



## **Central Arizona Life Safety System Council – Strategic Fire Station and Resource Determination Guidelines**

The Central Arizona Life Safety Council (CALSC) exists to administer the Regional Metropolitan Phoenix Fire Service Automatic Aid Agreement. CALSC members are committed to providing our communities with the highest level of emergency services. Emergency fire, medical, and special operations services are essential public safety functions. CALSC is dedicated to working together to ensure these services are provided in the most efficient and effective ways. Our guiding principles are customer service excellence and firefighter safety. This document aims to illustrate the guidelines adopted by CALSC for strategic planning of fire stations and for determining emergency service resources.

### **What factors go into the placement of fire stations?**

Future needs and strategic planning efforts include continuous assessment of our growing valley, including time and distance from fire stations to community areas, the number of calls units respond to, where extended response time challenges exist within our community, and other factors. Additionally, CALSC partner strategic planning includes assessing property use in developed areas, population density, street network, location of other fire stations, and property availability for future fire stations. In addition, the site's specific attributes are a significant factor in choosing a site for a fire station. Site attributes include enough acreage for the building, parking, fuel pumps, water retention, availability, expense, and other factors. CALSC agencies work with their partners in the planning and development fields to identify restrictions and undesirable property characteristics, such as floodplains.

Fire stations and associated resources must be placed to balance short— and long-term needs. This includes assessing how community areas will develop or redevelop in the future. What will road networks look like? Will predominant land use change? How will they change? Among other factors.

CALSC agencies plan for future fire stations when growth is known. Also, CALSC partners prioritize developed areas outside of a 4-minute travel time from the nearest fire station that generate over 500 service calls per year; these areas are identified as a need in the system.



With many factors considered when placing future fire stations, CALSC partners remain focused on sustained communication with their elected officials or governing bodies. CALSC agencies understand that a well-placed, well-designed fire station is a significant public investment and a visible symbol of the community's commitment to its residents' emergency needs.

## **What aspects determine response times, and how do land use and density factor in?**

The National Fire Protection Association is a nonprofit organization that provides research, training, education, codes, and standards for the fire service. NFPA 1750 is the standard that describes the service levels, deployment capabilities, staffing levels, and response time objectives. Response time is the time it takes for a unit and on-duty personnel to travel from the station to the incident. Factors in response times include distance, the arrangement of the area's natural and physical features, the location of fire department units, traffic conditions, and unit activity levels. State and National response times standards are as follows:

1. The first advanced life support unit to arrive at a critical emergency medical service incident is 5 minutes, based on a 90<sup>th</sup> percentile NFPA response time standard.
2. The first engine company to arrive at a fire is 5 minutes and 20 seconds, based on a 90<sup>th</sup> percentile NFPA response time standard.
3. The first ladder company to arrive at a major fire incident is 9 minutes and 20 seconds, based on a 90<sup>th</sup> percentile NFPA response time standard.

## **How do high-resource calls impact the rest of the CALSC system?**

Significant emergencies, such as structure fires, technical rescue, hazardous materials incidents, and major medical incidents, often require multiple units across the system. These incidents require more resources and usually last longer. Major incidents create gaps in the response system, with various units assigned, leading to units from other areas responding to other emergencies. CALSC employs an adaptive response model, using remaining units to the best of our ability to cover significant gaps within the system.

## **How do high unit activity levels impact emergency service response times?**

Unit (engine, ladder, heavy rescue, etc.) activity levels directly impact response time because the workload determines the unit's availability to respond to emergencies in its primary response area. When units respond to 4,000 or more calls per year, overlapping calls occur in many



cases hourly, forcing units from other areas of the community to answer. These units responding from other primary response areas often have response travel times greater than 8 minutes. The possibility of simultaneous calls cannot be eliminated; however, the risk can be significantly reduced by adding emergency response units in areas where units respond to over 3,000 calls for service annually.

**Table 1: TriData Categorization of Fire Department Units Based on Activity Levels**

<b>METRIC</b>	<b>TRIDATA DESCRIPTION</b>	<b>WHAT DOES THIS MEAN?</b>
<b>Extremely High</b>	>4,000 responses per year	Overlapping of calls occurs hourly, forcing fire companies covering other areas of the community to respond.
<b>Very High</b>	3,000-3,999 responses per year	Overlapping of calls occurs daily, usually in peak demand periods, requiring the response of adjacent fire companies.
<b>High</b>	2,000-2,999 responses per year	Additional overlap of calls occurs; however, fire companies will probably be able to respond to emergencies.
<b>Moderate</b>	1,000-1,999 responses per year	Some call overlap will occur, usually during peak demand periods, and fire companies are generally available.
<b>Low</b>	500-999 responses per year	Few calls will overlap, and fire company availability is usually assured.
<b>Very Low</b>	<500 responses per year	Simultaneous calls are infrequent, and fire company availability is almost always assured.