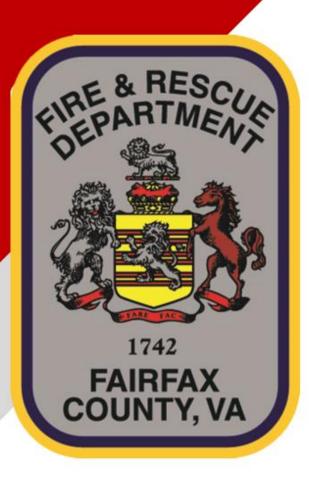# STANDARDS OF COVER

# 2022

Fairfax County Fire & Rescue Department

COMMISSION ON FIRE ACCREDITATION
INTERNATIONAL FIRE AND EMERGENCY SERVICES

## INTRODUCTION

This report serves as the Fairfax County Fire and Rescue Department's (FCFRD) Integrated Risk Management Plan: "Standards of Cover" document. The Commission on Fire Accreditation International (CFAI) defines the process known as "deployment analysis" as a written procedure which determines the distribution and concentration of fixed and mobile resources of an organization. The purpose for completing this document is to assist the FCFRD in ensuring a safe and effective response force for emergency medical services, fire suppression, and specialty response situations. This document conforms to the Center for Public Safety Excellence's (CPSE) 10th edition Commission on Fire Accreditation International (CFAI) model.

The creation of this Community Risk Assessment and Standards of Cover (CRA-SOC) was an internal and external collaboration with devoted stakeholders and required research and re-evaluation of all key areas. The report begins with an overview of both the community and the fire service. Following the overview, risk assessment, critical task analysis, agency service level objectives, and distribution and concentration measures are discussed. The FCFRD will provide documentation of reliability studies and historical performance through charts and graphs.

Fairfax County Fire and Rescue Department is a combination "all-hazards" department providing emergency medical response, fire suppression, technical rescue, hazardous materials response, fire inspections, public education, investigation, and community training and education. The FCFRD strives to provide the highest quality services to protect the lives, property, and environment of our community.

## VISION

The Fairfax County Fire and Rescue Department is dedicated to being the best community-focused fire and rescue department ensuring a safe environment for all.

## MISSION

Provide the highest quality services to protect the lives, property, and environment of our community.

## CORE VALUES

- Integrity
- Professional Excellence
- Health, Safety, and Wellness
- Diversity
- Teamwork and Shared Leadership
- Community Engagement

## ACKNOWLEDGEMENTS

FAIRFAX COUNTY FIRE AND RESCUE DEPARTMENT LEADERSHIP

Fire Chief John S. Butler

Assistant Chief Daniel Shaw

Assistant Chief Joseph Knerr

Assistant Chief Jason Jenkins

CRA-SOC DEVELOPMENT

Accreditation Manager - Battalion Chief Kris Johnson

Planning - Management Analyst IV Laurie Stone

Data Analytics Division - Management Analyst IV John Morrison

Performance Data - Data Analyst II Jessica LeBlanc

Community Risk Assessment – GIS Analyst IV John Hanke

# Table of Contents

## Executive Summary

Fairfax County Fire and Rescue Department (FCFRD) has proudly provided fire protection services to Fairfax County, Virginia, since 1949. The FCFRD's mission is to provide the highest quality service to protect the lives, property, and environment of our community. It is our mission that drives FCFRD to assemble and publish its Community Risk Assessment and Standards of Cover (CRA-SOC).

Since its inception on June 15, 1949, the FCFRD has grown into an all-hazards fire department, employing 1,360 uniformed men and women, 362 operational volunteers, and 183 full-time civilians. The FCFRD is comprised of 39 fire stations organized into two divisions and eight battalions. In total FCFRD has 39 engines, 14 trucks, eight heavy rescues, 43 emergency medical service (EMS) transports, one hazardous materials (HazMat) unit, one HazMat support unit, and an additional support fleet that provides services to the community.

The FCFRD's CRA-SOC is an in-depth compilation of data collected throughout the year to showcase the department's strengths and areas of improvement within current operations by incorporating a community risk trio of analysis, mitigation, and prevention.

Within this document, the FCFRD presents a risk assessment, department system performance, established baselines, benchmarks, and service level objectives for all emergency services with an explanation of the methodologies utilized in compiling the data.

The FCFRD's CRA-SOC provides an illustration of the department's continuous endeavor toward achieving and maintaining its mission. Through hard work and dedication, the department hopes to continue to improve the quality of life for the communities it serves.

## 1. Community Risk Assessment

### 1.1. Jurisdictional Characteristics

## Legal Basis

Fairfax County, Virginia, is governed by a Board of Supervisors/County Executive form of government. The Fairfax County Fire and Rescue Department operates under the authority delegated by the Fairfax County Board of Supervisors. The Fairfax County Board of Supervisors is comprised of nine elected supervisors. The supervisors represent the county's magisterial districts, including one elected at-large member serving as the Chairman of the Board. All seats on the Fairfax County Board of Supervisors are elected to a four-year term. Board members elect a vice-chair each year at their first meeting in January. The following individuals represent the current elected and appointed positions within Fairfax County, Virginia.



**FAIRFAX COUNTY BOARD OF SUPERVISORS**

Until Dec. 31, 2023

**CHAIRMAN**

**Jeffrey C. McKay, Elected At-Large**
Fairfax County Government Center
12000 Government Center Parkway, Suite 530
Fairfax, VA 22035-0079
Phone: 703-324-2321
www.fairfaxcounty.gov/chairman
Email: chairman@fairfaxcounty.gov

**VICE CHAIRMAN**

**Penelope A. Gross, Mason District**
Mason Governmental Center
6507 Columbia Pike, Annandale, VA 22003-2029
Phone: 703-256-7717
www.fairfaxcounty.gov/mason
Email: mason@fairfaxcounty.gov

**James R. Walkinshaw, Braddock District**
Kings Park Library
9002 Burke Lake Road, Burke, VA 22015-1608
Phone: 703-425-9300
www.fairfaxcounty.gov/braddock
Email: braddock@fairfaxcounty.gov

**Daniel G. Storck, Mount Vernon District**
Mount Vernon Governmental Center
2511 Parkers Lane, Mount Vernon, VA 22306-2799
Phone: 703-780-7518
www.fairfaxcounty.gov/mountvernon
Email: mtvernon@fairfaxcounty.gov

**John W. Foust, Dranesville District**
McLean Governmental Center
  1437 Balls Hill Road, McLean, VA 22101
  Phone: 703-356-0551
Herndon Office
  730 Elden Street, Herndon, VA 20170-4637
  Phone: 703-471-5076
www.fairfaxcounty.gov/dranesville
Email: dranesville@fairfaxcounty.gov

**Dalia A. Palchik, Providence District**
Providence District Office
3001 Vaden Drive, Fairfax, VA 22031
Phone: 703-560-6946
www.fairfaxcounty.gov/providence
Email: provdist@fairfaxcounty.gov

**Rodney L. Lusk, Franconia District**
Franconia Governmental Center
6121 Franconia Road, Alexandria, VA 22310-2508
Phone: 703-971-6262
www.fairfaxcounty.gov/franconia
Email: franconia@fairfaxcounty.gov

**Pat Herrity, Springfield District**
Springfield Governmental Center
6140 Rolling Road, Springfield, VA 22152-1579
Phone: 703-451-8873
www.fairfaxcounty.gov/springfield
Email: springfield@fairfaxcounty.gov

**Walter L. Alcorn, Hunter Mill District**
North County Governmental Center
1801 Cameron Glen Drive, Reston, VA 20190
Phone: 703-478-0283
www.fairfaxcounty.gov/huntermill
Email: huntermill@fairfaxcounty.gov

**Kathy L. Smith, Sully District**
Sully Governmental Center
4900 Stonecroft Boulevard, Chantilly, VA 20151-3808
Phone: 703-814-7100
www.fairfaxcounty.gov/sully
Email: sully@fairfaxcounty.gov

## Appointed Leadership

County Executive - Bryan J. Hill

Deputy County Executive of Safety and Security - Thomas Arnold

Fire Chief - John S. Butler

## Fairfax County Overview

| | |
|---|---|
| Chartered | 1742 |
| Land Area in Square Miles | 395 |
| Total Area in Square Miles | 405 |
| Population | 1,170,033 (2021) |
| Form of Government | County Executive |
| | Governed by a 10-member Board of Supervisors |
| | |
| Assessed Valuation | $264,793,644,730 (FY 2023) |
| Real Estate Tax Rate | $1.11 per $100 of assessed value. |
| Personal Property Tax Rate | $4.57 per $100 of assessed value (FY 2023) |
| Adopted Budget | $4.77 Billion |

## History of Service

In 1949, the Fairfax County Board of Supervisors approved the founding of the Fairfax County Fire and Rescue Department. For more than 30 years prior, men volunteered their services as firefighters to the county. On July 1, 1949, 10 career firefighters were hired and assigned to the 11 volunteer stations throughout the county. These firefighters served primarily as apparatus drivers during the day and responded to "after hours" calls from their homes.

At that time, Fairfax County was showing signs of rapid expansion. The housing boom following World War II brought an influx of growth and new communities to Fairfax. In order to respond to the community's needs, additional volunteer fire stations were created. In 1954, the Fire Marshal's Office was established, and a Fire Administrator was hired to oversee the volunteer stations. Additionally, the first formal training school for new firefighters was created. The training program would take another leap forward in 1965 with the opening of the FCFRD's Training Academy and again in 2014 with the expansion of the Training Academy.

Throughout its history, the FCFRD has been on the forefront of firefighting techniques, training, and technology. In 1970, the department was the first fire department in the nation to adopt the Field Incident Reporting Evaluation System (FIRES) based on the National Fire Protection Association (NFPA) Standard 901. It continued to expand its services by establishing the Emergency Medical Services (EMS) Division in 1971 and implementing the first EMS Plan for advanced life support five years later.

December 1987 marked the first international deployment of the department's Urban Search and Rescue (USAR) Team under an agreement with the United States Agency for International Development and the Office of Foreign Disaster Assistance (USAID/OFDA). The team was sent to Soviet Armenia, at the request of the federal government, following an earthquake. The team, known as Virginia Task Force 1 (VA-TF1), would go on to numerous deployments including: the Philippines (1990), Oklahoma City (1995), Atlanta (1996), Nairobi (1998), Turkey (1999), Pentagon (2001), Haiti (2010), Japan (2011), Nepal (2015), Puerto Rico/U.S. Virgin Islands (2017), Puerto Rico/Bahamas (2019), Baton Rouge, LA (2020), Haiti (2021), and Turkey (2023).

In November 1989, the department made strides in the investigation and detection aspects of firefighting when the Fire Prevention Division established the first canine accelerant detection program in the Washington Metropolitan area. The first canine for this program was a black Labrador Retriever named "Ebby" who could detect 17 different accelerants. In order to better serve the citizens of Fairfax County, the Board of Supervisors authorized the FCFRD to establish a Hazardous Materials Services Section within the Prevention Division in January 1995.

Knowing that part of maintaining a successful department is the physical and mental well-being of its firefighters and personnel, the department opened its Occupational Health Center in May 1997. The new center consolidated the services required for maintaining firefighter medical standards.

In 2007, the department established the WellFit Center to provide comprehensive occupational health, fitness, and wellness services to uniform, volunteer, and civilian personnel. The Candidate Physical Ability Test (CPAT) is also conducted at the WellFit Center.

2015 hailed a landmark year for the department. In July, Fairfax County hosted the World Police and Fire Games bringing 9,000 athletes from over 70 countries to the area. The FCFRD played an instrumental role in ensuring the games were an immense success.

In October 2015, the department took another step forward in its constant drive to improve and received an ISO Class 1 Rating. In August 2018, the FCFRD became an accredited department by the Commission on Fire Accreditation International (CFAI).

In early 2021, the department implemented a second 24-hour shift deputy chief, and 8th battalion to improve command officer response times, reduce the span of control, and increase opportunities for training and mentoring. In July 2021, the 39th fire and rescue station, Scotts Run, was opened as the result of a developer proffer.

Today, the FCFRD responds to more than 108,000 emergency responses every year. Approximately 1,360 uniformed members, 382 volunteers, and 183 civilian personnel protect over 1.2 million people every day. The department continuously strives to meet the changing needs of citizens and visitors to Fairfax County with an overall goal of preventing the 911 Call.

## Fairfax County Fire and Rescue Department Today

The Fairfax County Fire and Rescue Department (FCFRD) currently operates 39 fire stations. Fire stations are staffed full-time by county personnel with supplemental services provided by volunteers. The department operates from an all-hazards platform and serves Fairfax County and its residents by suppressing fires and providing advanced life support, pre-hospital emergency medical care, rescue operations (i.e., searching for and rescuing persons who become trapped in fires, and extrication from vehicle accidents), and emergency planning. Additionally, the FCFRD provides special operations services, including hazardous materials response, technical rescue (i.e., swift water rescue, building or trench collapse, high-angle, rope rescue), and marine operations (i.e., water rescue, boat fires, fuel spills) on the lower Potomac and Pohick Bay.

The FCFRD's Office of the Fire Marshal (OFM) investigates fires, bombings, and hazardous material releases. The department supports regional, national, and international emergency response operations during disaster situations through the Urban Search and Rescue (USAR) Team (VA-TF1), the National Capital Region Incident Management Team, and other response groups. The USAR Team is one of only two teams in the United States federally sponsored for international disaster response.
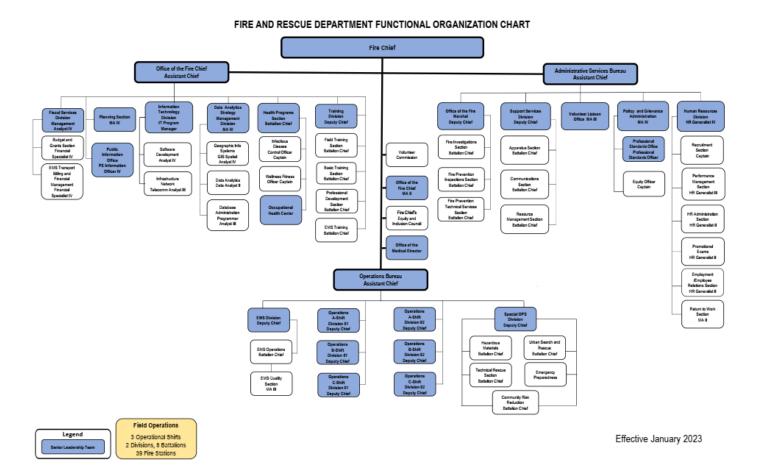
The FCFRD also provides critical non-emergency services to prevent the 911 call, such as educating the public on fire and personal safety issues, providing public information and prevention education, and enforcing fire prevention and life safety codes in all public buildings. The Community Risk Reduction (CRR) Section was established to leverage programs and resources to reduce high-priority risks and prevent the need for the community to call 911. In addition, CRR will focus on linking the community with services offered by other county agencies to integrate services across Fairfax County.

