



**Commission on  
Fire Accreditation  
International**

# **Accreditation Report**

**Columbia Fire Department  
201 Orr Street  
Columbia, Missouri  
United States of America**

**This report was prepared on February 6, 2019  
by the  
Commission on Fire Accreditation International**

**This report represents the findings  
of the peer assessment team that visited the  
Columbia Fire Department  
on November 11-15, 2018**

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# EXECUTIVE REVIEW

## PREFACE

The Columbia Fire Department recently received candidate status. On September 12, 2018, the department asked the Commission on Fire Accreditation International (CFAI) for a site visit to determine if it could be recommended for accreditation. The peer assessment team leader approved the department's documents for site visit on October 10, 2018. The peer assessment team conducted an on-site visit of the Columbia Fire Department on November 11-15, 2018.

In preparation for the onsite visit, each team member was provided access and reviewed the self-assessment manual, community risk assessment-standards of cover (CRA-SOC), and strategic plan posted by the Columbia Fire Department on the Center for Public Safety Excellence (CPSE) SharePoint site. 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 Columbia Fire Department based upon the ninth 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 Columbia Fire Department demonstrated that its self-study accreditation manual CRA-SOC, and strategic plan met all core competencies and criteria. The peer assessment team recommends accredited agency status for the Columbia 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, capital improvement plan, and balanced scorecard report. The CRA-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 CRA-SOC appropriately identifies that the city has an urban 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 CRA-SOC, are in line with community expectations and do not constitute a gross deviation. It is clear the department is committed to taking steps to meet the expectations of the community.

The agency has determined that adding two fire station locations in developing fringe areas of their jurisdiction would appropriately address travel time as a community concern. Financial resources have been approved and allocated beginning in 2019 to locate and construct two fire stations in the identified areas.

During the site visit the peer assessment team conducted interviews, took part in discussions and actively observed agency operations. Through this process the team identified opportunities for improvement detailed in the recommendations, observations, and performance sections of the report. The best example of these opportunities for improvement is the formal adoption of processes to review and evaluate agency projects and programs to drive the agency's strategic and operational plans with a focus on continuous improvement.

The peer assessment team observed a strong commitment by the agency to the CFAI accreditation process. In fact, the agency has attempted to complete the process on three previous occasions stopping short of the peer review and site visit component. The accreditation manager is a fixed position at the deputy chief position with commitment of the department to support the process throughout the organization.

The peer assessment team had meetings with the city manager, the president of the firefighters' association, agency representatives tasked with directing various operational aspects of service delivery, and other city department directors providing supporting functions to fire and emergency services. These individuals collectively support and have a vested interest in the accreditation process through their involvement and engagement throughout this journey. There exists clear and strong commitment to continuation of the process for the future growth and development of the agency, its personnel, and the community they serve.

The Columbia Fire Department has several innovative practices. The following are some of them:

- In order to gain department-wide engagement and awareness of the continuous development of policies and procedures, the agency has produced a Comprehensive Methodology Guidebook to ensure continuity through the process.
- The agency working in cooperation with the University of Missouri provides a fire department full-time employee (FTE), working out of the fire marshal's office. This employee spends half of their time as a fire prevention specialist for university facilities and projects.
- One member of the command staff is currently the Firefighter Cancer Support Network (FCSN) State Director for Missouri. His leadership in the health and safety committee and role in the FCSN promotes a strong presence for health and wellness initiatives within the fire department.
- The agency requires that all officers obtain a Fireground Safety Officer certification.
- The agency director of the hazardous materials response team is one of six certified statewide instructors for hazardous materials teams.

## **Composition**

The City of Columbia was established in 1821 with a population of approximately 200 people. The current population of the city is 118,966 making it the fourth largest city in Missouri. Columbia is located at the crossroads of U.S. Highway 63 and Interstate Highway 70 and is approximately 100 miles east of Kansas City; and 100 miles west of St. Louis.

The Columbia Fire Department began when a group of community volunteers organized the Columbia Fire Company in 1875. In 1901 the city organized a full-time professional fire department following a series of catastrophic fires; one of which started a discussion about relocating the University of Missouri. The Columbia Fire Department was officially chartered by city ordinance in 1964.

Columbia is the county seat of Boone County and the home of the University of Missouri. In addition to the university Columbia is home to Stephens College and Columbia College making it a regional hub for higher education. The University of Missouri operates one of the largest research nuclear reactors in the country. University of Missouri Hospital and Boone Hospital Center are located within the city making it a regional hub for healthcare and medicine.

The department responded to a total of 11,981 emergencies in 2017 including: 442 fire calls (3.7 percent); 7,725 emergency medical service (EMS) calls (64.5 percent); and 3,814 miscellaneous calls (31.8 percent).

In 2017, the Insurance Services Office (ISO) visited the city to rate its public protection classification. The outcome of the visit was maintenance of the public protection classification at Class 2.

## **Government**

Council-Manager form of government  
Mayor and 6 City Council Members  
City Manager  
Fire Chief

## **Fire Department**

9 fire stations  
141 uniformed and 4 civilian personnel  
3 shift system

### Staffed Resources

2 engine companies  
7 quint companies  
2 ladder companies  
1 heavy-rescue unit  
2 command staff vehicles

### Cross-staffed Resources

1 hazardous materials unit  
1 foam “snorkel” unit  
1 air truck  
1 technical rescue unit  
1 CAFS brush truck  
1 rehabilitation unit  
1 water rescue trailer

### Non-staffed Units

1 utility truck  
Multiple ready reserve apparatus

Daily minimum staffing (all stations): 37

## CONCLUSIONS

The self-assessment manual produced by the Example 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 Columbia Fire Department demonstrated that all core competencies were met and received a credible rating.
- The Columbia Fire Department demonstrated that all applicable criteria were met and received a credible rating.
- The peer assessment team recommends accredited agency status for the Columbia 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 staff officers 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 on-site assessment visit and the evaluation of the criteria and core competencies.

### **Category V – Programs**

#### **Criterion 5A – Community Risk Reduction Program**

Core Competency

5A.5 The agency conducts a formal and documented appraisal, at least annually, to determine the impacts of the community risk reduction program and its efforts in risk reduction based on the community risk assessment, standard of cover, and measures performance against adopted loss reduction goals.

It is recommended that the department conduct an annual formal appraisal report of the community risk reduction program. This recommendation also applies to the following core competencies: 5B.3 (Public Education Program), 5C.5 (Fire Investigation, Origin, and Cause Program), 5F.7 (Emergency Medical Services), 5G.3 (Technical Rescue).

#### **Criterion 5E: Fire Suppression**

Criterion Statement

5E.3 The agency operates an adequate, effective, efficient, and safe fire suppression program directed toward controlling and/or extinguishing fires to protect people from injury or death and reduce property loss. If identified risks are outside the scope of the agency's capabilities, Category X performance indicators should address the agency's ability to receive aid from mutual aid partners in those areas. The agency should conduct a thorough risk-analysis as part of activities in Category II to determine the need for specific fire suppression programs.

It is recommended that the department enhance its fire suppression program by entering into formal/written automatic aid agreements with its adjoining communities.

### **Category VIII – Training and Competency**

#### **Criterion 8C: Training and Education Resources**

Core Competencies

8C.2 The agency has instructional personnel with teaching qualifications and expertise to meet its needs.

It is recommended that the department assess the need to increase the current number of state-certified instructors to meet the growing demands of the agency.

8C.8 Training materials are evaluated at least annually, to reflect current practices and meet the needs of the agency.

It is recommended that the department administration establish more frequent intervals for the review of training materials to ensure their currency.

## **Category X: External Systems Relationships**

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

Core Competency

10B.1 External agency agreements are reviewed on an annual basis and revised as necessary to meet objectives.

- It is recommended that the agency establish agreements with all external partners.
- It is recommended that the agency amend its Columbia Fire Department Advanced Life Support (ALS) Program agreement to move the agency toward providing ALS service intervention prior to the arrival of hospital-based EMS.

