# 2025 Master Plan

## Emergency Service District #7,

## Kaufman County, Texas

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Emergency Services Consulting International

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# Contents

# Executive Summary

Kaufman County Emergency Services District 7 is at a pivotal juncture, facing structural, operational, and strategic challenges that require immediate and coordinated action. The dual governance model, where the Fire Chief reports to both the City of Crandall and the Emergency Services District, has led to administrative inefficiencies and misaligned budgetary priorities. To streamline operations, it is recommended that KCESD7 become the primary service provider within the City of Crandall, supported by a temporary service contract with neighboring cities until Fire Station 2 is operational.

Staffing remains inadequate, with reliance on part-time and volunteer personnel impacting consistency and compliance with NFPA 1710 standards. Transitioning to full-time staffing for engine and ladder companies, along with hiring key leadership roles, will enhance service delivery and improve operational efficiency. Additionally, response times exceed recommended standards due to inadequate distribution of facilities. Strategic planning and construction of Stations 2, 3, and eventually 4 are essential to meet current and future service demands.

A foundational gap exists in the absence of unified mission, vision, and values statements. Establishing these through a community-centered strategic planning process will align organizational culture and guide long-term decision-making. This should be supported by a 3–5 year strategic plan with clear goals and accountability.

Infrastructure deficiencies include aging equipment, a lack of a training facility, and health hazards from diesel exhaust. A capital apparatus plan, acquisition of land for a training center, and installation of exhaust capture systems are necessary investments.

The dual governance structure hinders financial planning. A unified budget and long-term Capital Improvement Plan (CIP) will ensure fiscal sustainability and transparency.

Finally, community engagement is limited. Expanding public education programs and increasing involvement in development planning will strengthen community safety and preparedness.

# Acknowledgments


**Emergency Service District #7**

President | Ashley Hunsaker

Vice President | Joseph Reese

Secretary | Kevin Johnson

Treasurer | Oliver Rawls

Asst. Treasurer | Melissa Smith

Administrator | Eboni T. Chopp

**City of Crandall**

Mayor | David Lindsey

Mayor Pro Tem | Scott Rogers

Council Member | Caleb Allen

Council Member | Tim Atkins

Council Member | Adam Holden

Council Member | Vacant Position

**Crandall Volunteer Fire Department Leadership Staff**

Fire Chief | Carl Sheller

Assistant Chief | Josh Woodham

# Organizations

To ensure clarity, it's crucial to define each entity involved in governance, including contractor agencies and service providers, and how they will be referenced throughout this report.

## Kaufman County Emergency Service District #7 (KCESD7)

An Emergency Services District (ESD) is a local government agency established by public vote of the Kaufman County Commissioners' Court on September 27, 2004, to provide fire protection and/or emergency medical services (EMS) in the specified boundary of Kaufman County under the governing statute Article III, Section 48-e, of the Texas Constitution. An ESD collects taxes based on real and personal property appraisals and has approved a contract with the Crandall Volunteer Fire Department to provide protection and fire-fighting operations.

## City of Crandall (CoC)

The City of Crandall was incorporated in 1945 and operates under the General Law Type A statute, a form of municipal government in Texas that provides a framework for cities with populations under five thousand. The City also contracts with the Crandall Volunteer Fire Department to provide fire and EMS services.

## Crandall Volunteer Fire Department (CVFD)

The Crandall Volunteer Fire Department was formed in 1954 as a 501(c)(3) nonprofit organization. The corporation is established to support charitable, religious, and educational activities, and it can provide financial support to organizations that qualify under Section 501(c)(3) of the Internal Revenue Code. It must ensure that no profits are distributed to its members, trustees, directors, officers, or other private individuals, except for paying fair wages for work and making payments to support its charitable objectives. Additionally, the corporation must follow rules that maintain its tax-exempt status and eligibility for deductible contributions. If the corporation is dissolved, its assets must be given to other organizations that qualify under Section 501(c)(3) or to government entities for public use.

## ESD Fire Department (ESDFD)

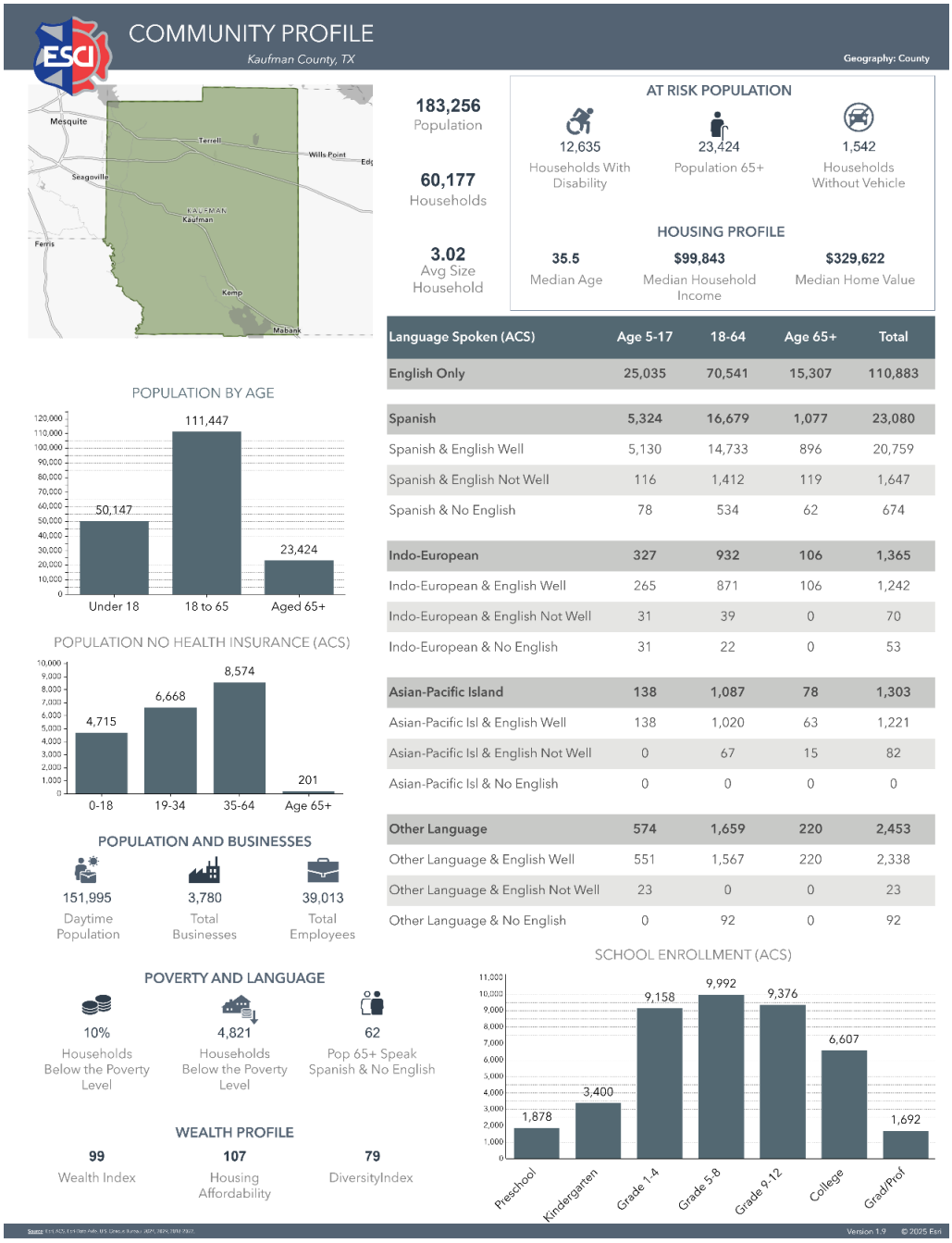
Throughout this report, there may be recommendations, statements, or duties associated with all three agencies. In those areas, the report will use the title ESD Fire Department (ESDFD) to reflect the comprehensive nature of the discussion.

# Community Overview

## Service Area Population & Demographics

Kaufman County spans 808 square miles and has a population of 183,256 as of 2024. The two largest cities in the county are Forney, with a population of 43,196, and Terrell, with a population of 24,028.

Figure 1: Kaufman County Demographics




| Language Spoken (ACS) | Age 5-17 | 18-64 | Age 65+ | Total |
|---|---|---|---|---|
| **English Only** | **25,035** | **70,541** | **15,307** | **110,883** |
| **Spanish** | **5,324** | **16,679** | **1,077** | **23,080** |
| Spanish & English Well | 5,130 | 14,733 | 896 | 20,759 |
| Spanish & English Not Well | 116 | 1,412 | 119 | 1,647 |
| Spanish & No English | 78 | 534 | 62 | 674 |
| **Indo-European** | **327** | **932** | **106** | **1,365** |
| Indo-European & English Well | 265 | 871 | 106 | 1,242 |
| Indo-European & English Not Well | 31 | 39 | 0 | 70 |
| Indo-European & No English | 31 | 22 | 0 | 53 |
| **Asian-Pacific Island** | **138** | **1,087** | **78** | **1,303** |
| Asian-Pacific Isl & English Well | 138 | 1,020 | 63 | 1,221 |
| Asian-Pacific Isl & English Not Well | 0 | 67 | 15 | 82 |
| Asian-Pacific Isl & No English | 0 | 0 | 0 | 0 |
| **Other Language** | **574** | **1,659** | **220** | **2,453** |
| Other Language & English Well | 551 | 1,567 | 220 | 2,338 |
| Other Language & English Not Well | 23 | 0 | 0 | 23 |
| Other Language & No English | 0 | 92 | 0 | 92 |

The county contains approximately 60,177 households, with an average household size of 3.0 individuals. The median age of residents is 35.5 years, reflecting a relatively young population. Housing in Kaufman County is valued at a median home price of $329,622, while the median household income is $99,843. During the day, the population swells to 151,905, indicating a significant influx of non-residents for work or leisure. The county supports a thriving business environment with 3,780 businesses employing 39,013 people.

According to news reports in March of 2025, Kaufman County is the fastest-growing county in the state, with a population increase of 6%. That makes the county the second-fastest-growing in the country, behind only Dawson County, Georgia, which grew by 6.4%.[1]

## Kaufman County ESD #7 and the City of Crandall

The Crandall Volunteer Fire Department (CVFD) is contracted to provide services to KCESD7, which surrounds the City of Crandall (CoC), which is also served under contract by the fire department.

The total response area for the CoC and KCESD7 spans 42 square miles, with a population of 26,220 as of 2024. There are 8,118 households with an average size of 3.2 members. The median age is 32.5 years, and the median home value is $318,917. The median household income is $99,974. During the day, the population shrinks due to commuter employment in surrounding employment centers; however, it retains a population of 18,179, partly due to the presence of 230 businesses that employ 1,917 people.

In terms of at-risk populations, 1,105 households have a disability, which constitutes 4.2% of all households. This is significantly lower than the Texas state average of 12.6%. Individuals aged 65 and older account for 8.7% of the total population, compared to the state average of 11.8%. Additionally, 9.0% of households are below the poverty level, which is also lower than the Texas state average of 14.0%.

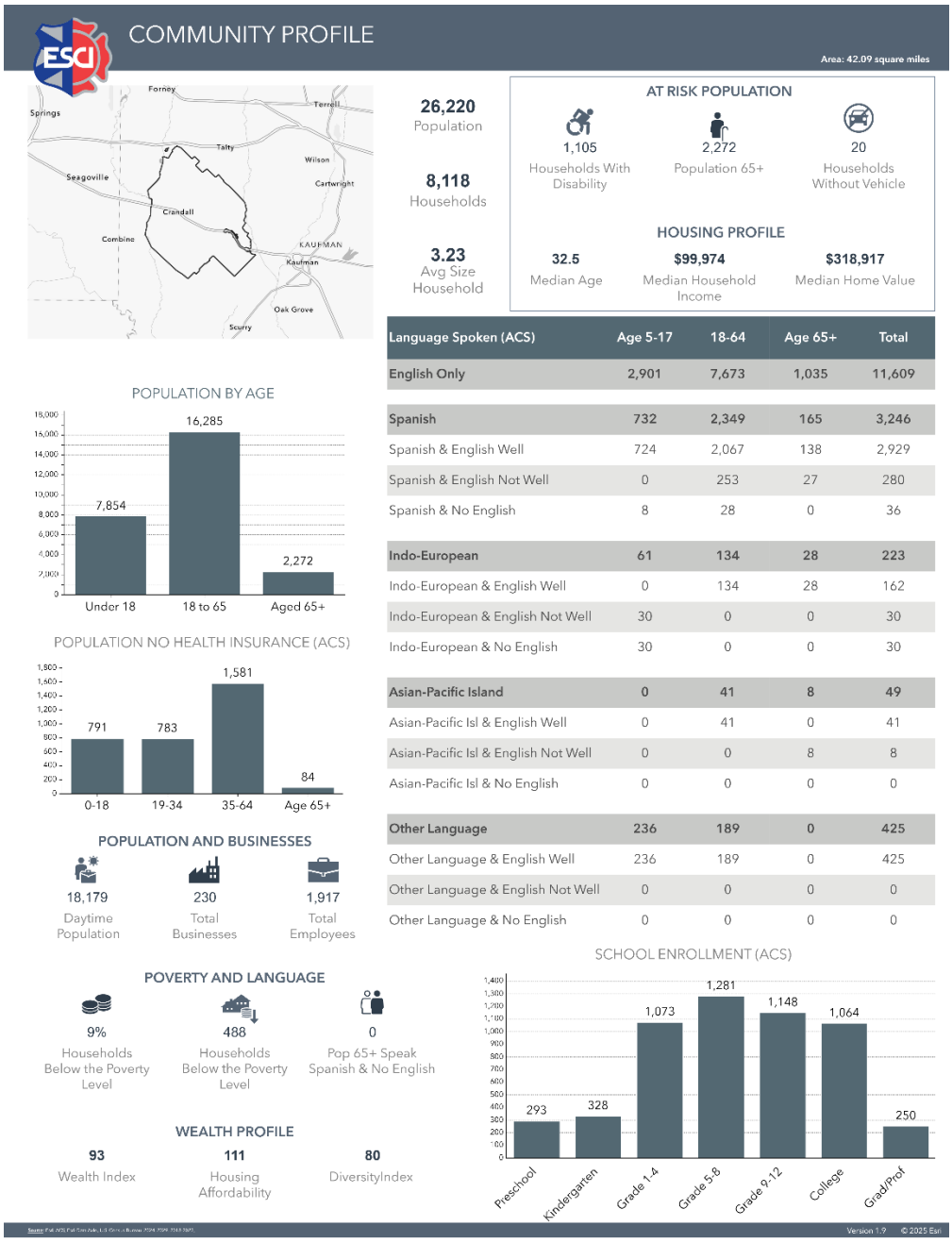
## City of Crandall

The response area of the CoC is 7 square miles, with a population of 4,321 as of 2024. There are 1,481 households with an average size of 3.3 members. The median age is

[1] These were Texas' fastest-growing counties in 2024, according to new Census Bureau estimates | KXAN Austin

32.4 years, and the median home value is $318,750. The median household income is $98,669. During the day, the population shrinks due to outbound commuter employment in adjacent employment centers; however, it retains a population of 3,930, partly due to the presence of 112 businesses that employ 1,095 people.

