



**Commission on
Fire Accreditation
International**

Accreditation Report

**Pasadena Fire Department
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United States of America**

**This report was prepared on August 7, 2015
by the
Commission on Fire Accreditation International
for the
Pasadena Fire Department**

**This report represents the findings
of the peer assessment team that visited the
Pasadena Fire Department on January 25-29, 2015
and the review of additional documentation from
February through July, 2015**

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EXECUTIVE REVIEW

PREFACE

The Pasadena Fire Department recently received candidate status. On September 23, 2014 the department asked the Commission on Fire Accreditation International (CFAI) for a site visit to determine if it could be recommended for accreditation. On September 25, 2014 the CFAI appointed a peer assessment team. The peer team leader approved the documents for a site visit on November 12, 2014. The peer assessment team conducted an on-site visit of the department on January 25-29, 2015. The peer team recommended deferred agency status for the department and the Commission on Fire Accreditation International confirmed that decision March 18, 2015.

Team Leader Cindy Bonham conducted a second CFAI assessment of the Pasadena Fire Department by reviewing progress made regarding deficiencies from February 2015 until July 2015. The Pasadena Fire Department submitted written updates and revisions of its community risk analysis, and standards of cover to CFAI and to the peer assessment team. All documentation was comprehensively reviewed. This documentation represented a significant improvement over the originally submitted documents. The department did not use a consultant to assist it with completing the documents required for accreditation; however the department used FireStats, LLC. to provide assistance in its ongoing calculation of performance-related metrics.

SUMMARY

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

The peer assessment team leader followed CFAI processes confirmed during the second CFAI assessment through an examination of available data and interviews that the department has appropriately addressed the initial concerns that caused the team not to recommend that the department be accredited. The department has now satisfactorily addressed criteria 2B and 2C, as well as core competencies 2B.1, 2B.5, 2B.6, 2B.8, 2C.1, 2C.5, 2C.6, 5A.1, 5B.8, 5C.4, 5C.7, 5E.1, 5F.1, 5G.1, and 9A.1, and the related criterion statements. The Pasadena Fire Department has now demonstrated that its self-study accreditation manual, community risk analysis, standards of cover (SOC), and strategic plan met all core competencies and criteria. The team leader shared the findings of the re-visit with the peer assessment team. As a result, the team recommends accredited agency status for the Pasadena Fire Department from the Commission on Fire Accreditation International.

The department had used the services of an external independent contractor, Citygate Associates, LLC, to conduct its last two community hazard and risk assessments and standards of cover studies. While the documents produced by Citygate were of high quality, the department and the peer assessment team found discrepancies in the data that was provided to the consultant which prevented the team from being able to verify and validate the report's conclusions related to total response times across all service demand types. Some institutional knowledge was also lost via retirements prior to the site visit.

Since the initial site visit, a very strong relationship has been formed between the Verdugo Fire Communications Center (VFCC) and the department. Eight management zones were developed that include 78 management blocks that enable the department to evaluate both fire and non-fire risks. The appropriate socioeconomic data is being used to further aid in the development of response standards. The SOC processes have evolved, and appropriate adjustments have been made through the implementation of necessary improvements, to match available resources to the fire and non-fire risks and related expectations in the community. The SOC appropriately identifies that 89 percent of the jurisdiction has a metro/urban population density, and 11 percent has a rural density. There are appropriate benchmark goals and actual baseline performance statements in place that identify and measure all components of the total response time continuum.

Following a detailed assessment and analysis, the peer assessment team believes by consensus that the alarm handling time, turnout time, and travel time for the first-due and effective response force components of the total response time continuum, as contained in the SOC, are in line with the industry best practices identified in the eighth edition of the *FESSAM* and do not constitute a gross deviation. It is clear the department is committed to taking steps to meet the expectations.

The department has identified that Verdugo Fire Communications Center (VFCC) is sometimes the second public safety answering point (PSAP) depending on where the call initiates. The department has been making a concerted effort to develop a method to capture these initial PSAP times in the cases where the call is transferred from another PSAP into VFCC. This is a work in progress and although there has been progress, the department is committed to working through to achieve the most accurate portrayal of total response time possible. The department has also identified that turnout times can be improved.

The initial peer assessment team identified opportunities for improvement that are captured in the recommendations section and in the observations and performance section of the report. These recommendations flowed from discussions, interviews, and a review of department supplied documentation to support its self-assessment conclusions. The department demonstrated its keen desire to immediately implement plans to address opportunities for improvement. Immediately after the initial site visit, the department began working on its shortcomings with a strong desire to address all core competency deficiencies within six months. It is obvious from the work the department has done thus far they will continue to address the recommendations that are left after the follow-up verification process.

The peer assessment team observed a strong commitment by the department to the CFAI accreditation process. The accreditation manager has an assistant who will undoubtedly be a future accreditation manager. The agency has been pursuing accreditation for ten years and has been persistent in not giving up on the model of self-improvement. The initial site visit occurred less than one month after the naming of the current fire chief. The chief came from a department that had gone through the process and is a huge proponent of the model and process. A testament to his dedication to this process is the numerous changes in staffing and policy that have occurred in the past six months. The department has been encouraged to provide peer assessors to CFAI to ensure continuity and a more direct access to best practices with other similar organizations.

The peer assessment team had a meeting with the city manager. Although he has not been engaged from the outset of the department's journey towards accreditation ten years ago, he showed a genuine interest in the process and the department in general. There is clearly a commitment to continue to follow and support the implementation of identified opportunities for improvement. It can be

anticipated that all representatives will be strong supporters and network participants as the full benefits of going through the self-assessment process are realized and built on in the future.

Composition

Pasadena, California was incorporated as a city in 1886 and is the ninth largest city in Los Angeles County. The Pasadena Board of Trustees Resolution 52 established the fire department on October 8, 1887. The department acquired a Seagrave 6-cylinder, air-cooled chemical engine in 1909 which was the first motorized fire apparatus west of the Mississippi. This apparatus is still functional and participated in the most recent Rose Bowl Parade.

The most recent census data indicates Pasadena had a population of 137,122. The Pasadena Fire Department joined with Burbank Fire Department and Glendale Fire Department to create the Verdugo Fire Communications Center (VFCC) in 1979. The communications center now dispatches for a total of 13 agencies. There are automatic and mutual aid agreements in place so that the closest unit is dispatched to a given call, regardless of department.

The majority of the housing encompasses low to medium-low density residential housing, which can be expected for a municipality with a population density of 5,969.6 people per square mile. The last Census showed that the median household income was \$68,310 and the average home was valued at \$620,600. The daytime population of the city is estimated at 186,575 based on employment and commuter trends due to the city being a major employment center for the San Gabriel Valley.

Pasadena is bordered by the cities of Arcadia, Glendale, Los Angeles, San Gabriel, South Pasadena, San Marino, Sierra Madre, and various unincorporated areas. The city has an extremely large gap in elevation starting at 606 feet above sea level and rising to over 3,300 feet above sea level. The climate is warm with an average high of 77°F. The average low temperature is 51°F.

There are four main routes that flow through Pasadena. State routes 134 and 110; and Interstates 210 and 710. Typical urban traffic flows occur during peak times during the week. The road system is a traditional grid for the majority of the city and as the area expands and the topography changes, so do the road layouts.

The department answered a total of 13,699 calls in FY 2015 including: 204 fire calls (1 percent); 10,519 EMS calls (77 percent); and 2,976 miscellaneous calls (22 percent). The department operates out of 8 fire stations, with a minimum staffing level set at 51.

Government

Council-Manager form of government
Mayor and 7 Council members
City Manager
Fire Chief

Fire Department

8 fire stations
144 uniform and 22 civilian personnel
3 shift system

Staffed Resources

8 engine companies
2 truck companies
5 rescue ambulances
1 battalion chief

Cross-staffed Resources

1 water tender
1 patrol
1 strike team command vehicle
1 Type-1 heavy urban search and rescue (USAR)
1 rescue cushion
2 EMS rescue carts
EMS bike teams (paramedic & EMT)
MIRV trailer (multi-victim response vehicle)

Non-staffed Units

5 reserve engines
1 reserve truck
6 reserve rescue ambulances
1 reserve command vehicle
1 reserve USAR

Daily Minimum Staffing (All Stations): 51

CONCLUSIONS

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

RECOMMENDATIONS

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

Team leader Cindy Bonham conducted an interview with the agency consisting of the fire chief, accreditation manager, and assistant accreditation manager. The purpose of the meeting was to review the team's initial findings and recommendations from the site visit on January 25-29, 2015. Validation of corrective actions was satisfactorily established. The department was given an opportunity to respond to any errors in findings of fact.

Strategic Recommendations

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

All strategic recommendations that led to the initial deferral have been satisfactorily addressed as completed or are in progress. They include:

1. It is recommended the department update the population density evaluation for each planning zone in collaboration with the geographic information system service provider and develop and monitor total response time standards for each planning zone.
 - *The agency has broken the jurisdiction into 8 management zones and further into 78 management blocks. Population density has been evaluated in each of these zones and response times are also monitored within each zone.*
2. It is recommended that the department update the analysis of fire and non-fire risks to expand from the jurisdictional overview to the planning zone level.
 - *Within each zone and block, the agency has identified special, high, moderate, and low risks, both fire and non-fire.*
3. It is recommended that the department update total response times data based upon the most current information developed since the publication of the standards of cover document.
 - *The department entered a relationship with FireStats, LLC to assure that data acquisition, management, and application utilized a standard methodology to ensure optimal accuracy.*

4. It is recommended that with updates to risk factors and specific assessment at the planning zone level, the standards of cover strategy should type risks in each service demand areas e.g., low risk, moderate risk, and high risk.
 - *The agency has broken the jurisdiction into 8 management zones and further into 78 management blocks. The department has also updated its standards of cover to include risk levels for both fire and non-fire risks.*
5. It is recommended that the agency develop a formal process for an annual review of hazards, risks, demands, outcomes, and deployment/capability to identify, manage, and narrow imbalances.
 - *The department has developed a comprehensive program appraisal process that: identifies the measured goals; specifies the review period (monthly, quarterly, annually); and specifies whether the appraisal is measuring outcomes, impacts, or processes. This process ties together the CFAI model with budget and council goals.*
6. It is recommended that the department develop its own methodology that will provide valid response data regarding all fire and non-fire risks at all risk levels. This recommendation also applies to the technical rescue, hazardous materials, and EMS programs.
 - *Through a relationship with FireStats, LLC, a comprehensive methodology has been established identifying the means to capture the most accurate data possible. This applies to all call types.*
7. It is recommended that the department expand its appraisal of the fire prevention program beyond the current report of bureau output activity as data in the annual budget document, to include outcome measures indicating effectiveness in risk reduction.
 - *The department has developed a comprehensive program appraisal process that: identifies the measured goals; specifies the review period (monthly, quarterly, annually); and specifies whether the appraisal is measuring outcomes, impacts, or processes. Each is analyzed and findings are reported. Plans are then developed to support continued success of the program. This process ties together the CFAI model with budget and council goals.*
8. It is recommended that the department establish public education program activity specifically identified for risks and risk audiences as a result of Pasadena incident activity, demographic and data analysis. Further, the department should overtly target the delivery of the identified program activities to specifically required audiences as an effort for risk and event reduction.
 - *The department is now using response data to target public education efforts. This includes smoke detector giveaways and education efforts regarding hazardous vegetation.*
9. It is recommended that the department expand its appraisal of the public education program beyond the current report of output activity as data in the annual budget document, to include

outcome measures indicating the program's effectiveness at reducing identified risks and emergency events.