### **Specific Recommendations**

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

## **Category V – Programs**

### **Criterion 5D: Domestic Preparedness, Planning and Response**

Performance Indicator

5D.7 The agency has a documented Continuity of Operations Plan (COOP) that is reviewed and updated at least every 5 years, to ensure essential operations are maintained.

It is recommended that the agency work with its local and regional partner agencies to review and update the COOP.

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

Performance Indicator

5F.8 The agency has developed a plan or has already implemented a cardio pulmonary resuscitation (CPR) and public access defibrillation program for the community.

It is recommended that the agency develop and implement a public CPR and automatic external defibrillator (AED) program for the community.

## **Category VII – Human Resources**

### **Criterion 7G: Wellness/Fitness Programs**

Performance Indicator

7G.5 A formal and documented appraisal is conducted, at least annually, to determine the effectiveness of the wellness/fitness programs and its impact on meeting the agency's goals and objectives.

- It is recommended the department establish a formal and documented appraisal which is conducted at least annually to determine the effectiveness of the wellness/fitness programs and its impact on meeting the agency's goals and objectives.
- It is recommended the department develop a wellness/fitness policy that addresses the wellness/fitness program and the health and safety committee.

## **OBSERVATIONS**

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

The agency is a well-organized, highly respected municipal agency; legally established and under direction of a chief officer, city manager, and mayor-council government model. The agency is structured as a quasi-military organization with established chain-of-command and rank structure to provide direction and guidance in the provision of emergency and safety services to the community

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. In 1875, 48 citizens organized as a volunteer organization, the Columbia Fire Company. In April 1901 the city took control of the fire department in response to catastrophic fire incidents and pressure from the University of Missouri. The Columbia City Council officially chartered the Columbia Fire Department (CFD) in 1964 as a municipal fire department under city code 1964, ordinance number 9.150, in accordance with state statute.

Under advice and direction of supporting city departments the agency complies with local, state, and federal legal requirements. The combined efforts of the city's civic relations officer, human resources department and the city attorney serve to provide the agency with subject matter expertise to meet compliance requirements.

The organizational structure aligns with or supports the agency's mission, purposes, goals, strategies, and objectives. Under the direction of the fire chief, the agency has established three divisions for directing and managing activities; each division is mutually supportive of the other divisions of the agency. The administrative division under direction of the deputy fire chief manages the business office with oversight for budgeting, purchasing, contracts, personnel management, payroll management, fire reporting, records management, and statistical data. Operational divisions of emergency services and the fire marshal operate under the direction of two assistant chiefs.

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

The agency utilizes an all-hazards approach to service delivery within their jurisdiction. Utilizing specific data based on population, demographics, and response specific data the agency has established an assessment and planning methodology to meet the service demands of the community.

The agency collects and analyzes data specific to the distinct characteristics of its legally defined service area(s) and applies the findings to organizational services and services development. The primary methodology utilized by the agency for establishing geographic planning zones is their station location established response area. The agency has also established a grid system breaking the area into one square mile response zones to allow for a more focused and detailed analysis of specific areas of the city. However, the agency found that the grid squares usually do not provide a large enough data set to be reliable. The agencies use of the station area data has allowed for them obtain approval and funding to locate two additional fire stations in areas that were determined to be underserved.

The agency has established emergency response zones by fire station location using population specific data; and, by the location of specific hazards within each planning zone. As population

density has increased the agency has been able to locate additional stations and department resources to better meet established response time standards based on resource availability, resource needs by population, and hazards specific to a given response area.

The agency identifies and assesses the nature and magnitude of all hazards and risks within its jurisdiction. Risk categorization and deployment impact considers such factors as cultural, economic, historical, environmental values, and operational characteristics. Utilizing an all hazards approach to analysis the agency has adopted a three-axis methodology to measure the probability, consequence, and impact of emergency incidents throughout their jurisdiction. This analysis is then used to classify risks as low, moderate, high, or special risk incidents.

By using this methodology and incorporating geographic information system (GIS) data from mapping software the agency further classifies specific structures within their jurisdiction. All new construction has a risk classification applied at the time of initial plan review and throughout the construction process.

The agency utilizes the adopted methodology for categorizing and classifying risks city-wide and for each of the nine planning zones within the city. Risk analysis is an on-going process and is reviewed at least annually.

The agency's risk analysis methodology and the result obtained during the review process have shown the agency that there are underserved areas within their jurisdiction. The agency was able to use the results of this analysis to secure approval and funding for the location and construction of two new fire stations beginning in 2019.

The agency identifies and documents the nature and magnitude of the service and deployment demands within its jurisdiction. Based on risk categorization and service impact considerations, the agency's deployment practices are consistent with jurisdictional expectations and with industry research. Efficiency and effectiveness are documented through quality response measurements that consider overall response, consistency, reliability, resiliency, and outcomes throughout all service areas. The agency develops procedures, practices, and programs to appropriately guide its resource deployment.

The agency has an adopted a methodology for providing consistent delivery of service in all areas for all risk categories and classifications. Based on the risk assessment, the agency has established risk categories and classifications. The agency, using risk classifications, established critical tasking for each risk category and classification; the community risk assessment-standards of cover (CRA-SOC) and department policies and activities are updated as needed based on data analysis.

Customer satisfaction plays a major role in determining the effectiveness of service delivery. The agency annually conducts a citizen survey. The survey results include, but are not limited to, demographics and socio-economic data to identify areas of specific interest for agency activities and programs. All data obtained through the surveys and the annual review of risk analysis is utilized to ensure the agency is applying adequate resources to meet customer expectations.

The agency has an adopted methodology and an annual schedule to systematically assess and update quality of services and programs based on type of service for each planning zone. Data is analyzed quarterly to identify current trends and provide solutions to immediate concerns. Data is also reviewed annually to focus the agency on continuous improvement.

The agency reviews critical tasks for each risk category and classification with a focus on identifying and updating on-scene tasks. The critical task analysis is also used to identify risks and mitigate threats prior to the occurrence of emergency incidents. Information generated from this analysis allows the agency to determine the appropriate effective response to emergency incidents. Information from the critical task analysis helps the agency identify and plan for training and professional development of staff.

The agency has identified the response time components including alarm handling, turnout, first unit travel time, effective response force (ERF) travel time, and total response time for each risk category and risk classification. Response time components are recorded and analyzed at least monthly and annually to ensure services are consistent and reliable.

The agency utilizes monthly reports to ensure that critical tasking is consistent for the services being delivered; and, that resources are allocated in a consistent and reliable manner throughout their jurisdiction. The agency has determined that quarterly reports for each risk category provide a valid and reliable data set to allow the agency to identify and mitigate any service gaps.

The agency has made efforts to maintain and improve performance and is working to mitigate performance gaps. These service gaps include alarm handling, turn-out, and initial response time components. Alarm handling times are being addressed with Boone County Joint Communications (BCJC); the agency and BCJC meet monthly to review alarm handling times and identifying solutions to improve alarm handling. To address the identified service gap with turn-out time the agency is focusing on educating staff, as well as investigating a more effective pre-alert process to get units “out the door” quicker. The travel time component of service delivery, and the identified service gap, is being addressed through the approval and construction of two additional fire stations in those areas with travel times for emergency response outside of expected performance.

The agency has assessed and provided evidence that its current deployment methods for emergency services appropriately address the risk in its service area. Its response strategy has evolved to ensure that its deployment practices have maintained and/or made continuous improvements in the effectiveness, efficiency, and safety of its operations, notwithstanding any outside influences beyond its control. The agency has identified the impacts of these outside influences to the authority having jurisdiction.

The agency has an adopted methodology to establish and assess performance. Through a process of monthly, quarterly, and annual review of performance data sets, the department is able to assess whether a performance standard is being met. The agency assesses many factors in determining areas of adequacy and those in need of improvement. These factors include, but are not limited to dollar loss versus dollars saved on fires, the time element from initial action to fire confinement, and determining fire cause and origin. These factors help to identify trends and opportunities to improve.

