural	**	**	**	**

\*2012 Alarm Handling: 9-1-1 Phone Pickup time was not entered in the fire department's RMS. Overall performance (not by incident type) from the dispatch center was reported as 4:34 or less, 90% of the time.

\*\*Less than 10 calls for analysis.

### **Criterion 5F – Hazardous Materials (Hazmat)**

The Charleston Fire Department (CFD) provides hazardous materials response for the city and remains available to respond outside the city limits for mutual and auto-aid responses. All CFD line personnel are trained to the operations level and are capable of identifying a hazardous materials incident, isolating the area, notifying appropriate resources, and denying entry. In addition, the agency also maintains a FEMA Level II Hazmat Team with 26 personnel certified through the 80-hour International Association of Fire Fighters (IAFF) hazmat technician program. The department has identified three levels of hazardous material risk: low, moderate, and high. Each risk level accompanies a critical task analysis as well as performance data showing unit response baselines and corresponding benchmark objectives. Hazardous materials detection and mitigation equipment is maintained on the department's hazmat response unit (Hazmat 101) with additional air monitoring

equipment available on each apparatus. Additional hazmat equipment is available from automatic and mutual-aid partners.

The agency operates an adequate, effective, and efficient hazardous materials program directed toward protecting the community from the hazards associated with fires and uncontrolled releases of hazardous and toxic materials. The department has standard operating procedures (SOP) in place to guide the response for hazardous materials incidents. These procedures provide direction for command functions, response procedures, hazard mitigation, and enhance the operational safety for all responders. All personnel are responsible for understanding and implementing the procedures outlined in the SOPs during operations and training. In addition to the department's SOPs, the Charleston County Emergency Management Red Book SOPs and emergency operations plan provide further guidance for hazardous materials response. The department works with multiple mutual and auto-aid partners that also maintain similar SOP's to provide a streamlined response. The department, in cooperation with auto and mutual-aid partners, is working toward a regional SOP to enhance response processes in the future.

The department has established an appraisal process for measuring the effectiveness of the hazardous materials response program. This process includes the review of incident reports, site safety plans, training exercise debriefings, and informal "hot washes" following minor incidents. In addition, the completion of the standards of cover (SOC) document enabled the department to further examine their response capabilities. The SOC provides response data, high frequency incident locations, resource allocation, and trending analysis allowing for the opportunity to forecast potential needs in the future. The department has also adopted a standard operating procedure, which outlines the parameters for a formal post-incident review process involving major incidents.

The department provides adequate equipment for the level of response the department has chosen to deliver. The department has developed a specific line item in the annual budget for the purpose of replacing and purchasing equipment for a continuous state of readiness. Currently; however, the department does not have a formal process in place for the cost recovery of equipment lost, or destroyed during a hazardous materials incident. This can cause a strain on the annual budget and could potentially impact the department's ability to provide the equipment needed for response operations. It is recommended that the agency develop a cost recovery plan for the purposes of replacing stock and equipment used during hazardous materials operations.

The department's response and deployment standards are based upon the metro, urban, suburban, and rural population densities, and the hazardous materials demands of the community. Fifteen fire stations provide citywide coverage; department staffing is based upon station location, incident type, and frequency. The targeted service level objectives in the standards of cover benchmark statements are based on industry standards and best practices, as identified earlier in this report in Category II – Assessment and Planning. The objectives have been approved and adopted by fire department management. The department's benchmark service level objectives are as follows:

For 90 percent of all low risk hazardous materials calls, the total response time for the arrival of the first-due unit, staffed with a minimum four firefighters and officers, shall be: 7 minutes and 30 seconds in metro and urban areas; 8 minutes and 30 seconds in suburban areas; and 10 minutes and 30 seconds in rural areas. The first arriving unit will be capable of: conducting scene size-up, establishing command, isolating a hazardous area and denying entry to bystanders, identifying the hazard(s), and mitigating the incident within the limits of equipment and training. The first-due unit is considered the effective response force (ERF) for low risk hazardous materials.

For 90 percent of all moderate risk hazardous materials calls, the total response time for the arrival of the ERF of 8 firefighters and officers shall be: 11 minutes and 30 seconds in metro and urban areas; 13 minutes and 30 seconds in suburban areas; and 15 minutes and 30 seconds in rural areas. The ERF will be capable of identifying the hazard(s), and mitigating the incident within the limits of equipment and training.

For 90 percent of all high risk hazardous materials calls, the total response time for the arrival of the effective response force consisting of 21 firefighters and officers shall be: 11 minutes and 30 seconds in metro and urban areas; 13 minutes and 30 seconds in suburban areas; and 15 minutes and 30 seconds in rural areas. The effective response force will be capable of identifying the hazardous material(s) and mitigating the incident within the limits of equipment and training.

The department's baseline statements reflect actual performance during 2012 to 2014. The department relies on the use of automatic aid from neighboring fire departments to provide its effective response force complement of personnel. These resources are immediately available as part of a seamless response system. The department's actual baseline service level performance is as follows:

For 90 percent of all low risk hazardous materials calls, the total response time for the arrival of the first-due unit, staffed with a minimum four firefighters and officers, is 6 minutes and 59 seconds in metro and urban areas. The first arriving unit is capable of: conducting scene size-up, establishing command, isolating a hazardous area and denying entry to bystanders, identifying the hazard(s), and mitigating the incident within the limits of equipment and training. The first-due unit is considered the effective response force (ERF) for low risk hazardous materials.