The FCFRD operates several facilities to ensure personnel are trained and prepared to perform the department's mission. The FCFRD Training Academy provides firefighter, rescue, and emergency medical training in addition to conducting citizen emergency response training. The FCFRD also partners with the Fairfax County Public Schools for the High School Firefighter program. Furthermore, two apparatus shops are staffed to ensure emergency response vehicles are safe and service ready.

The FCFRD actively engages at local, regional, and national levels to meet the challenges of emergency response and prevention. Robust life safety education programs, concentrated enforcement of fire prevention codes, and operational personnel dedicated to protecting lives are instrumental in the county maintaining a low fatality record. Within the region, the FCFRD has built collaborative relationships with surrounding localities and organizations necessary for responding to emergency incidents regardless of jurisdictional boundaries and across public safety disciplines.

Despite high demands for emergency and non-emergency services (113,833 incidents in CY 2022) and tightened financial resources, the FCFRD has maintained its ability to meet core responsibilities while striving to remain on the cutting edge of safety and technological advancements. To implement initiatives, the department continually seeks alternative funding sources. During FY 2022, the FCFRD was awarded more than $12.1 million in grant funds. Grant funding is used to support USAR personnel within VA-TF1, purchase personal protective equipment and emergency response vehicles, and support firefighter training and education.

The FCFRD is dedicated to being the best community-focused fire and rescue department and ensuring a safe and secure environment for all residents and visitors. To successfully meet challenges posed by increasing urbanization and a more densely populated response area, the FCFRD will continue to be progressive in efforts to achieve economies of scale through regional cooperation, seek out innovative methods for keeping pace with technology, sustain programs to maintain a healthy workforce, and adjust staffing configurations to meet the needs of future growth in Fairfax County.

**FIRE AND RESCUE DEPARTMENT FUNCTIONAL ORGANIZATION CHART**

**Fire Chief**

**Office of the Fire Chief**
Assistant Chief

- **Fiscal Services Division**
  Management Analyst IV
  - Budget and Grants Section
    Financial Specialist IV
  - EMS Transport Billing and Financial Management
    Financial Specialist IV
- **Planning Section**
  MA IV
  - **Public Information Office**
    PS Information Officer IV
- **Information Technology Division**
  IT Program Manager
  - Software Development Analyst IV
  - Infrastructure Network
    Telecomm Analyst III
- **Data Analytics Strategy Management Division**
  MA IV
  - Geographic Info Systems
    GIS Spatial Analyst IV
  - Data Analytics
    Data Analyst II
  - Database Administration
    Programmer Analyst III
- **Health Programs Section**
  Battalion Chief
  - Infectious Disease Control Officer Captain
  - Wellness Fitness Officer Captain
  - **Occupational Health Center**
- **Training Division**
  Deputy Chief
  - Field Training Section
    Battalion Chief
  - Basic Training Section
    Battalion Chief
  - Professional Development Section
    Battalion Chief
  - EMS Training
    Battalion Chief

- **Volunteer Commission**
- **Office of the Fire Chief**
  MA II
- **Fire Chief's Equity and Inclusion Council**
- **Office of the Medical Director**

**Administrative Services Bureau**
Assistant Chief

- **Office of the Fire Marshal**
  Deputy Chief
  - Fire Investigations Section
    Battalion Chief
  - Fire Prevention Inspections Section
    Battalion Chief
  - Fire Prevention Technical Services Section
    Battalion Chief
- **Support Services Division**
  Deputy Chief
  - Apparatus Section
    Battalion Chief
  - Communications Section
    Battalion Chief
  - Resource Management Section
    Battalion Chief
- **Volunteer Liaison Office** MA III
- **Policy and Grievance Administration**
  MA IV
  - **Professional Standards Office**
    Professional Standards Officer
  - Equity Officer Captain
- **Human Resources Division**
  HR Generalist IV
  - Recruitment Section
    Captain
  - Performance Management Section
    HR Generalist III
  - HR Administration Section
    HR Generalist II
  - Promotional Exams
    HR Generalist II
  - Employment /Employee Relations Section
    HR Generalist II
  - Return to Work Section
    MA II

**Operations Bureau**
Assistant Chief

- **EMS Division**
  Deputy Chief
  - EMS Operations
    Battalion Chief
  - EMS Quality Section
    MA III
- **Operations A-Shift Division 01**
  Deputy Chief
  - **Operations B-Shift Division 01**
    Deputy Chief
  - **Operations C-Shift Division 01**
    Deputy Chief
- **Operations A-Shift Division 02**
  Deputy Chief
  - **Operations B-Shift Division 02**
    Deputy Chief
  - **Operations C-Shift Division 02**
    Deputy Chief
- **Special OPS Division**
  Deputy Chief
  - Hazardous Materials
    Battalion Chief
  - Urban Search and Rescue
    Battalion Chief
  - Technical Rescue Section
    Battalion Chief
  - Emergency Preparedness
  - Community Risk Reduction
    Battalion Chief

**Legend**
Senior Leadership Team

**Field Operations**
3 Operational Shifts
2 Divisions, 8 Battalions
39 Fire Stations

Effective January 2023

Cost Centers

The three cost centers of the FCFRD are the Office of the Fire Chief, the Operations Bureau, and the Administrative Services Bureau. The cost centers work together to fulfill the mission of the department and carry out key initiatives for the fiscal year.

Office of the Fire Chief:

The Office of the Fire Chief manages and coordinates all aspects of the Fire and Rescue Department, including directing overall policy and the planning and management of the department. This office also includes the department's Data Analytics Strategy Management Division, the Fiscal Services Division, the Health Programs Section, the Information Technology Division, the Training Division, the Planning Section, and the Public Information Office. This bureau also provides basic and volunteer training, professional certifications, and continuing education.

Operations Bureau:

The Operations Bureau is composed of the Field Operations Division, Emergency Medical Services (EMS) Operations Division, and the Special Operations Division. The goal of the Operations Bureau is to save lives and protect property by providing emergency and non-emergency responses to residents and visitors of Fairfax County. Operations Bureau personnel who are assigned to the field operate on three separate 24-hour rotation shifts. Each shift is led by two Deputy Fire Chiefs. The county is geographically separated into eight battalions, each managed by a Battalion Fire Chief. Fire suppression personnel and paramedics work in tandem to ensure the highest level of safety and care for residents and visitors of Fairfax County. Operations Bureau also includes personnel who are assigned daywork positions to direct and support the field, EMS, and Special Operations Divisions.

Administrative Services Bureau:

The Administrative Services Bureau includes the Human Resources Division, the Office of the Fire Marshal, the Policy and Grievances Administration Division, the Support Services Division, and the Volunteer Liaison's Office. This bureau strives to provide a representative work force through equal employment opportunity, active recruitment of qualified applicants and volunteers, overseeing the volunteer program, and maintaining professional standards for the department.

## Financial

- Fairfax County Assessed Valuation (FY2023)            $264,793,644,730
- Fairfax County Fire and Rescue Department Budget (FY2022)      $218,846.455

Each year, Fairfax County government prepares and approves an annual budget in compliance with sound financial practices, generally accepted accounting principles, and the provisions of the Code of Virginia which control the preparation, consideration, adoption, and execution of the budget. As required by the Code of Virginia (§15.2-2503), the County Executive must submit to the County Board of Supervisors a proposed budget on or before April 1 of each year for the fiscal year beginning July 1. All local governments in the Commonwealth of Virginia must adopt a balanced budget no later than July 1 as a requirement of state law. A budget is balanced when projected total funds available equal total disbursements, including established reserves. The Advertised Budget Plan is the annual budget proposed by the County Executive for county general government operations for the upcoming fiscal year, which runs from July 1 through June 30.

The county's magisterial functions and accounting system are organized and controlled on a fund basis. Each fund is considered a separate accounting entity, with operations accounted for in a separate set of self-balancing accounts that comprise assets, liabilities, fund equity, revenues, and expenditures or expenses as appropriate. The largest fund in the General Fund Group (General Fund) is the county's primary operating fund and is used to account for all revenue sources and expenditures which are not required to be accounted for in other funds. Revenues are derived primarily from real estate and personal property taxes as well as other local taxes, federal and state distributions, license and permit fees, charges for services, and interest from investments.

For reporting purposes, all agencies and departments in the General Fund are grouped into "program areas." A program area is a grouping of county agencies or departments with related countywide goals. Under each program area, individual agencies and departments participate in activities to support the program area goals. The Public Safety Program Area, for example, includes the Fire and Rescue Department, among others.

According to the Code of Virginia, the Board of Supervisors must approve a tax rate and adopt a budget for informative and planning purposes no later than the beginning of the fiscal year on July 1. Following extensive review, deliberation, and public hearings to receive input from county residents, the Board of Supervisors formally approves the adopted budget plan typically in late April. The county's budget serves as the documentation of the financial, policy, and service decisions that the Board of Supervisors has authorized for the fiscal year. The Adopted Budget Plan documents the annual funding level authorized by the Board of Supervisors for the FCFRD.

## Service Area Description

The land that is now Fairfax County was part of the Northern Neck Proprietary granted by King Charles II in 1660 and inherited by Thomas Fairfax, Sixth Lord Fairfax of Cameron, in 1719.
The county itself was formed in 1742 from Prince William County. Fairfax County comprises about 405 square miles (with 395 being land area) located directly across the Potomac River from Washington D.C. The 2022 census population estimate for the county is 1,150,309.

Most of Fairfax County lies in the Piedmont region, with rolling hills and deep stream valleys such as Difficult Run and its tributaries. West of Route 28, the hills give way to a flat, gentle valley which stretches west to the Bull Run Mountains in Loudoun County. Elevations in the county range from near sea level along the tidal sections of the Potomac River in the southeast portion of the county to more than 500 feet (150 m) in the Tysons area.

Fairfax County is bounded on the north and southeast by the Potomac River. Across the river to the northeast lays Washington D.C. and to the north, Montgomery County and Charles County, Maryland. Across the Potomac River to the southeast is Prince George's County Maryland.
Fairfax County is partially bounded on the north and east by the cities of Falls Church, Alexandria, and Arlington County. The western border is shared with Loudoun County and the southern border with Prince William County, Virginia.

Federal government growth leading up to and post-World War II saw a large increase in population developing the suburban aspect of the county. The government-driven economy and technology have increased the business community dramatically and are now home to nine Fortune 500 companies. Fairfax was the first U.S. County to reach a six-figure median household income and has the second-highest median household income of any local jurisdiction in the United States after neighbor Loudoun County, Virginia.

Fairfax County is home to the headquarters of intelligence agencies such as the Central Intelligence Agency, National Geospatial-Intelligence Agency, and National Reconnaissance Office, as well as the National Counterterrorism Center and Office of the Director of National Intelligence.

The county has three incorporated towns – Clifton, Herndon, and Vienna – located within Fairfax County borders that receive services from the Fire and Rescue Department. The county has a diverse population with approximately 30.9 percent foreign-born residents and 39 percent of people aged 5 or older speak a language other than English at home. This includes over 130 different languages.

The Fairfax County Public School (FCPS) system is the tenth largest school district in the nation with 2022 enrollment of over 180,000 students. FCPS includes 141 elementary schools, 23 middle schools, 3 secondary schools, 28 high schools, 2 alternative high schools, and 8 special education centers, with 48 alternative programs and learning centers. Major colleges include George Mason University and Northern Virginia Community College.

## Fairfax County Demographics

Working and Living

| | |
|---|---|
| Businesses | 152,000 |
| Total Jobs | 652,000 |
| Professional, Scientific, and Technical Services Jobs | 26% |
| Unemployment Rate (age 20-64) | 2.6% |

| | |
|---|---|
| Median Housing Value | $584,304 |
| Median Home Size | 1,616 square feet |
| Average Monthly Rent | $1,787 |
| Total Households | 418,187 |

| Housing by Type | Number of Units |
|---|---|
| Single-family | 194,776 |
| Town House/Duplex/Multiplex | 102,567 |
| Multi-Family 1-8 Stories | 104,617 |
| Multi-Family 9+ Stories (High-rise) | 21,870 |
| Mobile Homes | 1,758 |
| Total Housing Units | 425,588 |

Top Employers

| # | Employer | # of Employees |
|---|---|---|
| 1 | United States Federal Government | 25,000+ |
| 2 | Fairfax County Public Schools | 20,000+ |
| 3 | Fairfax County Government | 10,000+ |
| 4 | Inova Health System | 10,000+ |
| 5 | Commonwealth of Virginia | 5,000 – 9,999 |
| 6 | Amazon | 5,000 – 9,999 |
| 7 | Booz Allen Hamilton | 5,000 – 9,999 |
| 8 | Capital One | 5,000 – 9,999 |
| 9 | Freddie Mac | 5,000 – 9,999 |
| 10 | General Dynamics | 5,000 – 9,999 |
| 11 | SAIC | 5,000 – 9,999 |
| 12 | MITRE | 2,500 – 4,999 |
| 13 | Navy Federal Credit Union | 2,500 – 4,999 |
| 14 | Peraton | 2,500 – 4,999 |

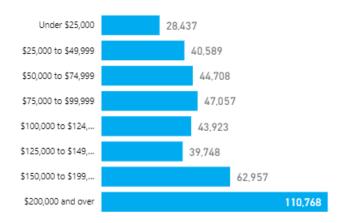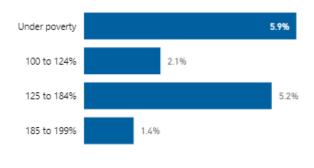Source: Fairfax County Demographics  https://www.fairfaxcounty.gov/demographics/fairfax-county-general-overview

People

| | | |
|---|---|---|
| Population | | 1,170,033 |
| Gender | Male | 49.6% |
| | Female | 50.4% |
| Age | 20-Under | 25.9% |
| | 21-64 | 60.6% |
| | 65-Over | 13.5% |
| Race | White | 55.7 % |
| | Black | 10.9% |
| | Asian | 23.0% |
| | Other | 10.4% |
| | Hispanic (any race) | 17.3% |

| | |
|---|---|
| Persons with High School Education | 92.7% |
| Persons with a Bachelor's Degree or Higher | 62.0% |
| Persons speaking non-English at home | 39.0% |
| Median Household Income | $127,866 |

**Households by Income Range**

| Income Range | Households |
|---|---|
| Under $25,000 | 28,437 |
| $25,000 to $49,999 | 40,589 |
| $50,000 to $74,999 | 44,708 |
| $75,000 to $99,999 | 47,057 |
| $100,000 to $124,... | 43,923 |
| $125,000 to $149,... | 39,748 |
| $150,000 to $199,... | 62,957 |
| $200,000 and over | 110,768 |

**Percent of Persons by Poverty Ratio**

| Poverty Ratio | Percent |
|---|---|
| Under poverty | 5.9% |
| 100 to 124% | 2.1% |
| 125 to 184% | 5.2% |
| 185 to 199% | 1.4% |

Source: Fairfax County Demographics  https://www.fairfaxcounty.gov/demographics/fairfax-county-general-overvie

## Surrounding Communities

Fairfax County is one of 24 local governments that make up the Metropolitan Washington Council of Governments (MWCOG). The MWCOG is also comprised of members of the Maryland and Virginia state legislatures, the U.S. Senate, and the U.S. House of Representatives.