The department’s performance monitoring methodology includes monthly and annual reporting of department performance, including response time components, communications capabilities, personnel resource capability, and community expectations. Included in the process of performance monitoring are a series of meetings designed to assess performance and plan for improvements and future development. These meetings include regular departmental staff meetings that include the fire chief, deputy chief, assistant chiefs, union leadership, and staff members who lead specialty units within the agency. The fire chief attends regular meetings with the city manager and other city department directors. The agency also participates in meetings with the joint communications center,

county emergency management, the University of Missouri, and other community stakeholders throughout the course of the calendar year.

A specific outcome from this process is the continuous process of identifying and rectifying alarm handling processes through a series of on-going meetings with the Boone County Joint Communications Center. As the communications center is working through the installation of a new computer-aided dispatch (CAD) system, they have been working directly with the agency to resolve alarm handling and dispatch issues immediately as they are identified.

The agency conducts a series of reviews on a monthly, quarterly, and annual basis to identify and solve performance gaps for each risk category and risk classification. Through this process the department has identified performance gaps and is working to develop solutions. The utilization of these processes has been successful in justifying two additional fire stations in areas of the community that were determined to have response travel times that were outside of agency standards and community expectations.

The agency developed a strategic plan that covers the time from 2018 to 2021. Through the utilization and development of strategic plans the agency has developed a method of identifying strategic priorities and assigning ownership to an agency staff member. The staff member is identified as the “owner” of the strategic element. The owner is responsible for overseeing the task and its timely completion. Once an action plan is developed, including a timeline for completion, the item is added to the monthly staff meeting agenda and is addressed at least monthly to gauge progress.

The agency also has developed a department improvement committee made up of representatives at all levels of the agency. Any members of the agency can suggest improvements to the committee. The committee then takes suggestions and develops solutions.

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

The agency is guided by a mission statement, core values, vision, and established goals and objectives. The strategic plan is community driven and includes input from internal and external stakeholders. The current document outlines a plan for a three-year period encompassing the years 2018-2021 to help guide the agency in meeting the community needs. The development and regular updates of this document ensures the department remains aligned with the mission and vision of the city and the needs of the community.

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 agency has a published strategic plan, which covers the years of 2018 – 2021. The plan was developed using both internal and external stakeholder input. The plan consists of 6 goals, 16 objectives and 69 critical tasks. The plan is published both internally and externally.

The agency's general goals and specific objectives direct its priorities in a manner consistent with its mission and appropriate for the community it serves. The agency publishes organizational goals, objectives, and critical tasks, which are directed toward achieving its long-range plans. The agency’s strategic plan guides this process with the measurable elements of time, quantity, and quality.

The agency uses a management process to implement its goals and objectives. The agency's organizational management process uses the strategic plan and annual program appraisal to track the progress and results of its program goals and objectives. The agency also supports this comprehensive process during the annual budget process, annual goal review, and monthly staff meetings. The progress and results are tracked by the accreditation manager using a word processor document.

The agency implements a process where goals and objectives are assigned to an owner. The owner is responsible for the management of assigned goals, objectives, and critical tasks. These goals, objectives, and tasks are tracked and updated monthly as part of the monthly staff meetings.

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 agency examines and modifies its goals, objectives, and critical tasks on a monthly and annual basis. This occurs at the monthly staff meeting as well as during the annual program appraisal process and its subsequent review, which occurs every February.

The agency regularly evaluates its administrative and operational processes during the monthly staff meetings, as well as at the annual review which is conducted each February. Furthermore, the agency also utilizes the fire department improvement committee as a method of evaluating improvement suggestions.

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

The city of Columbia has a well-established and organized process in place for budget development. The Columbia Fire Department follows all applicable processes put in place by the City of Columbia. The fire chief, with oversight from the city manager determines the specific goals and objectives for the fire department.

Agency planning involving broad staff participation activates financial planning and resource allocation. The agency's plan for financing reflects sound strategic planning and a commitment to its stated goals and objectives. The agency deems financial support for programs and services adequate to maintain the number and quality of personnel and other operational costs.

The department's annual budget process has been clearly defined and strictly adhered to in accordance with the City of Columbia Code of Ordinance Article V Section 33-40. Financial policies and guidelines are developed and enforced through the city manager's office by the city's finance officer.

Financial management of the agency exhibits sound budgeting and control, proper recording, reporting and auditing. The peer assessment team confirmed that the city of Columbia 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 city's finance director's two-year financial forecast is the primary tool used to predict the adequacy of



future revenues. 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.

## **Category V— Programs**

### **Criterion 5A – Community Risk Reduction Program**

The agency is actively engaged in the community through a holistic approach to reduce risk through a three-axis risk analysis tool. With analysis of probability, consequence, and impact, models are created to provide guidance for the delivery of programs. The agency has developed outreach programs such as car seat installations, education outreach including a juvenile fire starter program, fire prevention inspections, code enforcement, and plan review activities.

The agency operates an adequate, effective, and efficient program to manage community risks as identified in the community risk assessment and standards of cover. The approach is comprehensive and includes both prevention and mitigation strategies such as life safety, hazard risk reduction, plan review, code compliance, and the detection, reporting and control of fires.

The agency, through city council action, has adopted the 2015 edition of the International Fire Code, Ordinance 022833, effective October 1, 2016, as its fire code, with amendments specific to the municipality. Section 103.0 of the fire code places responsibility for administration and enforcement with the director of community development and the fire chief.

Fire code inspections are performed by emergency services and the fire marshal's division personnel. Code enforcement, as it relates to plan review, is outlined in Chapter 6, *Buildings and Building Regulation*, revised January 17, 2014.

The fire marshal's office, consisting of four assistant fire marshals is dedicated to plan reviews. Operational Bulletin FMD-10 directs inspections to be conducted on a regular basis, either annually, every 18 months, or biennially based on occupancy classification. Approximately 4,500 inspections are conducted annually. Staff members are certified to the Fire Inspector I level.

The agency conducts a monthly command staff meeting to review various aspects of service delivery, including fire hazard risk assessment. A fire prevention and safety report is compiled through the plan review process, fire and life safety inspections, fire investigations, and scheduled events for presentation at these staff meetings. Through the use of an operation impact review and a program or project appraisal, the agency develops plans for continuous improvement. The agency has a thorough process for reviewing activities, programs and procedures it was determined formal documentation of these reviews and subsequent plans derived from reviews has not been kept up-to-date and do not adequately reflect the review process. Therefore, it is recommended that the department conduct an annual formal appraisal process and report of their community risk reduction program.

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

The agency provides public education outreach consistent with the organization's mission statement and stated goals. The criteria to identify these groups was through a risk analysis, significant incident review and feedback from community outreach. Analysis identifies at-risk populations with resulting programs developed with concentrated focus on four primary groups: senior citizens, college-age

students (three universities and colleges are in the community), grade school age students, and the business community.

A public education program is in place and directed toward reducing specific risks in a manner consistent with the agency's mission and as identified within the community risk assessment and standards of cover. The agency's fire marshal division is responsible for identifying public education initiatives, developing programs, coordinating delivery and monitoring. Those assigned in the division responsible for program development are designated as certified fire and public safety educators.

The agency's fire marshal division is responsible for providing the public education program. Through analysis and significant community events, four specific public safety concentrations have been identified: schools, off-campus housing, assisted living communities, and businesses. Along with these groups, the agency supports a juvenile fire setter program. The result of this analysis is development of focused programs for: off-campus student housing, senior adults, children (primarily ages three to seven), and juvenile fire-setters.

All assigned staff in the fire marshal division, the emergency services division chief, administrative chief officers, and some operations personnel are certified as National Fire Protection Association (NFPA) Fire and Life Safety Educators. Agency field personnel are responsible for public education, coordinated through the fire marshal division.

The agency completed an appraisal of their public education programs in early 2018. This appraisal identified high-risk areas in the community based on data collected from fire cause determination, mapping, and demographics. Outreach programs are audited weekly, with feedback provided internally to command staff and externally through social media and public safety announcements. Outcomes have been identified to serve as a measurement for program success, along with identifying areas for improvement.