- *The department has developed a comprehensive program appraisal process that: identifies the measured goals; specifies the review period (monthly, quarterly, annually); and specifies whether the appraisal is measuring outcomes, impacts, or processes. Each is analyzed and findings are reported. Plans are then developed to support continued success of the program. This process ties together the CFAI model with budget and council goals.*

10. The department should conduct an appraisal, at least once per year, that links EMS risk assessment, goals and objectives, with actual patient/EMS system outcomes.

- *The department has developed a comprehensive program appraisal process that: identifies the measured goals; specifies the review period (monthly, quarterly, annually); and specifies whether the appraisal is measuring outcomes, impacts, or processes. Some of the things now measured are response times and cardiac arrest survival rates.*

11. The department should implement the consistent use of pre-fire planning for all target hazards, including providing required fire flow information. These plans should be developed in a manner consistent with National Fire Protection Association (NFPA) 1620: *Standard for Pre-Incident Planning*.

- *The department has developed preplans that show the fire flow, number of stories, life hazards, and other data. Each hydrant has its own table of values which show the last flow test results. So far the department has identified over 2,600 targeted risks through this process.*

Category II – Assessment and Planning

Criterion 2B: Fire Risk Assessment and Response Strategies

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

Core Competencies

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

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

It is recommended that the department closely collaborate with Verdugo Fire Communications Center and the Pasadena Police Department to improve the accuracy of the elements of total response time, with special focus on the public safety answering point answering and transfer times.

Category V – Programs

Criterion 5A: Fire Suppression

Core Competencies

5A.1 Given the agency’s standards of cover and emergency deployment objectives, the agency meets its staffing, response time, pumping capacity, apparatus and equipment deployment objectives for each type and magnitude of fire suppression emergency incidents.

The department has made vast progress since the initial site visit with regards to risk analysis and deployment strategies. It is recommended that the department continue to refine the deployment objectives to provide realistic goals based on the jurisdiction’s characteristics.

This recommendation also applies to the technical rescue, hazardous materials, and EMS programs.

5A.4 Current standard operating procedures or general guidelines are in place to direct fire suppression activities.

It is recommended that the department continue and complete the transition of procedures over to *Lexipol* and also formalize a process to review them regularly. This recommendation also applies to the technical rescue and hazmat programs.

5A.7 An appraisal is conducted, at least annually, to determine the effectiveness of the fire suppression program.

It is recommended that the department continue to formalize an appraisal process that will incorporate more measures than those required by the budget process. This appraisal process should include the dissemination of data on a regular basis to operations personnel. This recommendation also applies to the technical rescue and hazmat programs.

Criterion 5B: Fire Prevention/Life Safety Program

Core Competency

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

It is recommended that the department fund and fill the deputy chief position of fire marshal which has been vacant for many years.

Criterion 5C: Public Education Program

Core Competency

5C.5 Current standard operating procedures or general guidelines are in place to direct the public education program.

It is recommended that the department update as planned the current public education policy and procedures so as to better define the program and its effective/efficient use of resources.

Category VI – Physical Resources

Criterion 6B: Fixed Facilities

Criterion Statement

6B Fixed facilities are designed, maintained, managed, and adequate to meet the agency’s goals and objectives.

It is recommended that the city procure the funding necessary for the redesign and/or replacement of the seven fire stations and training facilities identified (but not funded) in the city’s 2015-2019 Capital Improvement Program for Municipal Buildings and Facilities.

Criterion 6D: Apparatus Maintenance

Core Competency

6D.5 Current standard operating procedures or general guidelines are in place to direct the apparatus maintenance program.

It is recommended that the Pasadena Public Works Department continue to move forward with finalizing the updated Building Systems Fleet Maintenance Division operating procedures and program guidelines.

Category VII – Human Resources

Criterion 7F: Occupational Health and Safety and Risk Management

Core Competency

7F.5 An occupational health and safety training program is established and designed to instruct the workforce in general safe work practices, from point of initial employment through each job assignment and/or whenever new substances, new processes, procedures, or equipment are introduced. It provides specific instructions on operations and hazards specific to the agency.

The department should establish the “incident safety officer” role within the critical task analysis and standard of cover for all hazardous incidents, including structure fires, hazmat incidents, and technical rescues. The department should ensure that this position is filled during incidents and that the individuals are properly trained and certified.

Category VIII – Training and Competency

Criterion 8C: Training and Education Resources

Core Competency

8C.1 Available training facilities and apparatus are provided to support the training needs of the agency.

- It is recommended that a plan to provide adequate training facilities, capable of supporting all training requirements based upon hazards and risks, be developed within the jurisdiction, preferably at a single consolidated campus.
- It is also recommended that the existing training tower be renovated or replaced if a new consolidated campus cannot be funded within the next capital improvement schedule for funded projects.

Specific Recommendations

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

All specific recommendations that led to the initial deferral have been satisfactorily addressed as completed or are in progress. They include:

1. It is recommended that the department develop critical tasking for each fire risk category and for each non-fire risk category.
 - *The agency has developed critical tasking for: low, moderate, and high fire risks; low and moderate medical risks; low, moderate, high, and special technical rescue risks; and low, moderate, and high hazardous materials risks.*
2. It is recommended that in addition to strategic goals and budget objectives, specific goals, objectives, and corresponding performance measures be developed and tracked for each program.
 - *The department has developed a comprehensive program appraisal process that: identifies the measured goals; specifies the review period (monthly, quarterly, annually; and specifies whether the appraisal is measuring outcomes, impacts, or processes. This method of program appraisal has been developed for fire suppression, fire prevention and life safety, hazardous materials (both code compliance and emergency response), public education, fire investigation, technical rescue, emergency medical services, and domestic preparedness planning and response.*
3. It is recommended that the department re-analyze the water supply availability for required fire flow to expand from a jurisdictional overview and assessment to specific assessment at planning zone, major risk, key risk, and special hazard areas and ensure that the results are included in the planning effort.
 - *The department has identified fire flows needed for each type of structures through pre-planning and ISO (Insurance Services Office) reporting. Pre-plans show the fire flow needed in addition to the last flow test results. These target hazards and related information is available by planning zone and block.*

Category V – Programs

Criterion 5A: Fire Suppression

Performance Indicator

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

It is recommended that the department capitalize on the data available in the information system, which will enhance its ability to further evaluate the fire suppression program. This recommendation also applies to the technical rescue and hazmat programs.

Category VI – Physical Resources

Criterion 6D: Apparatus Maintenance

Performance Indicators

6D.2 The maintenance and repair facility is provided with sufficient space and equipped with appropriate tools.

It is recommended that the city move forward with recommendations provided to the Public Works Department in a 2013 consultant’s report identifying fleet maintenance facility space and ergonomic inadequacies for city fleet maintenance activity.

6D.4 An adequate number of trained and certified maintenance personnel are available to meet the program needs.

It is recommended that the city Public Works Department implement recommendations provided in the 2013 consultant’s report addressing the staffing shortage, the classification of staffing with specific certifications and licenses, and operations supervisory span of control.

Category VIII – Training and Competency

Criterion 8B: Training and Education Program Performance

Performance Indicators

8B.3 The agency has a process for developing performance-based measurements.

It is recommended, in addition to California Fire Fighter Joint Apprenticeship Program and other guidance; the department considers using NFPA 1410: *Standard on Training for Emergency Scene Operations*, to provide performance-based measurements for crew and multi-company training and drills.

8B.5 The agency maintains individual/member training records.

It is recommended that the department develops and/or utilizes management reports to determine and track individual and crew compliance with training standards and requirements on a regular basis.

OBSERVATIONS

Category I — Governance and Administration

The Pasadena Fire Department operates within a council-manager form of municipal government. The fire chief is one of 13 department heads reporting to the city manager. The city manager conducts weekly meetings with all department heads, as well as monthly one-on-one meetings.

The City of Pasadena was incorporated in 1886 and has been recognized by the state of California as a chartered municipality since 1901. The charter allows the city council to create and establish departments and provide for the functions, powers, and duties of each department.

City council can monitor compliance with basic and agency-specific policies through the budget report. The council also has a Public Safety Committee that was established to create oversight for overall public safety and other relevant matters.

There are adequate processes in place that allows for the implementation of an administrative structure. This structure is approved by the city manager. Policies are in place regarding conflict of interest. These policies define limitations and acceptable practices for employees.

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. Pasadena City Charter Article IV, Section 410 allows the city council to create departments within the city. Pasadena Code of Ordinances, Article VII, Chapter 2.280 creates a functional unit of city government known as the fire department, under the general administration of the city manager, which is under the direction and control of the fire chief.

The established administrative structure provides an environment for achievement of the agency's mission, purposes, goals, strategies, and objectives. The agency complies with all legal requirements mandated by local, state, and federal governments. The department collaborates with the Human Resources Department and the City Attorney/City Prosecutor Department to stay updated on any changes or requirements and also when initiating a new policy or practice. The department also contracts with Lexipol, who aids in compliance with legal requirements.

There is an extensive process in place to select department heads within the city. The process includes input from the community, the affected department, and peers from the surrounding area. Qualified candidates were screened based on the knowledge, skills, and abilities determined by the input received. The process complied with the city's equal opportunity policy.

There is a robust communication process between the governing body and the administrative structure. The city manager has weekly meetings with all of the department heads collectively. Once a month, there are one-on-one meetings between the manager and each department head. There are monthly meetings with the Public Safety Committee who help direct the city manager on recommendations to city council. Interviews suggested that aside from these formal processes in place, healthy informal communication was common.

Category II — Assessment and Planning

The Pasadena Fire Department has an assessment and planning process that includes a self-assessment process, a community risk hazard analysis, a standards of cover (SOC), and a strategic plan. Initially, the team was unable to verify and validate the conclusions of the document since the actual and specific data was not available. In the months following the initial visit, the department has redeveloped its community risk hazard analysis and standards of cover. The department has broken the jurisdiction into 8 planning zones and 78 management zones. The department has also built a relationship with FireStats, LLC to ensure the data captured for analysis and the methodology used is accurate.

Two criterion statements and seven core competencies were not met: criterion statements 2B and 2C, and core competencies 2B.1, 2B.5, 2B.6, 2B.8, 2C.1, 2C.5, and 2C.6. Additional detail related to the team's findings is located below in its observations about the ability of the department to meet the criterion statement and core competency expectations. It has been verified and validated through extensive document review that the agency has satisfactorily addressed the issues that led to the initial deferral, and has subsequently demonstrated compliance with these core competencies.

The agency collects and analyzes data specific to the distinct characteristics of the community served and applies the findings to organizational planning. Conclusions in the SOC appropriately identify that the city's overall population density is metropolitan with a population density of 5969.6 people per square mile. There are a very few areas in the jurisdiction that would meet the description for remote and include wildland urban interfaces. The department has adopted the metropolitan travel time guidelines for its structure fire standards of cover. It was recommended the department update the population density evaluation for each planning zone in collaboration with the GIS service provider and develop and monitor total response time standards for each planning zone. Since the initial site visit, the agency has broken the jurisdiction into 8 management zones and further into 78 management blocks. Population density has been evaluated in each of these zones and response times are also monitored within each zone.

