

# **Commission on Fire Accreditation, International Template Standards of Response Coverage**

## **Introduction**

The Commission on Fire Accreditation, International defines “Standards of Response Coverage as being those adopted, written policies and procedures that determines the distribution, concentration and reliability of fixed and mobile response forces for fire, emergency medical services, hazardous materials and other forces of technical response. The CFAI methodology has 9 points of assessment.

The following document is a template for use by fire agencies that are in the process of providing an exhibit for self assessment for the various performance indicator that deal with “standards of response coverage.” The purpose of this template is to provide guidelines to provide evidence of compliance with Performance Indicator A2, Criterion 3, Category 2. This document is not intended to be the only way that an organization can comply with this performance indicator, but it does provide a template that, when fully utilized should provide the agency with a reasonable expectation of approval by peer assessors.

This template provides a section for the analysis and documentation to address each point in an adopted Standards of Response Cover document

## **Executive Summary**

After the document has been drafted, reviewed and recommended for adoption prepare an Executive Summary which highlights the main points of the study. Depending upon the format of the study agency, provide essential information to the reader to obtain either a positive vote or a consensus on the report

It may include an explanation of the process. For example:

The following template provides one approach to putting together an agencies Standards of Response Coverage, It is:

Based upon the SOC methodology published in the CFAI Self Assessment Manual. All terminology is based upon that document.

This process is totally reliant upon the accuracy and comprehensiveness of a local fire agencies needs, data and policies.

## **DRAFT**

It is a tool for :

- evaluating and defining an agencies baseline of operations.
- identifying benchmarks for achieving an agencies goals and objectives.
- determining levels of service for all, or portions of a community.
- measuring an agencies performance over different budget or operational years.

And, lastly, a method of documentation of SORC that meets the core competency requirements for accreditation by supplying supportive evidence that documents both the process and the outcomes.

# DRAFT

## Body of the Report

### Section I - Community Baselines

#### A. Community Overview

This section should provide an overview of the agency that is conducting the study. It may include, but not be limited to a description of both historical and contemporary factual information. The primary purpose of this section is to provide the reader with a context for the department. Previous achievements and accomplishments that relate to fire station location, staffing and performance that will assist the reader in understanding the departments' needs and rationale for developing the standards are useful in setting the foundation for the remainder of the document

#### B. Describe the Governance Model of the AHJ

C. Current Levels of Service – This section of the document should provide the peer reviewers with a description of the physical and human resources assets of the department as the department currently exist. Do not try to justify any past decision that has resulted in things being what they are right now. This is just a description of the department resources at the time of the study.

Number of companies

Locations of existing fire stations

Staffing Levels and staffing patterns

Use charts and graphs to simplify this area

Provide description or narrative of current goals and objectives.

### Section II - Risk Assessment

This section is established to provide the reader with a understanding the scope, complexity and relationship of the various risk factors. The CFAI recognizes that there are many different ways to illustrate this section. For example, a fire agency that is trying to protect against wildland fires will have to evaluate the factors of fuel, topography and weather. An agency that is an airport facility will have to evaluate aircraft design, runway access and air traffic control. Structural or all-risk agencies may have to use more than one method. The standards of response coverage concept recognizes any system that has elements of being based upon empirical data and can be sourced.

CFAI also provides one type of software that can be used without cost. It is called RHAVE. It is available for free from the United State Fire Administration. It can also be downloaded from the USFA Website at [www.usfa.gov](http://www.usfa.gov).

## DRAFT

### A. General requirements.

Provide general demographics of the area to be protected, defined in square miles

Population at risk  
Permanent  
Transient

B. Average area protected by initial attack companies, i.e. 20 square miles, five fire companies = 4 square miles per company, 100 square miles, five companies = 20 square miles. Generally speaking when the area protected by fire companies exceeds 9 square miles this results on extended response times

C. Population density per square mile (population divided by area served) i.e. 10 square miles and 10,000 population = 1000 people per square mile. 100 square miles and 10,000 population = 100 people per square mile. Generally speaking the lower the density, the lower every other factor tends to be, i.e. calls, values at risk, and even financial resources to support the departments financial needs

D. Building density per square mile (area divided by number of buildings in inventory) i.e. 10 square miles and 5,000 buildings = 500 building per square mile. 5,000 buildings in 100 square miles = 50 buildings per square mile

### C. Describe Method chosen to describe Values at risk

RHAVE is a tool that can help here  
Structural Risk Assessment  
Number of structures to protect  
Types of structures to protect  
Define – levels of risk and categories used  
Maximum Risk  
Significant Risk  
Routine Risk  
Remote Risk

Non-Structural Risk Assessment  
Emergency Medical Services  
Hazardous Materials  
Heavy Rescue  
Swift Water Rescue  
Wildland

## Section III – Standards, Goals and objectives

A. based upon the risks being assessed describe what level of service the department is providing to the community.

## DRAFT

Describe level of acceptable risk

In the RHAVE there is a definition of “acceptable risk” determine if the service level being provided is intended to deal with all risk, or whether there are certain situations where there is an element of acceptable risk.