It was verified and validated by the peer assessment team that the Charleston Fire Department did not have sufficient hazardous materials incidents, which required an effective response force to be assembled for moderate or high risk hazardous materials calls in 2012-2014, to provide reliable data. There are therefore no baseline service level performance statements provided for these areas in this report.

The team also reviewed the available 2015 response time data and confirmed it is consistent with the provided information for 2012-2014.

Hazmat Calls - 90th Percentile Times - Baseline Performance			2012-2014	2014	2013	2012
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro/Urban	3:17 184 calls	3:26 95 calls	3:12 91 calls	4:34*
		Suburban	2:34 32 calls	4:34 12 calls	2:29 20 calls	4:34*
		Rural	** 6 calls	** 3 calls	** 1 call	4:34*
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro/Urban	2:00 234 calls	1:49 90 calls	2:04 85 calls	2:40 60 calls
		Suburban	2:12 48 calls	2:00 12 calls	2:20 21 calls	1:56 16 calls
		Rural	** 6 calls	** 3 calls	** 1 call	** 2 calls
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Metro/Urban	5:13 249 calls	4:58 87 calls	4:46 85 calls	5:47 78 calls
		Suburban	6:36 52 calls	9:17 13 calls	6:06 20 calls	5:18 19 calls
		Rural	** 6 calls	** 3 calls	** 1 call	** 2 calls
<b>Low Risk</b>	Total Response Time 1st Unit On Scene <b>Distribution</b>	Metro/Urban	6:59 9 calls	** 4 calls	** 4 calls	** 1 call
		Suburban	** 1 call	** 0 calls	** 1 call	** 0 Calls

\*2012 Alarm Handling: 9-1-1 Phone Pickup time was not entered in the fire department's RMS. Overall performance (not by incident type) from the dispatch center was reported as 4:34 or less, 90% of the time.

\*\*Less than 10 calls for analysis.

### **Criterion 5G – Emergency Medical Services (EMS)**

The Charleston Fire Department responds to emergency medical services (EMS) situations with fire apparatus equipped at the basic life support level. Charleston County EMS and Berkeley County EMS are the agencies, operated by their respective counties that provide advanced life support level service and transport for EMS calls in the city of Charleston. The department deploys one engine staffed with a minimum of four personnel to medical events.

Each fire suppression company is staffed with, at a minimum, one firefighter trained to the emergency medical technician (EMT) level of EMT-Basic (EMT-B). All fire suppression staff hired after January 2009 are required to maintain an EMT-Basic level certification. All other fire suppression staff are required to maintain a first responder level certification. Each front-line apparatus is equipped with adequate equipment, including automatic external defibrillators (AED), to respond to EMS incidents.

The agency operates an EMS program that provides the community with a designated level of out-of-hospital emergency medical care. The Charleston Fire Department has procedures, guidelines, and standing protocols in place that direct EMS response activities to the basic life support level. The fire department works closely with the Charleston and Berkeley County EMS Agencies. It is recommended that the department and its medical director work to align department protocols with those of the county EMS agencies to ensure improved continuity of care.

A patient care record is created and maintained for each patient encountered by the fire department. Each record receives an independent review by either the EMS program manager or medical director to ensure the report contains the appropriate information. Reasonable efforts are made to protect reports from public access, and records are maintained in accordance with local and state records retention requirements.

The Charleston Fire Department has a standard operating procedure in place for the Health Insurance Portability and Accountability Act (HIPPA) that meets federal guidelines. All personnel have been properly trained in HIPPA regulations and procedures.

Several times during the year, the department conducts an appraisal to determine the effectiveness of the EMS program using retrospective patient care report reviews and response time monitoring. The fire chief, command staff, and program managers review the results of the appraisal.

The department's response and deployment standards are based upon the metro, urban, suburban, and rural population densities, and the medical demands of the community. Fifteen fire stations provide citywide coverage; department staffing is based upon station location, incident type, and frequency. The targeted service level objectives in the standards of cover benchmark statements are based on industry standards and best practices, as identified earlier in this report in Category II – Assessment and Planning. The objectives have been approved and adopted by fire department management. The department's benchmark service level objectives are as follows:

For 90 percent of all emergency medical calls, the total response time for the arrival of the first-due unit, staffed with a minimum four firefighters and officers, at least one being an EMT, shall be: 7 minutes and 30 seconds in metro and urban areas; 8 minutes and 30 seconds in suburban areas; and 10 minutes and 30 seconds in rural areas. The first unit shall be capable of: providing basic life support care with sufficient equipment that will stabilize the situation; provide care and support to the victim and reduce, reverse, or eliminate the conditions that have caused the emergency, while providing for the safety of the responders.

The department relies upon Charleston County Emergency Medical System, a third-party provider, to complete the effective response force (ERF) component of its EMS program. The initial arriving fire department company shall have the capabilities of providing first responder medical aid including AED, until the third-party provider arrives on scene. If the third-party provider unit arrives on scene first, its personnel shall initiate care and the staff from the initial fire department company shall provide support as needed.

The department's baseline statements reflect actual performance during 2012 to 2014. The department relies on the use of automatic aid from neighboring fire departments to provide its effective response force complement of personnel. These resources are immediately available as part of a seamless response system. The department's actual baseline service level performance is as follows:

For 90 percent of all emergency medical calls, the total response time for the arrival of the first-due unit, staffed with a minimum four firefighters and officers, at least one being an EMT, is: 9 minutes and 56 seconds in metro and urban areas; 8 minutes and 22 seconds in suburban areas; and 14 minutes and 26 seconds in rural areas. The first unit is capable of providing basic life support care with sufficient equipment that will stabilize the situation, provide care and support to the victim and reduce, reverse, or eliminate the conditions that have caused the emergency, while providing for the safety of the responders.