Although the department could show the water supply from a jurisdictional viewpoint, it was recommended the department re-analyze the water supply availability for required fire flow to expand from a jurisdictional overview and assessment to specific assessment at planning zone, major risk, key risk, and special hazard areas and ensure that the results are included in the planning effort. The department has since worked closely with ESRI to utilize the GIS system to its fullest. The department has identified fire flows needed for each type of structures through pre-planning and ISO (Insurance Services Office) reporting. Pre-plans show the fire flow needed, in addition to the last flow test results. These target hazards and related information are available by planning zone and block.

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

Criterion statements 2B and 2C were initially not met; risk levels (low, moderate and high, etc.) were not incorporated into SOC statements or measurements, and critical tasking was not addressed for each hazard and risk level. The peer assessment team was not able to verify and validate the SOC

study conclusions. Since the initial site visit, the agency has broken the jurisdiction into 8 management zones and further into 78 management blocks. The SOC has been rewritten and includes analysis based on these zones and blocks. Different levels of risks have been identified for both fire and non-fire risks, along with the appropriate critical tasking.

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

Initially, the majority of the analysis was conducted from a jurisdiction view. It was recommended that the department update the analysis of fire and non-fire risks to expand from the jurisdictional overview to the planning zone level. The department now applies metropolitan and rural population densities to each of its management zones and blocks. Different levels of risks are identified and analyzed for both fire and non-fire risks.

Initially, the team could not verify and validate the standards of cover strategy. It was recommended that with updates to risk factors and specific assessment at the planning zone level, the standards of coverage strategy should include standards for each risk type in each service demand, e.g., low risk, moderate risk, and high risk. The department has analyzed the newly developed planning zones and blocks and thus far identified over 2,600 risks that are low, moderate, high, or special. The standards of cover strategy has been expanded to include responses to the different levels of risks based on the critical tasks of resources.

During the initial visit, the strategy used in developing response plans was not able to be verified and validated. Since the initial visit, the SOC has been redeveloped and includes a sound strategy in identifying what non-fire risks exist in the jurisdiction, what critical tasks need to be accomplished, and what resources should be deployed. The risks have been identified as being low, moderate, high, or special and resources deployed accordingly.

In actual deployment, the department demonstrates strategies for strong collaboration with neighboring and regional organizations and assets to respond to non-fire risk event.

There was no evidence of institutionalized assessment of outcomes compared to risk and capability/deployment. It was recommended that the agency develop a formal process for an annual review of hazards, risk, demands, outcomes, and deployment/capability to identify, manage, and narrow imbalances. Deployment performance is compared to benchmarks every month and shared by the fire chief to the staff. The department recently initiated mandated reporting to the command staff so that performance can be shared. Since the initial site visit, the department has also developed a comprehensive program appraisal process that includes fire suppression and identifies the measured goals; specifies the review period (monthly, quarterly, annually); and specifies whether the appraisal is measuring outcomes, impacts, or processes. This process ties together the CFAI model with budget and council goals.

The department's practice is to document alarm handling as the time interval from the receipt of the alarm at the primary public safety answering point (PSAP) at the Pasadena Police Department through the transfer of the alarm to the Verdugo Fire Communication Center until the beginning of the transmittal of the response information via voice or electronic means to emergency response facilities or the emergency response units in the field.

Following a detailed assessment and analysis, the peer assessment team believes by consensus that the alarm handling time, turnout time, and travel time for the first-due and effective response force components of the total response time continuum, as contained in the SOC, are in line with the industry best practices identified in the eighth edition of the *FESSAM* and do not constitute a gross deviation. It is clear the department is committed to taking steps to meet the expectations.

The department has identified that Verdugo Fire Communications Center (VFCC) is sometimes the second PSAP depending on where the call initiates. The department has been making a concerted effort to develop a method to capture these initial PSAP times in the cases where the call is transferred from another PSAP into VFCC. This is a work in progress and although there has been progress, the department is committed to working through to achieve the most accurate portrayal of total response time possible. It is recommended that the department closely collaborate with Verdugo Fire Communications Center and the Pasadena Police Department to improve the accuracy of the elements of total response time, with special focus on the public safety answering point answering and transfer times.

During the initial visit, the SOC had identified some critical tasks, however there were some risk categories that were without them. It was recommended that the department develop critical tasking for each fire risk category and for each non-fire risk category. In the revised version of the SOC that has been developed since the initial visit, all risks identified now have critical task analyses according to risk level.

A strategic plan for 2011-2015 is in place, with a scheduled update process beginning in July 2015, which coincides with the budget and other city required planning processes, which along with the budget, is guiding the activities of the department. The plan is submitted to the city manager.

The department has a current and published plan in place, the second in a series of five-year cycle plans. The current plan continues through the remaining portion of 2015. The current plan was created with very broad community and internal stakeholder input. The plan is published in hard copy and is available in the department's electronic, digitally accessible records. A publication team was established for the current plan consisting of a chair and four additional members who were responsible for the plans publication. The current plan was distributed through an extensive distribution plan that included departmental and community presentations. A published matrix was created and maintained as part of the department's institutionalized strategic plan implementation and tracking process, which identifies responsible parties, timelines, and progress at the objective level. Twice per year, a formal strategic plan progress meeting is held in which responsible parties update the management team and department on objective achievement. The matrix is updated with each meeting.

Category III — Goals and Objectives

The Pasadena Fire Department is guided by a vision statement, a department slogan, "Desire to Serve – Courage to Act", bureau level mission statements and departmental goals and objectives. A number

of related performance measures are stated in the city's annual adopted budget document and serve to establish the benchmarks of the department's goals and objectives.

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. Much of the agency's focus for goals and the current strategic plan has driven objective setting for the last five years and the four identified strategic priorities. Twenty-eight goals were established across the four priorities that are goals for improvement. These objectives have been published and progress is published twice per year. Additional objectives and performance measures are measured and published annually as part of the budget development and approval process.

A management process is utilized for implementation of goals and objectives. The department tracks progress towards implementing its goals and objectives by a management process that includes: conducting monthly senior staff meetings and semi-annual strategic plan progress meetings, which includes the updating and publishing of the strategic priorities/goals tracking matrix.

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.

Progress is measured semi-annually for achievement and alignment of strategic priorities and goals/action plans. Senior management and other members of the department assigned to goal and objective implementation teams meet formally to review status and discuss adjustments if needed. Program specific and some outcome measures are reviewed annually as part of the budget process.

It had been recommended that in addition to strategic goals and budget objectives, specific goals, objectives, and corresponding performance measure be developed and tracked for each program. The department has since developed a comprehensive program appraisal process that: identifies the measured goals; specifies the review period (monthly, quarterly, annually); and specifies whether the appraisal is measuring outcomes, impacts, or processes. This method of program appraisal has been developed for fire suppression, fire prevention and life safety, hazardous materials (both code compliance and emergency response), public education, fire investigation, technical rescue, emergency medical services, and domestic preparedness planning and response.

Category IV — Financial Resources

The Pasadena Fire Department's executive staff develops the proposed operating and capital budgets. The processes used are defined by city policy.

Financial planning and resource allocation is based on agency planning involving broad staff participation. The Pasadena Fire Department's budget and financial operations are closely linked to and governed by the city's finance department. Financial procedures are closely monitored and managed by the executive staff of the department with assistance from the civilian management specialist. Budget development is almost entirely comprised of line item review with input from program managers. The internal budget process does not include an appraisal of program goals or effectiveness. Instead, the process is almost entirely an analysis of historical expenses with projected increases or decreases.

Financial management of the agency exhibits sound budgeting and control, proper recording, reporting, and auditing. The peer assessment team confirmed that the City of Pasadena 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. An analysis of FY14 budget and expenditures confirms adequate funds were provided to cover required expenditures. The FY15 budget includes a modest increase over FY14 to account for base salary increases. The operational budget has been flat.

The department has recommended construction projects in the capital improvement plan (CIP) totaling more than \$52 million in order to replace older stations, to add a training center, and to address other facility requirements. Those projects are included in the CIP, but as of the date of the site visit, funding for these projects had not been identified or approved by the council.

In recent years, the department has reduced expenditures through position control. In particular, the deputy chief of fire prevention and administration position has been vacant for several years, which has resulted in other staff members taking on multiple roles. Other positions have been vacated or reclassified to non-sworn.

Category V — Programs

Criterion 5A – Fire Suppression

The Pasadena Fire Department is a full-service fire and rescue organization designed to provide essential public safety and emergency services. To meet the needs of its residents, the department currently staffs eight engines, two trucks, five rescue ambulances, and a battalion chief from eight stations. The pump capacity of all engines is 1,500 gallons per minute and all trucks are tiller-driven aerials with 100-foot ladders.

The department operates a 3-shift system and works under a daily minimum staffing of 51 personnel. City council policy has established minimum staffing for each engine and truck. Through the department's Region I, Area C Unified Response Agreement, resources are available to cover five alarms on a structure fire with resources to spare.

The department has adequate equipment, supplies, and materials available to allow the fire suppression to be effective. There are caches of spare supplies and materials. Responsibilities regarding equipment, supplies, and materials are spread throughout various personnel in operations. All reserve apparatus are fully stocked and require no trade-off of equipment when needed.

The agency operates an adequate, effective, and efficient fire suppression program directed toward controlling and/or extinguishing fires for the purposes of protecting people from injury or death, and reducing property loss.

The department has a comprehensive set of procedures in place that guide the fire suppression program. Although some have been updated recently, many are in need of review and update. The department has started using Lexipol services as the keeper of their procedures, and all policies have successfully been transferred into Lexipol. The procedures and guidelines are still in the transition

phase. This transition is a strategic initiative in the strategic plan and is being monitored for completion. It is recommended that the department continue and complete the transition of procedures over to Lexipol and also formalize a process to review them regularly. This recommendation also applies to the technical rescue and hazmat programs.

The department has adopted an incident management system and routinely uses it during all emergency responses, regardless of the size or complexity of the incident. The department has adopted and follows the expectations of the National Incident Management System (NIMS).

The department occasionally monitors the effectiveness of its fire suppression program. There are formal and informal after action reports where successes and opportunities for improvement are recognized. These reports are made available to the entire department via a SharePoint site. The reporting of percentage of fires contained to the room or area found upon arrival of suppression crews, as well as the percentage of time fire companies arrive within 5 minutes of being dispatched to building fires are two performance measures captured in each year's budget document.

The deputy chief of operations recently retired and this has made it challenging to find the information that may have been captured in the past regarding program appraisal. It is recommended that the department continue to formalize an appraisal process that will incorporate more measures than those required by the budget process. This appraisal process should include the dissemination of data on a regular basis to operations personnel so that everyone can identify with program goals and work towards improving performance.

The department has an information system in place that allows for analysis. However, the department is just beginning to understand the full potential of information available to be used for program analysis. It is recommended that the department capitalize on the data available in the information system, which will enhance its ability to further evaluate the fire suppression service.