The agency has formalized processes and procedures to report on and evaluate program impacts and subsequent plans for program development. However, the agency needs to improve how program elements and progress is documented as a part of a program specific appraisal. It is recommended that the department conduct an annual formal appraisal report of the public education program.

#### **Criterion 5C – Fire Investigation, Origin and Cause Program**

The agency investigates the origin and cause of fires and explosions which occur within Columbia. The program is authorized in accordance with local ordinance. Fire investigations are conducted by personnel who have specific knowledge and training related to the industry. All findings from fire investigations are reported and the data is maintained by the agency.

The agency operates an adequate, effective, and efficient program directed toward origin and cause investigation and subsequent classification of fires, explosions, and other emergency situations that endanger life or property. The agency is authorized to conduct fire investigations per Ordinance No. 022833 and the 2015 International Fire Code. Agency personnel are tasked with identifying the cause and point of origin of all fires within the city. Agency staff work cooperatively with the police department if a fire is determined to be deliberately set.

Agency fire investigators are trained in National Fire Protection Association (NFPA) 921, *Guide for Fire and Explosion Investigations*, and use the scientific method when investigating and determining the origin and cause of all fires and explosions. When a fire appears to be incendiary, fire investigators receive direct support from one of two Columbia Police Department detectives who specialize in fires.

The agency's fire investigation program is under the direction of the Fire Marshal's Office. The program has six personnel who are certified fire investigators by the State of Missouri. Four of the investigators are on a rotational call schedule, which provides one person on call for fire investigations around-the-clock. Fire investigators are also supported by an accelerant detection canine. Fire investigators receive direct oversight from the position of deputy fire marshal.

The agency conducts a formal and documented appraisal of the fire investigation program every year. The appraisal, which is reviewed every February at a staff meeting, uses a standardized template and provides a detailed look at the fire suppression program. The appraisal includes program goals and objectives, inputs, outputs, outcomes, conclusions and next steps. The agency has a thorough process for reviewing activities, programs and procedures. It was determined formal documentation of these reviews and subsequent plans derived from reviews has not been kept up-to-date and do not adequately reflect the current review process. Therefore, it is recommended that the department conduct an annual formal appraisal report of their fire investigation, origin and cause program.

#### **Criterion 5D – Domestic Preparedness, Planning and Response**

The agency utilizes an all-hazards approach to prepare themselves and the community in case of a natural or man-made disaster incident. The preparedness program includes a coordinated multi-agency response plan designed to protect the community in the event of a major incident.

The agency 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 agency operates under the Columbia/Boone County Emergency Operations Plan (BCEOP), 2015, developed under the authority of the Columbia-Boone County Office of Emergency Management. The BCEOP clearly defines the roles and responsibilities of responding agencies throughout the county. Potential threats have been identified, with a multi-year training and exercise plan in place.

The agency operates under an all-hazard response model, supporting the BCEOP. The operational plan defines concepts and processes necessary to successfully manage incidents. Established standard operating guidelines are in place with structured definitions consistent with established incident command and emergency support functions. Information is disseminated through the county office of emergency management. The Regional Homeland Security Oversight Committee meets quarterly to review homeland security, communications interoperability, and statewide/ regional updates, as well as public comments.

The agency working in cooperation with the County Emergency Management Office has a documented COOP plan. However, the current plan needs an update, as it is more than five years old. It is recommended that the agency work with its local and regional partner agencies to review and update the COOP.

### *Criterion 5E – Fire Suppression*

The agency provides around-the-clock fire suppression service within the corporate boundaries of the city of Columbia, Missouri covering a geographic area of 65.78 square miles. The estimated resident population served is 118,966. Fire suppression service is provided from nine fire stations. The agency's daily minimum staffing is 37 personnel including firefighters and command staff. Staff is assigned to 14 fire apparatus, special operations vehicles and command/support units.

The agency operates an adequate, effective, efficient, and safe fire suppression program directed toward controlling and/or extinguishing fires to protect people from injury or death and reduce property loss.

The agency has a very robust fire suppression program. They work with outside agencies providing and getting automatic and/or mutual aid from neighboring agencies on a regular basis. However automatic aid services provided or obtained are not always supported by formal written agreements. It is recommended that the department enhance its fire suppression program by entering into formal written automatic aid agreements with its adjoining communities.

The agency uses the incident command system at all incidents and it is supported by an operational bulletin and training. All agency personnel are trained in incident command system (ICS), National Incident Management System (NIMS) 100, 200, 700 and 800. Additionally, all chief officers are trained in ICS 300 and 400. The agency conducts command training for its emergency services personnel twice a year to assist with officer development and to exercise the use of ICS. The agency is also pilot testing the use of the proprietary Blue Card Command System to augment its existing command operations.

The agency conducts a formal and documented appraisal of the fire suppression program every year. The appraisal, which is reviewed every February at a staff meeting, uses a standardized template and provides a detailed look at the fire suppression program. The appraisal includes program goals and objectives, inputs, outputs, outcomes, conclusions, and next steps.

The agency's response and deployment standards are based upon the urban population density, and the fire suppression demands of the community. Nine fire stations provide citywide coverage; agency 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 with community expectations, as identified earlier in this report in Category II – Assessment and Planning. The objectives have been approved and adopted by agency management and city manager. The agency's benchmark service level objectives are as follows:

For 90 percent of high risk fire suppression incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be: 8 minutes in urban areas. The first due unit shall be capable of: providing 300 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; conducting a scene size-up; initiating command/safety; initiating a primary fire attack line; and, determining the need for additional resources.

For 90 percent of high-risk fire suppression incidents, the total response time for the arrival of the effective response force (ERF), staffed with 15 firefighters and 1 officer, shall be: 12 minutes in urban areas. The ERF shall be capable of: providing 300 gallons of water and 1,500 gallons per minute (gpm) pumping capacity; conducting a scene size-up; advancing a

primary fire attack line; establishing a back-up line; establishing a sustainable water supply, conducting primary search and rescue; providing ventilation; and, establishing a rapid intervention crew.

The department's baseline statements reflect actual performance during 2015 to 2017. The department does not rely on the use of automatic aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance is as follows:

For 90 percent of high-risk fire suppression incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, is 8 minutes and 55 seconds in urban areas. The first arriving unit is capable of providing 300 gallons of water and 1,500 gpm pumping capacity; conducting a scene size up; initiating command/safety; initiating a primary fire attack line; and determining the need for additional resources.

For 90 percent of high risk of fire suppression incidents, the total response time for the ERF, staffed with 15 firefighters and one chief officer, is 13 minutes and 51 seconds. The ERF is capable of: providing 300 gallons of water and pumping 1,500 gpm pumping capacity; conducting command/safety; advancing primary fire attack line; establishing a backup line; establishing a sustainable water supply; conducting primary search and rescue; providing ventilation; and establishing a rapid intervention crew (RIC). The ERF includes a minimum of 16 personnel.

The team also reviewed the available 2018 response time data and confirmed it is consistent with the provided information for 2015-2017.

<b>(High Risk) Fire Suppression - 90th Percentile Times - Baseline Performance</b>			<b>2015-2017</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	2:57	3:04	2:54	2:40
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	3:22	3:22	3:22	3:22
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	4:32	4:30	4:32	4:24
	Travel Time ERF <b>Concentration</b>	Urban	10:02	10:16	9:31	10:13
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	8:55	9:01	8:33	8:57
			n=330	n=130	n=109	n=91
	Total Response Time ERF <b>Concentration</b>	Urban	13:51	13:51	12:51	14:05
			n=75	n=35	n=23	n=17

**Criterion 5F – Emergency Medical Services (EMS)**

The agency primarily provides non-transport basic life support care service to the citizens and guests of Columbia. Patient transport is provided by two third-party advanced life support ambulance providers. The agency adheres to the regulations of the state of Missouri for the delivery of EMS services as well as the training of personnel. EMS delivery is guided by agency operational bulletins and county-wide protocols, which were developed with medical director oversight.