The team also reviewed the available 2015 response time data and confirmed it is consistent with the provided information for 2012-2014.

EMS Calls - 90th Percentile Times - Baseline Performance			2012-2014	2014	2013	2012
<b>Alarm Handling</b>	Pick-up to Dispatch	Metro/Urban	3:04 12,743	2:18 6369 calls	3:52 6374 calls	4:34*
		Suburban	2:20 2371 calls	2:08 1168 calls	4:02 1203 calls	4:34*
		Rural	4:22 639 calls	3:49 311 calls	4:22 328 calls	4:34*
<b>Turnout Time</b>	Turnout Time 1st Unit	Metro/Urban	2:01 16,817	1:54 6153 calls	2:08 6315 calls	2:14 4349 calls
		Suburban	2:07 3343 calls	1:56 1152 calls	2:10 1186 calls	2:30 1005 calls
		Rural	2:02 640 calls	1:51 270 calls	2:29 313 calls	2:15 57 calls
<b>Travel Time</b>	Travel Time 1st Unit Distribution	Metro/Urban	5:13	4:56	4:56	5:09
		Suburban	6:00	5:51	5:36	6:17
		Rural	12:31	10:30	10:31	14:00
<b>Total Response Time</b>	Total Response Time Distribution	Metro/Urban	9:56	7:16	8:48	6:09*
		Suburban	8:22	8:04	9:29	7:33*
		Rural	14:26	13:08	14:53	15:57*

\*2012 Alarm Handling: 9-1-1 Phone Pickup time was not entered in the fire department's RMS. Overall performance (not by incident type) from the dispatch center was reported as 4:34 or less, 90% of the time.

**Criterion 5H – Domestic Preparedness Planning and Response**

The city of Charleston emergency operations plan (EOP), Charleston County EOP and the Berkeley County EOP establish policies and procedures used by the city to coordinate county, state, and federal response to disasters impacting the citizens of Charleston. These plans provide a guideline for emergency response and act as a foundation for responders, incident commanders, city staff, and elected officials, and the roles they are required to fulfill during extensive emergency operations. The department has also adopted multiple standard operating procedures used to guide operational personnel participating in emergency operations. The combination of local, county, and state support ensure CFD will be prepared to meet the demands of large-scale disasters.

Through its involvement with the city and two counties, the department operates an all-hazards preparedness program that includes a coordinated multi-agency response plan, designed to protect the

community from terrorist threats or attacks, major disasters, and other large-scale emergencies occurring at or in the immediate area.

The department does not maintain sole responsibility for the domestic preparedness response, but works within the city's EOP and two county EOPs to provide mitigation efforts. The EOPs provide policies and procedures used by the agency to coordinate wide-spread response efforts. These plans describe how the fire department, other city departments, and county resources will mobilize assets and conduct activities to manage preparedness, response, recovery, and mitigation activities. The city emergency manager has recently developed an updated version of the city EOP that is aligned with the county EOP and provides additional clarification regarding response procedures and responsibilities. This plan is awaiting adoption by city officials and will further prepare the agency to provide an appropriate response to large-scale incidents.

The department operates within the framework of the city EOP and two county EOPs to provide response for domestic planning and response activities. In addition, the department has developed standard operating procedures (SOP) to provide additional guidance and direction for large-scale incidents. The department has identified the need to expand the SOPs, which will allow for clarification of roles and responsibilities and provide response expectations for the organization. It is recommended that the agency develop and adopt standard operating procedures that will bridge the gap between the emergency operations plan (EOP) and fire department operations during large-scale emergencies. Following the formal adoption of the city's EOP, the agency should begin the process of expanding operational procedures for domestic preparedness activities.

The department has a robust auto and mutual-aid system, which provides critical response resources to the city. As a result, the CFD considers interoperability to be fundamental for day-to-day and emergency operations. Charleston Fire Department operates on an 800 MHz digital radio system providing consistent interoperability with both auto and mutual-aid partners. The consolidated dispatch center dispatches all county fire department resources, including CFD, using closest unit dispatch protocols, regardless of jurisdiction. The agency's city limits extend beyond the Charleston County borders into Berkeley County. As a result, the department has identified communication challenges with Berkeley County fire departments, which do not operate on the 800 MHz radio system. CFD maintains interoperability with these fire departments through the use of dual-band radios. In 2015, the department purchased five additional dual-band radios and has applied for a grant to fund further expansion of dual-band radios for increased interoperability.

The department has not completed a comprehensive vulnerability study to determine the status of critical infrastructure. It is recommended that the department develop plans and timelines for the completion of a comprehensive vulnerability assessment. This process should be part of the capital projects improvement plan to ensure physical facilities are capable of remaining functional during significant weather and natural disaster events.

### **Criterion 5J – Marine and Shipboard Rescue and Fire Fighting Services**

The Charleston Fire Department operates a marine and shipboard rescue and firefighting service as part of a regional Marine Incident Response Team (MIRT) and the Charleston harbor workgroup. The MIRT has specialized equipment, with trained personnel assigned to provide excellent response capabilities to a variety of water-based incidents. The fire department maintains a modern 40-foot fireboat with 3,000 gallon per minute (gpm) pumping capability, which was purchased with the assistance of a homeland security grant to respond to incidents involving marine situations.