Urban population– usually used to describe dense, fully developed areas, high density of permanent or transient population. Density of 1500 persons per square miles and higher. High number of buildings per square mile. Closely gridded street network. Limited open space, Manufacturing facilities. Usually concentrations of mid and high rises. Commonly core locations that include transportation hubs. Usually over 250,000 population. High per capita tax base In ICMA Annual report identified by both size and budget expenditures.

Suburban – usually used to describe areas with mixed occupancy, average to high density populations, typically fringed around heavily urban areas. Population density between 500 and 1500 persons per square mile. Moderate number of buildings per square mile. Gridded streets and existence of cul-de-sac, dead-end residential development. Gated communities. Open space, Green areas, mid rise, low rise. Limited high rise. Industry and commercial development. Accessed by limited access highways and freeways. When population is predominantly residential, commonly have strip malls and “brand boxes.” These are franchised buildings such as fast food restaurants, or “big boxes” such as the various “Depot” type businesses. Budgets usually based on property and sales tax. Moderate tax bases, unless areas of affluence with high Assessed valuation. Listed in ICMA as cities from 20,000 to 100,000.

Rural –usually used to describe areas with large open spaces, low to moderate population densities, typically remote from other areas, normally covered by fire districts as opposed to municipalities. Residential occupancies predominate, agricultural businesses, service businesses.

Frontier- used to describe areas that are remote from any significant development, usually limited road network, long response times, in excess of 15 minutes.

F. Describe Risk Policies that are already in existence

### Section IV - Discussion of Critical Task Capability of Department

A. Provide a description of the critical task(s) that have been developed by the department to describe:

**DRAFT**

Initial Attack, First Alarm – Structural  
Initial Attack, First Alarm Commercial  
Second Alarm Assignment

First Alarm Assignment – Structural

Provide a matrix that describes the departments resources, such as:

Station	Engines/staffing	Trucks/staffing	Squads/staffing	Command,staffing
1	1-3	1-4	1-1	1-1
2	1-3			
3	1-4			
Total	3-10	1-4	1-1	1-1

**Section V - Setting Service Level Objectives**

Describe the method used to develop time and percentile criterion by the agency. If the department needs to inform the reader of the cascade of events and utstein criterion, it should be listed as an appendix.

A. Establishing distribution criterion

Provide a definition of what “distribution” means in the report, in the context of the community preparing this document;

CFAI defines it as: The locating of geographically distributed, first-due resources, for all-risk initial intervention. These station location(s) are needed to assure rapid deployment to minimize *and* terminate average, routine emergencies.

Describe the service level objective(s) for initial attack ( first due) that have been established for the agency for each risk type – Agencies may have more than one risk type i.e. remote, moderate, significant and maximum. Therefore there may be more than one service objective:

An example of service level objectives is a follows:

*“For 90% of all incidents, the first-due unit shall arrive within five minutes total reflex time. (or travel time) The first-due unit shall be capable of advancing the first line for fire control or starting rescue or providing basic life support for medical incidents.”*

Or it could more specific;

## DRAFT

*“For 90% of all fire incidents in routine risk areas the first-due unit shall arrive within five minutes total reflex time. (or travel time) The first-due unit shall be capable of advancing the first line for fire control or starting rescue or providing basic life support for medical incidents.”*

There could be separate service level objectives for different types of services, i.e. fire, EMS, technical rescue, hazardous materials, USAR and other events.

There could be separate service objectives for specific fire or emergency demand zones. Provide what is appropriate for the agency to full define its role in providing fire and ems protection to the community

Provide a list of fire station locations. If this statement can be supported by a map the better it is to illustrate the distribution information.

If there was any previous methodology of station siting criteria, provide criterion here

Based upon the area being covered by the fire stations, and the manner and method used to create fire or emergency demand zones, provide an analysis of how workload is distributed among the stations by using any method that illustrates this point

If available, provide one paragraph of how the population of each area covered is distributed among the respective stations

If available, provide one paragraph of how many road miles there are to cover in the entire area, and describe what percentage of road miles are covered by each station.

If this statement can be supported by a map the better it is to illustrate the distribution information.

### B. Establishing concentration criterion

Provide a definition of what “concentration ” means in this report;

CFAI defines it as: Is the spacing of multiple resources arranged (close enough together) so that an initial “effective response force” can be assembled on-scene within *adopted public policy* time frames. An “initial” effective response force is that which will most likely stop the escalation of the emergency for each risk type.