Figure 2: KCESD7 & CoC Demographics




| Language Spoken (ACS) | Age 5-17 | 18-64 | Age 65+ | Total |
|---|---|---|---|---|
| English Only | 2,901 | 7,673 | 1,035 | 11,609 |
| Spanish | 732 | 2,349 | 165 | 3,246 |
| Spanish & English Well | 724 | 2,067 | 138 | 2,929 |
| Spanish & English Not Well | 0 | 253 | 27 | 280 |
| Spanish & No English | 8 | 28 | 0 | 36 |
| Indo-European | 61 | 134 | 28 | 223 |
| Indo-European & English Well | 0 | 134 | 28 | 162 |
| Indo-European & English Not Well | 30 | 0 | 0 | 30 |
| Indo-European & No English | 30 | 0 | 0 | 30 |
| Asian-Pacific Island | 0 | 41 | 8 | 49 |
| Asian-Pacific Isl & English Well | 0 | 41 | 0 | 41 |
| Asian-Pacific Isl & English Not Well | 0 | 0 | 8 | 8 |
| Asian-Pacific Isl & No English | 0 | 0 | 0 | 0 |
| Other Language | 236 | 189 | 0 | 425 |
| Other Language & English Well | 236 | 189 | 0 | 425 |
| Other Language & English Not Well | 0 | 0 | 0 | 0 |
| Other Language & No English | 0 | 0 | 0 | 0 |

## Comparison of Community Demographics

Kaufman County ESD #7 and the City of Crandall exhibit significant differences in demographics and at-risk populations. KCESD #7 covers a larger service area, 35 square miles, compared to the City of Crandall's 7 square miles. The population of KCESD #7 is 21,899 (84%), significantly higher than Crandall's 4,321 residents. Similarly, Kaufman County ESD #7 has more households, totaling 6,637 (82%), while Crandall has 1,481 households.

In terms of at-risk populations, KCESD #7 has a lower percentage of households with disabilities at 3.3% compared to Crandall's 8.7%. Additionally, the population aged 65 and older in KCESD7 is 8.2%, lower than Crandall's 11.3%. Lastly, the percentage of households below the poverty level is slightly higher in KCESD7 at 10.0% compared to Crandall's 9.5%.

# Organizational Overview

## History, Formation

The Crandall Volunteer Fire Department was established in 1954 by a group of dedicated individuals in Crandall, Texas. The department's first apparatus was a 1949 Ahrens-Fox fire engine purchased from the Dallas Fire Department. Also, when an alarm was received, a volunteer was assigned to respond to the old fire station, a Quonset hut located at Main and Gleason, to activate the civil defense siren and alert other volunteers to respond. This marked the beginning of a community-driven effort to ensure the safety and well-being of Crandall's residents.

In 1989, Kaufman County Emergency Service District #7 (KCESD #7) was established through a public vote to provide fire protection and emergency medical services in the unincorporated areas of Kaufman County. KCESD #7 collects taxes based on property appraisals and contracts with service providers, such as the Crandall Volunteer Fire Department, to support first responders.

The City of Crandall first provided fire protection in 1954 by establishing the Crandall Volunteer Fire Department. The City of Crandall has a rich history, dating back to its founding in the late 19th century. Named after Rev. Cornelius F. Crandall, a Methodist minister who purchased land in the area in 1877, the city developed alongside the Texas Trunk Railroad in the early 1880s

## Management Components

### Mission, Vision, Values

When developing a new Master Plan or updating an existing one, a fire service organization should create a Mission and Vision statement, as well as a set of Core Values. KCESD7 and CVFD are responsible for creating these statements since they are crucial to the organization's effectiveness. These statements define the organization's purpose, outline its current and future objectives, articulate core beliefs that personnel aim to demonstrate, and represent their shared vision for the future. These statements are intended for the organization's personnel and the community and residents they serve.

Effective mission statements are concise statements that capture the essence of an organization's purpose. There should be brief statements that efficiently and effectively state why the agency exists and for whom it provides its services. Answering these two questions can clarify why communities and members commit their time and other resources.

KCESD7 and CoC lack a formalized mission statement; however, the CVFD mission statement is: "As a team of highly trained and dedicated professionals, it is our mission to provide the highest standard of service to all those who may seek our assistance.

*"We are a service provider, and we stand ready to provide fire suppression, fire prevention and education, rescue services, and emergency medical care. We will faithfully provide these important services, promptly and safely, to any person that resides in, works in, or visits the Crandall area. As a family of individuals committed to serving others, we will always provide for the welfare of our members through a healthy and rewarding work environment. We will actively participate in our community, serve as role models, and strive to effectively and efficiently utilize all of the necessary resources at our command to provide a quality of service deemed excellent by our citizens with Courage, Integrity and Honor."*

### *Discussion*

Evaluating, updating, and reaffirming the Mission Statement must ensure that the CVFD and KCESD7 priorities align with current service delivery. All levels of the organization must understand the mission and priorities to make decisions with a unified focus and direction.

## Vision Statement

A vision statement should affirm an organization's mission and outline how it will progress in the future, addressing upcoming challenges or changes in the delivery service. It provides direction for the entire organization and a common goal. The vision statement should succinctly describe the ultimate success in service provision and guide decision-makers. Currently, the CVFD and KCESD7 lack a vision statement.

While a mission statement lays the groundwork for purpose and direction, the vision statement builds upon this foundation, painting a picture of the future that the organization strives to achieve. It articulates the organization's aspirations and drives its momentum forward, ensuring that every step aligns with long-term goals.

The vision statement should illuminate the path, guiding all actions and decisions. It inspires and motivates members by clearly representing what the organization aims to accomplish in the coming years. This foresight is crucial for navigating the evolving landscape and adapting to changes in service delivery while staying true to the core mission.

The absence of a vision statement for CVFD and KCESD7 leaves a gap in strategic direction. By establishing a compelling vision, both can better address future challenges, unify efforts toward a common objective, and enhance service provision.

*Discussion*

A vision statement should affirm an organization's mission and outline how it will progress, addressing upcoming challenges and changes in the delivery service. It provides direction for the entire organization and establishes a common goal.

## Core Values Statement

This absence of a core values statement leaves a significant gap in the organizational identity of the CVFD and KCESD7. Core values serve as guiding principles for decision-making and behavior, providing unity and purpose for all organizational members. Without them, it is challenging to establish a consistent culture or to measure and uphold standards of excellence.

The lack of clearly defined core values can lead to inconsistencies in how policies are implemented and how goals are pursued, resulting in a disjointed approach to service delivery and internal management.

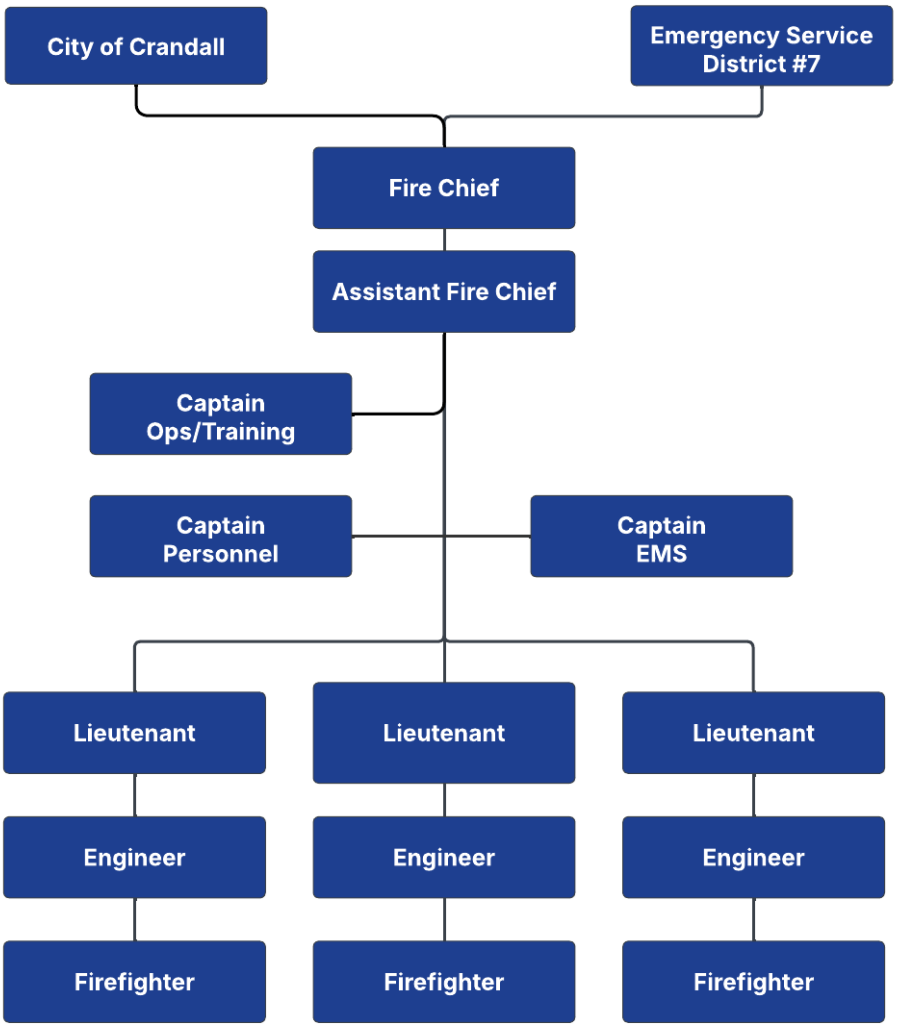
*Discussion*

An organization's core values comprise a set of fundamental beliefs and established principles that guide its actions and decisions. Establishing core values aims to connect the members, clarify their mission, and define the organization's brand for the community it serves

## Organizational Design

The Crandall Volunteer Fire Department operates within a conventional hierarchical structure and reports to two governance bodies. The following figures reflect the CVFD's current management structure and reporting hierarchy.

Figure 3: Current Organization Chart and Reporting Structure



## Span of Control and Unity of Command

A balance of personnel and supervisory roles is crucial for maintaining efficiency within the department. Ensuring that lieutenants oversee a manageable number of firefighters enables effective leadership and prompt decision-making during critical operations. Maintaining an optimal span of control is crucial, as it underscores the need for direct oversight, particularly when working with volunteer personnel who may require additional guidance and support due to their varying levels of experience and commitment.

Unity of command ensures that each firefighter reports to a single supervisor, clearly defining the chain of command for maintaining order and efficiency, especially in high-risk events. When firefighters receive instructions from one source, communication is streamlined, reducing the risk of conflicting orders and confusion.

Unity of command also enhances accountability. Accountability ensures that standards are maintained and that problems are quickly identified and resolved. Safety is the cornerstone of fire service operations, and unity of command plays a vital role in ensuring it.

The captains are pivotal in this hierarchy as the crucial link between the assistant fire chief and the lieutenants. They ensure that strategic directives from supervisors are effectively translated into operational actions, enabling the department to accomplish its overall objectives.

Overall, unity of command and span of control are indispensable in fire service organizations. They ensure they can operate efficiently, safely, and effectively in emergencies. This current structure ensures that each shift operates smoothly and that subordinates receive the necessary supervision and mentorship from their Lieutenants, Captains, or Chief Officers.

## Emergency Service Deployment

The station's staffing structure ensures a minimum of 24-hour coverage with part-time paid employees. Engine 1 is typically staffed by at least three firefighters: a Lieutenant, an Engineer, and a Firefighter. Squad 1 operates with at least two personnel, which provides flexibility to respond to certain incidents, typically medical, while preserving the engine company for other incidents.

All staff members hold Emergency Medical Technician (EMT) certifications, with some holding advanced certifications as Advanced EMTs or Paramedics. Despite these advanced certifications, the department currently provides Basic Life Support (BLS) services. Efforts are underway to obtain the necessary equipment and authority from the Medical Program Director to offer ALS services.

In addition, CareFlite houses and deploys an ALS Ambulance in Station 1. This ambulance unit responds to medical incidents in the region while also performing interfacility transfers. When available, this ambulance responds simultaneously with CVFD staff to medical-related incidents.

## Foundational Organizational Documents

### Policies/Procedures

The CVFD's rules, regulations, and procedural policies are compiled in a single manual. This manual also includes the fire department's response protocols, necessary forms, the probationary book, and guidelines for maintenance and inspections. Updates to the manual occur on an "as-needed" basis.

Rules, regulations, and procedural policy documents should be reviewed and revised appropriately on a planned cycle. ESCI recommends that one-third of the documents be reviewed annually, ensuring the complete set is reviewed and revised every three years. A formal process should also be established to develop new regulations, policies, and guidelines.

### Policy and Procedure Manual Discussion

The CVFD updates its policies and procedures as needed due to the limited availability of administrative staff. ESCI recommends that the entire document be reviewed and updated promptly and that an annual review process be established for specific parts, aiming for a comprehensive review of the entire manual every three years.

The review team should include individuals most knowledgeable about the assessed policies and procedures, as well as a chief-level officer to provide overall policy guidance and expertise. Additionally, outsourcing the review and creation of policies and procedures could be considered; there are online subscription services that provide customized policies and periodic reviews for fire departments.

### Reporting & Recordkeeping

Routine documentation and archiving activities are critical functions in any organization. Sound management decisions cannot be made and supported without accurate data, and organizational transparency to the public will be lost if the department cannot explain and justify its activities. Recordkeeping is, thus, an essential aspect of organizational efficiency and accountability.