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

For 90 percent of all fire calls, the total response time for the arrival of the first-due unit, staffed with three firefighters and an officer shall be: 6 minutes 20 seconds in metropolitan/urban areas; and 7 minutes 20 seconds in rural areas. The first-due unit shall be capable of: establishing command; scene size-up; securing a water supply; deploying and utilizing a 1- $\frac{3}{4}$ " hose line for fire attack capable of delivering 175 gallons per minute (gpm); initiating search and rescue; initiating mitigation efforts within one minute of arrival; and provide basic life support (BLS) using automatic external cardiac defibrillator (AED). These specific tasks are aligned with the department's standard operating procedures and can be completed concurrently or consecutively, thereby ensuring safe and effective firefighting performance conditions to slow or mitigate the fire incident.

For 90 percent of all low risk fires, the total response time for the arrival of the ERF, staffed with three firefighters and an officer, shall be: 6 minutes 20 seconds in metropolitan/urban

areas; and 7 minutes 20 seconds in rural areas. The ERF for low risk fires shall be capable of: establishing command; securing a water supply; deploying and utilizing 1-3/4" hose lines for fire attack and back-up attack, both capable of delivering 175 gpm per hose line; pump operations; completing forcible entry; performing salvage and overhaul; providing BLS using an AED; and accountability.

For 90 percent of all moderate risk fires, the total response time for the arrival of the ERF, staffed with 12 firefighters and officers, shall be: 10 minutes 20 seconds in metropolitan/urban areas; and 16 minutes 20 seconds in rural areas. The ERF for moderate risk fires shall be capable of: establishing command; securing a water supply; deploying and utilizing 1- 3/4" hose lines for fire attack and back-up attack, both capable of delivering 175 gpm per hose line; pump operations; complying with the OSHA requirements of two in-two out; initial rapid intervention; providing BLS using an AED; completing forcible entry; search and rescue; ventilating the structure; controlling utilities; performing salvage and overhaul; and accountability.

For 90 percent of all high risk fires, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers, shall be: 12 minutes 20 seconds in metropolitan/urban areas; and 18 minutes 20 seconds in rural areas. The ERF for high risk fires shall be capable of: establishing command; securing a water supply; deploying and utilizing 1-3/4" hose lines for fire attack and back-up attack, both capable of delivering 175 gpm per hose line; pump operations; complying with the OSHA requirements of two in-two out; establishing a rapid intervention company; providing BLS using an AED; completing forcible entry; search and rescue; ventilating the structure; controlling utilities; performing salvage and overhaul; pump operations; and accountability. The ERF for high risk fires shall also be capable of placing elevated streams into service from aerial ladders or providing exposure protection by utilizing a 2-1/2" hose line that delivers greater than 250 gpm for fire attack.

The department's baseline statements reflect actual performance during 2010 to 2014. 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 fires, (ERF for low risk) the total response time for the arrival of the first-due unit, staffed with three firefighters and an officer, is: 8 minutes and 45 seconds in metropolitan/urban areas. The first-due unit is capable of: establishing command; scene size-up; securing a water supply; deploying and utilizing a 1-3/4" hose line for fire attack capable of delivering 175 gallons per minute (gpm); initiating search and rescue; initiating mitigation efforts within one minute of arrival; and provide basic life support (BLS) using automatic external cardiac defibrillator (AED). These specific tasks are aligned with the department's standard operating procedures and can be completed concurrently or consecutively, thereby ensuring safe and effective firefighting performance conditions to slow or mitigate the fire incident.

For 90 percent of all high risk fires, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers, is: 14 minutes 02 seconds in metropolitan/urban areas. The ERF for high risk fires is capable of: establishing command; securing a water supply; deploying and utilizing 1-3/4" hose lines for fire attack and back-up attack, both capable of delivering 175 gpm per hose line; pump operations; complying with the OSHA requirements

of two in-two out; establishing a rapid intervention company; providing BLS using an AED; completing forcible entry; search and rescue; ventilating the structure; controlling utilities; performing salvage and overhaul; pump operations; and accountability. The ERF for high risk fires is also capable of placing elevated streams into service from aerial ladders or providing exposure protection by utilizing a 2-1/2" hose line that delivers greater than 250 gpm for fire attack.

It was verified and validated by the peer assessment team that the Pasadena Fire Department did not have sufficient moderate risk fire suppression incidents or responses in rural areas that required any fire response, to be assembled for 2010-2014, to provide reliable data. Therefore, there are no baseline service level performance statements provided for moderate or rural fire responses in this report.

Fire Calls - 90th Percentile Times - Baseline Performance			2010- 2014	2014	2013	2012	2011	2010
Alarm Handling	Pick-up to Dispatch		2:26	2:20	2:24	2:26	2:31	2:27
Turnout Time	Turnout Time 1st Unit		2:16	2:11	2:15	2:16	2:21	2:16
Travel Time	Travel Time 1st Unit Distribution	Metro/Urban	6:06	5:48	6:19	6:47	5:43	5:46
	Travel Time ERF Concentration	Metro/Urban	10:46	9:46	10:32	10:54	11:05	10:39
<u>Low Risk</u> Fire Calls TRT	Total Response Time 1st Unit On Scene Distribution	Metro/Urban	8:45	8:31	8:39	9:04	8:33	8:46
<u>High Risk</u> Fire Calls TRT	Total Response Time ERF Concentration	Metro/Urban	14:02	12:27	14:14	14:21	13:42	14:24

The team leader also reviewed the available 2015 response time data and confirmed it is consistent with the provided information for 2010-2014.

The department has made vast progress since the initial site visit with regards to risk analysis and deployment strategies. It is recommended that the department continue to refine the deployment objectives to provide realistic goals based on the jurisdiction's characteristics.

Criterion 5B – Fire Prevention / Life Safety Program

The Pasadena Fire Department relies on its fire operations, prevention, and administration divisions to administer its fire prevention and life safety program. Contemporary effective codes, statutes, and regulations are in place to administer and enforce so as to ensure a safe and protected community of residences, businesses, visitors, and the environment.

The agency operates an adequate, effective, and efficient program directed toward fire prevention, life safety, hazard risk reduction, the detection, reporting, and control of fires and other emergencies, the provision of occupant safety and exiting, and the provisions for first aid fire fighting equipment. The department operates under the Pasadena Municipal Code Title 14, Chapter 14.28, *Fire Prevention Code*, which is the 2013 California Fire Code, but with 35 additional municipal additions or exceptions.

The department ensures compliance with the applicable fire protection laws through its enforcement of the Pasadena Municipal Code Title 14, Chapter 14.28, *Fire Prevention Code*, as well as through its enforcement of building standards relating to fire and panic safety as adopted by the Office of the State Fire Marshal (OSFM) and published in the California Building Standards Code. The department utilizes code enforcement inspection activity through both its operations and fire prevention bureaus. Fire operations company inspections and fire prevention bureau professional civilian inspectors provide the required occupancy inspections in 10 identified districts to over 7,200 occupancies. Hazardous occupancies are required to submit a hazardous materials business plan no less than once every three years to the fire prevention bureau's hazardous materials division who is delegated the responsibility of inspecting certified vapor recovery systems per the OSFM to ensure compliance with California codes and statutes.

Through the use of the fire department company inspection program, utilization of civilian professional inspectors, the use of hazardous materials inspectors and also the utilization of plans examiners located at the City of Pasadena Permit Center, the deputy fire marshal currently manages the necessary work required to accomplish the fire prevention program goals and objectives. While the program is working diligently to meet its program responsibilities, supervisory and program management is considerably overburdened due to organizational leadership changes. It is recommended that the department fund and fill the deputy chief position of fire marshal, which has been vacant for many years. The lack of adequate executive staffing in the fire prevention and administration bureau has overloaded the deputy fire marshal (a battalion chief) with responsibilities for managing multiple divisional program areas, processes, and projects, all while having to provide direct supervision at many levels.

The fire prevention bureau initially was evaluating 17 different sets of data, considering type of occupancy inspected and percent in compliance. This was done as part of the department's annual budget report. It was not really determining the effectiveness of the fire prevention program in its efforts in risk reduction. It was recommended that the department expand its appraisal of the fire prevention program beyond the current report of bureau output activity as data in the annual budget document, to include outcome measures indicating effectiveness in risk reduction. Since the site visit, the department has developed a comprehensive program appraisal process that: identifies the measured goals; specifies the review period (monthly, quarterly, annually); and specifies whether the appraisal is measuring outcomes, impacts, or processes. Each is analyzed and findings are reported. Plans are then developed to support continued success of the program. This process ties together the CFAI model with budget and council goals.

Criterion 5C – Public Education Program

The Pasadena Fire Department public education program is managed by the company officers of Fire Station 38 with oversight by the Fire Prevention and Administration Bureau. The programming is aimed at providing education to the public and changing unsafe behaviors through fire extinguisher demonstrations, *Learn Not To Burn* school presentations, station tours, earthquake preparedness demonstrations, and community events/airs demonstrations. All fire and life safety programs are tailored to the needs of the requesting audience by choosing from a wide array of educational materials before the planned event(s).

A public education program is in place and directed toward identifying and reducing specific risks in a manner consistent with the agency's mission. The department targets certain audiences and a number of human behaviors as fire risk factors considered in the delivery of the program. The department has built a set of quality program deliveries targeting risks and audience types, but it could not be validated that the program activities are a result of specific community incident demographics or data analysis. It was recommended that the department establish public education program activity specifically identified for risks and risk audiences as a result of Pasadena incident activity, demographic and data analysis. It was also recommended that the department overtly target the delivery of the identified program activities to specifically required audiences as an effort for risk and event reduction. This would provide a dynamic shift from delivering program activity and scheduling when requested, to delivering program activity proactively where required to reduce community risk and emergency events.

The department is now using response data to target public education efforts. This includes smoke detector giveaways and education efforts regarding hazardous vegetation. As a result of the development of a comprehensive appraisal process, such things will now be measured such as the marketing/publicizing various programs and seasonal safety messages. Each station hosting an open house is also now part of the plan that will be measured.

The department has a current published policy in place guiding and managing certain aspects of the public education program; however, it was verified and validated in accordance with their own appraisal of the program that a comprehensive set of policies that could better define the program had not been developed, limiting the overall effective and efficient use of resources. It is recommended that the department update as planned the current public education policy and procedures so as to better define the program and its effective/efficient use of resources.

The department's public education program's efficacy was evaluated monthly by the deputy fire marshal through activity reports generated in the department's records management system. While historically the monthly reports provide data that is meaningful and quantifiable, the analysis does not produce a truly quantifiable or qualitative assessment or analysis of the program's effect on reducing identified risks. It was recommended that the department expand its appraisal of the public education program beyond the current report of output activity as data in the annual budget document, to include outcome measures indicating the program's effectiveness at reducing identified risks and emergency events.

The department has since developed a comprehensive program appraisal process that: identifies the measured goals; specifies the review period (monthly, quarterly, annually); and specifies whether the appraisal is measuring outcomes, impacts, or processes. Each is analyzed and findings are reported.

Plans are then developed to support continued success of the program. This process ties together the CFAI model with budget and council goals.

Criterion 5D – Fire Investigation Program

The Pasadena Fire Department has a superior fire investigation program in place to conduct investigations of all reported fires and explosions within the city. The fire investigators work closely with the city's police department and other area peer fire investigation teams to complete thorough investigations and to process criminal charges, where appropriate. All reports are properly filed in accordance with the *California Health and Safety Code §13110.5*.