The agency operates an adequate, effective and efficient program directed toward a marine or shipboard fire or incident occurring at or in the immediate area. The department has current standard operating procedures and guidelines in place for marine and shipboard firefighting and rescue activities. Standard operating guidelines exist in both hard and electronic form and are kept up-to-date. Annual reviews and updates of the procedures and guidelines occur.

The department reviews response data to determine the frequency of responses for marine shipboard firefighting and rescue incidents. The program has had a limited existence, although plans are in place to annually review performance measures related to the program.

The marine and shipboard firefighting and rescue program is relatively new for the department. In light of that, the department is just gaining data on the frequency of responses for the unit and the number of hours the cross-staffed engine is out of service due to the crew being assigned to the boat. It is recommended that the department regularly review the practice of placing an engine out of service while the crew is performing boat operations and how this impacts the meeting of performance measures.

The Charleston Fire Department operates an adequate marine and shipboard rescue and firefighting services as part of a regional Marine Incident Response Team (MIRT) and the Harbor Workgroup. The Charleston Fire Department has emergency deployment objectives for two types of marine and shipboard emergency incidents. Type I incidents are accessible from shore and type II incidents are not accessible from shore.

For 90 percent of all type II marine responses, the Charleston Fire Department will respond a fireboat, with a minimum four boat crew members, to a boat launch site in 9 minutes and 39 seconds. Charleston Fire Department personnel will stop the escalation of a fire where found, conduct a search and rescue for any trapped victims, provide medical treatment, and minimize property damage.

It was verified and validated by the peer assessment team that the Charleston Fire Department did not have sufficient marine and shipboard rescue and fire fighting incidents, which required a first-due response or an effective response force to be assembled for 2012-2014, to provide reliable data. There are therefore no baseline service level performance statements provided for the first-due unit or the effective response force in this report.

## **Category VI — Physical Resources**

The Charleston Fire Department (CFD) operates out of 15 fire stations with 16 engines, 2 ladders, 2 towers, 4 battalion chiefs, a fireboat, a hazardous materials unit, and an air unit. Stations and apparatus have been strategically located to provide an effective and efficient response for emergencies. The department has developed plans to provide for the continuous maintenance and replacement of stations, apparatus, and equipment. The department plans to enhance these plans in the future and work towards continuous improvement in regards to physical resources. CFD also maintains an apparatus maintenance facility with trained staff dedicated to supporting the fleet of response and support vehicles. In addition, a training facility is equipped to meet the current needs of the department with future plans for relocation and further expansion as funding allows. The department understands the importance of maintaining physical resources to ensure responders are prepared to serve the citizens of Charleston with equipment and facilities that meet or exceed industry standards.

Development and use of physical resources is consistent with the agency's established plans. A systematic and planned approach to the future development of facilities is in place. The department utilizes multiple parties when planning and designing physical facilities including the fire chief, deputy fire chief, administrative services manager, city parks director, and director of finance. In addition, fire department leadership also seeks input from line personnel regarding station design and specific needs. Consideration is given to emergency response, storage, training space, living/sleeping quarters, and apparatus placement as part of the planning process. Prior to implementation, plans and funding for physical facilities must be approved by the mayor and city council. This process has proven effective for the agency and will continue to be used in the future.

Fixed facility resources are designed, maintained, managed, and adequate to meet the agency's goals and objectives. The department's standards of cover document identifies the baseline service level objectives and demonstrates that the physical facilities are properly distributed. The agency plans to continue analyzing station distribution through the use of a station deployment study conducted by the Insurance Services Office (ISO), expected to be completed in October 2015. This study will help ensure that future stations are placed in areas where demand and risk require readily accessible emergency response. In addition, the department has developed a fire station capital projects plan to address both current and future needs for the agency's physical facilities. Equally as important, the agency will continue to monitor response data to ensure that concentration and distribution of resources meet the demand for services.

The department maintains a wide variety of station designs, construction types, age of structures, and unique historical facilities, which require a substantial degree of care and maintenance. Several of the department's stations were built in the late 1800's and present a unique set of challenges in regards to federal, state, and local code requirements. All stations were built in accordance to federal, state, and local codes at the time of construction. Five of the sixteen stations meet American with Disabilities Act compliance, while the remaining stations constructed between 1887–1990 will require renovations to meet codes required today. In the past, station renovation and maintenance was not part of the budget and planning process. As a result, many stations are in need of substantial renovations and repairs. The department recognizes that facility renovations and replacement will be necessary in the near future to meet the growing demands of the department. In December 2014, the city council passed a 1.5 percent millage tax increase specifically designated for public safety infrastructure. This, coupled with the department's capital improvement projects plan, will provide a roadmap for upcoming renovation and station development plans. It is recommended that the agency continue to seek funding and plan for facility replacement and renovation projects that will meet the federal, state, and local, codes and provide a safe working environment for responders.

Not all department facilities are clean and well maintained. In recent years, the department has made progress in this area; however, work still needs to be completed. It is recommended the department review its current practices related to general maintenance and cleaning of its facilities. There is already evidence that the lack of routine maintenance is beginning to create potential problems with significant capital cost implications in the future.

Apparatus resources are designed and purchased to be adequate to meet the agency's goals and objectives. The department's standards of cover document identifies the baseline service level objectives and demonstrates that the apparatus are properly distributed. Baseline response is within the parameters for metro, urban, suburban, and rural population densities. The department uses response time data in conjunction with a community risk analysis to determine apparatus placement. The agency has identified areas which have service gaps, and is in the process of providing resources

to this area to improve response. This includes the purchase of a water tender and brush truck to address water supply and response times in the area north of Station 20. Furthermore, the department plans to complete an Insurance Services Organization (ISO) distribution study in October 2015. This study will help ensure that the agency continues to place apparatus in areas where demand and risk require readily accessible emergency response. Equally as important, the department will continue to monitor response data to ensure that concentration and distribution of resources meet the demand for services.