The CVFD maintains records as required by federal, state, and local statutes and regulations. They document their incident responses in a computer-based records management system (RMS), which manages electronic patient healthcare records. The Assistant Chief and station Captains are primarily responsible for recording training. Completed Target Solution® courses are automatically recorded in the RMS's database.

While CVFD does not provide medical patient transport, the Kaufman County Ground Ambulance Service Provider, CareFlight, utilizes ImageTrend, a patient Cloud-Based documentation software program. CareFlite intends to develop an interface between the two Electronic Patient Care Reporting (ePCR) platforms to improve patient care data exchange. The CVFD will transition from Emergency Reporting RMS to ESO Solutions RMS no later than December 31, 2025.

## Information Technology Systems

### Infrastructure

The Crandall Volunteer Fire Department pays for Information Technology (IT) equipment using funds from its contracted amounts. It purchases all the necessary equipment and services through various providers, and neither the city nor ESD manages or provides IT services for the fire department. The department staff facilitates software installation and updates the internal technology infrastructure.

### Management, Control, & Security

Information technology is safeguarded per departmental policies. CVFD possesses the hardware but relies on a vendor to maintain, troubleshoot, and repair computers and hardware, as well as provide technical support when the administrative staff's capabilities are exceeded.

Computers and software feature password protection, with access being granted and managed at the user level. Furthermore, electronic records are backed up remotely.

### Internal and External Communications

Internally, CVFD provides various communication methods with personnel, including regularly scheduled meetings, emails, and directives. Externally, the CVFD and KCESD7 maintain websites to provide information to their customers. However, they do not have a formal citizen feedback/input mechanism to receive necessary end-user feedback.

The KCESD7 and CoC websites have a link to direct users to the CVFD website. Communication with the public is accomplished primarily through social media platforms, including Facebook and Instagram. Administrative staff provide and monitor content. As of 2025, CVFD had approximately 5,700 followers on Facebook and 2,092 followers on Instagram.

## Support Services

### Vehicle Maintenance

Major mechanical repairs currently have no contracts, but the department is looking to establish a contract with Siddons Martin Emergency Group, an authorized dealer for Pierce that handles warranty work and repairs. Additionally, the department is working with a local vendor, C&R Fleet Services, which is licensed to work on the apparatus. This vendor offers repairs at a lower cost and with a quicker turnaround.

C&R Fleet Services handles minor repairs and routine maintenance, such as preventive maintenance. If an issue is beyond their scope, they will refer the department to Siddons Martin or another appropriate vendor. Mechanics who maintain and repair departmental apparatus and vehicles are certified Emergency Vehicle Technicians.

Waterway Inc., a third-party contract company that provides testing services in accordance with NFPA and the Texas Commission on Fire Protection (TCFP), conducts annual ladder and hose testing. In addition, Siddons Martin conducts pump testing annually.

The department's equipment, including extrication tools, fans, generators, and air packs, is primarily purchased from Municipal Emergency Services (MES). MES performs the annual air-pack flow testing and provides repair services for extrication tools.

The ESD Fire Department has no published replacement schedule for apparatus and equipment; replacements are based on the service life of the equipment, and requests are submitted to the governing bodies through short-term planning and decision-making.

Structural Personal Protective Equipment (PPE) is replaced every 10 years, and options for replacing the Self-Contained Breathing Apparatus (SCBA) are being considered in accordance with the manufacturer's recommendations.

CVFD personnel manage minor facility repairs internally, while major repairs are facilitated through a local vendor contract and are split between the CoC and the ESD. For example, if a roof on Station 1 requires repairs or replacement, the cost would be split evenly between the CoC and the ESD.

## Human Resource

Fire department personnel are essential to delivering emergency services to community residents, businesses, and visitors. Efficient organizational management is crucial for the department's success. Insufficient administrative and support staff could jeopardize its mission. Effective human resources management is a key factor in a department's success, as its most valuable assets are its personnel.

Currently, the department functions without civilian administrative support. In the CVFD, the Fire Chief and Assistant Chief manage all human resource activities, including developing and updating job descriptions, administering discipline, conducting personnel evaluations, overseeing policies and procedures, and managing payroll and benefits. Additionally, a part-time shift Captain supports human resource needs.

## Financial Management

A Certified Public Accounting Firm provides general accounting support, including accounts payable, payroll, tax preparation, and auditing services.

All purchases must receive prior approval from the fire chief and the assistant chief. For significant purchases, the chief officers oversee a purchase order system. A vendor hired by Smith and Smith, Certified Public Accountants, performs an annual financial accountability audit. The CVFD is not subject to annual or biennial county or state auditing requirements.

## Logistical Support

Logistics is a cornerstone of successful fire department operations, encompassing emergency response and daily activities. By focusing on planning and efficient resource management, the department can maximize its effectiveness and ensure it is always prepared to serve. Logistics plays a vital role in ensuring the department can respond swiftly and efficiently during emergencies, which includes:

- **Resource Allocation:** Ensuring equipment, personnel, and supplies can be quickly deployed.
- **Transport Coordination:** Arranging transportation for both personnel and equipment to the incident site.
- **Communication:** Facilitating effective communication between different teams and agencies involved in the response.

Logistics is equally important in the daily functioning of the department. It impacts various aspects of operations, including:

- **Maintenance of Equipment:** Regular service and timely equipment replacement to ensure readiness.
- **Supply Chain Management:** Coordinating the acquisition and distribution of supplies needed for training, maintenance, and operations.
- **Training Logistics:** Organizing training sessions and ensuring all necessary materials and resources are accessible.

# Organizational Planning

## Internal Assessment of Critical Issues

The Crandall Fire Department is currently facing several significant issues that impact its operations and future planning. First, there is a pressing need for a new training facility and the acquisition of suitable property. The existing training facility is 40 miles away, posing logistical challenges and inefficiencies. The department aims to become a Texas Commission on Fire Protection (TCFD) certified department, which requires yearly live-fire training, further emphasizing the need for a closer and more accessible training site.

Secondly, the department grapples with administrative complexities due to its dual governance structure. The fire chief reports to the City of Crandall and the Emergency Services District (ESD) to manage the operations. This dual reporting structure challenges coordination, decision-making, and aligning budgets and responsibilities. The city has considered forming its own fire department, but the financial implications and need for taxpayer approval present significant hurdles.

Lastly, the department struggles with transitioning from an all-volunteer force to a combination of part-time and volunteer staff to maintain adequate service. This shift has led to consistency and communication challenges, particularly as call volumes have increased in recent years due to rapid population growth. Consistent full-time leadership and a transition to more full-time staffing will be beneficial in achieving the desired and reliable level of service for the growing region.

## Master Planning

Kaufman County ESD #7 has commissioned ESCI to conduct a study to create a long-range master plan, as no plan has been completed previously. This plan will provide guidance and benchmarks for enhancing fire protection, emergency medical services (EMS) delivery, and community risk reduction programs. It will include projections for future growth and recommendations categorized into short-, mid-, and long-term goals.

# Strategic Planning

## Overview

The Crandall Volunteer Fire Department's five-year plan (2021-2025) aims to enhance firefighter safety and public safety protection cost-effectively. The plan is designed to leverage strengths, address weaknesses, and mitigate threats to enhance compliance with National Fire Protection Association (NFPA) standards, thereby reducing the department's Insurance Service Organization (ISO) classification from three to one.

Despite its comprehensive nature, the plan was created without incorporating input from the community or involving the affected governing bodies through a facilitated nominal group process. ESCI suggests that strategic planning involves the community's foundational perspectives in its planning process.

## Overview of the Current Environment:

The City of Crandall has a population of 5,000 and features two main developments, as well as a retirement apartment complex. Kaufman County ESD #7 encompasses communities such as Heartland, Wildcat Ranch, and Highbridge, which are experiencing significant residential growth. CVFD provides fire suppression, public education, and first-response basic life support services, while CareFlite provides EMS transport and advanced life support services.

## Analysis of the CVFD Five-Year Plan

The response time for 60% of emergency incidents falls outside the recommended NFPA response time. Additionally, the department faces challenges due to insufficient staffing and the lack of an aerial truck or Quint to meet NFPA 1710 standards.

## Key Goals outlined in the Plan

To meet NFPA standards, the plan recommends increasing the number of part-time firefighters and raising the pay for volunteer firefighters. Additionally, the construction of a Heartland Fire Station with part-time 24/7 staffing is proposed. Hiring full-time firefighters and replacing Engine 1 (2007 Pierce) are crucial steps, along with acquiring an aerial apparatus to serve the city and its surrounding developments.

The budget impact includes the cost of additional part-time firefighter positions, which will amount to $394,200 for three firefighters working around the clock. Additionally, the purchase of an aerial apparatus is scheduled for 2024.

The CVFD plans to expand its services to include advanced life support capabilities for emergency medical services. Additionally, specialized training programs such as Hazardous Materials (HazMat), Driver/Operator, and Swift Water Rescue will be implemented to enhance the department's operational readiness. Public education initiatives, including CPR and First Aid classes, the Citizens Fire Academy, and Community Emergency Response Team (CERT) training, will be offered to enhance community preparedness.

The CVFDs vision for 2021 includes enhancing fire suppression, public education, EMS capabilities, and fire code and building planning. In 2021, the department aims to add a firefighter to each shift and identify a suitable location for constructing Station 2. By 2022, the plan is to replace Engine 1 and add another firefighter to each shift. In 2023, the department plans to build and deploy services from Station 2 and hire a part-time Battalion Chief. By 2024, the purchase and delivery of an aerial apparatus, which will be staffed with full-time firefighters, will be involved. Finally, by 2025, the department intends to hire a full-time Fire Chief.

## Tactical/Operational Planning

### ICS System

The CVFDs Standard Operational Plans (SOPs) document contains several Standard Operating Procedures (SOPs) related to tactical operations. The Incident Command System (ICS) is crucial to tactical operations, ensuring organized and effective control during emergencies. The ICS is designed to manage operations at emergency scenes, providing a structured approach to incident management and coordination. Upon arrival at a reported or actual structure fire or any major incident, the first arriving fire department officer establishes command.

This officer remains in command until formally relieved. The initial report includes a brief radio transmission confirming the assumption of command and providing a size-up of the situation. Size-up is a critical responsibility of the first-in officer. Fire Scene Factors include determining capabilities and resources, needed resources, making probability projections, and implementing initial decisions.

## Initial Entry in an IDLH Atmosphere

The 2-in/2-out rule is a procedure for interior structure firefighting or other adverse environments, such as chemical releases that are considered immediately dangerous to life and health (IDLH). These environments require a team of at least four firefighters before an interior fire attack can occur when the fire has progressed beyond the incipient stage. This rule ensures that at least two firefighters enter the IDLH (Immediately Dangerous to Life and Health) atmosphere while two remain outside to perform rescue if needed.

Apparatus placement at the emergency scene is another critical aspect of tactical operations. The placement of all apparatus on the fire ground should reflect standard operational procedures for first arriving engines, pre-arranged staging procedures, direct orders from command, or conscious decisions based on existing or predictable conditions.

Incident Safety Requirements mandate that the fire department provide enough personnel to conduct emergency scene operations safely. Operations are limited to those that can be safely performed by the personnel available at the scene. When members are operating an emergency incident, and their assignment places them in potential conflict with motor vehicle traffic, they must wear fire department helmets and a fluorescent or reflective garment.

## Strategies

Strategies for tactical operations are divided into two declared strategies: offensive and defensive. The offensive strategy involves taking calculated actions to resolve the problem, while the defensive strategy isolates or stabilizes the situation to prevent it from worsening.

Personal Protective Equipment (PPE) is mandatory for all personnel involved in fire suppression duties and operating in the hazard zone. PPE includes full protective clothing as outlined in NFPA 1851. Lastly, the Accountability System ensures that command or sector officers record and maintain the identity of all personnel assigned to operate in high-hazard areas.

# External Planning Process

## Community Comprehensive Planning

The fire department can play a crucial role in developing the City of Crandall's Capital Facilities Plan. Their involvement ensures that the city's infrastructure planning adequately addresses fire safety and emergency response capabilities.

By participating in the planning process, the fire department can provide valuable insights into the current and future needs of fire stations, equipment, and personnel. This collaboration helps identify high-risk areas and ensures that resources are allocated effectively to enhance public safety.

Additionally, the fire department's input can inform the design and location of new facilities, optimizing response times and enhancing overall community resilience. Engaging the fire department early and throughout the planning cycle fosters a comprehensive approach to city development that prioritizes the well-being of all residents.

## Development and Construction Planning

The fire department's involvement in the Building Department’s plan review process for new developments within the City of Crandall is essential to ensure comprehensive fire safety and emergency preparedness. By providing input on the location of fire appliances such as Fire Department Connections (FDCs) and Post Indicator Valves (PIVs), the fire department can ensure these critical components are strategically placed for optimal accessibility during emergencies.

Additionally, fire department expertise in consulting over matters of ingress and egress standards is vital to match the capabilities and limitations of the department's apparatus and equipment, ensuring that emergency vehicles can navigate efficiently and effectively. Furthermore, addressing emergency radio system requirements in certain construction types is crucial for maintaining reliable communication during incidents. A proactive approach will ensure that fire safety measures are incorporated into the city's development plans, thereby enhancing overall community resilience and safety. ESCI recommends that fire department leadership be proactive and regularly engaged in the city’s planning processes described above.

# Personnel Management and Staffing

## Reports & Recordkeeping

CVFD provides fire protection and EMS services under contractual agreements with KCESD7 and CoC. KCESD7 is managed by a six-member Board of Commissioners appointed for two-year cycles. KCESD7 conducts monthly meetings that include key stakeholders such as the CVFD Fire Chief and Assistant Fire Chief. CVFD administration provides comprehensive reports on department operations during these meetings. These reports cover financial matters, training, management activities, membership, emergency operations, and response times, including breakdowns by apparatus, out-of-station times, and call volumes for fire/rescue and EMS calls.

In addition to the reports provided to KCESD7, formal CVFD reports are submitted quarterly to the CoC. These quarterly reports provide a narrative overview of the department's activities, including the number of emergency responses and the training completed during the reporting period.