The agency operates an adequate, effective and efficient program directed toward origin and cause investigation and determination for fires, explosions, and other emergency situations that endanger life or property. The Pasadena Fire Department fire investigation program is authorized by *Pasadena Municipal Code Title 2, Article VII, Chapter 2.280.020*, which is complemented by the 2013 California Fire Code § 104.10, *Fire Investigations*. The code establishes the authority to investigate the cause, origin, and circumstances of any fire, explosion or hazardous condition.

Mandated investigations to determine the origin and cause of all significant fires and explosions are scientifically conducted by departmental fire investigators following the Pasadena Fire Department Policy, Chapter 404.06(a) 1, *Fire Investigations*. The department follows and utilizes the National Fire Protection Association (NFPA) 921: *Guide for Fire and Explosion Investigations, 2011 edition*.

The current staffing level provided by the Pasadena Fire Department allows the department to accomplish the fire investigation program goals and objectives. All fire department company officers (captains) promoted since 2001 have been certified by the California State Fire Marshal as Certified Fire Officers, and have received training on fire cause and origin determination. The utilization of California certified fire officers ensures that there is always a fire investigator who has specific expertise, training, and credentials related to fire and explosion investigation on an incident.

Further, the department has a full-time fire investigator who is a sworn peace officer per the *California Penal Code §830.3*, and is certified by the International Association of Arson Investigators as a Certified Fire and Explosion Investigator (CFEI). In addition to the fire investigator's workweek, the investigator is on call 24 hours a day, seven days a week. In the investigator's absence, an agreement is in place that provides coverage by a full-time fire investigator from South Pasadena Fire Department, Burbank Fire Department, or the Burbank Police Department.

The department utilizes and follows *Pasadena Fire Department Policy Chapter 404* to guide company officers and the department fire investigator as they carry out the fire investigation program. The policy is reviewed tri-annually as is consistent with the California Fire Code.

Activity and outcome appraisals are conducted monthly, bi-monthly, and annually to determine the effectiveness of the department's fire investigation program. These appraisal assessments are conducted to determine trends and patterns; by following this process, the fire investigation staff is able to provide specific data on arrests, conviction rate outcome, and case clearance rates. The department also collaborates with area peer fire and police department fire investigation units as a part of this appraisal process.

Criterion 5E – Technical Rescue

The Pasadena Fire Department provides a wide range of technical rescue programs to its residents including, but not limited to: vehicle entrapment, urban search and rescue, high angle, confined space, and trench collapse. The department's two truck companies have the capability to handle vehicle extrication situations. The other technical rescue disciplines are the responsibility of the urban search and rescue team (USAR).

The equipment, supplies, and materials used for technical rescue is state-of-the-art and in excellent shape. There is spare equipment available. An extensive checkout and maintenance system is in place to ensure the readiness of the tools needed to fulfill the operational needs of the program. Inventories are conducted every month. A checkout system exists to control the inventory both in the station and on scene. The USAR team is resource typed as a Type 1 – Heavy Rescue. The department is the lead agency that coordinates the regional task force with seven neighboring cities.

The agency operates an adequate, effective, and efficient program directed toward rescuing trapped or endangered persons from any life-endangering cause, e.g., structural collapse, vehicle accidents, swift water or submersion, confined space, cave-in, trench collapse, fire, etc.

The department describes what is expected of its members during technical rescue incidents through the use of standard operating guidelines (SOGs). Although some have been updated recently, many are in need of review and update. The department has started using Lexipol services as the keeper of their procedures, and all policies have successfully been transferred into Lexipol. The procedures and guidelines are still in the transition phase. This transition is a strategic initiative in the strategic plan and is being monitored for completion. It is recommended that the department continue this transition to completion and formalize a process to review them regularly. The department's records management system has the capability to pre-identify and track required updates; however, it is not currently being used for that purpose. It is recommended the department enhance its existing processes to more formally track and document the updating of SOGs.

The department monitors the effectiveness of its technical rescue program. There are formal and informal after action reports where successes and opportunities for improvement are recognized. These reports are made available to the entire department via a SharePoint site. The department participates in a regional exercise in which extensive feedback is given regarding strengths and opportunities for improvement.

The department has an information system in place that allows for analysis. However, the department is just beginning to understand the full potential of information available to be used for program analysis. It is recommended the department utilize the data and the information system to enhance its ability to evaluate the technical rescue program.

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

For 90 percent of all technical rescue calls, the total response time for the arrival of the first-due unit, staffed with three firefighters and an officer, shall be: 6 minutes 20 seconds in metropolitan/urban areas; and 7 minutes 20 seconds in rural areas. The first-due unit shall be capable of: establishing command; reconnaissance and search; initiate rescue of patients; and provide basic life support (BLS) using automatic external cardiac defibrillator (AED). These specific tasks are aligned with the department's standard operating procedures and can be completed concurrently or consecutively, thereby ensuring safe and effective rescue techniques can be deployed for the rescue of viable victims.

For 90 percent of all low risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with three firefighters and an officer, shall be: 6 minutes 20 seconds in metropolitan/urban areas; and 7 minutes 20 seconds in rural areas. The ERF for low risk technical rescue incidents shall be capable of: establishing command and ensuring the safety of all personnel on scene; rescuing of victims; and providing BLS using an AED.

For 90 percent of all moderate risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with 9 firefighters and two officers, shall be: 10 minutes 20 seconds in metropolitan/urban areas; and 16 minutes 20 seconds in rural areas. The ERF for moderate risk technical rescue incidents shall be capable of: establishing command and ensuring the safety of all personnel on scene; rescuing of victims; deploying a 1-3/4" protection hose line, capable of delivering 175 gpm; and providing BLS using an AED.

For 90 percent of all high risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers, shall be: 20 minutes in both metropolitan/urban and rural areas. The ERF for all high risk technical rescue incidents shall be capable of: establishing command; initiating reconnaissance and search; rescuing of patients; establishing the role of an incident safety officer; deploying a 1-3/4" protection hose line, capable of delivering 175 gpm; and providing BLS using an AED. The ERF for high risk technical rescue incidents shall also be capable of performing operations at incidents of structural collapse, swift water rescue, confined space, trench rescue, and high angle rescue.

The department's baseline statements reflect actual performance during 2010 to 2014. 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 technical rescue calls, the total response time for the arrival of the first-due unit, staffed with three firefighters and an officer, is: 12 minutes 05 seconds in metropolitan/urban areas. The first-due unit is capable of: establishing command; reconnaissance and search; initiate rescue of patients; and provide basic life support (BLS) using automatic external cardiac defibrillator (AED). These specific tasks are aligned with the department's standard operating procedures and can be completed concurrently or consecutively, thereby ensuring safe and effective rescue techniques can be deployed for the rescue of viable victims.

For 90 percent of all high risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with 20 firefighters and officers, is: 23 minutes 06 seconds in metropolitan/urban areas. The ERF for all high risk technical rescue incidents is capable of: establishing command; initiating reconnaissance and search; rescuing of patients; establishing

the role of an incident safety officer; deploying a 1-¾” protection hose line, capable of delivering 175 gpm; and providing BLS using an AED. The ERF for high risk technical rescue incidents is also capable of performing operations at incidents of structural collapse, swift water rescue, confined space, trench rescue, and high angle rescue.

It was verified and validated by the peer assessment team that the Pasadena Fire Department did not have sufficient low or moderate response technical rescue incidents, which required a first-due response or an effective response force to be assembled for 2010-2014, to provide reliable data. There are therefore no baseline service level performance statements provided for the low or moderate responses in this report.

Technical Rescue Calls - 90th Percentile Times - Baseline Performance			2010- 2014	2014	2013	2012	2011	2010
Alarm Handling	Pick-up to Dispatch		3:10	2:25	3:02	2:47	3:26	3:43
Turnout Time	Turnout Time 1st Unit		2:23	2:05	2:24	2:17	2:24	2:27
Travel Time	Travel Time 1st Unit Distribution	Metro/Urban	7:17	6:57	7:42	6:45	7:33	7:36
	Travel Time ERF Concentration	Metro/Urban	15:59	14:42	16:05	16:34	14:02	10:41
High Risk Fire Calls TRT	Total Response Time 1st Unit On Scene Distribution	Metro/Urban	12:05	12:00	12:19	11:27	12:22	9:39
	Total Response Time ERF Concentration	Metro/Urban	23:06	22:59	21:24	23:59	15:48	16:07

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

The department has made vast progress since the initial site visit with regards to risk analysis and deployment strategies. It is recommended that the department continue to refine the deployment objectives to provide realistic goals based on the jurisdiction’s characteristics.

Criterion 5F – Hazardous Materials (Hazmat)

The Pasadena Fire Department works in conjunction with the Area C Unified Response Agreement to embrace a comprehensive approach to hazardous materials emergencies. All first-due companies are trained to the operations level. There is an Office of Emergency Services (OES) Type 1 hazardous

materials teams that responds from the Burbank and Glendale fire departments. There is adequate equipment and resources available based on the level of response provided by the department.

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

The department describes what is expected of its members during hazardous materials incidents through the use of standard operating guidelines (SOGs). Although some have been updated recently, many are in need of review and update. The department has started using Lexipol services as the keeper of their procedures; all policies have successfully been transferred into Lexipol. The procedures and guidelines are still in the transition phase. This transition is a strategic initiative in the strategic plan and is being monitored for completion. It is recommended that the department continue this transition to completion and formalize a process to review them regularly.

The department monitors the effectiveness of its hazardous materials program. There are formal and informal after action reports where successes and opportunities for improvement are recognized. These reports are made available to the entire department via a SharePoint site. The department participates in a regional exercise in which extensive feedback is given regarding strengths and opportunities for improvement. Although an ongoing appraisal is conducted, it is recommended that the department consider creating a more formal process and also create additional measures in which to measure program effectiveness.

The department has an information system in place that allows for analysis. However, the department is just beginning to understand the full potential of information available to be used for program analysis. It is recommended the department utilize the data and the information system to enhance its ability to evaluate the suppression program.

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

For 90 percent of all hazmat calls, the total response time for the arrival of the first-due unit, staffed with three firefighters and an officer, shall be: 6 minutes 20 seconds in metropolitan/urban areas; and 7 minutes 20 seconds in rural areas. The first-due unit shall be capable of: establishing command, isolating and denying entry to the affected area, requesting additional resources, initiating rescue and rapid decontamination of viable victims, and providing basic life support (BLS) using automatic external cardiac defibrillator (AED). These specific tasks are aligned with the department's standard operating procedures and can be completed concurrently or consecutively, thereby ensuring the community and personnel are protected from the hazards associated with hazardous materials incidents.

For 90 percent of all low risk hazmat incidents, the total response time for the arrival of the ERF, staffed with three firefighters and an officer, shall be: 6 minutes 20 seconds in metropolitan/urban areas; and 7 minutes 20 seconds in rural areas. The ERF for low risk

hazmat incidents shall be capable of: establishing command and ensuring the safety of all personnel on scene, isolating and denying entry to the affected area, identifying materials; mitigating the incident; and deploying rapid decontamination techniques in conjunction with BLS using an AED.