The MWCOG is an independent, nonprofit association where area leaders address regional issues affecting the District of Columbia, suburban Maryland, and Northern Virginia. Its membership is comprised of approximately 300 local, state, and federal elected officials. It was founded in 1957 and formally incorporated on May 28, 1965.

On December 5, 2005, the Fairfax County Board of Supervisors adopted a resolution to enter into a National Capitol Region Mutual Aid Agreement for all fire departments. This agreement established the regional framework of response across the District of Columbia, two states, several cities and federal military installations. This agreement would influence the fire and emergency services departments in Northern Virginia to enter into the Northern Virginia Emergency Services Mutual Response Agreement which created a two-tiered system of automatic aid within that region.

The MWCOG has population as reported in 2020 census of over 6 million with 1,150,309 living in Fairfax County. The next largest population base is Montgomery County, Maryland, on its northern border with a population of 1.1 million. Prince George's County, Maryland, is on the eastern border with a population of 9,67,201; Prince William County, Virginia on the southern border with a population of 482,204; and Loudoun County, Virginia to the west with 420,959 residents. Fairfax County is adjacent or surrounds several smaller cities and counties and operates under an automatic aid or regional resource agreement providing seamless emergency response utilizing GPS-based Automatic Vehicle Location (AVL).

The following elements of the Community Risk Assessment can be found on the FCFRD's public facing StoryMap: [Community Risk Assessment](https://tinyurl.com/FCFRDCRA2022) or (https://tinyurl.com/FCFRDCRA2022)

1.1. Risk Assessment Methodology

1.2. Community Characteristics

1.3. Demographics

1.4. Fire Loss and Civilian Injury

1.5. Climatological Risk

1.6. Service Line Risk

1.7. Service Demand Zone Risk

## 2. Standards of Cover

### 2.1. Resource Deployment

Fairfax County has a daily minimum staffing of 363 full time positions that staff 131 pieces of rolling stock to provide primary first response to the community. An additional 62 pieces of specialty apparatus are strategically positioned based on risk or regional deployment and crossed staffed to support ongoing operations as they develop. The FCFRD keeps 43 apparatus in reserve to support units in the field for maintenance and repair. The individual volunteer organizations will supplement and up-staff units for high volume or scheduled special events.

FCFRD Resources and Staffing

| Resource Type | Description | Total Units | Staffing Per Unit | FT On- duty Staffing |
|---|---|---|---|---|
| Shift Deputy Chief | Operations Deputy Chief | 2 | 2 | 4 |
| Staffing and Command Post Officer | Daily Staffing and Command Post Operations Officer | 1 | 1 | 1 |
| Battalion Chief | Operations Battalion Chiefs | 8 | 1 | 8 |
| EMS Supervisor | Emergency Medical Services Supervisor | 5 | 1 | 5 |
| Engine | Pumper (Engine) Apparatus | 39 | 4 | 156 |
| ALS Medical Unit | ALS Transport Unit | 31 | 2 | 70 |
| BLS Medical Unit | BLS Transport Unit | 12 | 2 | 16 |
| Truck - Tiller/Tower/Straight | Aerial Apparatus | 14 | 4 | 56 |
| Heavy Rescue (4 HazMat and 4 TROT) | Full-time Staffed Firefighting Resource | 8 | 4 | 32 |
| HazMat | Full-time Staffed Hazardous Material Response Unit | 1 | 4 | 4 |
| HazMat Support Unit | Full-time Staffed | 1 | 2 | 2 |
| Tanker | Mobile Water Supply | 6 | 1 | 6 |
| Safety Officer | Daily Health and Safety Officer | 3 | 1 | 3 |
| Units Fully Staffed Total | | 131 | | 363 |
| Mobile Light and Air Unit | Cross Staffed | 3 | 0 | 0 |
| Fire Boat-Marine Unit | Cross Staffed | 2 | 0 | 0 |
| Rehab Unit | Cross Staffed | 1 | 0 | 0 |
| Brush Truck | Cross Staffed | 11 | 0 | 0 |
| Utility Vehicle | Cross Staffed | 7 | 0 | 0 |
| Swift Water Boat-Inflatable | Cross Staffed | 8 | 0 | 0 |

| Resource Type | Description | Total Units | Staffing Per Unit | FT On-duty Staffing |
|---|---|---|---|---|
| *Flat Water Boat-Inflatable* | Cross Staffed | 4 | 0 | 0 |
| *Canteen Unit* | Volunteer Staffed | 4 | 0 | 0 |
| *Medical Care Support Unit- MCI* | Cross Staffed | 3 | 0 | 0 |
| *Ambulance Bus - MCI* | Cross Staffed | 1 | 0 | 0 |
| *Mobile Command Unit* | Cross Staffed | 2 | 0 | 0 |
| *Technical Rescue Support Unit* | Cross Staffed | 5 | 0 | 0 |
| *Foam Unit* | Cross Staffed | 2 | 0 | 0 |
| *Utility ATV-Gator* | Cross Staffed | 4 | 0 | 0 |
| *Units Crossed Staffed Total* | Cross staffed | 58 | 0 | 0 |
| *Reserve Engine* | Reserve unit | 19 | 0 | 0 |
| *Reserve Medic* | Reserve unit | 28 | 0 | 0 |
| *Reserve Heavy Rescue* | Reserve unit | 4 | 0 | 0 |
| *Reserve Aerial Unit* | Reserve unit | 9 | 0 | 0 |
| *Reserve Tanker* | Reserve unit | 1 | 0 | 0 |
| *Reserve Light and Air Unit* | Reserve unit | 1 | 0 | 0 |
| *Reserve HazMat Support Unit* | Reserve unit | 1 | 0 | 0 |
| *Reserve Command/EMS Command* | Reserve unit | 12 | 0 | 0 |
| *Units in Reserve Total* | Reserve units | 75 | 0 | 0 |
| *Volunteer Engine* | Volunteer Staffed | 7 | 0 | 0 |
| *Volunteer Medic Unit - ALS* | Volunteer Staffed | 7 | 0 | 0 |
| *Volunteer Ambulance - BLS* | Volunteer Staffed | 14 | 0 | 0 |
| *Volunteer SUV* | Volunteer Staffed | 4 | 0 | 0 |
| *Volunteer Units Up-staff Total* | Volunteer Staffed | 32 | 0 | 0 |
| *Grand Total* | | 296 | | 363 |

## 2.2. Consistent Provision of Service Across Agency

The FCFRD has established performance benchmarks to consistently provide the highest quality service to protect the lives, property, and environment of our community. In establishing its benchmarks, the FCFRD understands that a single benchmark standard to all service areas and planning zones of the community is in line with NFPA 1710. The FCFRD further understands that its baseline performance will reflect this higher standard in its rural service areas but is committed to a single performance goal applied consistently to the citizens and community of Fairfax County, Virginia. To provide this level of consistency, the FCFRD has developed a service provision methodology to measure its baseline performance against its established benchmarks in the following manner:

## Service Provision Methodology

In performing the Community Risk Assessment, the FCFRD was able to assess, categorize, and classify risk within each service line. This Standards of Cover is designed to evaluate available resources and match them against the risk to provide consistent provision of service across all demand zones in the community. This is accomplished by:

- Conducting a critical task analysis of each service type
- Measure baseline performance for each service type
- Establish consistent benchmarks for each service type across the entire agency
- Analyze baseline performance against established benchmarks
- Develop short- and long-term goals to improve service and close the gap between baseline performance and benchmark goals.

2.3. Deployment Considerations

## Intergraph Computer Aided Dispatching (I/CAD)

Fairfax County utilizes Intergraph Corporation's Computer Aided Dispatching System (I/CAD) to manage everything from call handling and dispatching to remote access and mobile data. I/CAD sends and receives information to various databases maintained by the county. When I/CAD is operational, events are dispatched by a controlling dispatcher through transmittal of a digital I/CAD dispatch message. This message is routed to the I/CAD terminal of stations which have units to be dispatched with a status of available in-quarters. This activates an audible alerting device, turns on designated lights in the station, and opens the radio speakers. Concurrently, a digital message is delivered to the Mobile Communications Terminal (MCT) of any dispatched unit. I/CAD utilizes the Fairfax County Public Safety Network to support NetDispatcher workstations in the various public safety locations (typically one per fire station).

## Automatic Vehicle Location (AVL)

When CAD is functional, units are dispatched based on their actual vehicle location via a global positioning system (GPS) monitoring device. Calculations for response recommendations are based on speed limits and the roadway network mileage from a unit's actual location to the incident scene. When a unit is in "available in-quarters" (AQ) status, their location is based on the fire station XY coordinates. When in "available on radio" (AR) status, units are recommended for incidents based on the unit's XY coordinates position on the map. If a unit's GPS device is not functioning properly, the unit will be recommended from the XY coordinate of the fire station from which the response area is identified through the AR command.

## Fire Box Logic

Each fire station (demand zone) has a "First Due" area that is divided into fire boxes. These boxes are used to assist with locating emergencies as well as administrative ownership of target hazards and locations of interest. Divided highways are further divided into distinct box assignments.

## First Due Size-up

The First Due Size Up (FDSU) desktop/ mobile application is the FCFRD's single platform used for both incident routing and preplanning functions.  This application ensures compliance with both National Fire Protection Association Standard 1620, *Standard for Pre-Incident Planning,* and Insurance Services Office best practices.  All FCFRD units have been outfitted with iPads to allow immediate access to the application while enroute to incidents.  FCFRD's Standard Operating Procedure 05.03.01, Pre-Incident Plans, details the procedures for all personnel to make changes to building preplans and update with critical information to include: Water Supply, Hazardous Materials, building characteristics, and status of building fire suppression systems and smoke alarms.

## Traffic Signal Pre-emption

Historically, Fairfax County had only used traffic pre-emption devices directly connected to the fire station. In 2016, the FCFRD developed a multi-funding strategy to install pre-emption devices on all traffic signals in Fairfax County through developer proffers, grant funding, general fund, and external agreements. Maintaining the pre-emption devices will be an ongoing effort to help improve travel response times to incidents.

## Unit Types and Staffing

| Company Type | Total Units | Minimum Staffing | Personnel | Apparatus Capability |
|---|---|---|---|---|
| *Operations Deputy* | 2 | 2 | Deputy Chief Officer/EMT-B | Command vehicle |
| *Battalion Chief* | 8 | 1 | Battalion Chief | Command vehicle |
| *EMS Supervisor* | 5 | 1 | 1 Officer/EMT-P | Command vehicle w/EMS cache |
| *ALS Transport* | 31 | 2 | 1 Firefighter/EMT-B<br>1 Firefighter/EMT-P | Advanced Life Support transport unit |
| *BLS Transport* | 12 | 2 | 1 Firefighter/EMT-B<br>1 Firefighter/EMT-B | Basic Life Support transport unit |
| *Engine* | 39 | 4 | 1 Officer/EMT-B<br>1 Driver/EMT-B<br>1 Firefighter/EMT-B<br>1 Firefighter/EMT-P | 1250 GPM pump, 750 gallon booster tank, 40 gallon foam tank |
| *Truck* | 14 | 4 | 1 Officer/EMT-B<br>1 Driver/EMT-B<br>1 Firefighter/EMT-B<br>1 Firefighter/EMT-P | 100 foot aerial and full complement of NFPA 1901-compliant ground ladders |
| *Heavy Rescue* | 8 | 4 | 1 Officer/EMT-B<br>1 Driver/EMT-B<br>1 Firefighter/EMT-B<br>1 Firefighter/EMT-P | Heavy extrication equipment |
| *HazMat Unit* | 1 | 6 | 1 Officer/EMT-B<br>1 Driver/EMT-B<br>3 HazMat Technician/EMT-B<br>1 HazMat Technician/EMT-P | Mobile HazMat diagnostic lab with support unit |

*Minimum daily staffing 363 personnel*

## Response Levels

The FCFRD uses the dispatched event type to determine response levels. The call taker, based on information given by caller, determines the event type. As more information is gathered, an event may be updated and changed to a more appropriate event type prompting the cancellation or addition of resources to the call. Currently there are 102 event types within the four service lines (EMS emergency, fire, hazmat, rescue), each with a pre-determined response level. Although each event type has its own pre-determined response, a large percentage of incidents will fit into one of the following response levels:

- Single unit response: Used for an incident of a minor nature, such as a BLS emergency, public service, or investigation.
- Double unit response: Used for an emergency of an elevated or more critical nature, such as an ALS emergency, vehicle fire without exposure, or fire alarm in a structure. This event may require two suppression units or, in the case of an ALS emergency, one suppression unit and one transport unit for a total of six personnel with a minimum of two ALS providers.
- Divided highway response: Used for vehicle accidents or fires on controlled access roadways. Units are sent from two directions to ensure there is no response delay in cases where the reporting party provides inaccurate location information. Typical response would be two engines and two medic units. If entrapment is suspected, one heavy rescue, one Battalion Chief, and one Safety Officer will be added
- Full alarm response or "Box Alarm": Used for a report of an incident that is significant in intensity, magnitude, or scope and will require numerous resources to successfully complete primary tactical objectives and support functions at scene which is immediately dangerous to life or health (IDLH). A full alarm will consist of four engines, two truck companies, one heavy rescue, two Battalion Chiefs, one EMS Supervisor, one medic, one EMS transport unit, and one Safety Officer. If the fire is in a high-rise building (high risk), a fifth engine will be dispatched for building/lobby support. All confirmed working fires will add a rapid intervention team (RIT)-Level 1 which will report to the RIT engine. All confirmed working fires will add a RIT-Task Force that reports to the I-RIT Engine. RIT Task Force consists of one engine, one special service, one Battalion Chief, one EMS Supervisor, one medic, one light and air unit, and one investigator.
- Multi-alarm: Additional alarms to a full alarm will consist of three engines, one truck, one EMS Transport unit, one Battalion Chief, one EMS Supervisor, one Operations Deputy Chief, command aide (CA400), one Safety Officer, and one canteen.

## Resiliency

Resiliency as defined by the CPSE's 10th edition CFAI accreditation model as "an organization's ability to quickly recover from an incident or events, or to adjust easily to changing needs or requirements." Greater resiliency can be achieved through constant review and analysis of the response system and focuses on three key components:

- Resistance: The ability to deploy only the resources necessary to control an incident and bring it to termination safely and effectively.
- Absorption: The ability of the agency to quickly add or duplicate the resources necessary to maintain service levels during heavy call volume or incidents of high resource demand.
- Restoration: The agency's ability to quickly return to state of normalcy.