## DRAFT

Describe the service level objective(s) for deploying a first alarm assignment (The departments definition of an effective response force) that have been established for the agency for each risk type – Agencies may have more than one risk type i.e. remote, moderate, significant and maximum. Therefore there may be more than one service objective:

A sample Standards of Cover policy statement on Concentration could be:

*“That in a maximum risk area, an initial effective response force shall arrive within 10 minutes total reflex time, 90% of the time and be able to provide 1,500 gpm for firefighting, or be able to handle a five patient emergency medical incident.”*

There could be separate service level objectives for different types of services, i.e. fire, EMS, technical rescue, hazardous materials, USAR and other events. Examples:

*“That in the residential area, a basic life support force shall arrive within 6 minutes total reflex time, 90% of the time and be able to provide 1,500 gpm for firefighting, or be able to handle a one patient emergency medical incident.”*

There could be separate service objectives for specific fire or emergency demand zones. Provide what is appropriate for the agency to full define its role in providing fire and ems protection to the community.

*“That in the area FDZ 26, 28 and 30, an initial effective response force shall arrive within 10 minutes total reflex time, 90% of the time and be able to provide 1,500 gpm for firefighting, or be able to handle a five patient emergency medical incident.”*

Based upon the area being covered by the fire stations, and the manner and method used to create fire or emergency demand zones, provide an analysis of how concentration is achieved among the stations by using any method that illustrates this point.

Describe the percentage of area covered by agencies Effective Response Force.

Provide information on calls that fall out of the response time goal  
Identify “hard to service” areas. These are areas that are within the jurisdiction, are outside of the distribution area coverage, and therefore are probably outside of areas for concentration also.

## DRAFT

Describe percentage of road miles covered by agencies Effective Response Force.

If this statement can be supported by a map the better it is to illustrate the concentration information

### **Section VI - Evaluation of reliability of fire companies**

This section of the study looks at actual incident history data to measure historical performance. If your agency states it does something within x-minutes, z% of the time, does it? If not, why not? How reliable is your response system, does the agency frequently see multiple calls for service (stacked, or queued calls) and do these degrade performance? Are there predictable times of the day, week or year when queued calls occur? Can these occurrences be controlled or can peak hour staffing be used? For example, in some areas in the summertime during extreme fire weather conditions, additional crews are placed into service for the worst part of the day, or in a similar way, EMS peak hour incident needs can be handled by additional, part-time units.

Discuss any issues associated with simultaneous calls that result in resources not being able to meet initial attack performance goals. Examine data to look at length response times to determine if there are reasons for delayed response.

#### A. Evaluation of draw-down of department

Discuss the issue of what the minimum number of resources the department can be reduced to before it has reached a point of not being able to handle a secondary or simultaneous call that occurs that is of equal magnitude of a call that is in progress, i.e you are involved in a structural fire and another structural fire.

Discuss policies or procedures to deal with drawdown. Discuss mutual aid resources in this section if appropriate.

#### B. Evaluation of Resource exhaustion of department

Discuss the issue of what happens when an emergency of sufficient magnitude occurs that results in total commitment of the department. Describe what policies or procedures are in place to request assistance. Discuss mutual aid here.

#### C. Historical Performance

Discuss what you know about the department performance up to the time that this report/ document was prepared.

Describe total call load

## **DRAFT**

Provide three years data on call workload

Use charts and graphs to breakdown the components into types of calls

If mapping technology is available, provide maps

D. Evaluation of Performance on annual basis

Discriminate between emergency and non-emergency call load

Provide a chart that differentiates these calls

Provide charts of:

Day of Week distribution of total call volume

Day of Week distribution of emergency call volume

Treat fire and Ems separately if needed

Day of Week distribution of non-emergency call volume

Time of Day distribution of call volume

Month of Year distribution of call volume

Fractile chart of all calls

Fractile chart of emergency calls

E. Maintenance of Effort.

This section should describe the agencies on-going effort to provide analysis and evaluation of the adopted standards of cover. This may include, but not be limited to a description of the management information systems to be used, the assignment of responsibility to a particular person or position, a schedule of assessments or the requirement for the information to be officially reviewed by the authority having jurisdiction.

F. Overall Evaluation

Once all the individual SOC factors are understood and measured, an overall, comprehensive evaluation must be conducted. This is where the professional fire officer's experience in their community is needed. We have all heard the computer industry term "garbage-in, garbage-out." Well, all the statistics may say one thing, but they may totally disagree with real world experience. If so, find out why and keep studying until the

## **DRAFT**

numbers come close to reality. Then based on good data, compare and contrast the study findings to community needs, expectations and the ability to afford. All elected officials should be presented with a cost-benefit analysis, not just a demand for a change!

### **Section VII - Policy recommendations**

Provide the reader with a set of recommended actions to be taken. These will be carried forward to the Executive Summary as the action items to be adopted. These could be as simple as formally adopting existing service level objectives, modifying them, suggesting that they be incorporated in other documents (i.e. budgets or general plan) or they could be as complex as requiring on-going study. The CFAI recommends that any SOC study be adopted by the AHJ in a resolution that clarifies the intent of the process. (See model resolution)

#### **Summary**

Written summary of the key points in the report.

#### **Appendices**

**Bibliography**

**Glossary (if needed)**

**Map Atlas – if available**