For 90 percent of all moderate risk hazmat incidents, the total response time for the arrival of the ERF, staffed with three firefighters and an officer, shall be: 10 minutes 20 seconds in metropolitan/urban areas; and 16 minutes 20 seconds in rural areas. The ERF for moderate risk hazmat incidents shall be capable of: establishing command and ensuring the safety of all personnel on scene, rescuing or evacuating of victims, isolating and denying entry to the affected area, and deploying rapid decontamination techniques in conjunction with BLS using an AED.

For 90 percent of all high risk hazmat incidents, the total response time for the arrival of the ERF, staffed with 14 firefighters and two officers, shall be: 12 minutes 20 seconds in metropolitan/urban areas; and 18 minutes 20 seconds in rural areas. The ERF for all high risk hazmat incidents shall be capable of establishing command, establishing isolation areas and denying entry, rescuing or evacuating of viable victims, establishing the role of an incident safety officer, developing the decontamination corridor, and providing BLS using an AED.

The department's baseline statements reflect actual performance during 2010 to 2014. 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 hazmat calls (ERF for low risk), the total response time for the arrival of the first-due unit, staffed with three firefighters and an officer, is: 10 minutes 03 seconds in metropolitan/urban areas. The first-due unit is capable of: establishing command, isolating and denying entry to the affected area, requesting additional resources, initiating rescue and rapid decontamination of viable victims, and providing basic life support (BLS) using automatic external cardiac defibrillator (AED). These specific tasks are aligned with the department's standard operating procedures and can be completed concurrently or consecutively, thereby ensuring the community and personnel are protected from the hazards associated with hazardous materials incidents.

For 90 percent of all high risk hazmat incidents, the total response time for the arrival of the ERF, staffed with 14 firefighters and two officers, is: 12 minutes 41 seconds in metropolitan/urban areas. The ERF for all high risk hazmat incidents is capable of establishing command, establishing isolation areas and denying entry, rescuing or evacuating of viable victims, establishing the role of an incident safety officer, developing the decontamination corridor, and providing BLS using an AED.

It was verified and validated by the peer assessment team that the Pasadena Fire Department did not have sufficient moderate risk hazardous materials incidents or incidents in rural areas, which required a response to be assembled for 2010-2014, to provide reliable data. There are therefore no baseline service level performance statements provided for rural or moderate responses in this report.

Hazmat Calls - 90th Percentile Times – Baseline Performance			2010- 2014	2014	2013	2012	2011	2010
Alarm Handling	Pick-up to Dispatch		2:52	2:33	2:38	2:35	2:55	2:54
Turnout Time	Turnout Time 1st Unit		2:10	2:01	2:12	2:12	2:07	2:18
Travel Time	Travel Time 1st Unit Distribution	Metro/Urban	6:42	7:19	6:42	6:35	6:15	6:15
	Travel Time ERF Concentration	Metro/Urban	9:20	9:05	8:19	9:00	11:29	8:35
<u>Low Risk</u> Hazmat Calls TRT	Total Response Time 1st Unit On Scene Distribution	Metro/Urban	10:03	10:09	9:56	9:44	9:19	10:06
<u>High Risk</u> Hazmat Calls TRT	Total Response Time ERF Concentration	Metro/Urban	12:41	12:16	11:55	12:25	14:33	12:32

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

The department has made vast progress since the initial site visit with regards to risk analysis and deployment strategies. It is recommended that the department continue to refine the deployment objectives to provide realistic goals based on the jurisdiction's characteristics.

Criterion 5G – Emergency Medical Services (EMS)

Pasadena Fire Department provides a comprehensive EMS service, consisting of first response by either an advanced life support (ALS) assessment engine or a basic life support (BLS) truck company, along with ALS transport services.

The minimum level of EMS training for all members is emergency medical technician-defibrillation (EMT-D). The department requires entry level firefighter applicants be certified as EMT-Ds, and preference in hiring is given to candidates certified to the EMT-Paramedic level. In the past, the department has supported personnel to attend paramedic training, but not in recent years. Firefighters who serve as paramedics receive a salary bonus, but they also must sign an agreement to maintain their ALS certification for the duration of their employment with the city.

The department participates in and complies with the requirements of the Los Angeles County Department of Health Services EMS policies and procedures. This well-established and long-

standing countywide system has significant strengths including standardized training, protocols, quality assurance/improvement, and interagency coordination.

The agency operates an EMS program that provides the community with a designated level of out-of-hospital emergency medical care. The department does not develop its own EMS protocols, but does participate in and comply with protocols and operating procedures outlined by the Los Angeles County Department of Health Services EMS agency. This long-standing countywide system has significant strengths including the integration of common training, protocols, quality assurance/improvement measures, and interagency coordination. All of these are intended to create a consistent level of patient care at the BLS and ALS level. In addition, the agency has a modern and complete set of operational procedures (SOPs) that address the operation of personnel assigned to EMS responsibilities. During the site visit, the assessment team observed that personnel were well versed in those policies and procedures.

The Pasadena Fire Department Operational Medical Director and Quality Assurance Nurse ensure compliance with protocols, policies, and procedures. The department has a comprehensive quality improvement (QI) program that focuses on documentation, skill completion, and protocol compliance. The results of the QI program are used to provide tailored continuing education programs designed to correct areas of identified opportunity.

The agency utilizes a standardized Los Angeles County patient care report, and the agency has purchased an electronic records management system to record this data in real time during incidents. Pasadena's electronic patient care report (EPCR) system collects all data elements required by the Los Angeles County Department of Health Services EMS. Records are protected according to the Health Insurance Portability and Accountability Act (HIPAA) requirements. Legacy (paper based) records have been scanned into an electronic format and are maintained according to expected standards; the newer electronic EPCRs are similarly maintained in appropriate storage.

The department has a Health Insurance Portability and Accountability Act (HIPAA) compliance program in place, and all personnel have received training on this law. Members of the department are responsible for maintaining privacy and confidentiality of an individual's personal information in accordance to local, state and federal protocols. The department's EMS Coordinator ensures HIPAA training is provided to all personnel on a regular basis.

The department collects a superior level of detailed quality improvement (QI) data that measures compliance with protocols and effectiveness of skills provision. The quality improvement/assurance coordinator also has access to data that describes patient outcomes, but there was no evidence that the department completes an institutionalized, annual appraisal that links EMS risk assessment, EMS goals and objectives, and actual EMS program results. It was recommended that the department should conduct an appraisal, at least once per year, that links EMS risk assessment, goals and objectives, with actual patient / EMS system outcomes. Since the initial site visit, the department has developed a comprehensive program appraisal process that: identifies the measured goals; specifies the review period (monthly, quarterly, annually); and specifies whether the appraisal is measuring outcomes, impacts, or processes. Some of the things now measured are response times and cardiac arrest survival rates.

The Pasadena Fire Department is currently participating in a pilot study of a county-wide "community paramedicine" program. The agency recognizes this program has the potential to reduce

demand for emergency responses while providing patients with access to the most appropriate resource.

The agency has made a significant investment in equipping its ambulances with the full range of ALS supplies and equipment, including the reserve ambulances - which are fully stocked at all times. The agency has developed and implemented a very robust and effective EPCR system that utilizes iPad tablets, and is clearly well accepted, appreciated, and effectively used by personnel.

Pasadena Fire Department enjoys a very collaborative and effective relationship with the primary receiving hospital, Huntington Hospital. For instance, the agency and the hospital have developed a "trauma rounds" training opportunity whereby all firefighter/paramedics spend time in the hospital participating in patient care reviews.

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

For 90 percent of all emergency medical services calls, the total response time for the arrival of the first-due unit, staffed with 3 firefighters and an officer, shall be: 6 minutes 20 seconds in metropolitan/urban areas; and 7 minutes 20 seconds in rural areas. The first-due unit shall be capable of establishing command, initiating triage, providing basic life support (BLS) using an automatic external cardiac defibrillator (AED), and establishing base hospital communications. These specific tasks are aligned with the department's standard operating procedures and can be completed concurrently or consecutively, thereby ensuring safe and effective emergency care is provided to patients during emergency medical incidents by the department's emergency medical technicians (EMT) and paramedics.

For 90 percent of all low risk EMS incidents, the total response time for the arrival of the ERF, staffed with three firefighters and an officer, shall be: 6 minutes 20 seconds in metropolitan/urban areas; and 7 minutes 20 seconds in rural areas. The ERF for low risk EMS incidents shall be capable of establishing command, ensuring the safety of all personnel, initiating triage, and providing BLS using an AED.

For 90 percent of all moderate risk EMS incidents, the total response time for the arrival of the ERF, staffed with three firefighters and an officer, shall be: 10 minutes 20 seconds in metropolitan/urban areas; and 16 minutes 20 seconds in rural areas. The ERF for moderate risk EMS incidents shall be capable of establishing command, initiating triage and treatment with BLS using an AED, and establish base hospital communications. The ERF shall also ensure the safety of personnel and patients on scene of the EMS incident.

The department's baseline statements reflect actual performance during 2010 to 2014. 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 EMS incidents, the total response time for the arrival of the first-due unit, staffed with 3 firefighters and an officer, is: 7 minutes and 42 seconds for low risk responses in Metropolitan/Urban areas and 7 minutes and 58 seconds for moderate risk. The first-due unit is capable of establishing command, initiating triage, providing basic life support (BLS) using an automatic external cardiac defibrillator (AED), and establishing base hospital communications. These specific tasks are aligned with the department's standard operating procedures and can be completed concurrently or consecutively, thereby ensuring safe and effective emergency care is provided to patients during emergency medical incidents by the department's emergency medical technicians (EMT) and paramedics.

It was verified and validated by the peer assessment team that the Pasadena Fire Department did not have sufficient EMS incidents in rural density areas, which required a response to be assembled for 2010-2014, to provide reliable data. There are therefore no baseline service level performance statements provided for EMS responses in rural areas in this report.

EMS Calls 90th Percentile Times Baseline Performance		2010- 2014	2014	2013	2012	2011	2010
Alarm Handling	Pick-up to Dispatch	2:12	2:15	2:11	2:09	2:14	2:10
Turnout Time	Turnout Time 1st Unit	2:01	1:59	2:03	2:01	2:01	2:01
Travel Time	Travel Time 1st Unit Distribution	Metro/Urban 4:49	4:55	4:55	4:46	4:45	4:40
	Travel Time ERF Concentration	Metro/Urban 5:00	5:03	5:06	5:04	4:54	4:53
<u>Low Risk</u> EMS Calls TRT	Total Response Time 1st Unit On Scene Distribution	Metro/Urban 7:42	7:47	7:46	7:40	7:40	7:30
<u>Moderate Risk</u> EMS Calls TRT	Total Response Time ERF Concentration	Metro/Urban 7:58	8:02	8:04	8:03	7:53	7:45

The team also reviewed the available 2015 response time data and confirmed it is consistent with the provided information for 2010-2014.

The department has made vast progress since the initial site visit with regards to risk analysis and deployment strategies. It is recommended that the department continue to refine the deployment objectives to provide realistic goals based on the jurisdiction's characteristics.