The inspection, testing, preventive maintenance, replacement schedule, and emergency repair of all apparatus is well established and meets the emergency apparatus service and reliability needs. The department has developed and maintained an efficient and effective apparatus maintenance program. A battalion chief solely responsible for ensuring repairs provides oversight and preventative maintenance is completed according to manufacture recommendations. The agency considers safety and functionality paramount when prioritizing repairs. The department has developed multiple standard operating procedures to guide personnel in appropriate actions for emergency, routine, and preventative repairs notification. The agency maintains a well-stocked parts supply allowing for timely repairs of apparatus. Qualified vendors outside of the agency complete repairs that extend beyond the capabilities of the department's mechanics and staff. The department plans to follow manufacture recommendations as well as federal, state and local regulations.

The department has developed standard operating procedures (SOP) for the apparatus maintenance program. The SOPs outline the responsibilities of the driver/operator and ensure that each apparatus is operationally ready at the start of the shift. The SOPs also identify the procedures required for reporting routine and emergency repairs. Guidance is provided for daily vehicle maintenance, monthly vehicle inspection, annual vehicle inspection, and uniform completion of preventative maintenance. Personnel have access to the SOPs via a network drive.

The logistics officer manages the maintenance division with additional oversight provided by a deputy chief. The logistics officer oversees 3 full-time and 1 part-time mechanics to fulfill the mission of the maintenance division. Prior to January 2015, the agency experienced extended repair times for apparatus and deficient communication procedures regarding timelines for repair completion. In January, the department made a change in the supervision of the maintenance program. As a result, the organization, communication, and efficiency of the program have improved substantially. It is recommended that the department adopt standard performance expectations for the apparatus and equipment maintenance program to ensure that continuous improvement is maintained. This recommendation will allow the agency to expect that the program continues to develop professionally and provides a safeguard against program deterioration in the future.

Equipment resources are adequate and designed and maintained to meet the agency's goals and objectives. The department ensures that personnel and outside vendors are qualified to perform maintenance, testing, and inspections of equipment. The agency provides in-house service for self-contained breathing apparatus (SCBA) and personal protective equipment (PPE) through the use of ten certified Scott SCBA repair technicians and eleven certified PPE inspectors. Repairs that extend beyond the scope of in-house repairs are sent to a qualified vendor for completion. Qualified vendors complete pump testing and ladder testing annually. The department maintains records of completed tests both electronically and with hard copies. The agency is working to consolidate records electronically and is currently in the process of moving to a system that will enable the department to track repairs and maintenance more efficiently.

The department currently purchases apparatus fully equipped with ISO equipment requirements. This process has enabled the agency to rapidly move forward with equipment improvements. The department does not currently have a solidified plan for maintaining and replacing equipment outside of the apparatus replacement plan. As a result, equipment purchased with apparatus several years ago is nearing its end of life and must soon be replaced. The agency understands that this is a potential problem and is working to inventory equipment and identify areas that need to be addressed. As part of this process, the department has developed a line item within the budget for tools and equipment. It is recommended that the agency develop and adopt a formal plan to inventory and replace equipment in a systematic and consistent manner. The adoption of the recommendation will better prepare the organization for on-going equipment needs and improvements.

Safety equipment is adequate and designed to meet the agency goals and objectives. The department has a comprehensive safety program, which provides personnel with high quality equipment that meets or exceeds industry standards. The agency has created a system to ensure that personnel receive and maintain safety equipment necessary to provide the level of service the community expects. The agency follows National Fire Protection Association standards for the replacement, inspection, care and maintenance of personal protective equipment. The agency plans to continue monitoring the effectiveness of the safety equipment provided to personnel. In addition, the department plans to remain engaged with the industries technology improvements to ensure responders remain prepared to complete their duties.

### **Category VII — Human Resources**

Human resources (HR) functions for the Charleston Fire Department are provided through the city of Charleston human resources department. The department services include compensation, recruitment, benefits, employee training and development, employee relations and wellness. The department consists of fifteen personnel and is overseen by a director who functions as the Charleston Fire Department human resources manager. Since 2007, the department has grown in size from approximately 256 personnel to 338 today.

The Charleston Fire Department's administration includes a fire chief, two deputy chiefs, three assistant chiefs, four battalion chiefs, an administrative services manager, two full-time and one part-time administrative specialist, an administrative assistant (HR), and a finance coordinator. The fire department has 16 administrative positions that support a total of 338 personnel.

Charleston Fire Department operates a three-shift, 24-48 suppression staffing schedule. There are 100 suppression positions per shift for a total of 300 suppression personnel. Each shift is staffed by: 4 Battalion Chiefs, 20 Captains, 21 Engineers, 17 Assistant Engineers, and 38 Firefighters.

General human resources administration practices are in place and are consistent with local, state, and federal statutory and regulatory requirements. The city's human resources director is appointed by the mayor and designated as the one person responsible for all human resource activities in the various city departments.

Systems are established to attract, select, retain, and promote qualified personnel in accordance with applicable local, state, and federal statutory requirements. The city of Charleston is an equal opportunity employer. Firefighter testing is administered by the city of Charleston human resources department and utilizes a written test, firefighter skills physical agility test, and interview to identify candidates. Promotional processes consist of a written test, appropriate practical exercises, and an

interview. The human resources department and city attorneys ensure compliance with local, state, and federal recruitment and hiring requirements.