The agency operates an EMS program with a designated level of out-of-hospital emergency medical care that meets the needs of the community. The agency provides basic life support (BLS) care, which is directed by a set of county-wide protocols. These protocols are comprised of eight sections, which include things such as an initial protocol for all patients, adult protocols, pediatric protocols, universal protocols, etc. All agency firefighters are emergency medical technicians (EMTs) with the exception of 29 paramedics. While on-scene of a medical emergency either third-party ambulance service can request agency paramedics to provide advanced life support (ALS)-level care. When

providing ALS care, the agency's paramedics use the respective ambulance service's advanced medical equipment. This level of advanced care is allowed as part of an agreement with both ambulance service providers.

The agency's offline medical control is provided in the form of written protocols. Online medical control is provided by either of the two local hospitals, which support both ambulance service providers.

The agency uses FIREHOUSE Software<sup>®</sup> to create and maintain an electronic patient care record for each patient encountered. Medical incident reports contain the patient's chief complaint, pertinent history, treatment rendered by agency personnel, and the disposition of the patient. The agency helps to protect these reports by using two levels of security within the records management system.

The city of Columbia's legal counsel rendered an opinion that the Health Insurance Portability and Accountability Act does not apply to the agency since its services do not fall within the definition of "covered transactions" under Code of Federal Regulations Part 162, Electronic Code of Federal Regulations. However, the agency does comply with the provisions of Missouri's Sunshine Law.

The agency conducts a formal and documented appraisal of the EMS program every year. The appraisal uses a standardized template and provides a detailed look at the EMS program. The appraisal includes program goals and objectives, inputs, outputs, outcomes, conclusions and next steps. However, the agency does not specifically report on individual programs in "stand-alone" documents. This can sometimes lead to confusion when evaluating individual service components and programs. Therefore, it is recommended that the department conduct an annual formal appraisal report of the emergency medical services program.

The agency through the fire marshal's division and training division is very involved throughout the community in various aspects of Fire prevention and safety education programs. One element that is absent from their programming is that of public CPR and automatic external defibrillator (AED) training. It is recommended that the agency develop and implement a public CPR and automatic external defibrillator (AED) program for the community.

The agency's response and deployment standards are based upon the urban population density, and the emergency medical demands of the community. Nine fire stations provide citywide coverage; agency 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 with community expectations, as identified earlier in this report in Category II – Assessment and Planning. The objectives have been approved and adopted by agency management and city manager. The agency's benchmark service level objectives are as follows:

For 90 percent of high-risk EMS incident responses, the total response time of the first due unit, consisting of a minimum of two personnel shall be 8 minutes. The first due unit shall be capable of: establishing incident command/safety, providing a minimum of basic life support medical care, conducting patient assessment, and obtaining patient history.

For 90 percent of high-risk EMS incident responses, the total response time of the ERF, consisting of a minimum of five personnel, shall be 10 minutes. The ERF shall be capable of: conducting command/safety, providing a minimum of basic life support medical care, conducting patient assessment, and obtaining patient history.

The agency's baseline statements reflect actual performance during 2015 to 2017. The agency does not rely on the use of automatic aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance is as follows:

For 90 percent of high-risk EMS incident responses, the total response time of the first due unit, consisting of a minimum of two personnel, is 10 minutes and 4 seconds. The first due unit is capable of: establishing incident command/safety, providing a minimum of basic life support medical care, conducting patient assessment, and obtaining patient history.

For 90 percent of high-risk EMS incident responses, the total response time of the ERF, consisting of a minimum of five personnel, is 11 minutes and 29 seconds. The ERF is capable of: conducting command/safety, providing a minimum of basic life support medical care, conducting patient assessment, and obtaining patient history.

The team also reviewed the available 2018 response time data and confirmed it is consistent with the provided information for 2015-2017.



<b>(High Risk) EMS - 90th Percentile Times - Baseline Performance</b>			<b>2015- 2017</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	3:39	3:39	3:35	3:45
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	3:02	3:01	3:00	3:02
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	4:51	4:35	5:07	4:29
	Travel Time ERF <b>Concentration</b>	Urban	7:00	7:01	6:22	7:00
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	10:04	9:55	10:14	9:58
			n=1196	n=416	n=435	n=345
	Total Response Time ERF <b>Concentration</b>	Urban	11:29	12:25	11:19	11:11
			n=355	n=127	n=143	n=85

**Criterion 5G – Technical Rescue**

The agency operates as the primary provider of a regional technical rescue team. The rescue unit is staffed 24/7 by two shift assigned personnel and supported by additional shift personnel assigned other primary daily duties. When activated the rescue unit will respond anywhere within the region for the purposes of providing rescue of trapped or endangered persons due to structural collapse, vehicular entrapment, swift water rescue, confined space, cave in or trench rescue incidents.

The agency operates an adequate, effective, efficient, and safe 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).

The agency provides a municipal and regional technical rescue team and is available to respond to neighboring agencies. Squad 3, the primary technical rescue unit, is housed at Firehouse 3, staffed with a captain and engineer. The unit has a full complement of equipment for extrication, confined

space, trench, top water, high-angle, and incidents requiring supplemental breathing apparatus. Personnel assigned to Squad 3 have completed technical rescue certification. All personnel within the agency are certified to an awareness technical rescue level. Forty-five members of the agency are certified to the rescue technician level.

The agency has a mechanism in place for annual appraisal of its technical rescue capabilities. The agency's recent appraisal provided for a comprehensive equipment evaluation. However, the agency does not specifically report on individual programs in "stand-alone" documents. This can sometimes lead to confusion when evaluating individual service components and programs. It is recommended that the department conduct an annual formal appraisal report of the community risk reduction program.

The department's response and deployment standards are based upon the urban population density, and the technical rescue demands of the community. Nine 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 with community expectations, as identified earlier in this report in Category II – Assessment and Planning. The objectives have been approved and adopted by fire department management and the city council. The department's benchmark service level objectives are as follows:

For 90 percent of all technical rescue incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer shall be: 8 minutes and 00 seconds. The first-due unit shall be capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

For 90 percent of moderate risk technical rescue incidents, i.e. extrication accidents and low angle rescues, the total response time for the arrival of the effective response force (ERF), staffed with 10 firefighters and officers including the technical response team, Squad 3, shall be: 12 minutes and 00 seconds. The ERF shall be capable of: appointing a site safety officer; establishing patient contact; staging and apparatus set up; providing technical expertise, knowledge, skills, and abilities during technical rescue incidents; and providing first responder medical support.

For 90 percent of high risk technical rescue incidents, i.e. high angle rescues, trench rescue or confined space rescue, the total response time for the arrival of the effective response force (ERF), staffed with 15 firefighters and officers including the technical response team, Squad 3, the technical response truck cross-staffed with personnel assigned to Quint 8, shall be: 12 minutes and 00 seconds. The ERF shall be capable of: appointing a site safety officer; establishing patient contact; staging and apparatus set up; providing technical expertise, knowledge, skills, and abilities during technical rescue incidents; and providing first responder medical support.

The agency's baseline statements reflect actual performance during 2015 to 2017. The department does not rely on the use of automatic aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance is as follows:

For 90 percent of moderate risk technical rescue incidents, the total response time for the arrival of the first-due unit, staffed with 3 firefighters and 1 officer, is: 9 minutes and 52 seconds. The first-due unit is capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

For 90 percent of moderate risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with 10 firefighters and officers including the technical response team, is: 13 minutes and 11. The ERF is capable of: appointing a site safety officer; establishing patient contact; staging and apparatus set up; providing technical expertise, knowledge, skills, and abilities during technical rescue incidents; and providing first responder medical support.

It was verified and validated by the peer assessment team that the Columbia Fire Department did not have sufficient high-risk technical rescue incidents, which required a first due or effective response force to be assembled for 2014-2017, to provide a sufficient data set to study. Therefore, no baseline service level performance statements are provided for the first due or effective response force in this report.

The team also reviewed the available 2018 response time data and confirmed it is consistent with the provided information for 2015-2017.