## Labor-Management

The Crandall Volunteer Fire Department does not utilize a third-party human resources service; instead, the Fire Chief serves as the human resource director and has the final say on labor-related matters. Most concerns are addressed under the department's policies and guidelines, which have satisfied all past issues. If a problem not covered by existing policies arises, it is addressed directly by the Fire Chief. The department does not rely on the city's human resources services for guidance.

The department also has a yearly meeting that serves as a celebration and an opportunity to review accomplishments and future goals. This meeting includes the entire department and is treated as an end-of-year celebration, where awards are presented and achievements are recognized. Additionally, the department maintains an open-door policy, allowing employees to come and talk with the Fire Chief or Assistant Chief whenever needed. This approach ensures that the department manages labor-type issues effectively and transparently.

## Compensation

The Crandal Volunteer Fire Department has a documented pay scale for employees and volunteers, which includes rates for probationary firefighters, regular firefighters, and other positions. This pay scale is as follows:

Figure 4: CVFD Pay Schedule

| Position | Pay Rate |
|---|---|
| Volunteer | $6.25 per hour |
| Probationary Part-Time FF | $17.00 per hour for the first 6 months |
| Part-Time FF | $18.00 per hour |
| Part-Time Engineer | $19.00 per hour |
| Part-Time Lieutenant | $20.00 per hour |
| Part-Time Captain | $21.00 per hour |
| Asst. Chief | $2227.40 bi-weekly |
| Fire Chief | $2227.40 bi-weekly |

## Scheduling

Part-time employees and volunteers are scheduled for shifts using a web-based program and mobile application called ActiveTeam™ scheduling. The CVFD has set a policy that employees will operate within a 28-day pay cycle, permitting each firefighter to work up to 212 hours (equivalent to 17.6 twelve-hour shifts) per cycle. Each shift will have a minimum of five part-time operations personnel, each required to complete at least five 12-hour shifts monthly. Additionally, volunteer firefighters are required to complete at least four 12-hour shifts within the same period, and any changes to the mandated number of shifts worked during this timeframe must receive prior approval from the chief officer.

The CVFD's Policy Manual and Standard Operating Guidelines (SOGs) detail the rules and conditions around PTE shift-scheduling. Except for some volunteer firefighters, all CVFD District firefighters are trained and certified to the Texas Emergency Medical Technician-Basic (EMT-B) level or above. The CVFD encourages part-time personnel and volunteers to respond to the station when not on shift if:

- A structure fire is reported.
- Multiple calls are dispatched simultaneously or within a brief period.
- If CVFD is dispatched to mutual aid, we would always like to keep our department in service without calling for another city to fill in.
- Grass fires that require multiple brush trucks.
- In any emergency, additional personnel or equipment will be required.

## Certifications & Licensing

CVFD personnel must complete the continuing education hours allotted monthly in the Target Solutions LMS program. These hours are required not only by CVFD but also by the Texas Commission on Fire Protection.

All applicable personnel must complete the continuing education hours assigned by the CVFD, regardless of rank, certification, and/or the number of continuing education hours an individual has from outside classes or agencies.

## Counseling Services and Behavioral Health

Understanding the stressors linked to physical, emotional, and mental health issues, both on and off duty, the CVFD has implemented a behavioral health program. This program equips members with the necessary knowledge and skills to support one another, educates them about behavioral health, and connects them to local behavioral health programs and community resources.

The CVFD utilizes an external third-party contractor to provide no-cost assistance to personnel experiencing post-traumatic stress injuries or illnesses, in accordance with the guidelines outlined in NFPA 1500 (Chapter 12, Behavioral Health and Wellness Programs).

## Application & Recruitment Processes

CVFD regularly seeks volunteer firefighter applicants. Potential candidates are recruited through word of mouth, advertisements on the department's website, community event booths, and social media.

The process includes a prospective candidate application, a background check, a physical agility test, and an oral board before determining whether the candidate is a "fit" for the department.

Volunteer firefighters must meet all certification requirements within 14 to 16 months of being accepted into the department. In-house training is mandatory, and attendance at these sessions is required. They should also obtain a Class B License within 6 months. Furthermore, candidates must be able to work overnight shifts at the station and respond to emergency calls.

## Testing, Measuring, & Promotion Processes

CVFD's ability to attract, hire, and retain part-time employees directly impacts its ability to provide the desired services effectively and efficiently. All part-time employees must sign an employment offer between them and the CVFD. The offer of employment does not constitute a contract of employment, and positions are still considered "at will." The "at will" nature of the employment relationship means that the CVFD and the employee reserve the right to terminate the employment relationship at any time, for any or no reason, with or without notice.

Part-time employees through the rank of Captain are subject to a six-month probationary period. At the end of the probationary period, the Captain of Operations, the Assistant Fire Chief, and the Fire Chief evaluate the employee's performance. If the probationary employee does not meet performance standards, they may be required to relinquish their role.

All non-probationary personnel undergo an annual performance evaluation. This evaluation assesses job knowledge, public interaction, and departmental relationships. All evaluations are forwarded to the Fire Chief for review. Employees who receive an unsatisfactory evaluation may face disciplinary action.

## Health And Wellness Programs

CVFD provides personnel access to a local gym to support and maintain personal fitness and well-being. According to policy, personnel are encouraged to maintain their physical health and fitness to perform their duties efficiently. This is achieved by focusing on:

- Mental Fitness (emotional well-being)
- Health Fitness (hygiene and nutrition)
- Physical Fitness (exercise and aerobics)
- Safety Fitness (prevention and injury control)

On-duty personnel are encouraged to engage in 60 minutes of physical activity during each shift.

# Staffing

## Administrative Staff

The CVFD part-time senior leadership team includes a Fire Chief and an Assistant Chief. The figure below illustrates the roles of CVFD's administrative and support staff. ESCI finds that, when benchmarking the ratio of administrative staff to operations staff across multiple consulting projects, two averages emerge, depending on how the fire department is structured. Emergency Service Districts, or Fire Districts in other states, have a higher ratio of administrative staff because the support services are managed under a single entity. A city shares support services across several departments, such as Police, Fire, Public Works, Parks, etc..

ESCI has found that ESDs have an administrative-to-operational staff ratio between 15 and 25 percent. Additionally, cities exhibit a ratio of 10 to 20 percent. Crandall Volunteer Fire Department operates well below both organization types at 6 percent.

Figure 5: CVFD Administrative & Support Staff

| Administrative Staff Positions | No. of Staff |
|---|---|
| Fire Chief | 1 |
| Assistant Fire Chief | 1 |
| **Total FTEs:** | **2** |
| **Admin to Operations Staff Ratio:** | **6%** |

## Operational Staff

Determining staffing levels is challenging because it involves balancing the financial allocation of personnel to match the risks crews are likely to face and the level of service the community is willing to accept and support. Several noteworthy publications help agencies determine adequate staffing, including the 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. This NFPA standard recommends staffing and deployment of career organizations.

The National Institute of Standards and Technology's field studies on fire-ground and EMS incidents may also provide directions. Occupational health standards typically consider crew entry into a hazardous environment without an equal number of personnel equipped and capable of responding outside the hazard zone.

The ability to quickly, safely, and effectively mitigate highly dangerous and evolving emergency events requires a prescribed number of properly trained personnel and various equipment at strategically located fire stations. This is especially important due to the combined service area's mixture of suburban and rural response areas. Insufficient staffing at an operational scene, especially for first-due apparatus, negatively impacts the ability to perform critical life-saving and property-saving tasks, as well as ensure firefighter safety. The ESD Fire Department must ensure that responding companies can perform all the described tasks promptly, efficiently, and safely.

Operations personnel are assigned various duties that align with fulfilling emergency response objectives. They also hold additional collateral responsibilities to support the response mission. The Assistant Fire Chief oversees three shift Captains assigned to Operations and Training, Personnel, and Emergency Medical Services. The following figure lists the CVFD's part-time emergency response staffing.

Figure 6: CVFD Part-Time Emergency Response Staffing

| Operations Staff Positions | No. of Staff |
|---|---|
| Captain | 3 |
| Lieutenant | 3 |
| Driver/Engineer | 6 |
| Firefighter/EMT-P | 4 |
| Firefighter/EMT | 11 |
| **Total Part-Time Operations Personnel:** | **27** |
| **Operational Officers to Firefighters Ratio:** | **22%** |

Volunteers are essential to the CVFD, making significant contributions to its operational capacity. These dedicated individuals undergo rigorous training and are held to high-performance standards, ensuring they are ready to support their part-time counterparts at incident scenes. The following figure summarizes the assigned volunteer firefighter positions.

Figure 7: CVFD Volunteer Emergency Responders

| Operations Staff Positions | No. of Staff |
|---|---|
| Firefighter/EMT | 3 |
| Firefighter | 1 |
| **Total Volunteer Personnel:** | **4** |

## NFPA 2020 Fire Service Report

### *Ratio Career and Volunteers*

The NFPA 2020 Report on Fire Service in the US surveyed 25,175 fire departments on various aspects of the composition and the fire department's service delivery aspects.[2] This sample included all US fire departments that protect communities with a range of populations. In 2020, 364,300 career firefighters reported a ratio of **1.72 per 1,000 people** in their communities. Additionally, 676,900 volunteer firefighters reported a ratio of **5.66 per 1,000 population**. The combined KCESD7 and CoC service area shows a population of 26,220 residents. Applying these national ratios to the service area, the following is found as a benchmark:

(Paid FFs = (26,220/1000) * 1.7 = **45 Paid FFs**);
(Volunteer FFs = (26,220/1000) * 5.66 = **148 Volunteer FFs**)

[2] NFPA 2020 Report Fire Service in the US

### *Ratio of Firefighters by Community Size*

The following table illustrates the survey results regarding the median number of firefighters, categorized by community size. Communities with populations of fewer than 25,000 residents were excluded from the survey.

Figure 8: NFPA – FD Survey of FFs per 1000 Population

| Community Size | # Firefighters Per 1000 |
|---|---|
| 1,000,000 or more | 0.84 |
| 500,000 to 999,999 | 1.22 |
| 250,000 to 499,999 | 1.14 |
| 100,000 to 249,999 | 1.14 |
| 50,000 to 99,999 | 1.29 |
| 25,000 to 49,999 | 1.3 |

Based on a ratio of 1.3 firefighters per 1000 residents for the nearest population range (25,000 to 49,000), 34 firefighters would serve a community of this size.

### *Comparison of the current Staffing Model*

The Crandall Volunteer Fire Department staffs its main station 24/7 with part-time personnel, ensuring at least five members across two 12-hour shifts.

The agency would need five employees across three 24-hour shifts, totaling 15 paid members, to achieve this with full-time staff. Considering the staffing relief factor of 1.3 FTEs per position, the ESDFD would require 20 full-time firefighters.

# Capital Assets

Trained personnel, equipment, vehicles, firefighting and emergency medical tools, and fire stations are vital resources for a fire department to accomplish its mission. Regardless of how skilled or numerous the firefighters are, it would be impossible for CVFD and KCESD7 to fulfill their responsibilities effectively without the appropriate capital equipment for operations personnel. The essential capital assets for emergency operations include facilities, equipment, and other emergency response vehicles. Therefore, this section of the report evaluates the fire station, vehicles, and equipment.

## Fixed Facilities

### Facility Siting and Function

The functionality and location of fire stations are critical in ensuring efficient and effective emergency response. They must be strategically positioned within communities to optimize response times, preserve life, save property, and reduce community risks. Additionally, the design and layout of these facilities should accommodate modern firefighting equipment and the needs of the personnel housed within them.

Fire stations play an integral role in delivering emergency services for several reasons. A station's location will largely dictate response times to emergencies. A poorly located station can mean the difference between confining a fire to a single room and losing the structure or survival from sudden cardiac arrest. Fire stations should also be designed to adequately house equipment and apparatus and meet the organization's and its personnel's needs.

Fire station activities should be closely examined to ensure that the structure is adequate in size and function. Examples of these functions can include the following:

- Kitchen facilities, appliances, and storage
- Residential living space & sleeping quarters for on-duty personnel (all genders)
- Bathrooms and showers (all genders)
- Training, classroom, and library areas
- Firefighter fitness area
- The housing & cleaning of apparatus and equipment, including decontamination and disposal of biohazards
- Administrative and management offices, computer stations, and office facilities
- Public meeting spaces

## Facilities Review

ESCI asked CVFD staff to rate the condition of its only fire station using the following criteria.

| | |
|---|---|
| **Excellent** | • Like new condition.<br>• No visible structural defects.<br>• The facility is clean and well-maintained.<br>• The interior layout is conducive to function with no unnecessary impediments to the apparatus bays or offices.<br>• No significant defect history.<br>• Building design and construction match the building's purposes.<br>• Age is typically less than ten years. |
| **Good** | • The exterior has a good appearance with minor or no defects.<br>• Clean lines, good workflow design, and only minor wear on the building interior.<br>• The roof and apparatus apron are in good working order, absent any significant full-thickness cracks, crumbling of the apron surface, or visible roof patches or leaks.<br>• Building design and construction match the building's purposes.<br>• Age is typically less than 20 years. |
| **Fair** | • The building is structurally sound, with a weathered appearance and minor non-structural defects.<br>• The interior condition shows normal wear and tear, but flows effectively to the apparatus bay or offices.<br>• Mechanical systems are in working order.<br>• Building design and construction may not align well with the building's intended purposes.<br>• Shows increasing age-related maintenance but with no critical defects.<br>• The typical age is 30 years or more. |
| **Marginal** | • The building is structurally sound, with a weathered appearance and moderate non-structural defects.<br>• Full-thickness cracks and crumbling concrete on the apron may exist.<br>• The roof has evidence of leaking and/or multiple repairs.<br>• The interior is poorly maintained and shows signs of deterioration, with moderate non-structural defects.<br>• Problematic age-related maintenance and/or defects are evident.<br>• It may not be well suited to its intended purpose.<br>• Age is typically greater than 40 years. |
| **Poor** | • The building is cosmetically weathered and worn, with potential structural defects, although these are not imminently dangerous or unsafe.<br>• Large, multiple full-thickness cracks and crumbling concrete on the apron may exist.<br>• The roof has evidence of leaking and/or multiple repairs.<br>• The interior is poorly maintained and shows signs of advanced deterioration, with moderate to significant non-structural defects.<br>• Problematic age-related maintenance and/or major defects are evident.<br>• It may not be well suited to its intended purpose.<br>• Age is typically greater than 50 years. |

ESCI toured Fire Station #1, which is owned equally by the CoC and KCESD7. These observations, combined with the information provided by the CVFD, produced the observations listed below.