The Charleston Fire Department utilizes a 12-month probationary period to evaluate new and promoted personnel. A formal performance evaluation based on demonstrated knowledge, skills, and abilities is conducted for each new firefighter or promoted person after 12 months of employment or 12 months in the promoted position. Based on the firefighter's evaluation, the probationary period may be removed or extended. The probationary status for new-hire firefighters lasts 12 months from their date of hire and ends with a probationary evaluation before they are cleared to regular firefighter status.

Personnel policies and procedures are in place, documented, and guiding both administrative and personnel behavior. Charleston Fire Department policies, procedures and rules are current, written and communicated to all personnel. Policies, procedures and rules are available at every station via department-shared drives. Hard copies are printed and maintained in the department administrative offices. Supervisors are required to review new and updated documents and communicate these to subordinates. Each employee is responsible for understanding the department policies. The city of Charleston employee orientation provides training on city personnel policies including sexual harassment, drug and alcohol use, safety, internet use, and tardiness. All new city employees attend an orientation.

The city of Charleston's Personnel Policy HR4.4, *Anti-Harassment/Anti-Discrimination*, prohibits sexual, racial, disability, or other forms of harassment, bias, and unlawful discrimination of employees, and describes the related reporting procedures. The policy is communicated formally to employees during human resources mandatory employee orientation and during a mandatory training conducted annually for all employees.

Human resources development and utilization is consistent with the agency's established mission, goals, and objectives. The city of Charleston has a position classification system in place that is used by the Charleston Fire Department. With assistance from the city of Charleston human resources department, the fire department develops job descriptions based on the functions and duties performed at each level and position of the organization. Job descriptions are reviewed and revised when necessary prior to recruitment.

A system and practices for providing employee/member compensation are in place. Rates of pay and compensation are published by the city of Charleston human resources department and are available to all employees on a request basis. The Charleston Fire Department administrative manager maintains a copy of the job classification list with pay scales in the office for employees to view upon request. The city of Charleston maintains a pay matrix for all positions within the city based on job classification. Non-uniformed personnel pay rates are reflected in the city's pay matrix.

Occupational health and safety and risk management programs are established and designed to protect the organization and personnel from unnecessary injuries or losses from accidents or liability. The Charleston Fire Department has established an occupational health and safety training program that is documented in the agency occupational health and safety plan (OHSP). The department has a designated health and safety officer (HSO) assigned that reports directly to the deputy chief of operations. The HSO is responsible for developing and managing the CFD's OHSP including the risk management plan. This responsibility involves implementing the plan, monitoring the effectiveness of the occupational health and safety plan, recommending modifications to the plan and

communicating the plan to fire department members. The HSO is the chairperson of the department's health and safety committee. The CFD is currently rewriting the OHSP to bring it current with industry best practices and comply with all regulations. The occupational health and safety program is reviewed annually to maintain compliance with OSHA 29 CFR Part 1910, *Hazardous Waste Operations and Emergency Response*.

The HSO is notified anytime the CFD is working a major emergency incident. Upon arrival, the HSO assumes the role of incident safety officer (ISO). In the HSO's absence, the second arriving chief officer is assigned the role of ISO. The incident commander (IC) is solely responsible for scene safety until the arrival of a second chief officer or the HSO. The ISO assists the IC by monitoring all aspects of incident safety. The ISO has emergency authority to stop unsafe acts and direct member actions to prevent possible injuries posed by an imminently dangerous situation. The ISO notifies the IC of any such action taken.

The agency has a wellness/fitness program for recruit and incumbent personnel and provisions for non-compliance by employees/members are written and communicated. The city of Charleston requires all new fire department employees to have a physical which complies with *National Fire Protection Association (NFPA) 1582, Standard on Comprehensive Occupational Medical Program for Fire Departments*, conducted by the Medical University of South Carolina prior to being approved for duty. Annual medical evaluations are conducted for all suppression personnel. Charleston Fire Department (CFD) employees that have been injured must receive clearance from the agency authorized medical doctor prior to being approved to return to duty. The testing process for entry level firefighters includes a certified physical ability test which was instituted in 2013.

The Charleston Fire Department (CFD) health and safety plan, and standard operating procedure 300.06, *Physical Fitness Training*, identify and describe the department's wellness/fitness programs. The standard operating procedures establish a standardized fitness/wellness program for all employees of the fire department and provide a basis to assist fire department members with maintaining or improving their fitness for duty and overall wellness.

The physical training standard operating procedure and the health and safety plan do not adequately address the current needs of the wellness/fitness program for the CFD or coincide with industry best practices. The CFD plans to rewrite the two standard operating procedures in order to manage the department's fitness/wellness program and provide a more comprehensive and up to date program which focuses more on fitness and wellness of firefighters. Standard operating procedures will also be written for the peer fitness program.

### **Category VIII — Training and Competency**

The Charleston Fire Department has a comprehensive training and education program that meets the needs of the department. Six full-time instructors are assigned to the training division. Ten part-time instructors also assist with the training functions.

A training and education program is established to support the agency's needs. Program areas and required training needs are identified based upon federal, state, and local laws, as well as administrative requirements. The process ensures the training program delivers: programs that the department is legally mandated to offer; programs that meet state requirements for maintenance of existing certifications held by department personnel; and training needed to acquaint personnel with new equipment acquisitions or technologies.