<b>(Moderate) Technical Rescue - 90th Percentile Times - Baseline Performance</b>			<b>2015-2017</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	3:55	4:29	3:55	3:28
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	3:13	3:07	3:00	3:13
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	5:05	6:17	4:11	6:31
	Travel Time ERF <b>Concentration</b>	Urban	8:47	9:53	8:35	3:55
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	9:52	9:52	8:45	12:08
			n=31	n=4	n=13	n=14
	Total Response Time ERF <b>Concentration</b>	Urban	13:11	13:11	13:56	7:54
			n=10	n=4	n=5	n=1

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

The Columbia Fire Department Hazardous Materials Team is one of six regional response teams in the state of Missouri. The hazmat team is comprised of 32 hazmat technicians, with 12 to 15 technicians assigned per shift. The response region for the hazmat team is made up of 13 counties in north-central Missouri.

The agency operates an adequate, effective, efficient, and safe hazardous materials program directed toward protecting the community from the hazards associated with the uncontrolled releases of hazardous and toxic materials.

The hazardous materials team director is required to meet with the assistant chief of emergency services on a quarterly basis to review progress outlined in the yearly plan; and, to update the plan as necessary. The agency has a process to review and update plans in all programs and functional areas on an annual basis to gauge progress and set plans for the future.

The department's response and deployment standards are based upon the urban population density and the hazardous materials response demands of the community. Nine 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 and the city council. The department's benchmark service level objectives are as follows:

For 90 percent of hazardous materials incident responses, the total response time of the first due unit, consisting of a minimum of three personnel, shall be 8 minutes. The first due unit shall be capable of: establishing incident command/safety, sizing up the incident, stabilizing the incident, and determining the need for additional resources.

For 90 percent of high-risk hazardous materials incident responses, the total response time of the ERF, consisting of a minimum of 13 personnel, shall be 12 minutes. The ERF shall be capable of: maintaining incident command/safety, mitigating the incident, stabilizing the incident, and determining the need for additional resources.

The department's baseline statements reflect actual performance during 2015 to 2017. The department does not rely on the use of automatic aid or mutual aid from neighboring fire departments to provide its effective response force complement of personnel. The department's actual baseline service level performance is as follows:

For 90 percent of all hazardous materials response incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, is: 13 minutes and 40 seconds. The first-due unit is capable of: establishing command; sizing up and assessing the situation to determine the presence of a potential hazardous material or explosive device; determining the need for additional resources; estimating the potential harm without intervention; and begin establishing a hot, warm, and cold zone.

It was verified and validated by the peer assessment team that the Columbia Fire Department did not have sufficient high-risk hazardous materials incidents, which required an effective response force to be assembled for 2014-2017, to provide a sufficient data set to study.

Therefore, no baseline service level performance statements are provided for the effective response force in this report.

The team reviewed available 2018 data response time data and confirmed it is consistent with the provided information for 2015 – 2017.

<b>(High Risk) Hazardous Materials - 90th Percentile Times - Baseline Performance</b>			<b>2015-2017</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>
<b>Alarm Handling</b>	Pick-up to Dispatch	Urban	4:20	4:28	3:34	3:58
<b>Turnout Time</b>	Turnout Time 1st Unit	Urban	3:31	3:57	3:29	3:31
<b>Travel Time</b>	Travel Time 1st Unit <b>Distribution</b>	Urban	8:08	8:56	4:28	8:08
	Travel Time ERF <b>Concentration</b>	Urban	4:36	3:24	na	4:36
<b>Total Response Time</b>	Total Response Time 1st Unit on Scene <b>Distribution</b>	Urban	13:40	14:12	10:12	13:40
			n=19	n=5	n=7	n=7

### **Category VI — Physical Resources**

The agency presently operates from nine firehouses, with one also serving as its administrative offices. Additionally, there is a separate fire academy, which consists of a lecture facility, tower, burn building, and a newly constructed building for additional training and storage. The nine firehouses are strategically located to satisfy geographic and population needs. A Capital Improvement Plan (CIP) addresses expansion and growth, including the consideration for future firehouses.

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 process utilized in the planning for facilities involves three groups: department employees, community members, and government officials. All three participate in a self-assessment to determine existing facilities and needs for future expansion. This process proved to be successful in the recent completion of an additional training facility.

The agency designs, maintains, manages fixed facility resources that meet the agency's goals and objectives. The agency has and is presently working to upgrade facilities at the training grounds to include a rehabilitation of an existing burn building and training tower, and improvements in existing firehouses. The CIP has identified short-, medium-, and long-term projects, with projected costs to upgrade and/or replace facilities. Prior to any facility improvement or new construction, plans are submitted to the municipality's Office of Building and Site Development to ensure existing architectural and fire protection system code requirements are met.

Apparatus resources are designed, purchased, maintained to adequately meet the agency's goals and objectives. The agency exhibits varying vehicles for staff and command functions, along with apparatus designed for fire and specialized operations. Types of primary apparatus include two engines (pumpers), two ladder trucks, seven quints, one squad, one air truck, one foam vehicle and one hazardous material vehicle. In addition, sport utility vehicle (SUV) style is used for the shift battalion and division commander as well as various staff positions. All front-line vehicles, with the exception of one ladder truck and the foam unit has a service life of less than 10 years. The CIP includes a replacement and spending plan for apparatus through 2026. When a new vehicle is acquired, a "shepherd" is designated. A "shepherd" is a member who will be assigned to the vehicle for the service life of the vehicle, and/or, the career duration of the 'shepherd'. His or her duty is to guide the vehicle through preparation, training, and placement.

The "shepherd" process was found to be unique and provides a higher level of participation and ownership at the field level. The agency has found this to be a very successful program throughout the process and is well accepted by members of the organization

The inspection, testing, preventive maintenance, replacement schedule, and emergency repair of all apparatus are well established and meet the emergency apparatus service and reliability needs. Daily and weekly vehicle inspection and testing for all vehicles is mandated by agency written directive. Annually, a certified vehicle technician from the manufacturer arrives on site to perform inspections and testing. This contractual arrangement ensures vehicle service complies with manufacture recommendations. Routine service maintenance is performed at the municipality's Grissum Building. Staff employed at the Grissum Building include an Emergency Vehicle Technician (EVT).

A comprehensive program is in place to ensure vehicles are inspected, tested, and serviced at routine intervals. The program involves inspection of frontline and reserve apparatus. One individual is designated for each vehicle with the responsibility of performing inspections and reporting of any defects. Local maintenance is performed through EVT certified personnel and through manufacturer technicians annually or when needed.

Equipment and supplies are adequate and designed to meet the agency's goals and objectives. The agency maintains all department equipment with in-house personnel trained and qualified to maintain manufacturer's recommendations and industry safety standards. The agency has personnel certified to maintain and repair self-contained breathing apparatus, hazardous materials safety equipment, monitoring and sampling equipment; and, to conduct annual fire pump certification and testing. Any maintenance or repairs that are beyond the scope of expertise or certification of agency personnel are "farmed out" to qualified/certified manufacturer's representatives.

Safety equipment is adequate and designed to meet agency goals and objectives. Specific agency personnel identification is provided using unique helmet color coding, personnel name, and unit assignment shields on protective clothing. The agency has established a five-year replacement cycle

for protective clothing, with an annual appropriation within the municipal budget for costs. Directives are in place detailing the specifications, use, and maintenance of clothing, helmets, and breathing apparatus. All protective clothing must meet the applicable National Fire Protection Association (NFPA) standard. Repair and replacement of damaged equipment is outlined in agency directives.

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

The human resource functions for Columbia Fire Department are provided through the city's human resources director. The city of Columbia has the necessary staff to support the fire department's goals, mission and vision.

General human resources administration practices are in place and are consistent with local, state/provincial, and federal statutory and regulatory requirements. The human resource functions for Columbia Fire Department are provided through the city's human resources (HR) director. The HR director administers the human resources program established through city ordinance. The city code of ordinances ensures that Columbia Fire Department has the necessary staff to support the fire department's goals, mission, and vision. The Columbia Fire Department works jointly with human resources to coordinate personnel management.