The FCFRD manages all three elements through a combination of resource deployment policy, staffing of a Uniformed Fire Officer (UFO) in the dispatch center, and CAD software. Resiliency is addressed through Standard Operating Procedure (SOP) 05.04.01 Resource Deployment and the pre-determined response algorithms generated by response type dispatching. These systems, combined with a clear policy controlling self-dispatching, limits the "action imperative" effect of available resources self- dispatching.

Absorption is accomplished with the use of a UFO position in the dispatching center. The UFO constantly monitors the available FCFRD resource levels across the agency. When a specific geographic area is depleted of adequate coverage, the UFO will initiate apparatus relocations to cover unit and supervisory (Battalion Chief and EMS Supervisor) vacancies. UFOs utilize computer software and relocation guidelines approved by Operations and an interactive live move up model (MUM) application, RescueVision, interfaced with the CAD system to insure the best possible coverage. Connecting with the CAD in real time, RescueVision identifies holes in coverage or changes in a unit's status allowing the UFO to deploy optimal move-ups for apparatus.

Restoration is addressed using a system of "Response Conditions" initiated by the UFO with concurrence of the duty Operations Deputy Chief.

- Condition I: Normal conditions during which the CAD system is operational, the emergency incident information is transmitted through the CAD system to the appropriate station, and unit terminals are in normal operational mode.
- Condition II: Conditions during an extended period of increased incident response. While in Condition II, initial response complements to frequent event types such as fire alarms, accidents, and wires are reduced to conserve the availability of units. Condition II brings a need for increased situational awareness by all on duty personnel. Typically, Condition II is associated with heavy thunderstorms, ice/snowstorms, or some other significant circumstance. The decision to move to Condition II is at the discretion of the UFO.
- Condition III: Conditions when more than half of the FCFRD's units are either committed to incidents or out of service. Typically, Condition III is associated with peak incident response (i.e., multiple working incidents). Condition III brings a need for increased situational awareness by all on duty personnel. While in Condition III, responses will be reduced dramatically to conserve resources. Condition III gives notification to all FCFRD personnel of the critical shortage of units available for calls. Condition III can only be authorized by individuals at the rank of Deputy Fire Chief or higher.

As an example of resiliency, the FCFRD successfully navigated the COVID-19 pandemic from March 2020 through spring 2022 while following the Center for Disease Control (CDC) guidelines. The pandemic led to a diminished and fatigued uniform workforce which challenged daily staffing procedures. To complete the organization's mission, the Effective Response Force (ERF) for service delivery remained the same; however, measures were taken to minimize the exposure of providers during incidents. The Condition 1 response was

maintained throughout the pandemic.

In addition, to meet the demands placed on FCFRD's daywork staff due to the COVID-19 pandemic, employees utilized various technology platforms in a higher fashion to influence cooperation and coordination. Currently, daywork personnel are still able to work from home partially throughout the week to complete the organization's mission.

The agency's resilience was truly tested during the COVID-19 pandemic, but the ability to achieve restoration is a continual challenge due to a diverse generational gap of workforce mentality. Despite this, the FCFRD continually evaluates its service delivery and programs through consistent data analysis to make informed decisions.

### 2.4. Critical Tasking

## Emergency Medical Services

Incidents requiring emergency medical treatment and possible transport which do not involve a technical rescue are included in this section. As a fire-based EMS service provider, the FCFRD is responsible for BLS response, ALS response, and transport to emergency medical facilities. The FCFRD is currently licensed for 43 EMS Transport units (35 ALS units and eight BLS units.) Like all service categories, the risk assessment for EMS incidents has been categorized as low, moderate, high, and maximum risk.

*Low Risk Emergency Medical*

Low risk EMS emergencies typically involve minimal intervention on the part of response resources. One crew of two or four personnel is often sufficient to establish contact and assess the patient. An example of a low risk EMS emergency is a BLS incident. The following table depicts the critical tasking and staff necessary for mitigation and the resources assigned a low risk EMS emergency.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 1 |
| Treatment/Transport | 1 |
| Total ERF | 2 |

| Dispatched Units | Crew |
|---|---|
| 1 Suppression | 4 |
| 1 EMS Transport Unit | 2 |
| Total Dispatched | 6 |

*Moderate Risk Emergency Medical*

Moderate risk EMS emergencies involve more intervention on the part of response resources. Two crews with total of six personnel, including a minimum of two ALS providers, is often sufficient to assess and treat the patient. These calls represent the largest group of ALS emergencies. The following table depicts the critical tasking and staff necessary for mitigation and the resources assigned a moderate risk EMS emergency.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 1 |
| ALS | 1 |
| BLS | 1 |
| Transport | 2 |
| Total ERF | 5 |

| Dispatched Units | Crew |
|---|---|
| 1 Suppression | 4 |
| 1 Medic | 2 |
| Total Dispatched | 6 |

*High Risk Emergency Medical*

High risk EMS incidents include more than one patient and/or police response. These incidents require a higher level of coordination and management or a special circumstance with increased risk, such as a Metro right-of-way. Additional coordination and management allow providers to focus on patient care. The following table depicts the critical tasking and staff necessary for mitigation and the resources assigned a high-risk EMS emergency.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 1 |
| Triage | 2 |
| ALS | 2 |
| BLS | 3 |
| Treatment Supervisor | 1 |
| Total ERF | 9 |

| Dispatched Units | Crew |
|---|---|
| 1 Battalion | 1 |
| 1 EMS Supervisor | 1 |
| 1 Engine | 4 |
| 1 Rescue | 4 |
| 2 Medics | 4 |
| Total Dispatched | 14 |

*Maximum Risk Emergency Medical*

Maximum risk EMS are those events that would require the presence of enough personnel to handle multiple patients or tasks associated with complex rescues. In many situations, this would necessitate a mass casualty incident (MCI) response in accordance with FCFRD dispatch procedures. The following table depicts the critical tasking and staff necessary for mitigation and the resources assigned a maximum risk EMS emergency.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 2 |
| EMS Operations | 3 |
| Safety | 1 |
| Staging | 1 |
| Triage | 2 |
| Treatment Supervisor | 1 |
| ALS | 8 |
| BLS | 8 |
| Total ERF | 25 |

| Dispatched Units | Crew |
|---|---|
| 2 Battalion Chiefs | 2 |
| 3 EMS Supervisors | 3 |
| 10 EMS Transport Units | 20 |
| 10 Suppression | 40 |
| 1 MCI Unit | 2 |
| 1 Ambulance Bus | 2 |
| 1 Mobile Communication | 2 |
| | |
| Total Dispatched | 71 |

## Fire Suppression

*Low Risk Fire Incidents*

Low risk fires typically involve the response of single fire unit with pump capabilities. These types of fire incidents are minor in intensity, magnitude, and scope and may be effectively handled by one company. Examples of low-risk fires include brush and dumpster fires with no exposure threats to structures. The following table depicts the critical tasking and staff necessary for mitigation and the resources assigned to low-risk fires.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 1 |
| Pump Operator | 1 |
| Attack Line | 2 |
| Total ERF | 4 |

| Dispatched Units | Crew |
|---|---|
| 1 Engine | 4 |
| Total Dispatched | 4 |

*Moderate Risk Fire Incidents*

Moderate risk fires will typically involve the response of a primary first alarm assignment (Box Alarm). These types of fire incidents defined by confinement to a single structure or involve only contents, such as a fire in a single-family dwelling or residence with little risk of extension to surrounding exposures. The following table depicts the critical tasking and staff necessary for mitigation based on NFPA1710 and the resources assigned to moderate risk fires.

| Critical Task | Minimum Personnel |
|---|---|
| Command/Accountability | 1 |
| Water Supply | 1 |
| Fire Attack-2 lines | 4 |
| Utilities/Forcible Entry | 2 |
| Search and Rescue | 2 |
| Ladders/Ventilation | 3 |
| RIT | 2 |
| Total ERF | 15 |

| Dispatched Units | Crew |
|---|---|
| 2 Battalions | 2 |
| 1 EMS Supervisor | 1 |
| 4 Engines | 16 |
| 2 Trucks | 8 |
| 1 Rescue | 4 |
| 2 EMS Transport Units (1 ALS) | 4 |
| 1 Safety Officer | 1 |
| 1 Investigator | 1 |
| Total Dispatched | 37 |

*High Risk Fire Incidents*

Like moderate risk fires, high risk fires also involve an initial primary alarm assignment, (Box Alarm). High risk fires have the potential to involve the primary structure as well as exposures. High risk fires may demand the request for additional alarm assignments, though those additional resources are not reflected in the CTA. The following table depicts the critical tasking and staff necessary for mitigation based on NFPA1710, and the resources assigned by the FCFRD. Examples of high-risk fires may be strip shopping centers, and multi-family dwellings excluding mid-rise and high-rise structures.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 2 |
| Water Supply | 2 |
| Safety | 1 |
| Fire Attack – 3 lines | 6 |
| Utilities/Forcible Entry | 3 |
| Search and Rescue | 4 |
| Ladders/Ventilation | 4 |
| Aerial Operator | 1 |
| RIT | 4 |
| Medical | 2 |
| Total ERF | 29 |

| Dispatched Units | Crew |
|---|---|
| 2 Battalion Chiefs | 2 |
| 1 EMS Supervisor | 1 |
| 4 Engines | 16 |
| 2 Trucks | 8 |
| 1 Rescue | 4 |
| 2 EMS Transport Units (1 ALS) | 4 |
| 1 Safety Officer | 1 |
| 1 Investigator | 1 |
| Total Dispatched | 37 |

*Maximum Risk Fire Incidents*

Maximum risk fire incidents involve a high-risk fire incident response with additional alarm assignments. This will involve automatic move-up relocation of uninvolved units to areas within the agency that have been depleted of resources to maintain sufficient coverage across the jurisdiction. The following table depicts the critical tasking and staff necessary for mitigation based on NFPA1710, and the resources assigned by the FCFRD. Example of maximum risk fires are fires involving a high-rise building.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 2 |
| Water Supply | 1 |
| Fire Attack – 3 Lines | 6 |
| Utilities/Forcible Entry | 3 |
| RIT | 4 |
| Search and Rescue | 4 |
| Interior Command | 2 |
| Building Evacuation | 4 |
| Elevator Support | 1 |
| Safety | 1 |
| Staging | 1 |
| Rehab | 2 |

| Dispatched Units | Crew |
|---|---|
| 2 Battalion Chiefs | 2 |
| 1 EMS Supervisor | 1 |
| 5 Engines | 20 |
| 2 Trucks | 8 |
| 1 Rescue | 4 |
| 2 EMS Transport Units (1 ALS) | 4 |
| 2 Safety Officers | 2 |
| 1 Investigators | 1 |
| Total Dispatched | 42 |

| | |
|---|---|
| Ventilation | 4 |
| Lobby Control | 1 |
| Equipment Transport | 2 |
| Base Operations | 1 |
| Medical | 4 |
| Total ERF | 43 |

- By department operating guidelines, all fire responses that have confirmed fire shall initiate a RIT Task Force request by the first arriving unit. The RIT Task Force will add one Engine, one Special Service, one EMS Supervisor, one Battalion Chief, one Medic, one light and air unit, one investigator for a total of 15 personnel.

- By department operating guidelines, a confirmed fire in a maximum risk structure shall initiate an additional alarm in addition to the RIT Task Force. Every alarm after the initial alarm will equal: three Engines, one Truck, one EMS Transport, one Battalion Chief, one Operations Deputy Chief/Aide, one Safety Officer, one Command Aide (CA400), and the Canteen for a total of 25 additional personnel. The addition of a second alarm and the RIT Task Force assignment will total 40 additional personnel.

## Hazardous Material Incidents

### Low Risk Hazardous Materials
Limited emergency condition which can be controlled by a single unit response. The incident is typically confined to a small area and does not require evacuation of anything but the involved structure or the immediate outdoor area. This incident does not require the use of specialized chemical protective clothing or equipment.

| Critical Task | Minimum Personnel |
|---|---|
| Command/Safety | 1 |
| Mitigation | 2 |
| Total ERF | 3 |

| Dispatched Units | Crew |
|---|---|
| 1 Suppression | 4 |
| Total Dispatched | 4 |

### Moderate Risk Hazardous Materials
Limited emergency condition which can be controlled by a two-unit response utilizing a satellite HazMat Rescue Company. The incident is typically confined to a small area and does not require evacuation of anything but the involved structure or the immediate outdoor area. This incident does not require the use of specialized chemical protective clothing or monitoring equipment not carried on all suppression apparatus.

| Critical Task | Minimum Personnel |
|---|---|
| Command/Accountability | 1 |
| Air Monitoring | 2 |
| Water Supply | 1 |
| Attack line | 2 |
| Total ERF | 6 |

| Dispatched Units | Crew |
|---|---|
| 1 Engine or Truck | 4 |
| 1 Rescue | 4 |
| Total Dispatched | 8 |

*High Risk Hazardous Materials*

Emergency condition involving a greater hazard or larger area which poses a potential threat to life or property and may require a limited evacuation or protection in place of the surrounding area. Specialized chemical protective clothing and monitoring/sampling equipment may be required.

| Critical Task | Minimum Personnel |
|---|---|
| Command/Accountability | 1 |
| HM Branch | 1 |
| Research | 1 |
| Entry | 1 |
| Decontamination | 1 |
| Logistics | 1 |
| Medical | 1 |
| Water Supply | 1 |
| Entry Team | 4 |
| RIT | 4 |
| Mitigation | 4 |
| Decontamination Workers | 2 |
| Rehab/Medical | 1 |
| Total ERF | 23 |

| Dispatched Units | Crew |
|---|---|
| 1 Battalion Chief | 1 |
| 1 EMS Supervisor | 1 |
| 1 Safety Officer | 1 |
| 2 Engines | 8 |
| 1 Rescue | 4 |
| 1 HazMat | 6 |
| 1 EMS Transport Unit | 2 |
| Total Dispatched | 23 |

- The Hazardous Materials program operates one primary HazMat unit and HazMat Support Unit staffed with six Hazardous Materials Technicians and four satellite Heavy Rescues staffed with four Hazardous Materials Technicians. Minimum daily staffing for HazMat Technicians is 22.
- The Hazardous Materials program operates two cross staffed Foam Units and two cross staffed Special Hazard Units in addition to the minimum daily staffed units.