Training and education programs are provided to support the agency's needs. The training program is well organized and meets the needs of the department and its members; it also meets the state certification requirements. All members of the department meet the Firefighter Level II requirements of the *National Fire Protection Association (NFPA) 1001: Standard for Fire Fighter Professional Qualifications*. Training programs for current employees are also ongoing with mandatory re-certification of various disciplines, specialized training, and fire suppression training concentrating on the needs of the department. Mandatory training and certification levels for personnel in all divisions are monitored and updates are provided to identify the training needs for department personnel.

The department utilizes performance-based evaluations to ensure the members and companies are competent and confident to perform the job in individual, company, crew, and multi-company situations. The department has expended significant time and effort on development of task books for the rank of firefighter and engineer which has been successful in allowing for performance-based evaluations of personnel. The department plans to complete task books for all positions by January 2016.

Training and education resources, printed and non-printed library materials, media equipment, facilities, and staff are available in sufficient quantity, relevancy, diversity, and are current. The department has a training center with a training tower and multiple classrooms. Resources include training grounds sufficient for all varieties of firefighter related training. Three engines, an aerial, and a variety of staff vehicles are designated for training purposes. Nationally recognized training materials are being used. The department regularly reviews its training materials to ensure they reflect current practices.

## **Category IX — Essential Resources**

### **Criterion 9A – Water Supply**

The Charleston Fire Department (CFD) uses water systems maintained by third party agencies that provide adequate water supply and meet fire flow requirements for the majority of its jurisdiction. In areas found to have deficiencies, the CFD, along with its automatic aid partners, relies on rural water supply tactics in order to ensure needed fire flow. The CFD has acquired water tender apparatus to enhance rural water supply capabilities in areas without a water supply and has made operational plans to supplement deficient areas on the peninsula with the use of the department fireboat.

The department relies on the Charleston Water System (CWS) and Saint John's Water System (SJWS) to ensure the provision of a well maintained, reliable, and adequate water system. Portions of these service areas lack adequate water supply for firefighting operations due to lack of capital improvements to the infrastructure and degradation of the supply piping.

The water supply resources are reliable and capable of distributing adequate volumes of water and pressures to all areas of agency responsibility. It is recommended that the department develop a plan to identify areas within the city where fire hydrants are unable to deliver the required fire flows. It is further recommended that the department develop a plan to provide fire suppression crews information in the field on available water supply for all fire hydrants within the service delivery area.

The Charleston Fire Department establishes minimum fire flow requirements and total water supply needed through the agency pre-plan program. Company officers are required by department policy to

complete three pre-plans per year and also review six plans per year. Officers utilize worksheets to gather building construction information to calculate and then input into the department records management system (RMS). During the pre-plan process, hydrant location, hydrant distance from the building, and hydrant flow are identified. Fire flow is calculated using International Fire Code®, 2012 edition, and Appendix B, fire flow reference chart. Required fire flow criteria were included in the risk assessment methodology in the standards of cover. The water supply information is only available within the RMS and is currently not available to fire crews in the field. This lack of data in the scope of incident response limits the ability to connect to a known reliable water source and could lead to extended hose lays in order to properly support incident mitigation.

The Charleston Fire Department considers its water supply to be adequate and reliable for the majority of its service area based on the 2015 Insurance Services Office (ISO) review of water supply for its public protection classification rating. The peninsula area of the service area has portions that are either deficient or have unknown flow and pressure characteristics due to age of the infrastructure or lack of reliable flow test data. The rural Cainhoy Peninsula area does not have a water supply system, however the department has plans to locate one of the two new water tenders in this area.

### **Criterion 9B – Communication Systems**

The Charleston County Consolidated 911 Dispatch Center (CDC) was established in January 2009. The Charleston Fire Department (CFD) joined the consolidated dispatching services in June 2010. The CDC provides reliable dispatching services and is able to meet the demands of major operations. The CDC moved into a new, state-of-the-art facility in March 2013; nine call-taking consoles and 27 dispatching consoles are staffed according to workload, which changes throughout the day. All fire stations are equipped with a base radio and all apparatus are equipped with a mobile radio. A portable radio is assigned to each apparatus riding position to ensure communication for all fire personnel in the field. Base, mobile, and portable radios all have the same channel programming for efficiency. For radio communications, there are a total of 16 public safety radio towers in Charleston County; most towers have 24 usable radio channels each. The CDC uses ProQ & A® Fire Response Codes and Charleston County Emergency Management Department (CCEMD) Red Book standard operating guides (SOG) to direct all types of Charleston Fire Department dispatching.

The public and the agency have an adequate, effective, and efficient emergency communications system. The system is reliable and able to meet the demands of major operations, including command and control within fire/rescue services during emergency operations, and meets the needs of other public safety agencies having the need for distribution of information.

There are five mobile command centers in the Charleston metropolitan area that are available upon request. All available mobile command centers are able to send and receive communications to all local, regional, and state agencies with a combination of portable and mobile communications systems. Spare radios are available from the CDC with and the Charleston County / Low Country Weapons of Mass Destruction (WMD) Regional Response Team, and the Charleston County Radio Communications maintains a cache of approximately 100 radios for emergency use.

The public safety radio coverage in Charleston County is very good. With sixteen, 800 MHz P25 radio towers, the system is designed to penetrate most buildings in the County, as well as provide on street coverage virtually everywhere in the county. There are however some larger structures the radio system will have difficulty penetrating and require the installation of an in-building amplifier

(BDA) in these locations. Certain structures require the use of a direct channel for communications between command and interior crews.