Systems are established to attract, select, retain, and promote qualified personnel in accordance with applicable local, state/provincial, and federal statutory requirements. The city of Columbia human resources department uses an electric application management program to fill all positions. The city of Columbia's hiring policies are in compliance with all local, state, and federal equal opportunity and discrimination statutes, laws, and rules. The City of Columbia Code of Ordinance's Chapter 19 outlines the recruitment and selection process. The city maintains a two-year certification list to select initial hires and a one-year list to use for all promotional positions. The initial hiring process has multiple layers such as the application, written test, candidate physical ability test, background screening, interview, and a physical exam. Hiring for promotional positions is conducted internally.

The department has a defined supervised probationary process to evaluate new and promoted members. Initial hires are required to complete an 18-month probation period and promotional candidates are required to fulfill a one-year probation period. All new hires are required to work with a field training officer to complete task books upon completion of a fifteen-week academy. Fire department employees desiring to be promoted are required to complete specific certifications and tasks prior to becoming eligible for the promotional process.

Personnel policies and procedures are in place, documented, and guiding both administrative and personnel behavior. The department, with the assistance of the human resources office, establishes written published policies and procedures. The department utilizes operational bulletins as its primary policies that guide the department. These policies and procedures are reviewed regularly and made available to all employees. Copies of these policies and procedures are made available online and through hard copy within each fire station. Personnel rules are clear and well communicated to all employees. As changes occur employees are informed through e-mail, training, and meetings.

The department utilizes the City of Columbia's Chapter 19 Code of Ordinances to firmly commit to providing a work environment that is free from discrimination or harassment. The city distributes to all employees the City of Columbia Code of Ordinances policy and procedures. All fire stations have

hard copies and electronic access to the policy. Annually the human resources department conducts harassment training for all city employees.

Human resources development and utilization is consistent with the agency's established mission, goals, and objectives. The city of Columbia uses a third-party vendor to conduct a classification and compensation study to audit and modify job classifications. The city recently switched contracts with a new vendor in the fall of 2018. The current contract is renewable every year for up to 5 years before the bid requirement. Every year a specific amount of job classifications come up. At that time, each employee in the classification completes a job analysis questionnaire. Every job description and classification are reviewed at least every five years. All job descriptions are current and up to date.

A system and practices for providing employee and member compensation is in place. Rates of pay and compensation are evaluated by a third-party vendor to conduct an overall compensation study which is completed every five years. A new compensation study is currently being conducted with the new vendor. The current compensation study is available on the city's intranet and internet sites for access. Employees all have online access to the city's pay plan and compensation study or hard copies can be made available through the human resources department.

The agency's occupational health, safety, and risk management programs protect the organization and personnel from unnecessary injuries or losses from accidents or liability. The fire department training division instructs each member on all work practices, changes in procedures or equipment, and the hazards associated with them. Every new member begins training on fire ground safety in a fifteen-week recruit school. Hands-on and web-based training is provided daily and monthly which keeps personnel up to date on all current safety practices and procedures. The city of Columbia has an executive safety committee. The fire department chief training officer is the designee that represents the fire department. Additionally, the fire department has a health and safety committee that meets quarterly and provides a safety bulletin with health and safety tips.

The agency has one of its command staff who is currently the Firefighter Cancer Support Network (FCSN) State Director for Missouri. His leadership in the health and safety committee and role in the FCSN promotes a strong presence for health and wellness initiatives within the fire department workplace.

Scene safety responsibilities are supported through the assignment of a safety officer from the command staff on incidents. All personnel expected to fill the role of safety officer have received appropriate recognized training. The safety officer is formally expected to notify the incident commander of any unsafe operations. Similar expectations extend to all emergency response personnel.

The agency has a wellness/fitness program for recruit and incumbent personnel. The agency specifies and communicates the provisions if employees/members do not comply with the wellness/fitness program. The department requires initial and annual medical and fitness evaluations. The department complies with National Fire Protection Association (NFPA) 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*. The department provides space for fitness equipment at each fire station. The labor union, International Association of Fire Fighters (IAFF) Local 1055, provides the equipment in each station for the department members. The city also offers to all its city employees a 24/7 fitness center at city hall.



The fire department and the city of Columbia have a wellness program that is administered by the human resources department. The human resources office has a wellness educator position. The wellness educator provides annual wellness education to all employees and is designated to manage the overall wellness program for the city. Wellness initiatives are provided and wellness support is offered through the city's health insurance policy. The city provides an employee assistance program. Behavioral counseling resources are provided through an outside third-party vendor. The department has a health and wellness committee which involves representatives from both labor and management.

The City of Columbia Human Resources Department administers the wellness program. However, the fire department should establish independently its own policy that addresses that wellness/fitness program in place for its members.

It is recommended the department develop a wellness/fitness policy that addresses the wellness/fitness program and the health and safety committee. Additionally, it is recommended the department establish a formal and documented appraisal which is conducted at least annually to determine the effectiveness of the wellness/fitness programs and its impact on meeting the agency's goals and objectives.

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

The agency's training and education program meets the needs of the agency. The goals and objectives are determined by the needs of the community and the agency. The training division gathers input from each division of the department and employs a method for individuals to make suggestions. The training division ensures the agency meets the training and recertification requirements for all the members. All training is tracked using an online training platform, Target Solutions.

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 agency produces a master annual training calendar to serve as the guide for the year. This calendar has been established using historical data as well as incident reviews which have identified training needs. The training division has established a plan that builds toward quarterly "live" drills/training. The training staff assigns related training topics to fire personnel to practice and perform prior to the quarterly live training drill. Fire personnel may be tasked with various training assignments. (Examples: forcible entry, ground ladders, horizontal and vertical ventilation operations, emergency medical training, etc.) The live training drills meet the professional qualifications set forth by the National Fire Protection Association (NFPA) standards for fire fighters, engineers, fire officers, hazardous material, and technical rescue training. In the live training drills, fire personnel are required to perform tasks, activities, knowledge, and skills that they may possibly encounter during emergency conditions. Following the live events, the command staff meet to discuss the training and overall performance of the tasks.

All firefighting personnel are required to meet NFPA Standard 1001, *Standard for Fire Fighter Professional Qualifications*, Firefighter I and II as a minimum. Supervisory personnel have a minimum requirement of NFPA 1021, *Standard for Fire Officer Professional Qualifications*, Fire Officer I, and NFPA 1041, *Standard for Fire Service Instructor Professional Qualifications*, Instructor I.

Training and education programs are provided to support the agency's needs. The agency complies with NFPA 1001, 2013 Edition Firefighter I and II standards, which are the minimum job performance requirements for entry level firefighters whose duties are primarily structural firefighting. The purpose of this standard is to ensure that all personnel meet the requirements of this standard. Each entry level fire fighter is required to complete a probationary task book, which reassures successful competency at the fire fighter entry level. As members seek to obtain rank, evaluation of individual performance is based on acquired International Fire Service Accreditation Congress (IFSAC) certifications, written testing, practical scenarios, and demonstrations of testing processes.

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 agency's facilities support all-hazards training. The training academy, located at 700 Big Bear Boulevard, covers over two acres. Three main buildings are on site, with several portable buildings. The main classroom building has three offices for training officers and two classrooms for lecture presentations. One classroom which will accommodate a group of 20. A second will accommodate up to 60 personnel. A two-bay storage building was recently constructed as part of an overall renovation. Future use of this building includes apparatus storage, equipment, and training props, with an overall goal for training to be self-sufficient with training apparatus and equipment.

For live fire evolutions, the agency has a two-story burn building. This building has been used in conjunction with live fire, hazardous materials training, and other scenarios. The agency has a five-story tower with a fire department connection (FDC) and standpipe for training on high-rise structures. The tower also has the ability to include technical rescue training such as rope rescue. The training grounds also have a confined space tank that is used for technical incidents and hazardous materials.