Figure 9: Fire Station 1

**Facility Information and Condition Worksheet**

Complete facilities and apparatus information using these tables. Use one table for each facility.

Facility Name / Station Number: Fire Station #1

Address: 106 East Trunk Street, Crandall, Texas

Primary use (check all that apply)
■ Administration ☐ Maintenance ■ Emergency Ops
■ Special Ops ■ Training ☐ Communications Center
☐ Other (specify):

**Structure**

| | | |
|---|---|---|
| Square Footage: 11,970 | Construction Type: 2020 | # of Stories: 1 |
| Dates of Construction | Original: 2020 | Last Remodel: N/A |
| General Condition | ☐ Excellent ■ Good ☐ Fair ☐ Marginal ☐ Poor | |
| Applicable Fire Code & Edition | International Building Code (2020) | Code-compliant ■ Yes ☐ No |
| Special Considerations (ADA, etc.) | | |

**Facilities and Building Services**

Security System Type (check all that apply): ☐ Security Fence and Gate ☐ Sallyport ■ CCTV ■ Keypad ☐ Key ☐ Other, specify:

Maximum Staffing Capacity: 8 Personnel

| | | | |
|---|---|---|---|
| 24-hour Watch office | ■ Yes ☐ No | Emergency Ops Center | ■ Yes ☐ No |
| Kitchen Facilities | ■ Yes ☐ No | Exercise/Workout Areas | ☐ Yes ■ No |
| Training/Meeting Rooms | ■ Yes ☐ No | Shower Facilities | ■ Yes ☐ No |
| Individual Lockers | ■ Yes ☐ No | Equipment Storage | ■ Yes ☐ No |
| Living Quarters | ■ Yes ☐ No | Apparatus Bays | ■ Yes ☐ No |
| # of Beds: 8 | # of Bedrooms: 8 | # of Back-in: 6 | # of Drive Through: 3 |
| Cascade System/Compressor | ■ Yes ☐ No | Helipad | ☐ Yes ■ No |
| Emergency Power | ■ Yes ☐ No | Automatic Sprinklers | ■ Yes ☐ No |
| Smoke Detectors and Alarms | ■ Yes ☐ No | Apparatus Exhaust System | ☐ Yes ■ No |
| Automatic Cooking Shut-off | ■ Yes ☐ No | Seismic Protection | ■ Yes ☐ No |
| Washer/Dryer for station wear/linen | ■ Yes ☐ No | Washer/Extractor for PPE | ■ Yes ☐ No |
| Decontamination Area | ■ Yes ☐ No | Biohazard Disposal | ■ Yes ☐ No |

Fuel: ■ None ☐ Diesel, gal ☐ MoGas, gal ☐ AvGas, gal ☐ Jet A, gal

Emergency Power: ■ Gas ☐ Diesel, Day Tank Size:

## Fleet/Apparatus

Maintaining fire service apparatus and equipment ensures operational readiness, safety, and the longevity of service life. Essential elements of this maintenance include regular inspections and preventative maintenance schedules, which should be strictly adhered to according to manufacturer recommendations and NFPA standards.

The department should inspect and service all mechanical components, including engines, pumps, and aerial ladders, as well as test electrical systems and communication devices. Equipment and apparatus must be regularly cleaned, as this is essential to prevent corrosion and extend their lifespan.

Additionally, thorough documentation of all maintenance activities is necessary to track the condition and service history of each piece of equipment, enabling timely repairs and replacements. Training personnel in proper operation and maintenance techniques is equally important to minimize wear and tear and ensure the equipment performs effectively during emergencies.

### Age, Condition, & Serviceability

ESCI offers agencies a matrix to evaluate their apparatus condition and use the following evaluation scheme based on experience.

Figure 10: Vehicle Condition Grade Criteria

| Evaluation Components | Points Assignment Criteria |
|---|---|
| Age | One point for every year of chronological age, based on in-service date. |
| Miles/Hours | One point for each 10,000 miles or 1,000 hours of operation. |
| Service | 1,3, or 5 points are assigned based on the type of service unit. For instance, fire pumpers would be given a five because they are classified as severe-duty service. |
| Condition | This category considers body condition, rust, interior condition, accident history, anticipated repairs, and other relevant factors. The better the condition, the lower the points assigned. |
| Reliability | Points are assigned as 1, 3, or 5, depending on the frequency with which a vehicle is in the shop for repair. For example, a rating of five would be assigned to a vehicle in the shop two or more times per month on average. In contrast, a rating of one would be assigned to a vehicle in the shop an average of once every three months or less. |

Figure 11: Scoring Categories


## Apparatus Review

The following table assesses fire apparatus, including their age, condition, serviceability scores, and mileage scores, which are calculated by dividing the vehicle's total mileage by 10,000. The scoring system used for maintenance, condition, and serviceability ranges from 1 to 5. A score of "1" indicates routine preventative maintenance is regularly performed, the vehicle is in excellent condition, and it is very reliable with little downtime. Conversely, a score of "5" denotes no routine maintenance, poor condition, and frequent outages for repairs, respectively. The scores are calculated to provide an overall apparatus score.

## Frontline Apparatus Inventory

The Crandall Fire Department is in the process of acquiring several new apparatus, including two new engines and an aerial ladder. These are expected to be delivered in 2026. The next two figures list the current inventory of its frontline fleet, including its engines, rescue, wildland units (brush trucks), and support vehicles.

Figure 12: Engine Inventory (2025)

| Unit # | Type | Make | Year | SVC. | COND. | REL. | ESCI ASSESS. |
|---|---|---|---|---|---|---|---|
| E-1 | Engine | Pierce | 2021 | 1 | 1 | 1 | Excellent |
| E-2 | Engine | Spartan | 2014 | 1 | 2 | 4 | Excellent |
| E-3 | Engine | Pierce | 2008 | 1 | 3 | 5 | Poor |

The next figure lists the inventory of wildland apparatus, which consists of brush trucks.

Figure 13: Wildland Apparatus Inventory

| Unit # | Type | Make | Year | SVC. | COND. | REL. | ESCI ASSESS. |
|---|---|---|---|---|---|---|---|
| B-1 | Brush Type 5 | Skeeter | 2017 | 1 | 2 | 2 | Excellent |
| B-2 | Brush Type 5 | Skeeter | 2017 | 1 | 2 | 3 | Excellent |

Figure 14: Specialty Apparatus Inventory

| Unit # | Type | Make | Year | SVC. | COND. | REL. | ESCI ASSESS. |
|---|---|---|---|---|---|---|---|
| SQ-1 | Utility | Chevrolet Tahoe | 2023 | 1 | 1 | 1 | Excellent |
| UTV-1 | ORV | Kawasaki Cub | 2015 | 1 | 1 | 1 | Excellent |

Figure 15: Command & Staff Vehicles Inventory

| Unit | Assigned To | Make | Year | SVC. | COND. | REL. | ESCI ASSESS. |
|---|---|---|---|---|---|---|---|
| 5701 | Fire Chief | Ford Explorer | 2016 | 1 | 2 | 1 | Excellent |
| 5702 | Asst. Chief | Chev Tahoe | 2023 | 1 | 1 | 1 | Excellent |

## Future Inventory

The department operates several frontline response units, including three Class A Engines, two Wildland Units, and a Squad. Engine 1 is under a 10-year lease owned by the Emergency Services District (ESD) and will remain in service until the lease expires, which is expected to be approximately 8 more years. Engine 2, which incurs the highest maintenance costs, is planned for sale. The ownership of this unit is currently unknown but is expected to be identified through the soon-to-be-completed forensic audit. Engine 3, owned by the city, will be kept as a reserve and serve as a parade vehicle.

### Commissioning/Decommissioning Plan

The ESD has two brush trucks and a squad, which will remain in service for their specific purposes. Additionally, the department expects to receive two new engines and an aerial ladder in 2026, which will be owned by the ESD. Once these new units are received, the ESD will own three engines, a ladder truck, two wildland units, and a squad. The ESD also owns specialty/staff units, such as a UTV and two Command Units. The City of Crandall owns a single engine.

## Maintenance

### Future Apparatus Serviceability

An essential consideration for fire departments is the cost associated with the future replacement of major equipment. The service life of an apparatus can be readily predicted based on vehicle type, call volume, age, and maintenance considerations. CVFD utilizes two outside vendors to maintain its apparatus and vehicles.

NFPA 1901: *Standard for Automotive Fire Apparatus* recommends that fire apparatus 15 years or older be placed into reserve status, and apparatus 25 years or older should be replaced. This is a general guideline, and the standard recommends using the following objective criteria in evaluating fire apparatus lifespan:

- Vehicle road mileage.
- Engine operating hours.
- The quality of the preventative maintenance program.
- The quality of the driver-training program.
- The fire apparatus was used within its design parameters.
- Whether the fire apparatus was manufactured on a custom or commercial chassis.
- The quality of workmanship by the original manufacturer.
- The quality of the components used in the manufacturing process.
- The availability of replacement parts.

It is important to note that age is *not* the only factor in evaluating serviceability and replacement. Vehicle mileage and pump hours on engines must also be considered. A two-year-old engine with 250,000 miles may need replacement sooner than a 10-year-old with 2,500 miles.

# Capital Improvement Plan

## Purpose and Benefit

A Capital Improvement Plan (CIP) provides a systematic approach to financial planning and budgeting. It aligns with the organization's financial position and methodologies, ensuring a cohesive and efficient approach to addressing the capital assets required now and in the future. The CIP must identify revenue streams, fund balances, and debt service, which are critical for financial stability.

A capital improvement plan (CIP) for fire service agencies is crucial because it enhances operational capabilities by ensuring fire departments have the necessary equipment, facilities, and resources to respond effectively to emergencies. This includes modernizing fire stations and acquiring new apparatus and specialized equipment.

A CIP helps with long-term sustainability by projecting future needs and costs. This allows fire departments to plan for future expenses and incorporate them into existing budgeting processes. It ensures that the department can continue to serve the community effectively by maintaining and upgrading its infrastructure. If the necessary revenue streams are unavailable, the plan provides for the shortfalls, which can be communicated to the elected officials or the governing board for their consideration.

Furthermore, a CIP helps with resource allocation and prioritization. It ensures that critical projects are funded and completed in a timely manner, which is essential for maintaining high service levels. Fire departments can ensure efficient resource use by prioritizing capital projects based on departmental needs and available funding sources.

## Suggested Apparatus Replacement Schedule

Developing a replacement schedule for fire department apparatus involves careful consideration of the lifespan and cost of each type of equipment, along with the application of an inflation factor to account for future price increases. For instance, the replacement cycle for an Engine/Pumper is set at 20 years, with an estimated cost of $1,400,000 in 2026. Similarly, a Type 6 Wildland (Light Duty) vehicle has a 15-year replacement cycle and a projected cost of $400,000.

Ladder/Quint apparatus also follows a 20-year cycle and costs $1,800,000, while Rescue vehicles are scheduled for replacement every 15 years at $320,000. Command/Staff vehicles, with a shorter 10-year cycle, are estimated to cost $60,000, and Support/Utility/Special vehicles, such as the UTV, are set on a 15-year cycle and projected to cost $50,000 initially.

By applying a 3% inflation factor, the department can anticipate and budget for the increased costs over time, ensuring that funds are allocated appropriately to maintain operational readiness and safety standards. This systematic approach facilitates planning and managing the financial resources required for timely replacements, thereby sustaining the department's ability to respond effectively to emergencies.

## Financial Management Approach

Apart from facilities, the replacement of fire service apparatus is the greatest capital expense for a fire service agency. Managing and anticipating a sufficient reserve fund balance to cover capital expenses when needed is critical.

Effective financial planning for a fire department involves several key concepts to ensure long-term sustainability and readiness. Establishing a Capital Reserve Fund is the foundation of this approach, providing a dedicated pool of resources for future capital expenditures. Projecting costs within a five-year planning cycle allows the department to anticipate and prepare for upcoming financial needs.

To build this reserve, it is essential to budget annually, injecting sufficient revenue into the fund each year to cover the projected capital costs for the entire five-year cycle. This proactive strategy ensures the department can maintain and upgrade its infrastructure without financial strain. However, there may be instances where borrowing or leasing becomes necessary to bridge gaps and carry the agency through the planning cycle.

The financial plan also incorporates a 3% inflation factor, increasing the annual contributions to the reserve fund each cycle. This approach enables the plan to adjust its annual contributions upward or downward, thereby preserving other revenues for operational needs. This adjustment accounts for rising costs and ensures that the fund remains robust and capable of meeting future demands. The fire department can achieve financial stability and operational excellence by adhering to these principles.

The following figure presumes a starting Capital Fund of $600,000 in 2026. It provides financial estimates for the ESD to fund future capital needs.

Figure 16: Example Financial Plan for Apparatus Replacement

| Year | Expenditures | Contribution | Fund Balance |
|---|---|---|---|
| 2026 | 60,000 | 309,000 | 840,000 |
| 2027 | | 318,270 | 1,158,270 |
| 2028 | 1,529,818 | 327,818 | (43,730) |
| 2029 | | 337,653 | 293,923 |
| 2030 | | 347,782 | 641,705 |
| 2031 | | 358,216 | 999,921 |
| 2032 | 983,899 | 450,000 | 466,022 |
| 2033 | 139,345 | 463,500 | 790,177 |
| 2034 | 1,826,682 | 477,405 | (559,100) |
| 2035 | | 491,727 | (67,373) |
| 2036 | 83,054 | 506,479 | 356,052 |
| 2037 | | 450,000 | 806,052 |
| 2038 | | 463,500 | 1,269,552 |
| 2039 | 484,029 | 477,405 | 1,262,928 |
| 2040 | | 491,727 | 1,754,655 |
| 2041 | 2,246,589 | 506,479 | 14,545 |
| 2042 | | 1,000,000 | 1,014,545 |
| 2043 | | 1,030,000 | 2,044,545 |
| 2044 | | 1,060,900 | 3,105,445 |
| 2045 | | 1,092,727 | 4,198,172 |
| 2046 | 5,320,442 | 1,125,509 | 3,238 |
| **2047** | **1,532,883** | **1,159,274** | **(370,370)** |

## Fire Station Design and Standards

Modern fire station spaces and needs include housing fire apparatus, providing living quarters for firefighters, and accommodating administrative and training functions. The apparatus bay is the heart of the fire station, where fire engines, ladder trucks, and other emergency vehicles are stored and maintained. This area must be spacious enough to accommodate easy vehicle maneuvering, including maintenance bays equipped with the necessary tools and equipment. Using drive-through apparatus bays increases the land size requirements to accommodate the large turning radius of fire apparatus.