Criterion 5H – Domestic Preparedness Planning and Response

Emergency management responsibility for the City of Pasadena is established by ordinance in Chapter 2.370 of the City of Pasadena Code of Ordinances. The ordinance establishes a Disaster

Emergency Services Council which is led by the mayor and creates an office for Director of Emergency Services to which the city manager is appointed by ordinance. The city manager has designated the fire chief as his deputy director of emergency services. A full time emergency management coordinator works under the direction of the fire chief. The city maintains two major all-hazards plans. The first is the City of Pasadena Emergency Operations Plan, and the second is the City of Pasadena Multi Hazard Mitigation Plan. Through a number of memorandums of understanding and a joint powers agreement, the City of Pasadena is part of a local area multi-jurisdictional group (12 cities known as Area C), which is also part of the overall Los Angeles County Office of Emergency Management.

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 City of Pasadena Emergency Operations Plan (EOP) is a very comprehensive document, developed by technical experts, led by the Director of Emergency Services and his designees, approved by the Disaster Emergency Services Council, and adopted by the city council. It very clearly defines roles and responsibilities, procedures and protocols, both internally and externally to implement the EOP and the City of Pasadena Multi-Hazard Mitigation Plan. The EOP was most recently updated and adopted by the city council in 2011-2012.

The city participates in at least two multi-jurisdictional exercises annually and conducts multi-departmental exercises once every six months. This agency also has the opportunity to implement their plan, thereby testing the plan and ensuring participant awareness and competency in its execution, every year with the actual management of two nearly simultaneous events with the Rose Bowl Parade and Rose Bowl event every January. All participants train and operate under the National Incident Management System (NIMS).

Departmental standard operating procedures are in place, along with guidelines and joint powers agreements for external but critical agencies and services, all guided and or directed by the EOP and other state and federal regulations or requirements.

There is a well-equipped emergency operations center (EOC) that is managed by the emergency management coordinator, and maintained and operated by the fire department. The EOC is activated in each large-scale drill. It is prepared and ready in case a large-scale disaster develops during the two major annual events held in the community. All communications services for the Pasadena Fire Department are provided through the Verdugo Fire Communications Center, a consolidated communications center, which is serving 13 area fire departments. To facilitate interoperability in the larger region, the City of Pasadena and surrounding jurisdictions are all parties to the Interagency Communications Interoperability System (ICIS). ICIS is the regional radio and communications network system providing all of the hardware and systems used by 8 communications networks serving 31 Fire/EMS and Police agencies operating on the ICIS system as their primary means of mission critical and general communications. These agencies represent 22 individual cities and several thousand first responders within Los Angeles County. ICIS also serves the general government, public utility, and transportation resources in its member and subscriber communities. The system is managed by the ICIS Governance Board, which has representation from Pasadena's emergency response agencies.

Through the very capable skill and efforts of the emergency preparedness coordinator, there is a very strong community outreach program for disaster management. At least four 21-hour community emergency response team training programs for 25-30 citizens in each session are delivered annually. These community resources are then coordinated through the department programs adding significant capability for community-based sustainability during disaster events. The coordinator is also working to implement a Map Your Neighborhood program funded and organized through the Emergency Network Los Angeles, Regional Catastrophic Preparedness Grant Program. A volunteer citizen radio group is organized and coordinated in the program. This agency's disaster management program can become a best practice model if the department more closely integrates this programs assets and capabilities with their other operational programs.

Category VI — Physical Resources

The Pasadena Fire Department maintains eight fire stations and two support facilities (Permit Center and Fire Administration offices) that are distributed across the city. The department is seeking funding approval for fire station improvement and/or replacement projects that currently exist in the city's 2015-2019 Capital Improvement Plan (CIP). In the department's efforts to meet the department's standards of cover and service level objectives, it operates a front-line response fleet of eight engines, two ladders, four rescue ambulances, one basic life support ambulance and one command apparatus for the department's emergency response functions served. The department utilizes the city's public works department fleet services maintenance division, which is appropriately staffed and properly trained and qualified to maintain the apparatus and equipment used for emergency response activities.

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 City of Pasadena utilizes a five year CIP as a planning process for physical facilities. This process involves planning activity by the fire department staff, the fire chief, the public works director, the city manager, and the governing body.

Fixed facility resources are designed, maintained, managed, and adequate to meet the agency's goals and objectives. It is recommended that the city procure the funding necessary for the redesign and/or replacement of the seven fire stations and training facilities identified (but not funded) in the city's 2015-2019 Capital Improvement Program for Municipal Buildings and Facilities. These improvements will provide for improvement in the fire department's ability to carry out its mission and to safely and effectively meet its goals and objectives.

The current 2015-2019 CIP includes over \$52,000,000 in fire station and training facility re-design, improvement, and/or replacement projects, but none of the fire facility projects in the plan are currently funded.

The peer assessment team observed a strong commitment by the department and the city to ensure that all of its facilities meet all applicable codes and regulations. All of the current fire department facilities were evaluated in 2012, and the recommendations for required repairs, remodeling and/or replacement was established which led to seismic safety repairs and Americans with Disability Act improvements in 2013 and 2014. While the improvements and repairs addressed the minimum requirements established by federal, state, and local codes and regulations, there are still a variety of facility improvements and/or replacements necessary as identified in a consultant's report to the city in 2012.

Apparatus resources are designed and purchased to be adequate to meet the agency's goals and objectives. The department's eight fire engines, two ladder trucks, five rescue ambulances, command vehicle, urban search and rescue, patrol, rescue cushion and water tender are strategically deployed within the eight fire districts in the city. The apparatus locations in fire district stations are placed with a goal to provide a four-minute travel time except for small outer edge areas where automatic aid could provide closest unit response.

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. The department's apparatus maintenance program is provided by the city Public Works Department through its Building Systems Fleet Maintenance Division (BSFMD). The department's fleet maintenance program is established and conducted in accordance with manufacturer's recommendations and specifications. Fire department driver operators conduct daily, weekly, and monthly maintenance and inspections on apparatus. Deficiencies are reported to the driver operator's supervisor, and a work order is issued to BSFMD for address and/or repair. Periodic maintenance required for apparatus is provided by BSFMD and is provided by qualified technicians. A licensed third-party vendor is utilized for warranty and heavy repairs not available at the BSFMD.

The department follows Pasadena Fire Department Policy 704 regarding inspection and maintenance responsibilities with regard to front line and reserve vehicles and apparatus. All warranty maintenance activity is required to be followed by policy, and BSFMD handles any maintenance beyond daily, weekly or monthly activity. It was noted that the BSFMD is currently in the process of updating their standard operating procedures at the fleet maintenance center in accordance with a recommendation from a 2013 consultant's report. It is recommended that the Pasadena Public Works Department continue to move forward with finalizing the updated BSFMD operating procedures and program guidelines.

It is further recommended that the city move forward with recommendations provided to the Public Works Department in a 2013 consultant's report identifying fleet maintenance facility space and ergonomic inadequacies for city fleet maintenance activity. It is also recommended that the city implement recommendations addressing the staffing shortage, the classification of staffing with specific certifications and licenses, and operations supervisory span of control.

Equipment resources are adequate and designed and maintained to meet the agency's goals and objectives. It was validated that the department manages a tools and equipment program, which ensures that specific tools and/or equipment required to have qualified certified technicians for maintenance, testing, and inspection indeed are provided for effectively. The appropriate maintenance, testing and inspection records are also maintained in accordance with City Council Resolution No. 6051 concerning records retention.

Safety equipment is adequate and designed to meet the agency goals and objectives. The department has a comprehensive safety program that appropriately identifies and distributes a high quality supply of safety equipment for its employees. Personal protective equipment, including protective ensembles for hearing, vision, respiratory, and medical exposure protection is provided as personal issue. All safety equipment is properly sized and fitted to each firefighter. Other safety equipment is provided for particular tasks on an as needed basis. Personnel are charged with the regular inspection of their own safety equipment, and the company officers are responsible to ensure the compliance with the department policy manual concerning the inspection, maintenance and cleaning schedule for personal protective equipment.

Category VII — Human Resources

The human resources (HR) functions for the Pasadena Fire Department are primarily provided through the city's HR department. The department engages a variety of professional, technical, and clerical support staff.

General human resources administration practices are in place and are consistent with local, state, and federal statutory and regulatory requirements.

The city's director of human resources serves as the HR manager for the Pasadena Fire Department, and delegates tasks and activities as required. The Pasadena Fire Department has appointed a civilian staff assistant who serves as the department's liaison to the city human resources department. In addition, the deputy chief of operations has formal authority to ensure HR policies are maintained and followed.

Systems are established to attract, select, retain, and promote qualified personnel in accordance with applicable local, state, and federal statutory requirements. The department has a process to screen, qualify, and test candidates for new and promoted positions. Promotions are based on city and department defined competitive processes for both unionized personnel and management staff. The department uses an outside consultant firm for its validated entry-level test instrument. City human resources staff routinely audits processes, using both internal and external experts, to ensure compliance with state and federal requirements for both entry-level hiring, as well as promotional processes.

The department has done a credible job attracting and retaining a diverse workforce. In terms of ethnicity, the workforce mirrors the community. In terms of gender, the department's gender profile exceeds national averages for career fire departments.

In recent years the department has screened candidates for emergency medical technician certification as a business necessity; it appears this has not negatively impacted the diversity of the workforce.

The department has a defined and supervised probationary process to evaluate new members. During the recruit academy, candidates are considered hourly employees of the city and not firefighters. Upon successful completion of the training academy, these members become probationary firefighters and serve an 18-month probation period. During this time, they are evaluated by their company officer using regular written performance appraisals that are based on their demonstrated knowledge, skills, and abilities. Newly promoted members serve a 12-month probationary period. The department addresses job performance for newly promoted members through its annual employee appraisal program.

Personnel policies and procedures are in place, documented, and guiding both administrative and personnel behavior. The policies, procedures, and rules related to human resources are available in hard-copy in all stations and department facilities, as well as electronically. They are also published on the department's Lexipol site.

Policies defining and prohibiting discrimination and harassment are outlined in the collective bargaining agreement and department policies and procedures. Department and city policies meet or exceed minimum state and federal requirements. The related information is provided to new

employees at the time of hiring and any significant updates are regularly communicated to staff as they occur.

Human resources development and utilization is consistent with the agency's established mission, goals, and objectives. The department has a position classification system in place whereby, on an on-going basis, assessments of job functions and job descriptions are accomplished. This audit process culminates in the modification of classifications, as appropriate. Members of the management team work with human resources to make sure existing practices meet the needs of the department.

A system and practices for providing employee/member compensation are in place. The Pasadena HR department publishes rates of pay on the job classification form for each position in the department; these are available for public review.

Occupational health and safety and risk management programs are established and designed to protect the organization and personnel from unnecessary injuries or losses from accidents or liability. The department works closely with the city's human resources department to maintain an occupational health and safety training and compliance program. This includes an online training system; all members are required to complete monthly safety topics, which then become a permanent part of their employment/training record. In addition, the fire department's training chief serves as the safety officer monitoring compliance with fire/EMS safety practices.

There was no evidence that a safety officer is routinely assigned during working incidents. Although the department states that company officers *may* be assigned as safety officers, there was no evidence that these company officers have been certified to perform the safety officer role.

The department should establish the "incident safety officer" role within the critical task analysis and standard of cover for all hazardous incidents, including structure fires, hazmat incidents, and technical rescues. The department should ensure that this position is filled during incidents and that the individuals are properly trained and certified.