*Maximum Risk Hazardous Materials*

Emergency condition involving a severe hazard or large area which poses an extreme threat to life and property and will probably require plume modeling and possibly a large-scale evacuation. Specialized chemical protective clothing may be required in addition to special mitigation equipment and processes. Examples of maximum risk events would be a biological hazard, large chemical or flammable liquid spill inside/outside of a structure, or fire in a tank farm.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 1 |
| HM Branch | 1 |
| Research | 1 |
| Entry | 1 |
| Decontamination | 1 |

| Dispatched Units | Crew |
|---|---|
| 1 DFCO | 2 |
| 2 Battalion Chief | 2 |
| 1 EMS Supervisor | 1 |
| 1 Safety Officer | 1 |
| 4 Engines | 16 |

| | | | | |
|---|---|---|---|---|
| Logistics | 1 | | 1 Tanker | 1 |
| Medical | 1 | | 1 AFFF Unit | 4 |
| Water Supply | 1 | | 1 Rescues | 4 |
| Entry Team | 4 | | 1 HazMat | 6 |
| RIT | 4 | | 2 EMS Transport units | 4 |
| Decontamination Workers | 8 | | 1 SHU | 4 |
| Rehab/Medical | 2 | | 1 MCP | 4 |
| Total ERF | 28 | | 1 CSU | 2 |
| | | | Total Dispatched | 51 |

## Technical Rescue

*Low Risk Technical Rescue*
Limited rescue condition which can be handled by a single or double unit response.

| Critical Task | Minimum Personnel | | Dispatched Units | Crew |
|---|---|---|---|---|
| Command/Safety | 1 | | 1 Suppression | 4 |
| Rescue | 2 | | Total Dispatched | 4 |
| Total ERF | 3 | | | |

*Moderate Risk Tech Rescue*
Rescue condition which can be controlled by a primary response. The incident may require specialized knowledge and equipment but not the assembly of a specialized team. Examples may be accident with person trapped, vehicle into a structure with moderate damage to structure, or ice rescue. Moderate risk events will normally be short in duration.

| Critical Task | Minimum Personnel | | Dispatched Units | Crew |
|---|---|---|---|---|
| Command | 1 | | 1 Battalion Chief | 1 |
| Safety | 1 | | 1 Engine | 4 |
| Triage | 1 | | 1 Rescue | 4 |
| ALS | 2 | | 2 EMS Transport Units | 4 |
| BLS | 2 | | 1 Safety Officer | 1 |
| Extrication | 2 | | 1 EMS Supervisor | 1 |
| Total ERF | 9 | | Total Dispatched | 15 |

*High Risk Technical Rescue*
Complex rescue condition that will likely be extended in duration and require the use of specialized knowledge and resources with the assembly of a specialized team. Examples include a cave-in, swift water rescue, aerial or below grade rescue.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 1 |
| Accountability | 1 |
| Safety | 2 |
| Task Force Leader | 1 |
| Entry Team Officer | 2 |
| Entry Team | 2 |
| Backup Team | 2 |
| Attendant | 2 |
| Logistics | 2 |
| ALS | 2 |
| Rope/Shoring Team | 4 |
| Total ERF | 21 |

| Dispatched Units | Crew |
|---|---|
| 1 Battalion Chief | 1 |
| 1 EMS Supervisor | 1 |
| 1 Safety Officer | 1 |
| 1 Engine | 4 |
| 1 Tower Ladder | 4 |
| 2 Rescues (TROT) | 8 |
| 2 Medics | 4 |
| 2 Support Units (TROT) | 8 |
| Total Dispatched | 31 |

*Maximum Risk Technical Rescue*
Rescue condition involving a severe hazard or large area which poses an extreme threat to life and property and will probably require a large-scale rescue effort. Will require the use of specialized knowledge and resources with the assembly of a specialized team. Examples include rescue in a tunnel or an incident involving a train or light rail Metro. A maximum risk technical incident may add an additional alarm response.

| Critical Task | Minimum Personnel |
|---|---|
| Command | 1 |
| Accountability | 1 |
| Safety | 1 |
| Search/Triage | 8 |
| Task Force Leader | 1 |
| Entry Team Officer | 1 |
| Recon | 4 |
| Entry Team | 4 |
| Back-up Team | 4 |
| Air Monitoring/Ventilation | 2 |
| COMMS System | 1 |
| Air Supply Unit | 2 |
| Medical | 4 |

| Dispatched Units | Crew |
|---|---|
| 2 Battalion Chiefs | 2 |
| 2 EMS Supervisors | 2 |
| 1 Safety Officer | 1 |
| 5 Engines | 20 |
| 1 Tower Ladder | 4 |
| 1 Truck | 4 |
| 2 Rescues | 8 |
| TRS439 | 4 |
| 2 Medics + 2 EMS Transport units | 8 |
| 1 HazMat Unit | 6 |
| 1 MCP + 1 MCU | 6 |
| 1 DFCO | 2 |
| 1 CSU | 1 |

| Total ERF | 34 | | Total Dispatched | 68 |
|---|---|---|---|---|

## 2.5. Baseline Performance

### Performance Methodology
First-in measures the time of the first unit to arrive on the scene of an emergency incident. This unit will be able to assume incident command, perform a scene size-up, give an initial report and make assignments to other responding companies. All FCFRD suppression units are staffed with a minimum of four personnel so this unit will also initiate hazard mitigation by fire attack, confinement of hazard, or rescue of endangered persons. Effective Response Force (ERF) measures the time of the accumulation of personnel and resources to meet the effective response force defined in the critical task analysis documented in this Standards of Cover. The FCFRD response is the unit that meets this ERF requirement when it arrives and whose times are measured.

### Population Categories
During the Community Risk Assessment, all areas of the agency were designated as either urban or rural. Since rural areas generally have a lower probability and magnitude of risk, the number of emergency incidents is lower in these areas, and these areas are further from FCFRD resources. Baseline performance is measured separately for rural and urban population categories. This two- tier baseline evaluation measures performance in both areas, however the FCFRD has adopted a single benchmark based on NFPA 1710 standards with its goal being to provide a consistent and high level of service to all areas of the agency.

### Hazard Types
In line with the Center for Public Safety Excellence (CPSE) Community Risk Assessment - Standards of Cover, 10th Edition, the FCFRD evaluates emergency response performance in four primary service types: Emergency Medical, Fire Suppression, Hazardous Materials, and Technical Rescue. The FCFRD also evaluates Non-Fire Emergency performance for the purpose of improving those areas of service response. This is conducted on a 'type dispatched' rather than a 'type found' basis and uses the agency established event code found in Appendix A of the Fairfax County Fire and Rescue Department Communications Manual.

### Risk Levels
Risks for each type of incident are expressed in terms of low, moderate, high, and maximum risk. The definitions of these categories are defined in Section 2.4 of this document under Critical Task Analysis.

## System-wide Performance System

| Service Line | Risk Level | 2022 | 2021 | 2020 | 2019 | 2018 | CY18-CY22 |
|---|---|---|---|---|---|---|---|
| EMS Emergency | Low | 36,597 | 32,874 | 29,033 | 27,116 | 21,235 | 146,855 |
| | Moderate | 45,532 | 40,957 | 36,640 | 45,023 | 48,628 | 216,780 |
| | High | 271 | 242 | 269 | 219 | 185 | 1,186 |
| | Maximum | 0 | 0 | 0 | 0 | 1 | 1 |
| *EMS Total* | | *84,422* | *76,094* | *67,962* | *74,377* | *72,067* | *374,922* |
| Fire | Low | 13,018 | 11,900 | 11,221 | 12,229 | 12,868 | 61,236 |
| | Moderate | 320 | 271 | 278 | 314 | 333 | 1,516 |
| | High | 427 | 358 | 353 | 483 | 507 | 2,128 |
| | Maximum | 132 | 96 | 97 | 145 | 136 | 606 |
| *Fire Total* | | *13,897* | *12,625* | *11,949* | *13,171* | *13,844* | *65,486* |
| Hazmat | Low | 509 | 551 | 556 | 579 | 555 | 2,750 |
| | Moderate | 1,024 | 920 | 868 | 1,028 | 983 | 4,823 |
| | High | 72 | 75 | 64 | 100 | 93 | 404 |
| | Maximum | 2 | 2 | 6 | 3 | 3 | 16 |
| *HazMat Total* | | *1,607* | *1,548* | *1,494* | *1,710* | *1,634* | *7,993* |
| Rescue | Moderate | 1,017 | 1,023 | 1,013 | 1,295 | 1,277 | 5,625 |
| | High | 60 | 94 | 83 | 114 | 133 | 484 |
| *Rescue Total* | | *2,686* | *2,667* | *2,596* | *3,122* | *3,047* | *14,118* |
| Non-Emergency | Low | 11,239 | 10,359 | 8,885 | 10,277 | 10,605 | 51,365 |
| Non-Fire Emergency | Low | 1,591 | 1,547 | 1,509 | 1,585 | 1,470 | 7,702 |
| *Grand Total* | | *113,833* | *103,290* | *92,895* | *102,529* | *101,030* | *513,577* |

## Emergency Medical Services

For 90 percent of all EMS responses, the total response time for the arrival of the first due unit, staffed with minimum 2 personnel, is 6 minutes and 30 seconds.

For 90 percent of all moderate risk EMS response incidents, the total response time for the arrival of the effective response force (ERF), staffed with minimum 6 personnel with a minimum of 2 ALS providers, is 6 minutes and 30 seconds.

For 90 percent of all high-risk EMS response incidents the total response time for the arrival of the ERF, staffed with minimum 9 personnel, is 12 minutes and 30 seconds.

For 90 percent of all maximum risk EMS response incidents the total response time for the arrival of the ERF, staffed with minimum 30 personnel, is 12 minutes and 40 seconds.

| (Low Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:02:58 | 0:02:39 | 0:02:34 | 0:02:38 | 0:03:03 | 0:03:48 |
| | | Rural | 0:02:51 | 0:02:30 | 0:02:18 | 0:02:34 | 0:03:06 | 0:03:46 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:01:28 | 0:01:28 | 0:01:26 | 0:01:26 | 0:01:27 | 0:01:38 |
| | | Rural | 0:01:38 | 0:01:36 | 0:01:37 | 0:01:29 | 0:01:40 | 0:01:46 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:06:12 | 0:06:01 | 0:06:02 | 0:06:02 | 0:06:20 | 0:06:46 |
| | | Rural | 0:08:40 | 0:08:40 | 0:08:35 | 0:08:38 | 0:08:33 | 0:09:00 |
| | Travel Time ERF Concentration | Urban | 0:08:53 | 0:09:59 | 0:08:19 | 0:08:24 | 0:08:42 | 0:09:24 |
| | | Rural | 0:13:58 | 0:15:53 | 0:11:38 | 0:12:27 | 0:11:12 | 0:12:59 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:09:33 | 0:09:14 | 0:09:06 | 0:09:03 | 0:09:42 | 0:10:49 |
| | | | n = 138,823 | n = 34,792 | n = 31,221 | n = 27,504 | n = 25,562 | n = 19,744 |
| | | Rural | 0:11:54 | 0:11:53 | 0:11:30 | 0:11:20 | 0:12:02 | 0:13:00 |
| | | | n = 2,271 | n = 508 | n = 534 | n = 462 | n = 427 | n = 340 |
| | Total Response Time ERF Concentration | Urban | 0:12:33 | 0:13:41 | 0:11:30 | 0:11:29 | 0:12:26 | 0:14:59 |
| | | | n = 113,518 | n = 30,512 | n = 27,641 | n = 24,826 | n = 19,695 | n = 10,844 |
| | | Rural | 0:17:44 | 0:19:03 | 0:14:10 | 0:16:30 | 0:14:59 | 0:21:49 |
| | | | n = 1,808 | n = 443 | n = 462 | n = 429 | n = 321 | n = 153 |

| (Moderate Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:02:39 | 0:02:33 | 0:02:28 | 0:02:29 | 0:02:39 | 0:02:58 |
| | | Rural | 0:02:31 | 0:02:31 | 0:02:14 | 0:02:18 | 0:02:29 | 0:02:54 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:01:20 | 0:01:22 | 0:01:21 | 0:01:20 | 0:01:17 | 0:01:20 |
| | | Rural | 0:01:31 | 0:01:32 | 0:01:32 | 0:01:35 | 0:01:28 | 0:01:28 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:06:01 | 0:05:59 | 0:06:00 | 0:05:59 | 0:06:04 | 0:06:02 |
| | | Rural | 0:07:58 | 0:08:11 | 0:07:58 | 0:07:59 | 0:07:50 | 0:07:52 |
| | Travel Time ERF Concentration | Urban | 0:08:44 | 0:09:38 | 0:08:27 | 0:08:28 | 0:08:35 | 0:08:34 |
| | | Rural | 0:12:18 | 0:14:58 | 0:11:12 | 0:11:06 | 0:11:55 | 0:12:17 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:09:05 | 0:09:06 | 0:08:58 | 0:08:56 | 0:09:02 | 0:09:18 |
| | | | n = 208,303 | n = 43,717 | n = 39,399 | n = 35,181 | n = 43,267 | n = 46,739 |
| | | Rural | 0:10:56 | 0:11:17 | 0:10:41 | 0:10:57 | 0:10:48 | 0:10:50 |
| | | | n = 3,657 | n = 723 | n = 697 | n = 598 | n = 777 | n = 862 |
| | Total Response Time ERF Concentration | Urban | 0:11:55 | 0:12:57 | 0:11:35 | 0:11:30 | 0:11:38 | 0:11:52 |
| | | | n = 195,127 | n = 39,611 | n = 36,769 | n = 33,391 | n = 41,011 | n = 44,345 |
| | | Rural | 0:15:14 | 0:17:28 | 0:13:51 | 0:13:28 | 0:14:26 | 0:15:19 |
| | | | n = 3,404 | n = 646 | n = 644 | n = 566 | n = 733 | n = 815 |

| (High Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:03:26 | 0:03:11 | 0:03:44 | 0:03:42 | 0:03:35 | 0:03:25 |
| | | Rural | 0:02:15 | 0:01:56 | 0:01:27 | 0:02:15 | 0:04:36 | 0:02:03 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:01:14 | 0:01:17 | 0:01:14 | 0:01:08 | 0:01:16 | 0:01:10 |
| | | Rural | 0:01:23 | 0:00:24 | 0:01:10 | 0:01:23 | 0:00:47 | 0:01:38 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:08:10 | 0:07:28 | 0:08:59 | 0:08:14 | 0:07:57 | 0:07:58 |
| | | Rural | 0:10:59 | 0:04:47 | 0:13:37 | 0:07:30 | 0:10:51 | 0:10:10 |
| | Travel Time ERF Concentration | Urban | 0:13:10 | 0:13:18 | 0:12:13 | 0:12:47 | 0:13:42 | 0:13:04 |
| | | Rural | 0:24:03 | 0:00:00 | 0:24:03 | 0:12:39 | 0:00:00 | 0:00:00 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:11:30 | 0:10:07 | 0:12:07 | 0:12:06 | 0:11:11 | 0:11:22 |
| | | | n = 1,049 | n = 244 | n = 211 | n = 238 | n = 192 | n = 164 |
| | | Rural | 0:13:30 | * | * | * | * | * |
| | | | n = 10 | n = 1 | n = 3 | n = 2 | n = 2 | n = 2 |
| | Total Response Time ERF Concentration | Urban | 0:17:13 | 0:16:36 | 0:16:25 | 0:17:09 | 0:21:07 | 0:16:41 |
| | | | n = 504 | n = 144 | n = 96 | n = 120 | n = 71 | n = 73 |
| | | Rural | * | * | * | * | * | * |
| | | | n = 3 | n = 0 | n = 1 | n = 2 | n = 0 | n = 0 |

| (Maximum Risk) 90th Percentile Times Baseline Performance | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|
| * Incident count (n) of EMS Emergency events in the maximum risk category was insufficient to conduct statistical analysis. | | | | | | |

## Fire Suppression Incidents

For 90 percent of all fire suppression incidents, the total response time for the arrival of the first due unit, staffed with minimum 4 personnel, is 6 minutes and 24 seconds.