### *Functional Spaces*

Living quarters should provide adequate accommodation for firefighters during their shifts, including dormitories, a kitchen, a dining area, and recreational spaces. Sleeping areas should include private rooms to ensure gender privacy. Living quarters should consist of individual dormitory rooms, a kitchen and dining area, and recreational spaces such as a gym or lounge. The workout facility should be separated from the apparatus bay area and equipped with sufficient ventilation to ensure a healthy environment.

Administrative offices are crucial for the efficient management of the fire department. Typically, a fire station's lifespan can extend from 30 to 50 years, so anticipating the need for administrative space to accommodate future expansion should be considered.

Training rooms and facilities ensure that firefighters can continually improve their skills and readiness; sufficient space is essential to accommodate large classrooms and hands-on training.

The apparatus bay needs high ceilings and large doors to fit fire trucks and emergency vehicles. Each bay should be at least 20 feet wide and 40 feet deep, with extra maintenance and storage space. Planning for future growth and reserving apparatus in the initial design is crucial.

The square footage requirements for a modern fire station are substantial, as they must accommodate various functions and ensure seamless operations.

### *Health and Safety*

Separation zones within the fire station are crucial for maintaining safety, efficiency, and comfort. The apparatus bay should be separated from living quarters, workout facilities, and storage of personal protective equipment. Administrative areas should also be suitably separated to minimize noise and exhaust fumes. Proper ventilation systems and overall building pressure zones are crucial to prevent vehicle exhaust from infiltrating other areas of the building.

### *Land Requirements*

Modern fire stations typically require a plot of land ranging from 1 to 3 acres, depending on the size of the department and the number of apparatus bays needed. The facility's total square footage can vary, but a typical fire station may range from 10,000 to 20,000 square feet. This includes space for the apparatus bay, living quarters, administrative offices, and training facilities.

Adequate parking for staff and visitors, as well as space for outdoor training exercises, should also be considered when determining the land size requirements.

### *Regional Cost Estimates*

ESCI typically finds fire stations that accommodate three apparatus bays, 24-hour personnel quarters, and office space for a dual company station, measuring approximately 12,000 square feet. These stations do not include facilities for administrative staff.

Although the construction cost can fluctuate rapidly, and it is currently difficult to determine the future construction cost with certainty, we offer the following estimate. According to Builders United, a large Commercial General Contractor serving the Southwest United States, the cost to construct a fire facility ranges from $405 to $606 per square foot.[3]

In other parts of the country, for example, in Colorado, the cost of constructing a new fire station is expected to be $1,000 per square foot.

Assuming the lower and upper thresholds of the Southwest region's per-square-foot costs, a 12,000-square-foot fire station built today would cost between $4,860,000 and $7,272,000. Since a fire station can take approximately 2 to 3 years to construct, it would be prudent to factor in a reasonable inflation factor.

[3] TX CCR 7.30.2021.xlsx

# Review of Industry Standards & Best Practices

## National Fire Protection Association

The National Fire Protection Association (NFPA), founded in 1896, is a global nonprofit organization that aims to reduce fire-related death, injury, and loss. It publishes over 300 codes and standards that manage fire risks through building, design, and installation criteria. *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* sets the standards for career fire departments: full-time, paid firefighters staff and includes key aspects such as:

**Response Times:** The initial engine company must arrive within 4 minutes, the second engine company should arrive within 6 minutes, and the full first alarm assignment should arrive within 8 minutes.

**Staffing Levels:** Specifies a minimum of 4 firefighters per engine company and 16–17 personnel for a full first alarm assignment.

**Coverage:** Focuses on urban and suburban areas where career firefighters are the primary responders.

Figure 17: NFPA 1710 Critical Tasks by Risk

| Task | Moderate Risk (Residential Fire) | High Risk (Strip Mall or Apt Building) | Extreme Risk (Multi-Story) |
|---|---|---|---|
| Command | 1 | 2 | 2 |
| Apparatus Operator | 1 | 2 | 2 |
| Handlines [2 FF's each] | 4 | 6 | 4 |
| Support members | 2 | 3 | 8 |
| Search and Rescue | 2 | 4 | 4 |
| Ground Ladders/Ventilation | 2 | 4 | |
| Aerial Operator (If Deployed) | 1 | 1 | 2 |
| Initial Rapid Intervention Crew | 4 | 4 | 4 |
| Initial Medical Care Component | | 2 | 4 |
| Building Fire Pump (If Equipped) | | | 1 |
| Hoseline – Floor Above Fire | | | 2 |
| Elevator Operations Manager | | | 1 |
| Incident Safety Officer | | | 1 |
| Interior Staging Manager | | | 2 |
| Member Rehabilitation | | | 2 |
| Vertical Ventilation Crew | | | 4 |
| Lobby Control | | | 1 |
| | 16 (17) | 27 (28) | 42 (43) |

## Occupational Safety & Health Administration

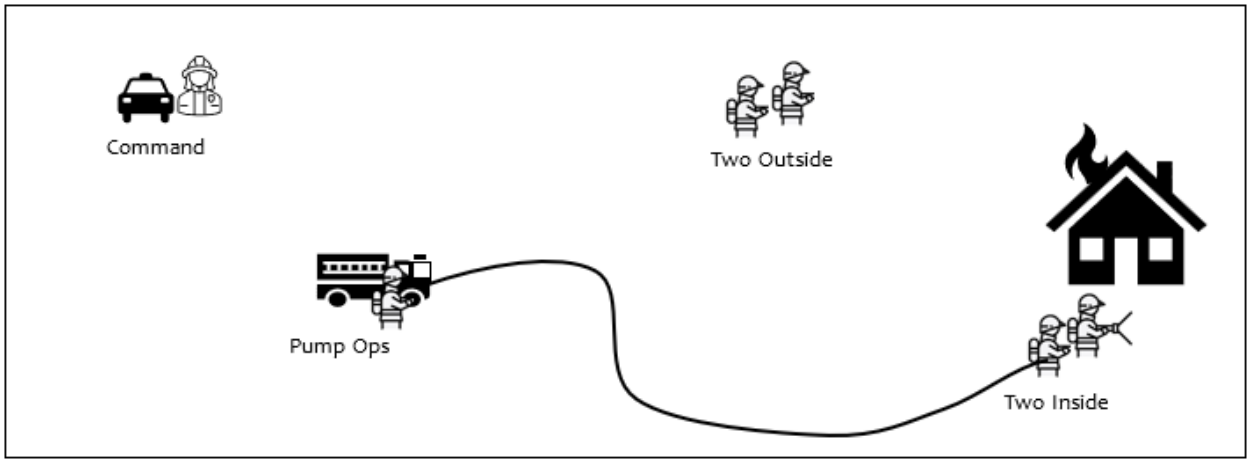
The Occupational Safety and Health Administration (OSHA) is a federal agency under the United States Department of Labor, established in 1970. Its mission is to ensure safe and healthy working conditions for workers by setting and enforcing standards and providing training, outreach, education, and assistance.

### The Two-In/Two-Out Rule

It is important to understand that the "two-in/two-out" rule applies to the arrival of the first unit(s) on the scene during the initial stage of an incident. It does not address the need to assemble additional firefighters who are required to perform other tasks to mitigate a fire or other emergency, which is referred to as the "Effective Response Force (ERF)."

The "two-in/two-out" rule is a safety standard established by OSHA specifically for interior structural firefighting. Still, it also applies to other incidents where the environment is Immediately Dangerous to Life and Health (IDLH). For example, a hazardous materials leak, confined space rescue, or other incidents where an SCBA must be worn. This rule requires that at least two firefighters enter a hazardous environment together, maintaining voice or visual contact to ensure mutual safety at all times. Simultaneously, at least two additional firefighters must remain outside the hazardous area, ready to assist or initiate a rescue if needed.

Figure 18: Initial Phase – 2 in 2 Out Pictorial



This standard is crucial because it ensures that firefighters are not working alone in hazardous conditions, thereby reducing the risk of injury or death. The “two-in/two-out rule” is particularly important when the atmosphere is immediately dangerous to life or health (IDLH), such as during fires with heat and dense smoke. By adhering to this rule, fire departments can enhance the safety and effectiveness of their operations, ensuring that firefighters have the necessary support to perform their duties safely and efficiently.

Fire departments with limited staffing face significant challenges in adhering to the “two-in/two-out” rule. When a fire department has only two personnel on a fire truck, complying with this standard can delay the entry needed to extinguish fires, as one firefighter must stay with the fire engine to establish a water supply and pump water to hose lines. This delay not only hampers the department's ability to save property but also increases the risk to firefighter safety when they must enter a burning structure alone. Limited staffing severely restricts a fire department's operational effectiveness and ability to maintain safety standards, highlighting the critical need for adequate personnel to ensure the safety of firefighters and the public.

## Commission on Fire Accreditation International

The Commission on Fire Accreditation International (CFAI) is a body that provides a comprehensive accreditation process for fire and emergency service agencies. This process involves rigorous self-assessment and peer review, ensuring that agencies meet high standards of performance and service. Accredited agencies are recognized for being community-oriented, data-driven, and outcome-focused, demonstrating strategic planning, proper equipment, staffing, and training. The CFAI model encompasses various publications, training, and access to experienced peer assessors to guide agencies through the accreditation process.

This accreditation enhances community trust and encourages continuous improvement and accountability within the agencies. The accreditation model provided by the Commission on Fire Accreditation International is widely recognized as a best practice in fire and emergency services.

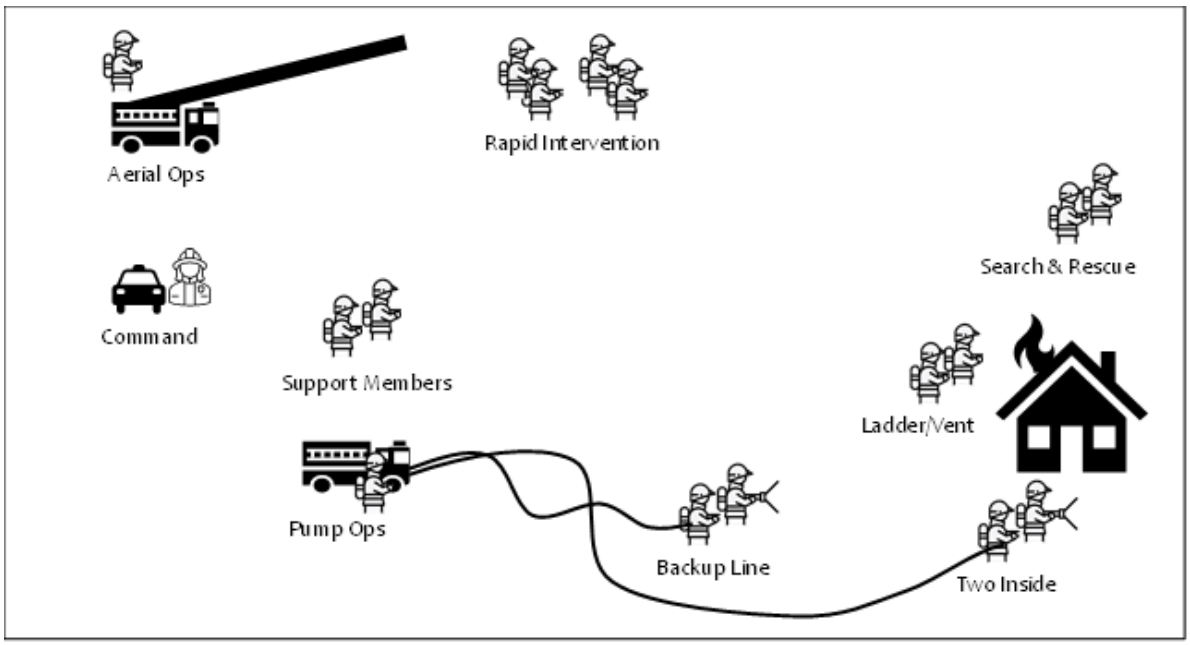
## Distribution & Concentration

NFPA and the Commission on Fire Accreditation International (CFAI) emphasize the importance of distribution and concentration in fire and emergency service deployment. **Distribution** refers to strategically placing fire stations and resources throughout a community to ensure that emergency services can respond quickly to incidents. As previously discussed, this is typically measured by the arrival of the initial crews to accomplish the "two-in/two-out" requirements. It also involves analyzing the geographical layout, population density, and risk areas to determine an optimal number of fire stations, personnel, and equipment locations. The goal is to minimize response times and ensure that resources are available where they are most needed.

**Concentration** ensures that resources are available and ready in specific areas when needed. This includes having enough personnel, equipment, and apparatus to perform simultaneous tasks during incidents, known as the Effective Response Force (ERF). Concentration ensures a strong response, minimizing loss of life and property. Both distribution and concentration offer a balanced deployment strategy for the fire department to efficiently meet community needs.

The following pictorial illustrates the NFPA 1710 Standard's recommendation for 16–17 firefighters needed to accomplish concurrent tasks safely and extinguish a 2,500-square-foot residential fire.