The department does not formally utilize any kind of "near miss" reporting procedures.

The agency has a wellness/fitness program for recruit and incumbent personnel and provisions for non-compliance by employees/members are written and communicated. The department contracts with a medical practice to provide a physician-supervised medical exam (including stressed 12-lead electrocardiogram) for each sworn member every year. In addition, each member undergoes a physical fitness evaluation at time of hire and annually. These evaluations are conducted on a contract with Santa Anna College. This evaluation results in a detailed report and fitness plan tailored for each sworn employee each year.

The department has a wellness and fitness program policy that includes five components: annual medical exams, annual fitness evaluations, immunizations and disease screening, physical fitness and conditioning, and peer fitness training.

Category VIII — Training and Competency

The Pasadena Fire Department meets the training needs of the department through dedicated departmental resources and facilities, and shared resources within the Area C group of thirteen cities. A training division is staffed by a full-time battalion chief working at fire headquarters and a

captain/training officer working within the operations division. The training officer has an office, records, and equipment storage space co-located at Station #33. A smart classroom, drill tower, and limited drill ground space is also located at Station #33. Training facilities are shared in neighboring communities for live fire training and special operations teams. Use of these facilities requires leaving the jurisdiction.

A training and education program is established to support the agency's needs. Program areas and required training needs are identified based upon federal, state, and local laws, as well as administrative requirements. As provided in the agreement with Local #809, there is a very heavy influence from the state fire marshal's office and the state labor organization that co-sponsor the California Fire Fighter Joint Apprenticeship Program (CFFJAC). CFFJAC establishes training standards, curriculum, and tracking systems to provide the system to participating departments for ensuring recruit fire fighter through company officer competencies. There is funding provided for the departments participation in the CFFJAC program.

Training and education programs are provided to support the agency's needs. The CFFJAC program is mandatory for the department and all personnel covered within the program's scope for apprentice and journeyman levels according to the labor agreement with Local #809. For training outside the scope of the CFFJAC program, the department utilizes other state and federal requirements and/or guidelines including National Fire Protection Association (NFPA) standards and occupational safety and health act requirements. Battalion chiefs must complete the courses and requirements of the California Chief Officer's program or demonstrate prima fascia compliance with a minimum of an associate's degree. Components of the training and education program are included in the current departmental strategic plan with specific goals related to implementation and/or management of training academies and Mentorship Program.

Line fire captains, under the supervision of their battalion chiefs, are responsible annually for the organization, delivery and performance evaluation of required company and multi-company drills. Performance-based measurements are also tracked and reported by the company officer to the training captain for completion of the CCFJAC apprentice and journeyman requirements.

As an improvement to an expansion of the department's performance-based measurements for training it is recommended that, in addition to CFFJAC and other guidance, the department consider using NFPA 1410: *Standard on Training for Emergency Scene Operations*, to provide performance-based measurements for crew and multi-company training and drills. The department does maintain individual training records for its members but it is currently reviewing other software program packages to improve the ease of tracking and reporting general and certification training. It is recommended that the department develops and/or utilizes management reports to determine and track individual and crew compliance with training standards and requirements on a regular basis.

Training and education resources, printed and non-printed library materials, media equipment, facilities, and staff are available in sufficient quantity, relevancy, diversity, and are current.

The department must utilize resources in neighboring jurisdictions to provide all the training assets required to meet the needs of the organization and the programs it provides to the community.

Apparatus for training is adequate with a modern fleet and full access to the reserve fleet when needed. The training tower and drill yard located at Station #33 are just adequate. Space is very limited and this site is located in a very urban location. The training tower is more than 50 years old.

There is evidence of repairs but no substantial renovation has been done since the tower opened. Flooring and window casings are for the most part original and showing extreme signs of weather and use-related deterioration.

It is recommended that a plan to provide adequate training facilities, capable of supporting all training requirements based upon hazards and risks be developed within the jurisdiction, preferably at a single consolidated campus. It is also recommended that the existing training tower be renovated or replaced if a new consolidated campus cannot be funded within the next capital improvement schedule for funded projects.

Nationally recognized training materials are being used. Much of the material is provided through the CFFJAC program, which has strong stakeholder participation in development and continuing review. The training staff also regularly monitors and reviews materials and station libraries and makes changes based upon findings, user, and administrative input.

Category IX — Essential Resources

Criterion 9A – Water Supply

The Pasadena Fire Department primarily relies on the city's water department to ensure the provision of a well maintained, reliable, and adequate water system. A solid working relationship exists between the two entities and includes the regular exchange of information to identify areas where the water supply system can be improved.

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

The department has access to Insurance Services Office (ISO) data that lists required fire flow for every structure. In addition, required fire flow is computed during the plan review process for new construction and renovation/expansion projects. The known fire flows, as represented by ISO data, were used to establish the community-wide risk assessment.

The department did not utilize a standard pre-fire planning document (in either electronic or paper format) or process. Fire inspections were completed on all commercial properties each year, but fire companies did not have immediate access to those inspection reports and in the absence of consistent and standardized pre-fire plans, the responding companies did not have any way of knowing the required gpm flow for the structure. It was recommended that the department implement the consistent use of pre-fire planning for all target hazards, including providing required fire flow information. Since the initial site visit, the department has worked with ESRI to develop preplans that show the fire flow, number of stories, life hazards, and other data. Each hydrant has its own table of values, which show the last flow test results. So far the department has identified over 2,600 targeted risks through this process.

Virtually all developed areas of the city are protected by a well-developed and maintained water system, which is under the control of the Pasadena Water and Power Department.

There was no evidence that responding fire officers have access to maps that show the size of water mains, or the flow and pressure of various hydrants. This information is available from the Pasadena

Water and Power Department, but may not be available on fire unit mobile data computers. Hard copies of this information are not kept on the units.

The fire department has one water tender that is strategically located and cross-staffed on an as needed basis to support incidents on major thoroughfares and wildland areas adjacent to the city. Pasadena's rural water supply challenge exists almost entirely in the context of wildland and wildland-urban interface settings. To this end, the department has long-standing practices and well-defined arrangements with both county and state agencies to address both routine and catastrophic wildland urban interface threats.

Criterion 9B – Communication Systems

The department's communications and alerting infrastructure relies on two separate primary public safety answering points (PSAP) and one regional/consolidated PSAP. The primary PSAPs are operated by the Pasadena Police Department and California Highway Patrol (respectively). The secondary PSAP, Verdugo Fire Communications Center (VFCC) is a regional fire/emergency medical service (EMS) dispatching facility that serves 13 fire agencies. VFCC was in the process of implementing Next Generation 911 technologies during the site team visit, and the assessment team was very impressed with the ability of this center to manage fire/EMS dispatching and incident communications support. The center relies on an older computer aided dispatch (CAD) and geographic information system (GIS) system, but is in the process of replacing this with a state of the art integrated CAD/GIS module. This upgrade will create a number of strong opportunities for the Pasadena Fire Department to improve data collection, data integrity, and interagency collaboration.

The assessment team did not observe the primary PSAPs (Pasadena Police and California Highway Patrol, respectively) and there were un-answered questions regarding the alarm processing results within these primary PSAPs.

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 radio system is based on digital trunked technology. Mobile data computers are installed on all fire apparatus. The department assigns portable radios individually to all sworn personnel, and other specialty assignments. All fire department mobile and portable radios have mutual aid and talk-around channels. The fire station alerting uses a combination of pre-alerts and audio alerts, with redundant backup.

VFCC has adequate provisions for meeting the incoming call volume associated with emergencies. All 18 full time staff in the center are cross-trained and able to assume call taker or dispatch functions should the need arise during times of high call volume. There is a 24-hour duty supervisor available to assist dispatchers and to implement policies and procedures regarding move-ups, system status management, and management of high-risk, low frequency emergencies.

The center operates under comprehensive standard operating guidelines (SOGs) that provide a central core of directives from which personnel can effectively, efficiently, and safely meet the expected levels of service for all emergency events. The VFCC is responsive to oversight committees from the member cities, and produces a comprehensive annual report detailing system performance.

Criterion 9C – Administrative Support Services and Office Systems

The fire department provides essential administrative services with internal staff, but relies heavily on daily support from the city for financial, administrative, legal, and human resources support. The department has a lean administrative staff, and has absorbed reductions in both command staff and administrative support positions in recent years. These staffing reductions have caused some difficulties in keeping pace with the support needs of the organization. Many administrative duties are borne and appropriately handled by personnel assigned to operational positions. The department contracts out certain administrative projects due to the lack of available administrative and/or professional staff (including the standards of cover data analysis).

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 department operates under specific city directives and guidelines that outline the required and authorized support positions. The number of authorized administrative and a management positions have declined in recent years in response to economic pressures. The department is operating at the authorized levels and, as such, is staffed and managed to meet its core administrative goals and objectives. Operational personnel share many administrative duties.

The fire department utilizes a highly decentralized method of managing the day to day logistics of the department, including supply ordering, equipment replacement, inventory tracking, fixed asset management, etc. While it appears this approach is very cost effective and provides a high level of employee engagement, the decentralization could easily contribute to a lack of internal controls for resource management and accountability.

The department relies heavily on the city Department of Information Technology for basic information technology and analytics/planning support. In recent years, this level of support has declined from a full time dedicated staff member to 25 percent full time equivalent. The department relies very heavily on “off the shelf” applications such as Telestaff, Firehouse, and Outlook to manage the data that is used to support management decisions. These applications are useful for defined purposes and for producing standard reports. However, they may not share common data elements and definitions, making multi-variable analysis and specific queries much more complex, problematic and time consuming. The assessment team observed firefighters and fire officers, who are not professionally trained as data analysts, struggle to extrapolate useful and accurate conclusions from large sets of raw data.

Category X — External Systems Relationships

The Pasadena Fire Department utilizes a variety of formal external relationships in order to provide the maximum benefit of emergency services for the City of Pasadena. Through the use of a local regional emergency communications center, the use of a “closest unit” automatic aid response system and agreement, and through the use of a variety of area, regional, and state aid systems, the city is able to benefit from multiple resources beyond its own capability. These agreements are well structured and managed in accordance with required private and local government policies.

The agency's operations and planning efforts include relationships with external agencies and operational systems that affect or may influence the agency's mission, operations, or cost effectiveness.

The department develops and maintains a variety of outside relationships that provide critical support to its mission, operations and cost effectiveness. The department depends on the Verdugo Fire Communications Center for its 9-1-1 call processing and dispatching of fire department resources to emergency events in the city. Additionally, relationships with organizations such as the Los Angeles Fire Chiefs Association, the Verdugo Fire Academy, the California Firefighter Joint Apprenticeship Committee, and its unified response agreement with other fire departments located within the California Office of Emergency Services Region 1, Area C assist in effective community emergency response and coverage, in the training of current and future firefighters, and also in the support of its mission and cost effective operations.

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

All of the City of Pasadena external agreements and contracts are in writing and executed in the name of the city by an officer or officers authorized to sign. All interagency policies, agreements, and/or contracts are approved to form by the city attorney before any execution occurs. It was verified that the Pasadena City Charter, Article X clearly defines the processes required for agreements. The processes identified in the charter include assuring that contracts and agreements are current and actively support intended objectives.

ORGANIZATION CHART