For 90 percent of all moderate risk fire suppression incidents, the total response time for the arrival of the effective response force (ERF), staffed with minimum 15 personnel, is 10 minutes and 24 seconds.

For 90 percent of all high-risk fire suppression incidents, the total response time for the arrival of the ERF, staffed with minimum 29 personnel, is 12 minutes and 34 seconds.

For 90 percent of maximum risk fire suppression response incidents, the total response time for the arrival of the ERF, staffed with minimum 43 personnel, is 12 minutes and 34 seconds.

| (Low Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:02:31 | 0:02:28 | 0:02:24 | 0:02:23 | 0:02:25 | 0:02:50 |
| | | Rural | 0:02:20 | 0:02:19 | 0:02:05 | 0:02:21 | 0:02:17 | 0:02:30 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:01:38 | 0:01:49 | 0:01:44 | 0:01:34 | 0:01:28 | 0:01:33 |
| | | Rural | 0:01:37 | 0:01:50 | 0:01:38 | 0:01:38 | 0:01:30 | 0:01:24 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:06:54 | 0:06:58 | 0:06:53 | 0:06:40 | 0:06:57 | 0:06:57 |
| | | Rural | 0:08:58 | 0:09:40 | 0:09:09 | 0:08:50 | 0:08:25 | 0:08:37 |
| | Travel Time ERF Concentration | Urban | 0:06:57 | 0:07:01 | 0:06:54 | 0:06:44 | 0:07:01 | 0:07:02 |
| | | Rural | 0:09:15 | 0:09:40 | 0:10:02 | 0:09:01 | 0:08:48 | 0:09:16 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:10:02 | 0:10:18 | 0:10:01 | 0:09:39 | 0:09:55 | 0:10:14 |
| | | | n = 52,059 | n = 10,797 | n = 10,036 | n = 9,512 | n = 10,574 | n = 11,140 |
| | | Rural | 0:11:54 | 0:12:25 | 0:12:27 | 0:11:41 | 0:11:35 | 0:11:47 |
| | | | n = 1,323 | n = 268 | n = 240 | n = 256 | n = 285 | n = 274 |
| | Total Response Time ERF Concentration | Urban | 0:10:04 | 0:10:19 | 0:10:01 | 0:09:40 | 0:09:58 | 0:10:18 |
| | | | n = 50,678 | n = 10,610 | n = 9,711 | n = 9,222 | n = 10,243 | n = 10,892 |
| | | Rural | 0:12:15 | 0:12:21 | 0:13:01 | 0:11:41 | 0:11:46 | 0:12:14 |
| | | | n = 1,266 | n = 251 | n = 230 | n = 245 | n = 278 | n = 262 |

| (Moderate Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:02:50 | 0:02:56 | 0:03:04 | 0:02:35 | 0:02:33 | 0:02:56 |
| | | Rural | 0:02:33 | 0:02:44 | 0:02:52 | 0:02:29 | 0:02:09 | 0:03:04 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:00:37 | 0:00:40 | 0:00:36 | 0:00:34 | 0:00:36 | 0:00:37 |
| | | Rural | 0:00:45 | 0:00:40 | 0:00:45 | 0:00:55 | 0:00:23 | 0:01:14 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:05:52 | 0:05:43 | 0:05:34 | 0:05:50 | 0:05:59 | 0:05:58 |
| | | Rural | 0:07:49 | 0:07:00 | 0:09:25 | 0:06:51 | 0:08:00 | 0:08:26 |
| | Travel Time ERF Concentration | Urban | 0:08:44 | 0:08:44 | 0:08:32 | 0:08:29 | 0:08:44 | 0:09:08 |
| | | Rural | 0:14:05 | 0:13:44 | 0:12:38 | 0:13:00 | 0:18:50 | 0:16:02 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:08:46 | 0:08:55 | 0:08:46 | 0:08:31 | 0:08:46 | 0:09:01 |
| | | | n = 1,468 | n = 305 | n = 269 | n = 276 | n = 306 | n = 312 |
| | | Rural | 0:10:59 | * | 0:12:00 | 0:09:14 | 0:11:01 | 0:10:53 |
| | | | n = 78 | n = 9 | n = 15 | n = 16 | n = 19 | n = 19 |
| | Total Response Time ERF Concentration | Urban | 0:11:46 | 0:12:06 | 0:11:57 | 0:11:24 | 0:11:46 | 0:11:39 |
| | | | n = 1,143 | n = 238 | n = 210 | n = 211 | n = 237 | n = 247 |
| | | Rural | 0:16:57 | * | 0:15:14 | 0:16:32 | 0:21:55 | * |
| | | | n = 55 | n = 7 | n = 11 | n = 14 | n = 14 | n = 9 |

| (High Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:02:53 | 0:02:59 | 0:02:57 | 0:02:36 | 0:02:51 | 0:03:01 |
| | | Rural | 0:03:00 | 0:01:15 | 0:03:00 | 0:01:52 | 0:02:10 | 0:02:28 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:00:32 | 0:00:36 | 0:00:33 | 0:00:26 | 0:00:30 | 0:00:34 |
| | | Rural | 0:00:28 | 0:00:16 | 0:00:17 | 0:00:16 | 0:00:25 | 0:00:28 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:04:54 | 0:04:51 | 0:04:52 | 0:04:46 | 0:04:58 | 0:05:05 |
| | | Rural | 0:06:25 | 0:02:46 | 0:04:46 | 0:05:15 | 0:06:25 | 0:01:46 |
| | Travel Time ERF Concentration | Urban | 0:13:21 | 0:15:12 | 0:12:45 | 0:13:40 | 0:12:13 | 0:14:55 |
| | | Rural | 0:20:37 | 0:16:10 | 0:00:00 | 0:20:37 | 0:00:00 | 0:12:04 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:07:59 | 0:07:50 | 0:07:41 | 0:07:52 | 0:08:05 | 0:08:09 |
| | | | n = 2,158 | n = 426 | n = 360 | n = 367 | n = 498 | n = 507 |
| | | Rural | * | * | * | * | * | * |
| | | | n = 8 | n = 1 | n = 3 | n = 1 | n = 1 | n = 2 |
| | Total Response Time ERF Concentration | Urban | 0:16:51 | 0:18:02 | 0:16:01 | 0:16:05 | 0:15:28 | 0:18:40 |
| | | | n = 1,173 | n = 233 | n = 214 | n = 201 | n = 259 | n = 266 |
| | | Rural | * | * | * | * | * | * |
| | | | n = 3 | n = 1 | n = 0 | n = 1 | n = 0 | n = 1 |

| (Maximum Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:03:09 | 0:03:08 | 0:03:04 | 0:03:23 | 0:03:01 | 0:03:21 |
| | | Rural | 0:02:43 | 0:01:17 | 0:00:32 | 0:02:43 | 0:02:42 | 0:01:38 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:00:43 | 0:00:45 | 0:00:40 | 0:00:36 | 0:00:45 | 0:00:42 |
| | | Rural | 0:00:38 | 0:00:06 | 0:00:22 | 0:00:29 | 0:00:38 | 0:00:34 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:06:15 | 0:05:21 | 0:06:43 | 0:07:04 | 0:06:13 | 0:06:19 |
| | | Rural | 0:07:05 | 0:00:03 | 0:05:30 | 0:00:00 | 0:07:05 | 0:06:06 |
| | Travel Time ERF Concentration | Urban | 0:19:09 | 0:47:57 | 0:17:02 | 0:10:25 | 0:17:33 | 0:21:39 |
| | | Rural | * | * | * | * | * | * |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:09:27 | 0:09:30 | 0:09:29 | 0:09:33 | 0:09:22 | 0:09:06 |
| | | | n = 577 | n = 126 | n = 96 | n = 94 | n = 140 | n = 121 |
| | | Rural | * | * | * | * | * | * |
| | | | n = 7 | n = 1 | n = 1 | n = 0 | n = 2 | n = 3 |
| | Total Response Time ERF Concentration | Urban | 0:31:11 | * | 0:31:11 | * | * | * |
| | | | n = 35 | n = 8 | n = 10 | n = 4 | n = 5 | n = 8 |
| | | Rural | * | * | * | * | * | * |
| | | | n = 0 | n = 0 | n = 0 | n = 0 | n = 0 | n = 0 |

## Hazardous Materials Incidents

For 90 percent of all hazardous materials incidents, the total response time for the arrival of the first due unit, staffed with minimum 4 personnel, is 6 minutes and 24 seconds.

For 90 percent of all moderate risk hazardous materials response incidents, the total response time for the arrival of the effective response force (ERF) including the hazardous materials response team, staffed with minimum 6 personnel, is 10 minutes and 24 seconds in urban.

For 90 percent of all high-risk hazardous materials response incidents, the total response time for arrival of the ERF, staffed with minimum 23 personnel, is 10 minutes and 24 seconds.

For 90 percent of all maximum risk hazardous materials response incidents, the total response time for arrival of the ERF, staffed with minimum 28 personnel, is 12 minutes and 34 seconds.

| (Low Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:03:00 | 0:03:05 | 0:02:48 | 0:03:00 | 0:03:08 | 0:03:05 |
| | | Rural | 0:03:32 | 0:03:01 | 0:03:42 | 0:03:23 | 0:03:33 | 0:03:04 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:01:21 | 0:01:22 | 0:01:15 | 0:01:21 | 0:01:16 | 0:01:27 |
| | | Rural | 0:01:22 | 0:01:22 | 0:01:15 | 0:01:46 | 0:01:13 | 0:01:00 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:07:02 | 0:07:02 | 0:07:09 | 0:06:35 | 0:07:14 | 0:07:10 |
| | | Rural | 0:09:11 | 0:06:22 | 0:09:11 | 0:08:05 | 0:12:57 | 0:09:57 |
| | Travel Time ERF Concentration | Urban | 0:07:06 | 0:07:04 | 0:07:11 | 0:06:35 | 0:07:14 | 0:07:20 |
| | | Rural | 0:09:57 | 0:06:22 | 0:09:31 | 0:08:05 | 0:12:57 | 0:09:57 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:10:18 | 0:10:29 | 0:09:58 | 0:09:54 | 0:10:12 | 0:10:28 |
| | | | n = 2,585 | n = 480 | n = 523 | n = 521 | n = 541 | n = 520 |
| | | Rural | 0:12:32 | 0:09:09 | 0:12:32 | 0:11:14 | 0:16:23 | 0:11:26 |
| | | | n = 73 | n = 10 | n = 13 | n = 16 | n = 20 | n = 14 |
| | Total Response Time ERF Concentration | Urban | 0:10:21 | 0:10:36 | 0:09:58 | 0:09:54 | 0:10:16 | 0:10:35 |
| | | | n = 2,556 | n = 480 | n = 518 | n = 513 | n = 536 | n = 509 |
| | | Rural | 0:13:00 | 0:09:09 | 0:12:43 | 0:11:14 | 0:16:23 | 0:11:26 |
| | | | n = 73 | n = 10 | n = 13 | n = 16 | n = 20 | n = 14 |

| (Moderate Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:03:03 | 0:03:13 | 0:03:05 | 0:02:49 | 0:02:50 | 0:03:15 |
| | | Rural | 0:03:34 | 0:07:03 | 0:03:07 | 0:03:43 | 0:02:43 | 0:03:31 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:00:57 | 0:01:00 | 0:00:53 | 0:00:57 | 0:00:54 | 0:00:58 |
| | | Rural | 0:01:03 | 0:01:07 | 0:00:44 | 0:01:12 | 0:01:03 | 0:00:56 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:05:40 | 0:05:27 | 0:05:43 | 0:05:39 | 0:05:48 | 0:05:46 |
| | | Rural | 0:07:28 | 0:08:32 | 0:07:09 | 0:06:45 | 0:07:28 | 0:08:32 |
| | Travel Time ERF Concentration | Urban | 0:06:45 | 0:06:49 | 0:06:45 | 0:06:37 | 0:06:48 | 0:06:46 |
| | | Rural | 0:08:40 | 0:09:49 | 0:08:40 | 0:08:26 | 0:08:11 | 0:11:54 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:08:57 | 0:09:01 | 0:08:58 | 0:08:40 | 0:08:48 | 0:09:10 |
| | | | n = 4,742 | n = 1,005 | n = 902 | n = 847 | n = 1,012 | n = 976 |
| | | Rural | 0:12:08 | 0:12:45 | 0:11:34 | 0:10:17 | 0:12:33 | * |
| | | | n = 73 | n = 17 | n = 16 | n = 18 | n = 16 | n = 6 |
| | Total Response Time ERF Concentration | Urban | 0:10:10 | 0:10:27 | 0:10:07 | 0:09:55 | 0:09:54 | 0:10:28 |
| | | | n = 4,675 | n = 994 | n = 886 | n = 842 | n = 998 | n = 955 |
| | | Rural | 0:13:08 | 0:14:58 | 0:12:50 | 0:11:05 | 0:12:33 | * |
| | | | n = 71 | n = 16 | n = 15 | n = 18 | n = 16 | n = 6 |