The CDC uses standardized protocols to process all fire incidents based on the answers to key questions, and then assigns the correct response code to the incident. Based on this response code, CFD has identified the appropriate response plan for each code and suffix. Furthermore, the CDC has in place standard operating procedures for all aspects of dispatching, which have all been approved by the Consolidated Dispatch Board. The CCEMD Red Book is used to assist telecommunicators with protocols for situations that are not experienced in daily operations

### **Criterion 9C – Administrative Support Services and Office Systems**

Charleston Fire Department (CFD) administrative support services provide effective and efficient services to fire department staff and citizens. In FY 2014, the administrative manager position was created to replace the deputy chief of administration's position due to retirement. The CFD's administrative functions are managed and conducted with the available staff, in addition to suppression staff tasked with various administrative support functions (i.e. – accreditation, mobile data terminal maintenance, incident report quality control, incident record management system, and personnel on light duty). General office systems are in place with adequate management. The 15 fire stations including fire headquarters co-located with Fire Station 9 are appropriately equipped to manage administrative tasks. Technological resources and various information management systems are appropriate to support the fire department's mission.

The CFD headquarters provides a public reception area, staffed by the department secretary during normal business hours. Current organizational documents, forms and manuals are maintained in hard copy and in electronic format. The public information officer/community educator provides a point of contact for fire department related public information.

Administrative support services and general office systems are in place with adequate staff to efficiently and effectively conduct and manage the agency's administrative functions, such as organizational planning and assessment, resource coordination, data analysis/research, records keeping, reporting, business communications, public interaction, and purchasing.

The CFD administrative division is made up of personnel necessary for administrative oversight of the department; including the implementation of written directives, accreditation, human resource functions, budget and purchasing and other administrative duties as assigned. The administrative division is overseen by the fire chief and is managed by an administrative services manager. The administrative services manager supervises the finance coordinator and administrative specialist who manage activity and personnel scheduling, payroll, purchasing, human resource functions and reception. The administrative services manager manages the fire department budget. The professional development and technical services division has an administrative specialist who oversees all clerical work within logistics. The fire marshals division has one full-time administrative assistant and one part-time administrative assistant who oversee all clerical work within the division. The CFD's administrative functions are managed and conducted with the available staff, in addition to suppression staff tasked with various administrative support functions.

While the current staffing of administrative services has sufficed in carrying out the department's mission, there is a need to increase administrative staffing levels. Currently administrative positions are fulfilling multiple roles, which has led to increased workloads. There is also a need for additional

administrative support within the training division. With increase of personnel and future stations, additional administrative support will be needed. In the FY2014 budget, the fire chief requested and approved the following administrative staff: converted one deputy chief sworn position to a civilian position, in turn creating one administrative services manager position. In addition, a temporary administrative specialist position within the professional development and technical services division was converted to a full time position. No new positions or upgrades other than what was requested were funded. As part of the 2016-2020 strategic plan, the administrative services manager has created recommendations to increase the administrative support staffing by 6 additional positions within the next 3-5 years.

### **Category X — External Systems Relationships**

The Charleston Fire Department (CFD) has developed robust and effective external relationships with multiple automatic and mutual aid partners. Currently, CFD has four automatic-aid agreements and one mutual-aid agreement, all of which support the agency's response goals. Furthermore, the department has recently achieved a Federal Emergency Management Agency (FEMA) Type II hazardous materials response team and a FEMA Type II urban search and rescue team, providing a deployment resource for the region and state. These relationships are supported by a consolidated county dispatch center capable of providing communications for surrounding departments, therefore, creating a seamless response for partnering agencies. CFD and auto-aid partners have adopted a closest unit dispatch protocol which operates without jurisdictional boundaries. The benefits for citizens include a rapid emergency response which ensures customer service is the top priority for both Charleston and the surrounding communities. This mode of operation represents a tremendous change for the region, and has required the vision and dedication of city officials and department leadership. The department plans to continue its role of leadership in the region and work with external agencies to develop relationships that support the agency's goals and objectives.

The agency's operations and planning efforts include relationships with external agencies and operational systems that affect or may influence the agency's mission, operations, or cost effectiveness. The department has developed extensive external relationships which provide a tremendous benefit to both the city of Charleston and the surrounding communities. Previously, it was not unusual for outside departments to drive past fully staffed CFD stations when responding to calls. During the past several years the agency, county, and surrounding departments have worked together to consolidate dispatch, improve interoperability, and enact both auto and mutual-aid agreements. As a result, there has been a major shift in efficiency and cooperation among the departments in the Charleston and Berkley County area. The agency fully understands the benefits of engaging in external relationships and plans to continue seeking opportunities to better serve the community by working with their surrounding partners.

The department does not have a formal conflict resolution process written into the automatic and mutual aid agreements. The department maintains an active role in participation and communication with surrounding agencies and has thus far managed to mitigate any conflicts through discussion and compromise. It is recommended that the department pursue the development of a conflict resolution process, with the assistance of the city's legal department, to ensure the agency has an effective methodology for resolving potential conflict in the future.

The fire service agency has well-developed and functioning external agency agreements. The system is synergistic and is taking advantage of all operational and cost effective benefits that may be

derived from external agency agreements. The department maintains multiple automatic and mutual aid agreements with surrounding communities. In addition, the agency is part of the state-wide South Carolina Firefighter Mobilization Plan which can be used to consolidate resources for large-scale incidents. The auto-aid agreement has been revised on an “as-needed” basis. The auto-aid partners have developed standard operating procedures for all participants to implement during training and operations. The department does not have a formal review process in place for reviewing and modifying external agency agreements. It is recommended that the department establish a formal review timeline to determine the operational effectiveness of external agency agreements and they continue to support organizational objectives.

# ORGANIZATION CHART