Figure 19: Effective Response Force Pictorial



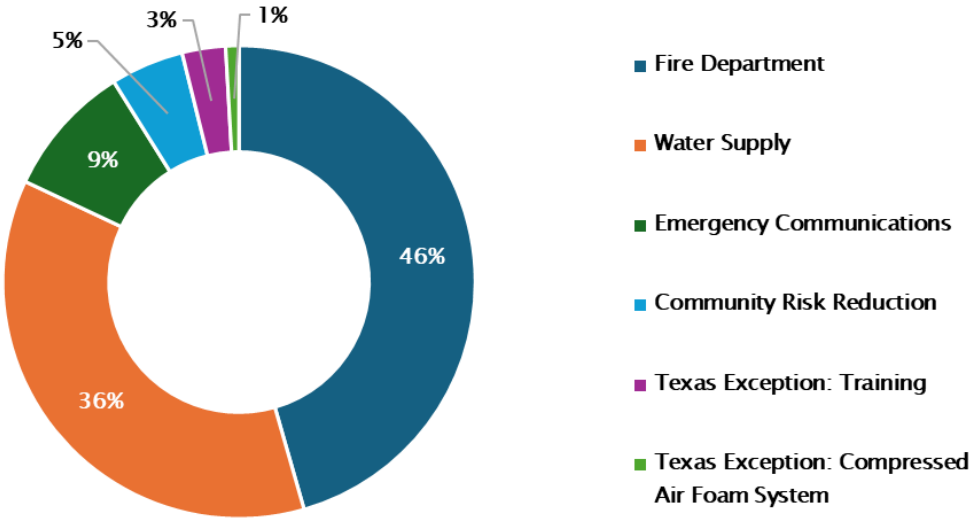
## Discussion of Industry Standards

Meeting industry standards set by OSHA and NFPA is crucial for several reasons. First, it ensures the safety of firefighters and the public by guaranteeing adequate resources and personnel arrive on the scene quickly. This prompt response is vital for effectively controlling fires and handling emergencies, enhancing operational efficiency. Additionally, these standards provide a consistent benchmark for fire departments to measure their performance and identify areas for improvement. Adhering to these standards also demonstrates a commitment to high standards and professionalism, which can significantly enhance public trust and confidence in the fire service. Although meeting these standards can be challenging, especially for volunteer departments with limited resources, striving to achieve them ensures that all communities receive the best possible fire protection and emergency response.

## Insurance Services Office (ISO)

The ISO Class rating system measures a community's fire protection capabilities on a scale from 1 to 10; Class 1 indicates the best possible fire protection system, while Class 10 indicates no fire protection available. This rating is part of the Public Protection Classification (PPC) program, which evaluates water supply, fire department capabilities, emergency communication systems, and community risk reduction efforts. The State of Texas has two special provisions toward which ISO is given points. The following chart illustrates the percentage of credit for each section.

Figure 20: Allocation of Points in Community Grade

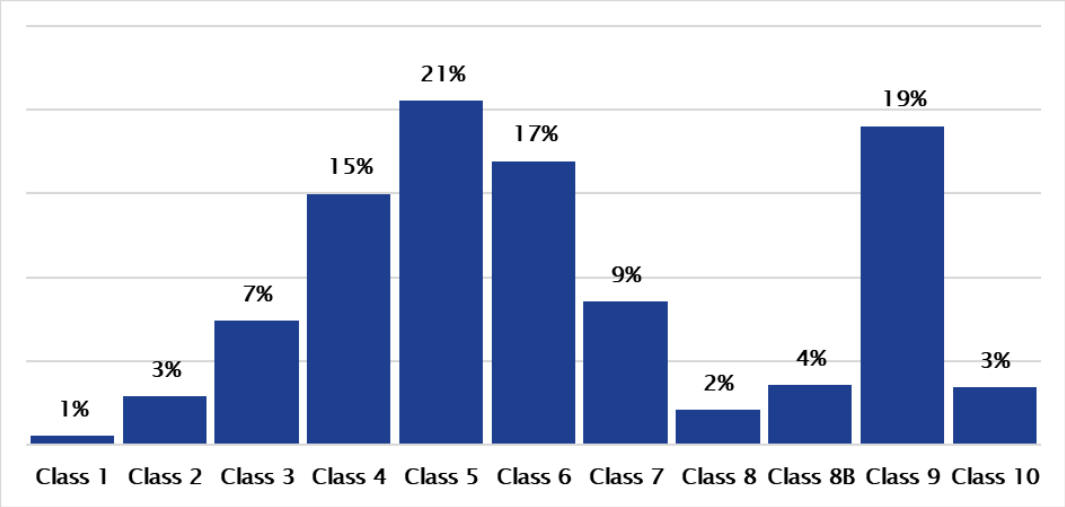


An ISO Class 1 rating typically indicates an advanced level of fire protection, reflecting factors like well-distributed fire stations, high staffing and training levels, effective emergency communications, and comprehensive public education programs.

Insurance companies often use PPC ratings to help determine premiums for homeowners and commercial fire insurance. Lower PPC ratings indicate that they generally offer lower premiums in communities with higher levels of protection.

The following is an aggregate view of all fire agencies nationally.

Figure 21: Aggregate Class Ratings Nationwide



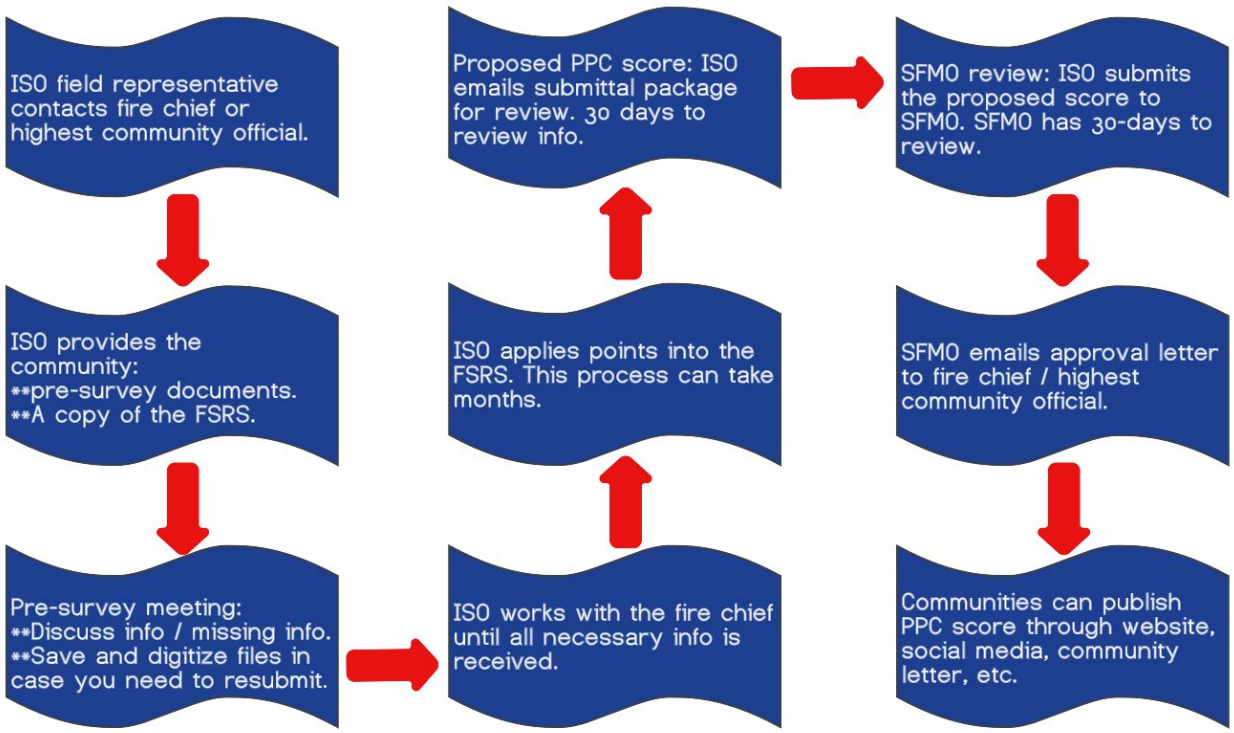

## Oversight of PPC

The Texas State Fire Marshal's Office plays a crucial role in overseeing Public Protection Classification (PPC) surveys across the state. This office is responsible for reviewing each classification rating submittal, mediating appeals, and ultimately approving or denying ISO-recommended PPC ratings.

Their involvement ensures that communities' fire protection capabilities are accurately assessed and appropriately classified, contributing to the overall safety and well-being of the residents.

The following figure illustrates the process and standards required under Texas rules.

Figure 22: Texas Oversight Process




## KCESD7 Fire Department Rating

The KCESD7 currently holds a ranking of 3/3X. In 2016, ISO released a detailed report summarizing the scores of KCESD7. There are several areas where the department's overall score can be improved, potentially resulting in a lower class rating for the residents.

## Updated ISO Rating

Kaufman County Emergency Service District received an updated ISO report issued July 10, 2025. Updated Report. The ISO report findings reveal a potential impact on increases in insurance rates for residents and businesses. The report indicates that ISO may revise the KCESD7 existing Class 3/3X to a Class 4/4X rating. The largest reductions in credit points in the 2025 report are in deployment analysis, ladder service, and Training.

The deployment analysis section of the ISO report reduced the credit based on the growth of the community and the shortage of fire stations and engine companies capable of serving the expanding community, especially in the Northwest.

According to Figure 23, the KCESD received a 7.53-point drop in the deployment analysis section. To remedy this issue, constructing fire stations, adding engine companies, and providing consistent staffing will be necessary. Fundamentally, ISO determines this factor by calculating the percentage of built-upon areas within 1.5 miles of a first-due engine company and commercial structures within 2.5 miles of a first-due ladder-service company.

Additionally, Training is another critical area where ISO reduced the score to 3.47 points out of a total of 5.74. An issue noted is that the department has not accounted for Training received by their part-time members, who receive Training from their home departments, where many of them are employed full-time. Additionally, Training received at conferences and schools was not recorded. These two factors contribute to the shortage of hours required under the ISO Schedule. To address these challenges, plans are in place to enhance documentation and promote greater participation in training programs.

Another factor contributing to the reduced training score is the requirement to demonstrate 18 hours annually of hands-on company training at a training facility or an alternative site. CVFD's only option is an off-site facility located 45 minutes from the main fire station. The facility offers opportunities for live burns, ladder training, hose handling, pump operations, forcible entry, and various other essential skill maintenance exercises. Due to the distance to the nearest training facility, obtaining this type of training at a facility is very challenging.

Below is a summary of training requirements for firefighters, pump operators, and company officers. To achieve full credit, members must meet all of these standards. Few fire departments achieve all of these standards.

*Firefighter Training*

| Training Type | Frequency/Duration | Details/Requirements |
|---|---|---|
| Quarterly Training | Minimum of 3 hours every 3 months | Focused on the suppression of structure fires |
| Company Training | Up to 16 hours per member per month | Using fire stations, streets, buildings, and open areas |
| Live Fire Training Facility Use | Up to 18 hours per member annually | Smoke rooms, drill towers, and training areas |
| Hazardous Materials Training | Minimum of 6 hours per year | At the awareness level per NFPA 472 |
| Recruit Training | 240 hours within the first year of certification | Per NFPA 1001 (Firefighter I and II) |
| Pre-Incident Planning | Annually | Building familiarization documented per NFPA 1620 |

*Pump Operators (Driver/Operators) Training*

| Training Type | Hours/Certification | Standard |
|---|---|---|
| New Driver/Operator Training | 60 hours or certification | NFPA 1002 and NFPA 1451 |
| Existing Driver/Operator Training | 12 hours per year | NFPA 1002 and NFPA 1451 |

*Company Officer Training*

| Certification | Continuing Education | Relevant NFPA Standards |
|---|---|---|
| Must be certified per NFPA 1021 | 12 hours per year in topics such as safety officer and ICS | NFPA 1521, NFPA 1561 |

*Training Facility Requirements*

| Facility Type | Description | Maximum Points |
|---|---|---|
| Live Fire Training Structure | Includes a smoke room for realistic fire scenarios | 17 points |
| Drill Tower | At least 3 stories in height for ladder and elevation training | 10 points |
| Training Area | Minimum of 2.0 acres in size for apparatus operations and drills | 8 points |

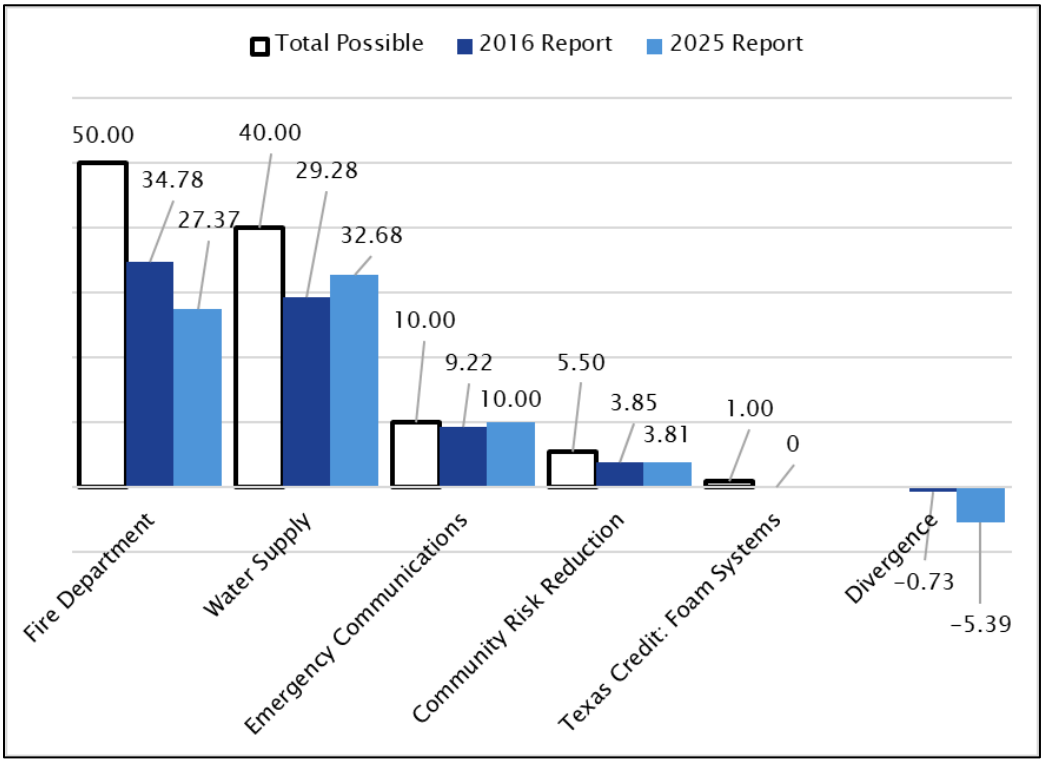
**Total Maximum Facility Points: 35

Staffing challenges faced by the department, particularly the need for six personnel per fire suppression apparatus, as required for maximum credit for each pumper, are difficult to achieve using the part-time paid staffing model. The department currently averages 4.2 individuals per day on duty through the part-time staffing model. This shortfall negatively impacts their ISO rating. Additionally, the lack of fire stations and personnel for deployment from future stations also plays a significant role in the credit. Although ISO provided more credit for company staffing, the score for 2025 is just over half of the total credit that could be achieved, reflecting the station and staffing shortfall.