Staff is required to have the certification of Fire Service Instructor II through IFSAC. Training staff uses shift personnel to assist with teaching specialized topics. These instructors must have certification of Fire Service Instructor I or higher to present training programs. The agency also utilizes expert contract instructors in their specialized industry type fields which may not require certifications. Classes are always supervised by a member of the training staff. The department currently has 74 members who hold instructor certifications of Fire Service Instructor I or higher certifications. In 2016, a policy that required new company officers to hold a minimum IFSAC certification of Fire Service Instructor I became effective. The minimum qualifications to instruct in the department's recruit academy is Fire Service Instructor I or have expertise in a special field if unrelated to an NFPA standard. Designated training coordinators and shift instructors for the hazardous materials and technical rescue teams are in place. All members of specialized teams are required to achieve or seek certifications in a timely manner in order to be on these special operation teams. The training staff audits all certifications to ensure expert personnel are secured for instructing positions. The department medical coordinator provides emergency medical services (EMS) training through lecture, hands-on classes, and Target Solutions online training. It was observed and verified through interviews with agency staff that personnel assigned to the training division are currently/frequently overwhelmed with the tasks associated with maintaining a high-quality fire services training and professional development program. It is recommended that the department assess the need to increase the current number of state-certified instructors to meet the growing demands of the agency.

The agency updates training materials based on several factors. Training materials are purchased to reflect changes in textbook editions, current NFPA standards, changes in operations, or to implement changes within current policy. Agency guidelines ensure the organization is following current material is to reference Missouri Division of Fire Safety's Training Division (MO-DFS) recommendations, fire service trade magazines, International Fire Service Training Association (IFSTA), Jones & Bartlett curriculum, and safety bulletins from manufacturers.

The agency purchased new training material within the past budget year in several areas. The textbook curriculum topics include: Fire Instructor I, Technical Rope Rescue, and Fire Officer I. All are of the current editions and meet the current recommendation by MO-DFS for certifications adhering to the current NFPA standard. However, it was observed and verified that the department does not have a true plan for the annual purchase and upkeep of training materials for the purposes of providing the most current and up-to-date manuals and materials for the various programs intended to maintain and develop a high-quality training program. It is recommended that the department administration establish more frequent intervals for the review of training materials to ensure their currency.

## **Category IX — Essential Resources**

### **Criterion 9A – Water Supply**

Columbia Water and Light is a public utility operating as a municipal department working in concert with the agency to ensure that adequate water supply is provided and maintained. The University of Missouri provides and maintains their own water supply and fire hydrants in accordance with agency requirements. Also, as the city area expands due to annexation, Columbia Water and Light works with outside water districts to ensure adequate water supply and distribution.

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 in accordance with applicable fire flow criteria.

The agency has adopted the 2015 International Fire Code (IFC), appendix B, along with NFPA 13 *Standard for Installation of Sprinkler Systems*, with local amendments to establish the minimum required fire flow for buildings and systems within the jurisdiction, including buildings on the University of Missouri campus. During the plan review process, the agency analyzes water supply demands to calculate availability of sufficient fire flow for new construction.

Based upon requirements contained within the adopted 2015 International Fire Code and NFPA standard, city utilities can provide adequate water supply throughout the jurisdiction with sufficient volume and pressure for the calculated demand. The water supply system in the city of Columbia is maintained by Columbia Water and Light. Water and Light currently estimates a 16.8 million gallon per day average demand with a maximum daily production capability of 25.8 million gallons per day.

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

The agency's public safety communication needs are supported through a regional emergency communications system. The system is operated by Boone County Joint Communications (BCJC). The BCJC occupies a new, state of the art dispatch facility which houses the dispatch center as well as the Boone County Office of Emergency Management. BCJC serves as the communications center

for all 911 calls and emergency radio communications in Boone County. This includes all fire, emergency medical services (EMS), and law enforcement agencies.

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.

The agency, through the BCJC, employs a variety of communication system pathways to maintain operational capability. These systems include a VHF duplex radio system, separate cellular communications, wireless text alerting, and a mass notification system known as RAVE. Section 510 of the adopted 2015 International Fire Code addresses emergency responder radio coverage inside buildings. This locally adopted code requires emergency responder radio coverage in all new and existing buildings. The agency performs daily and weekly tests of the communications system combined with day-to-day activities to ensure the performance of communications. The VHF system is regularly evaluated on calls within the departments jurisdiction and auto/mutual aid calls into other jurisdictions. Alternate means of communications are exercised less frequently but often enough to ensure their performance. The agency has identified structures within its jurisdiction that do not have adequate coverage and worked closely with BCJC and building owners to address these issues.

The BCJC is responsible for all emergency dispatch services for the entire area of Boone County, Missouri. This includes all fire, EMS and law enforcement agencies. Monthly, there is a technical operations group meeting to discuss issues that have arisen or changes that need to be made. This meeting is hosted by BCJC and representatives from each jurisdiction attend. BCJC also includes monthly compliance reports at this meeting. Quarterly, there is an advisory committee meeting hosted by BCJC. This meeting discusses short- and long-term issues. BCJC is accredited through the International Academies of Emergency Dispatch (IAED) and has specific performance objectives as part of that accreditation process. The agency receives a monthly call answering time report as well as a call processing time report. These reports are used to complete an annual appraisal of the communications system and its impact of meeting our goals and objectives.

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

Administrative personnel are in place to handle and manage administrative functions related to organizational planning and assessment, resource coordination, data analysis/research, records keeping, reporting, business communications, public interaction, and purchasing. The staff members are a strong resource to the various functions and divisions of the fire department and play a large part in the process of continuous improvement.

The assistant fire chief/fire marshal serves as the designated public information officer and handles the records management system. Data analysis is handled by a variety of personnel, especially personnel related to the accreditation process.

Administrative support services and general office systems are in place. The department has the proper technology and equipment to support the administrative functions and responsibilities. All facilities are linked by networked shared folders, email, intranet, and the internet.

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 administrative support services are appropriate for the agency's size, function, complexity, mission, and are adequately staffed and managed. Administrative authority and support is provided by the fire chief through the chain of command. The fire department's deputy chief manages, plans, organizes and directs administrative activity.

The department is supported by an administrative support services staff to manage the administrative functions. The staff aids the department in meeting its mission and performance objectives. The department's administrative staff consists of the fire chief, deputy chief, administrative officer, payroll clerk, administrative assistant, assistant chief emergency services and the assistant chief/fire marshal. Additionally, the department has access to 24/7 technical support staff by the city of Columbia. All fire administration staff are located at Fire Station One.

The department's management information system includes manuals, forms, policies, protocols, and documents to support daily operations. Operational bulletins are the primary policies that guide the department. The department utilizes a rotational schedule, spreadsheet, to review each month two operational bulletins. All operational bulletins and organizational forms are reviewed at least every three years and updated as needed. The department has an established policy, operational bulletin GEN-14 that outlines the methodology used for policy development, review and update.

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

Columbia Fire Department currently has four written agreements with external agencies. The agency regularly meets with all external organizations with which it has a defined relationship. A conflict resolution policy was recently established and in place.

The agency's operations and planning efforts include relationships with external agencies and operational systems that affect or may influence its mission, operations, and/or cost effectiveness. The fire department develops and maintains external relationships to support its mission, operations, and cost effectiveness. Maintaining these relationships affords the department opportunities in areas of community support, training facilities, and resources. The department has four written agreements with external agencies that enhance the service to the community and its mission.

The agency maintains current agreements with those external agencies which support the identified programs. All external agency agreements required to be maintained in support of any program are current, reviewed and/or updated within the accreditation period and adopted by the appropriate governing bodies.

The department reviews external agency agreements annually in March and revises as necessary to meet department objectives. None of the existing four written agreements in place have been revised since origination. The agency recently established an operational bulletin which outlines the process for review and updating all external agreements with the Columbia Fire Department.

The agency does not have external agreements with all agencies to which it may provide or request services. The agency has an agreement with its two hospital-based ambulance services permitting fire department members who are certified as paramedics to assist when requested and under the limited scope of practice advanced life support measures.

It is recommended that the agency establish agreements with all of its external partners and amend its Columbia Fire Department Advanced Life Support (ALS) Program to move the agency toward providing ALS service intervention prior to the arrival of hospital-based EMS.

# Organizational Chart