| (High Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:04:55 | 0:05:37 | 0:04:40 | 0:04:48 | 0:04:43 | 0:05:11 |
| | | Rural | 0:02:37 | 0:00:38 | 0:02:40 | 0:02:10 | 0:01:29 | 0:02:37 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:01:20 | 0:01:20 | 0:00:59 | 0:01:15 | 0:01:20 | 0:01:36 |
| | | Rural | 0:01:05 | 0:00:41 | 0:01:05 | 0:01:38 | 0:01:04 | 0:00:43 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:08:30 | 0:09:12 | 0:08:36 | 0:08:22 | 0:08:27 | 0:08:30 |
| | | Rural | 0:11:03 | 0:07:58 | 0:03:38 | 0:11:03 | 0:02:14 | 0:19:33 |
| | Travel Time ERF Concentration | Urban | 0:28:30 | 0:21:07 | 0:29:04 | 0:17:35 | 0:28:02 | 0:38:08 |
| | | Rural | * | 0:00:00 | 0:00:00 | 0:00:00 | 0:00:00 | 0:00:00 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:13:25 | 0:14:46 | 0:12:49 | 0:12:50 | 0:14:38 | 0:12:47 |
| | | | n = 377 | n = 67 | n = 72 | n = 59 | n = 92 | n = 87 |
| | | Rural | 0:13:35 | * | * | * | * | * |
| | | | n =11 | n = 1 | n = 3 | n = 4 | n = 2 | n = 1 |
| | Total Response Time ERF Concentration | Urban | 1:04:33 | * | * | * | * | * |
| | | | n = 25 | n = 3 | n = 4 | n = 3 | n = 7 | n = 8 |
| | | Rural | * | * | * | * | * | * |
| | | | n = 0 | n = 0 | n = 0 | n = 0 | n = 0 | n = 0 |

| (Maximum Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:07:34 | 0:03:01 | 0:03:50 | 0:07:34 | 0:04:57 | 0:09:41 |
| | | Rural | * | * | * | * | * | * |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:00:38 | 0:00:37 | 0:00:11 | 0:00:38 | 0:00:38 | 0:00:53 |
| | | Rural | * | * | * | * | * | * |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:06:00 | 0:09:18 | 0:04:44 | 0:06:00 | 0:04:17 | 0:04:11 |
| | | Rural | * | * | * | * | * | * |
| | Travel Time ERF Concentration | Urban | 0:31:09 | 0:06:47 | 0:00:00 | 0:31:09 | 0:09:00 | 0:11:52 |
| | | Rural | * | * | * | * | * | * |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:13:15 | * | * | * | * | * |
| | | | n = 16 | n = 2 | n = 2 | n = 6 | n = 3 | n = 3 |
| | | Rural | * | * | * | * | * | * |
| | | | n = 0 | n = 0 | n = 0 | n = 0 | n = 0 | n = 0 |
| | Total Response Time ERF Concentration | Urban | * | * | * | * | * | * |
| | | | n = 4 | n = 1 | n = 0 | n = 1 | n = 1 | n = 1 |
| | | Rural | * | * | * | * | * | * |
| | | | n = 0 | n = 0 | n = 0 | n = 0 | n = 0 | n = 0 |

## Technical Rescue Incidents

For 90 percent of all technical rescue incidents, the total response time for the arrival of the first due unit, staffed with a minimum of 4 personnel, is 6 minutes and 24 seconds.

For 90 percent of all moderate risk technical rescue incidents, the total response time for the arrival of the effective response force (ERF), staffed with a minimum 9 personnel, is 10 minutes and 24 seconds.

For 90 percent of all high-risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with a minimum 25 personnel, is 10 minutes and 24 seconds.

For 90 percent of all maximum risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with a minimum 34 personnel, is 12 minutes and 34 seconds.

| (Moderate Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:03:20 | 0:03:25 | 0:03:09 | 0:03:16 | 0:03:16 | 0:03:29 |
| | | Rural | 0:04:45 | 0:04:04 | 0:04:03 | 0:04:53 | 0:05:53 | 0:03:47 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:00:52 | 0:00:52 | 0:00:50 | 0:00:53 | 0:00:51 | 0:00:53 |
| | | Rural | 0:00:55 | 0:01:03 | 0:00:54 | 0:00:50 | 0:00:52 | 0:00:46 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:06:38 | 0:06:28 | 0:06:53 | 0:06:27 | 0:06:35 | 0:06:43 |
| | | Rural | 0:09:06 | 0:08:54 | 0:09:52 | 0:09:14 | 0:08:55 | 0:08:56 |
| | Travel Time ERF Concentration | Urban | 0:09:19 | 0:10:15 | 0:09:48 | 0:08:48 | 0:09:03 | 0:08:59 |
| | | Rural | 0:14:37 | 0:14:37 | 0:15:01 | 0:12:28 | 0:13:31 | 0:15:14 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:10:26 | 0:10:45 | 0:10:17 | 0:10:15 | 0:10:17 | 0:10:32 |
| | | | n = 4,986 | n = 907 | n = 898 | n = 891 | n = 1,153 | n = 1,137 |
| | | Rural | 0:14:11 | 0:13:41 | 0:14:40 | 0:14:23 | 0:14:20 | 0:13:19 |
| | | | n = 326 | n = 55 | n = 60 | n = 68 | n = 67 | n = 76 |
| | Total Response Time ERF Concentration | Urban | 0:13:12 | 0:13:39 | 0:13:34 | 0:12:37 | 0:13:20 | 0:12:40 |
| | | | n = 3,206 | n = 567 | n = 620 | n = 584 | n = 717 | n = 718 |
| | | Rural | 0:19:28 | 0:19:31 | 0:18:07 | 0:18:35 | 0:19:31 | 0:18:46 |
| | | | n = 189 | n = 33 | n = 32 | n = 39 | n = 42 | n = 43 |

| (High Risk) 90th Percentile Times Baseline Performance | | | CY18-CY22 | CY22 | CY21 | CY20 | CY19 | CY18 |
|---|---|---|---|---|---|---|---|---|
| Call Processing | Call Entered to Dispatch | Urban | 0:04:54 | 0:04:28 | 0:03:55 | 0:04:31 | 0:07:34 | 0:04:35 |
| | | Rural | 0:08:04 | 0:09:03 | 0:07:22 | 0:05:14 | 0:34:18 | 0:05:30 |
| Turnout Time | Turnout Time *1st unit dispatched* | Urban | 0:00:46 | 0:01:06 | 0:00:45 | 0:00:35 | 0:01:03 | 0:00:45 |
| | | Rural | 0:01:02 | 0:02:01 | 0:00:53 | 0:01:02 | 0:02:20 | 0:00:39 |
| Travel Time | Travel Time Distribution *1st unit on-scene* | Urban | 0:07:23 | 0:05:47 | 0:06:09 | 0:06:04 | 0:10:57 | 0:09:33 |
| | | Rural | 0:13:10 | 0:19:48 | 0:10:39 | 0:12:21 | 0:20:31 | 0:10:44 |
| | Travel Time ERF Concentration | Urban | 0:27:29 | 0:17:20 | 0:21:20 | 0:25:41 | 0:24:10 | 0:36:37 |
| | | Rural | 0:32:50 | 0:38:24 | 0:24:30 | 0:32:50 | 0:00:00 | 0:27:12 |
| Total Response Time | Total Response Time Distribution *1st unit on-scene* | Urban | 0:12:16 | 0:10:02 | 0:10:16 | 0:11:00 | 0:17:16 | 0:13:38 |
| | | | n = 394 | n = 52 | n = 64 | n = 66 | n = 94 | n = 118 |
| | | Rural | 0:19:07 | * | 0:18:53 | 0:17:57 | * | 0:16:03 |
| | | | n = 62 | n = 6 | n = 27 | n = 13 | n = 5 | n = 11 |
| | Total Response Time ERF Concentration | Urban | 0:38:25 | 0:24:59 | 0:30:45 | 0:34:09 | 0:40:57 | 0:53:09 |
| | | | n = 96 | n = 15 | n = 13 | n = 16 | n = 20 | n = 32 |
| | | Rural | 0:48:47 | * | * | * | * | * |
| | | | n = 10 | n = 2 | n = 5 | n = 1 | n = 0 | n = 2 |

| ALARM TIME TO FIRST DISPATCH TIME CY18-CY22 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| SERVICE LINE | 90th Percentile *seconds* | 90th Percentile *h:mm:ss* | Average Time *seconds* | Average Time *h:mm:ss* | Min Time *seconds* | Max Time *seconds* | Standard Deviation *seconds* | Standard Deviation *h:mm:ss* |
| EMS EMERGENCY | 39 | 00:00:39 | 20.88 | 00:00:20 | 0 | 360 | 20.21 | 00:00:20 |
| FIRE | 53 | 00:00:53 | 29.76 | 00:00:29 | 0 | 360 | 26.48 | 00:00:26 |
| HAZMAT | 55 | 00:00:55 | 31.96 | 00:00:31 | 0 | 342 | 25.16 | 00:00:25 |
| RESCUE | 77 | 00:01:17 | 46.09 | 00:00:46 | 0 | 360 | 32.34 | 00:00:32 |

*The above data was computed by using a baseline dataset of all unit records for EMS Emergency, Fire, and Public Service calls for service dispatched as an incident type in the EMS Emergency, Fire, Hazmat, and Rescue Accreditation Service Lines occurring within Fairfax County, except in Fort Belvoir's (463, 464, 465, 466) and the City of Fairfax's (443) battalions, between January 1, 2018, and December 31, 2022.*

*Time was calculated in seconds from the alarm time (when the call was released by the call taker to the dispatcher with a confirmed event type and/or location) to the dispatch time for the first unit dispatched. Calls where alarm to first dispatch was longer than 360 seconds or where no unit was dispatched were excluded (n=562, < 1%).*

2.6. Benchmark Objectives

FCFRD is an all-hazards metropolitan agency that has established benchmarks for emergency medical services, fire suppression, hazardous materials, technical rescue, and all other emergency response types. These benchmark objectives have been in place for over 10 years and were established using industry standards and an agency vision of being "the best community focused fire and rescue department ensuring a safe and secure environment for all". This vision establishes a consistent benchmark across all service areas within our community knowing that our baseline performance reporting will reflect this in the limited rural areas within the county. The industry standards included in establishment of the FCFRD benchmarks are 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: NFPA 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems.

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**Call processing and turn out time**

*Call Processing Performance Objectives* have been established by the FCFRD understanding that the Fairfax County Department of Public Safety Communications is responsible for all dispatching of public safety. For all incident types not identified in NFPA 1221: 7.4.2.2, the first alarm should be dispatched within 64 seconds, 90 percent of the time. Incidents requiring emergency medical dispatching will be completed within 90 seconds, 90 percent of the time.

*Turn out time objectives* have been established for all responding units to be out the door within 80 seconds of dispatch, 90 percent of the time for all emergency dispatches except for emergency medical incidents. For all emergency medical incidents, responding units will be out the door within 60 seconds of dispatch, 90 percent of the time.

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## Emergency Medical Incidents
For 90 percent of all EMS incidents, the total response time for the first arriving unit, staffed with a minimum of 2 personnel, is 6 minutes and 30 seconds. The first due unit can assess scene safety and establishing command; sizing up the situation; conducting an initial EMS patient assessment and interactions including cardiopulmonary resuscitation; bag valve mask ventilation; intravenous access; endotracheal intubation; IV medications.

*Emergency Medical Incidents – ERF*
FCFRD operates a combination ALS and BLS transport unit deployment model to ensure all apparatus except for transport units, command vehicles and tankers operate with one ALS provider equipped with a full cache of ALS equipment as established by agency protocols. An ERF for all ALS priority responses will consist of a minimum of one transport unit and one suppression unit with a total of 6 fire department personnel with a minimum of 2 ALS providers and shall have a total response time for 90 percent for incidents of, 6 minutes and 30 seconds. Critical ALS patients will add an EMS Supervisor.

## Fire Suppression Incidents

For 90 percent of all fire suppression incidents, the total response time for the arrival of the first due unit, staffed with a minimum of four personnel, shall be 6 minutes and 24 seconds for all service areas within the county. The first due unit is capable of: providing 625-750 gallons of water; 40 gallons of class B foam and 1,250 gallons per minute (gpm) pumping capacity; performing a size-up and calling for additional resources; establishing command; establishing an uninterrupted water supply; advancing an attack line to contain or extinguish fire; performing search and rescue of viable victims; and performing salvage operations. All operations are done within accordance with FCFRD policy and operational guidelines.

*Fire Suppression Incidents – ERF*

For 90 percent of all fire suppression incidents, the total response time for the arrival of the effective response force (ERF) for a moderate risk, staffed with a minimum of 15 personnel, shall be 10 minutes and 24 seconds for all service areas of the county. The ERF for all risks shall be capable of establishing command; providing two uninterrupted water sources; advancing an attack line and back-up line for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirement of 2 in-2 out; complete forcible entry; complete primary search and rescue; control utilities and perform salvage and overhaul.

## Hazardous Materials Incidents

For 90 percent of all hazardous materials incidents, the total response time for the first due unit, staffed with 4 personnel is 6 minutes and 24 seconds. The first due unit is capable of: performing incident size-up; establishing command; requesting additional resources; isolating and denying entry; evacuation; assisting the hazardous materials team members with support operations. All operations are done in accordance with departmental Standard Operating Procedures and the Fairfax County Fire and Rescue Department Hazardous Materials Manual.

*Hazardous Materials Incidents – ERF*

For 90 percent of all hazardous materials incidents, the total response time for the arrival of the ERF, staffed with 6 Hazardous Materials Technicians, is 10 minutes and 24 seconds for all service areas of the county. The ERF for all risks can respond with a minimum of 4 HazMat Technicians with a competence level under Title 29 of the Code of Federal Regulations (CFR) 1910.120 with one Heavy Rescue designated HazMat specialty or Hazardous Materials primary response unit able to establish command; establish a working perimeter; assemble a mitigation team while maintaining OSHA requirements of 2 in- 2 out. All operations are done in accordance with departmental Standard Operating Procedures and the Fairfax County Fire and Rescue Department Hazardous Materials Manual.

## Technical Rescue Incidents

For 90 percent of all technical rescue incidents, the total response time for the first due unit, staffed with 4 personnel, is 6 minutes and 24 seconds. The first due unit is capable of: performing a size-up; requesting additional resources; establishing command; isolating and denying entry; evacuating uninvolved persons and assisting technical rescue teams' members in operational support functions. All operations are done in accordance with departmental Standard Operating Procedures and the Fairfax County Fire and Rescue Department Special Operations Manual.

*Technical Rescue Incidents – ERF*

For 90 percent of all technical rescue incidents, the total response time for the arrival of the ERF, staffed with 9 FCFRD trained and certified technical rescue personnel, is 10 minutes 24 seconds for all service areas of the county. The ERF for all risks is capable of establishing command; performing water/flood rescue, technical rope rescue, confined space rescue, trench rescues, machinery entrapment, structural collapse rescue; complying with OSHA requirements. All operations are done in accordance with departmental Standard Operating Procedures and

the Fairfax County Fire and Rescue Department Special Operations Manual, NFPA 1855, NFPA 1006, NFPA 1670 while providing for the safety of responders and the community.

## Other Emergencies

For 90 percent of all fire suppression incidents, the total response time for the arrival of the first due unit, staffed with a minimum of four personnel, shall be 6 minutes and 24 seconds for all service areas within the county. The first due unit is capable of: performing a size-up and calling for additional resources; establishing command; isolating and denying entry; evacuating uninvolved persons; performing search and rescue of viable victims; and performing atmospheric monitoring. All operations are done within accordance with FCFRD policy and operational guidelines.

## Benchmark Tables

*Benchmark Objectives for all population categories*

| Measured at 90th Percentile | | Fire Incidents | EMS Incidents | Hazmat Incidents | Tech Rescue Incidents |
|---|---|---|---|---|---|
| Call Processing | Pick-up to Dispatch | 1:04 | 1:30 | 1:04 | 1:04 |
| Turnout | Turnout Time 1st In | 1:20 | 1:00 | 1:20 | 1:20 |
| Travel | Travel Time 1st In | 4:00 | 4:00 | 4:00 | 4:00 |
| | Travel Time Moderate ERF | 8:00 | 8:00 | 8:00 | 8:00 |
| | Travel Time for High ERF | 10:10 | 10:10 | 10:10 | 10:10 |
| | Travel Time Maximum ERF | 10:10 | 10.:10 | 10:10 | 10:10 |
| Total Response Time | Total Response Time 1st In | 6:24 | 6:30 | 6:24 | 6:24 |

| Measured at the 90th Percentile | | Fire Incidents | EMS Incidents | HazMat Incidents | Rescue Incidents |
|---|---|---|---|---|---|
| Call Processing | Pick-up to Dispatch | 1:04 | 1:30 | 1:04 | 1:04 |
| Turnout Time | Turnout Time 1st In | 1:20 | 1:00 | 1:20 | 1:20 |
| Travel Time | Travel Time 1st In | 4:00 | 4:00 | 4:00 | 4:00 |
| | Travel Time Moderate ERF | 8:00 | 8:00 | 8:00 | 8:00 |
| | Travel Time for High ERF | 10:10 | 10:10 | 10:10 | 10:10 |
| | Travel Time Maximum ERF | 10:10 | 10:10 | 10:10 | 10:10 |
| Response Time | Total Response Time 1st In | 6:24 | 6:30 | 6:24 | 6:24 |
| | Total Response Time Moderate ERF | 10:24 | 10:30 | 10:24 | 10:24 |
| | Total Response Time High ERF | 12:34 | 12:30 | 12:34 | 12:34 |
| | Total Response Time Maximum ERF | 12:34 | 12:40 | 12:34 | 12:34 |

## 2.7. Evaluation of Performance

The FCFRD remains committed to a process of self-evaluation and continuous improvement and embedding this mindset into its culture. The Standards of Cover (SOC) developed herein are an effort to further quantify current performance and establish tangible levels for future improvement. These standards will be evaluated continually and will be updated each year. As previously indicated, this SOC is considered a living document and will be a permanent part of the department's budget development and community-driven strategic planning processes.

## Evaluation Methodology

The department has historically performed statistical analysis on its system performance and adjusted service delivery based upon the outcomes. In 2008, the first comprehensive Geographic Information System (GIS) fire suppression and emergency medical services response capabilities analysis was completed. Several information sources including the agencies annual reports, county government capital improvement planning, county government public safety staffing plans, and agencies annual unit response activity reports are focused on the governing body and agency goals of safe staffing levels and service response times based on NFPA 1710, across all areas of Fairfax County.

As of FY2017, the department has adjusted its Unit Activity reporting to reflect the CFAI service categories for EMS, Fire, HazMat, Technical Rescue, and Non-Fire Emergency. This change will be an ongoing method to analyze performance against benchmarks established in this SOC. To establish an evaluation methodology to support the culture and mindset of "how can we improve?" the department will leverage strengths identified in its strategic planning process, performance gaps identified in its ongoing performance assessment and evaluate identified issues using the following process:

1. Technical review – What are the recommended changes to the service delivery system and what are the probable or expected results? How will it be accomplished?
2. Operational review – Is the service delivery change safe, and will it work in the field with available resources? What will the impact be to overall operations?
3. Fiscal review – Is the benefit worth the cost, and is it sustainable? What will the overall financial impact be to the department and the governing body?
4. Policy review – Does the scenario fit within the mission and core values of the department? Will there be any negative internal or community impact or reaction, and if so, is the benefit worth it?
5. Repeat the process – Once adjustments to service delivery are made the process of assessment and evaluation will begin again.

## Factors to Consider

Fairfax County Government adopted the first Countywide Strategic Plan which serves as a road map to help guide future work, focusing on the 10 Community Outcome Areas that represent the issues of greatest importance to the community and setting a clear, unified community-driven vision for the next 10-20 years. The Ten Community Outcome Areas include:

- Cultural and Recreational Opportunities
- Economic Opportunity
- Effective and Efficient Government
- Empowerment and Support for Residents Facing Vulnerability
- Environment
- Health
- Housing and Neighborhood Livability
- Lifelong Education and Learning
- Mobility and Transportation
- Safety and Security

Fairfax County Government adopted the FY2023 - FY2027 Capital Improvement Plan linked to the Public Safety Section of the Fairfax County Comprehensive Plan that has established objectives and policies to:

- Establish and maintain, at a minimum, a seven-minute response total response time coverage for fire and rescue emergencies to at least 95% of the county's population.
- While adhering to constructing new full-service fire stations of a minimum 14,000 square feet, all efforts should be made to construct new station to be compatible with the surrounding community.
- Safeguard the county's investment and ensure appropriate positioning of the Fire and Rescue Department's specialized emergency response equipment.
- Maintain the high level of training provided to public safety officials, so they either become or remain proficient and qualified in their duties.
- Locate fire stations on a street with traffic signal with pre-emption capability at a nearby intersection.

The Fairfax County Fire and Rescue Department completed and adopted its 2023 - 2025 Strategic Plan which is linked to the Countywide Strategic Plan and established objectives for the following seven strategic goals:

- Service Delivery
- Professional Development and Training
- Recruitment
- Internal and External Communications
- Behavioral Health and Wellness
- Infrastructure and Technology
- Healthy Culture

## 2.8. Plan for Maintaining and Improving Performance

The FCFRD is an organization of committed personnel working with modern and well-maintained fire stations, apparatus, and equipment. It provides an all-hazard approach toward emergency and life safety services, has an established fire training academy, good employee group/management relations, and an overall positive public image. Additionally, the department has achieved an ISO public protection classification (PPC) rating of Class 1, the best available.

To ensure the agency is meeting or approaching current service level objectives (benchmarks), continuous monitoring of service level baselines must be conducted. FCFRD begins the review process by conducting a community risk assessment, including the response demands and identifiable risks within each planning zone. Changes in community demographics and growth over the previous twelve-month period will be reviewed. The agency determines if there have been any significant changes within planning zones, changes to service demands, or changes in standards or operations that impact the service level objectives or the Standard of Cover document.

In 2020, Chief Butler established the Data Analytics and Strategy Management Division (DASM) which asserted the importance of continuous monitoring and evaluation with a dedicated branch on the organizational chart. DASM is comprised of ten positions, previously spread throughout the FCFRD, and includes three sections responsible for data analysis, geographic information systems (GIS), and database administration. This team encourages excellence in data accuracy through regular messaging to the field about proper documentation and participation in training academy exercises at all levels of instruction. This ongoing conversation provides transparency to the field about the importance of collecting accurate performance data and builds confidence in the data-informed decision-making process.

DASM utilizes interactive and automation tools to analyze and share data as well as provide timely notifications to stakeholders of critical events and performance issues at all agency sites. From daily performance reports shared with shift leaders to weekly reports shared with the public to monthly and annual reports shared with the entire agency, trending operational performance challenges and successes are woven into conversations at every level of the FCFRD. At the incident level, at-risk population encounters are shared with community partners to leverage additional resources and bring resolution to root causes. Through internal monitoring and conversation as well as external data sharing and reflection, the FCFRD takes a wholistic approach to improving performance and community outcomes.

The agency will continue to review service level baselines, system performance and critical events. Included in the review are a summary of the results of the service level objectives, a comparison of current results to previous results, and calculations of the difference in results between time periods. The service level objectives are incorporated for fire and other emergencies in its self-assessment manual. Findings of the self-assessment review are translated, where needed, into budgetary requests for the coming fiscal year budget preparation.

In addition, the FCFRD's community-focused 2023 – 2025 Strategic Plan includes goals and objectives related to ensuring service delivery matches the needs of the community and developing and implementing a community risk reduction (CRR) strategy leveraging external partnerships. Implementation of the strategic plan and ongoing strategic planning efforts will guide future decision making for continual improvement of service delivery and performance of all administrative and operational functions of the FCFRD.

Correlation of CRA-SOC to CFAI 10th Edition Accreditation Model

As stated in the CPSE Quality Improvement for the Fire and Emergency Services, the CRA-SOC is the first and foundational element of the accreditation process. There is significant connection between the CRA-SOC and Category 2 Assessment and Planning of the CFAI 10th Edition accreditation model. Provided below is the correlation matrix for documenting where the links between FCFRD's CRA-SOC and Category 2 can be found.

| | | CFAI 10th Edition Accreditation Model - Performance Indicator/ Core Competency | CRA-SOC Pages |
|---|---|---|---|
| | 2A.1 | Service area boundaries for the agency are identified, documented, and legally adopted by the authority having jurisdiction. | 17 |
| | 2A.2 | Boundaries for other service responsibility areas, such as automatic aid, mutual aid, and contract areas, are identified, documented, and appropriately approved by the authority having jurisdiction. | 20 |
| CC | 2A.3 | The agency has a documented and adopted methodology for organizing the response area(s) into geographical planning zones. | 25 |
| CC | 2A.4 | The agency assesses the community by planning zone and considers the population density within planning zones and population areas, as applicable, for the purpose of developing total response time standards. | 24 |
| | 2A.5 | Data that includes property, life, injury, environmental, and other associated losses, as well as the human and physical assets preserved and or saved, are recorded for a minimum of three (initial accreditation agencies) to five (currently accredited agencies) immediately previous years. | 21 |
| | 2A.6 | The agency utilizes its adopted planning zone methodology to identify response area characteristics such as population, transportation systems, area land use, topography, geography, geology, physiography, climate, hazards and risks, and service provision capability demands. | 21 |
| | 2A.7 | Significant socioeconomic and demographic characteristics for the response area are identified, such as key employment types and centers, assessed values, blighted areas, and population earning characteristics. | 18-19, 21 |
| | 2A.8 | The agency identifies and documents all safety and remediation programs, such as fire prevention, public education, injury prevention, public health, and other similar programs, currently active within the response area. | Annual Report, CRR |
| | 2A.9 | The agency defines and identifies infrastructure that is considered critical within the planning zones. | 21 |
| CC | 2B.1 | The agency has a documented and adopted methodology for identifying, assessing, categorizing, and classifying all risks (fire and non-fire) throughout the community or area of responsibility. | 21 |
| | 2B.2 | The historical emergency and non-emergency service demands frequency for a minimum of three immediately previous years and the future probability of emergency and non-emergency service demands, by service type, have been identified and documented by planning zone. | 41 |
| | 2B.3 | Event outputs and outcomes are assessed for three (initial accreditation agencies) to five (currently accredited agencies) immediately previous years. | 21 |
| CC | 2B.4 | The agency's risk identification, analysis, categorization, and classification methodology has been utilized to determine and document the different categories and classes of risks within each planning zone | 21 |
| | 2B.5 | Fire protection and detection systems are incorporated into the risk analysis. | 25 |
| | 2B.6 | The agency assesses critical infrastructure within the planning zones for capabilities and capacities to meet the demands posed by the risks. | 21 |
| | 2B.7 | The agency engages other discipline or groups within its community to compare and contrast risk assessment in order to identify gaps of future threats and risks. | 56 |
| CC | 2C.1 | Given the levels of risks, area of responsibility, demographics, and socio-economic factors, the agency has determined, documented, and adopted a methodology for the consistent provision of service levels in all service program areas through response coverage strategies. | 24-26 |

| | | CFAI 10th Edition Accreditation Model - Performance Indicator/ Core Competency | CRA-SOC Pages |
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| CC | 2C.2 | The agency has a documented and adopted methodology for monitoring its quality of emergency response performance for each service type within each planning zone and total response area. | 38-49 |
| | 2C.3 | Fire protection systems and detection systems are identified and considered in the development of appropriate response strategies. | 25 |
| CC | 2C.4 | A critical task analysis of each risk category and risk class has been conducted to determine the first due and effective response force capabilities, and a process is in place to validate and document the results. | 29-39 |
| CC | 2C.5 | The agency has identified the total response time components for delivery of services in each service program area and found those services consistent and reliable within the entire response area. | 56 |
| | 2C.6 | The agency identifies outcomes for its programs and ties them to the community risk assessment during updates and adjustments of its programs as needed. | 21 |
| | 2C.7 | The agency has identified the total response time components for delivery of services in each service program area and assessed those services in each planning zone | 50 |
| CC | 2C.8 | The agency has identified efforts to maintain and improve its performance in the delivery of its emergency services for the past three (initial accreditation agencies) to five (currently accredited agencies) immediately previous years. | 38-49 |
| | 2C.9 | The agency's resiliency has been assessed through its deployment policies, procedures, and practices. | 28 |
| CC | 2D.1 | The agency has a documented and adopted methodology for assessing performance adequacies, consistencies, reliabilities, resiliencies, and opportunities for improvement for the total response area. | 54 |
| | 2D.2 | The agency continuously monitors, assesses, and internally reports, at least quarterly, on the ability of the existing delivery system to meet expected outcomes and identifies the remedial actions most in need of attention. | 56 |
| | 2D.3 | The performance monitoring methodology identifies, at least annually, future external influences, altering conditions, growth, and development trends, and new or changing risks, for purposes of analyzing the balance of service capabilities with new conditions or demands. | 56 |
| | 2D.4 | The performance monitoring methodology supports the annual assessment of the efficiency and effectiveness of each service program at least annually in relation to industry research. | 56 |
| | 2D.5 | Impacts of incident mitigation program efforts, (such as community risk reduction, public education, and community service programs), are considered and assessed in the monitoring process. | 56 |
| CC | 2D.6 | Performance gaps for the total response area, such as inadequacies, inconsistencies, and negative trends, are determined at least annually. | 40-52 |
| CC | 2D.7 | The agency has systematically developed a continuous improvement plan that details actions to be taken within an identified timeframe to address existing gaps and variations. | 56 |
| | 2D.8 | The agency seeks approval of its standards of cover by the authority having jurisdiction (AHJ). | 8 |
| CC | 2D.9 | On at least an annual basis, the agency formally notifies the authority having jurisdiction (AHJ) of any gaps in the operational capabilities and capacity of its current delivery system to mitigate the identified risks within its service area, as identified in its community risk assessment/standards of cover. | Annual Report Strategic Plan Scorecard |
| | 2D.10 | The agency interacts with external stakeholders and the AHJ at least once every three years, to determine the stakeholders' and AHJ's expectations for types and levels of services provided by the agency. | County and agency Strategic Planning |