## Comparison of ISO Reports

ESCI compared the general categories of the 2016 and 2025 ISO reports. It is worth noting that, according to the U.S. Census Bureau, Kaufman County had a population of 117,904 residents in July 2016. In 2023, the U.S. Census Bureau's last population estimate was 185,690 residents, representing a 57% increase in seven years. This level of community growth is a factor in the KCESD7's looming ISO downgrade.

Figure 23: Comparison of ISO Points (Total Available, 2016, 2025)



Each insurance company evaluates the risks associated with its insurers. However, a downgrade of a fire department's class rating is likely to result in higher insurance premiums. The following chart illustrates the differences between the total possible points, the points issued in the 2016 report, and the most recent report.

The only reduction in the five categories from 2016 to 2025 is centered on the fire department, which accounts for 50% of the overall points, and deployment analysis was the single item receiving the greatest reduction.

Additionally, a factor referred to as Divergence is deducted from the overall rating points when there is a difference between the fire department score and the water supply score. Another way to view this is that the power of the fire department should be equivalent to the power of the water supply, concurrent with the overall community risk. A notable reduction in the overall points is seen as a result of a greater number of divergence points in the 2025 report.

Figure 24: Detailed Fire Department Comparison (Total Available, 2016, 2025)

| Fire Department | Total Possible | 2016 Report | 2025 Report |
|---|---|---|---|
| 513. Credit for Engine Companies | 6.00 | 5.66 | 5.78 |
| 523. Credit for Reserve Pumpers | 0.50 | 0.00 | 0.39 |
| 532. Credit for Pumper Capacity | 3.00 | 3.00 | 3.00 |
| 549. Credit for Ladder Service | 4.00 | 3.12 | 1.92 |
| 553. Credit for Reserve Ladder and Service Trucks | 0.50 | 0.00 | 0.00 |
| 561. Credit for Deployment Analysis | 10.00 | 7.88 | 0.35 |
| 571. Credit for Company Personnel | 15.00 | 6.60 | 8.70 |
| 581. Credit for Training | 5.74 | 4.76 | 3.47 |
| 580A. Credit for Texas State Training | 3.26 | 1.76 | 1.76 |
| 730. Credit for Operational Considerations | 2.00 | 2.00 | 2.00 |
| **Credit for Fire Department** | **50.00** | **34.78** | **27.37** |

# Service Demand Analysis

When every call for assistance is made, a demand for service is placed on the fire department. Analyzed by each calendar year, the primary analyses of service demand include the types of incidents, their frequency, and the locations where they occur.

## Incident Type Analysis

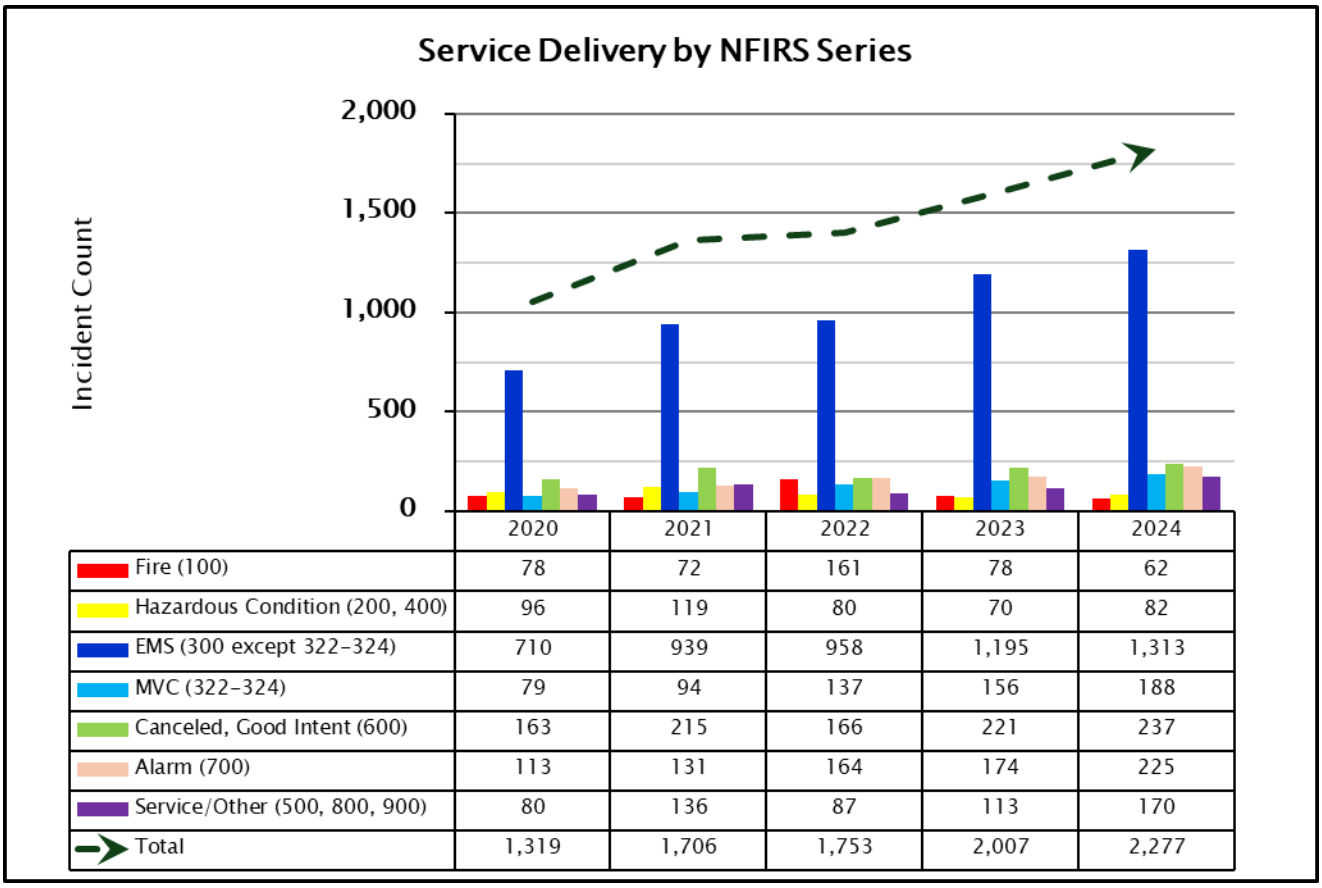
Documentation of responses to incidents includes recording the type of incident identified by an arriving unit. The National Fire Incident Reporting System (NFIRS) and its successor, the National Emergency Response Information System (NERIS), are industry-standard systems used by local fire departments to record this information. The systems track over one hundred incident types, which are grouped into series, as illustrated in the following figure.

Figure 25. NFIRS Incident Series.

| Incident Series | Incident Heading |
|---|---|
| 100-Series | Fires |
| 200-Series | Overpressure Rupture, Explosion, Overheat (No Fire) |
| 300-Series | Rescue and Emergency Medical Service (EMS) Incidents |
| 400-Series | Hazardous Condition (No Fire) |
| 500-Series | Service Call |
| 600-Series | Canceled, Good Intent |
| 700-Series | False Alarm, False Call |
| 800-Series | Severe Weather, Natural Disaster |
| 900-Series | Special Incident Type |

The following figure illustrates the types of incidents the fire department has responded to over the past five years.

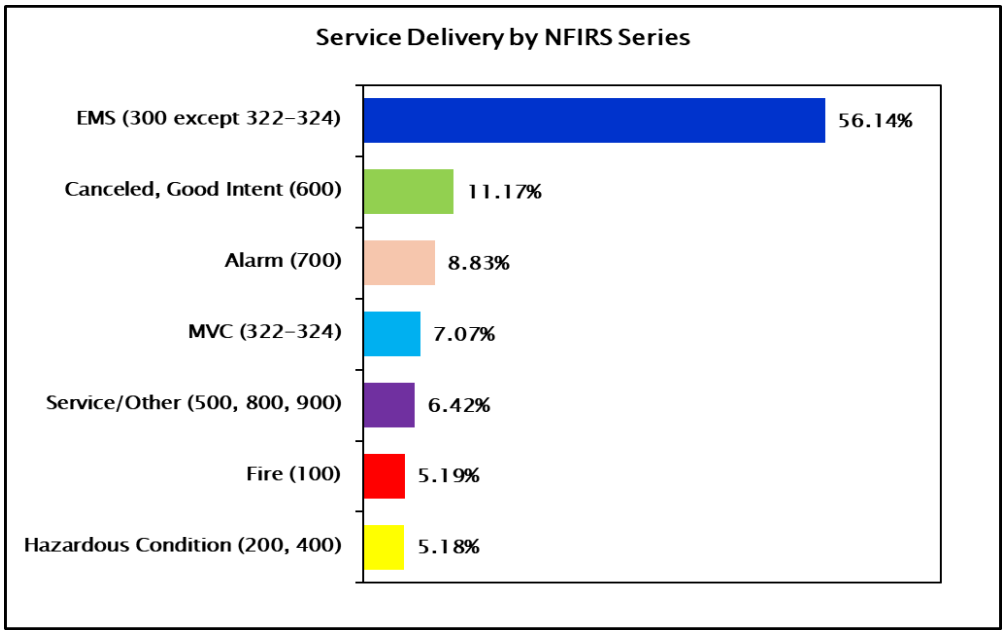
Figure 26. ESD7 Service Demand by NFIRS Series, 2020–2024.




| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Fire (100) | 78 | 72 | 161 | 78 | 62 |
| Hazardous Condition (200, 400) | 96 | 119 | 80 | 70 | 82 |
| EMS (300 except 322–324) | 710 | 939 | 958 | 1,195 | 1,313 |
| MVC (322–324) | 79 | 94 | 137 | 156 | 188 |
| Canceled, Good Intent (600) | 163 | 215 | 166 | 221 | 237 |
| Alarm (700) | 113 | 131 | 164 | 174 | 225 |
| Service/Other (500, 800, 900) | 80 | 136 | 87 | 113 | 170 |
| Total | 1,319 | 1,706 | 1,753 | 2,007 | 2,277 |

Another consideration is determining the percentage represented by each category comprising the entire service demand, as illustrated in the following figure.

Figure 27. ESD7 Service Demand by NFIRS Series, 2020–2024.



## Temporal Analysis

Another data point documented for each incident response is the time it occurs. As illustrated in the following figures, this may be analyzed from three perspectives: month, day, and hour.

Figure 28. ESD7 Service Demand by Month, 2019–2024.

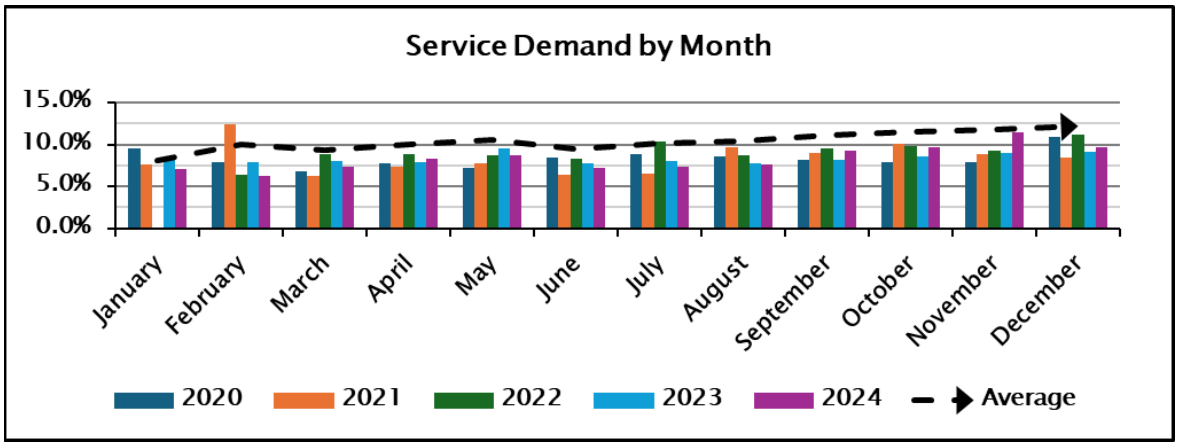



Figure 29. ESD7 Service Demand by Day, 2019–2024.

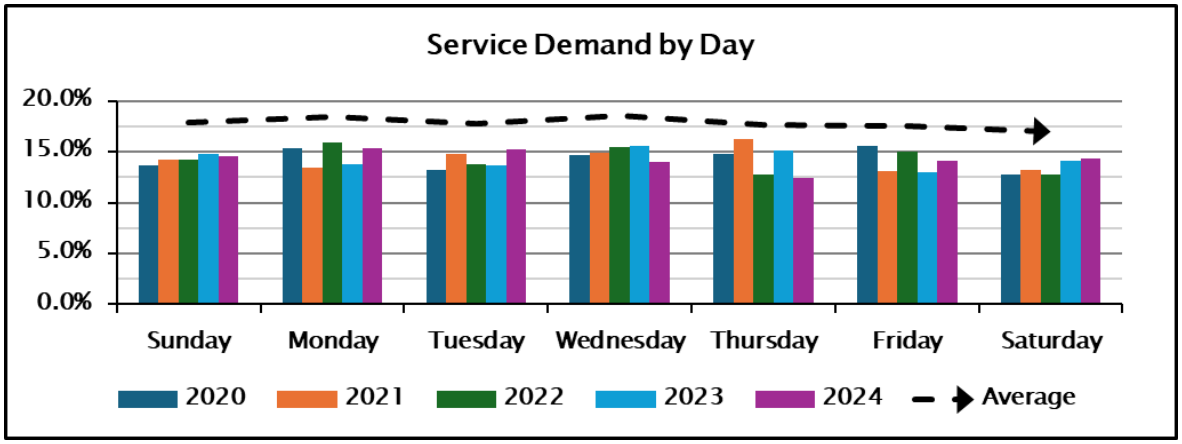
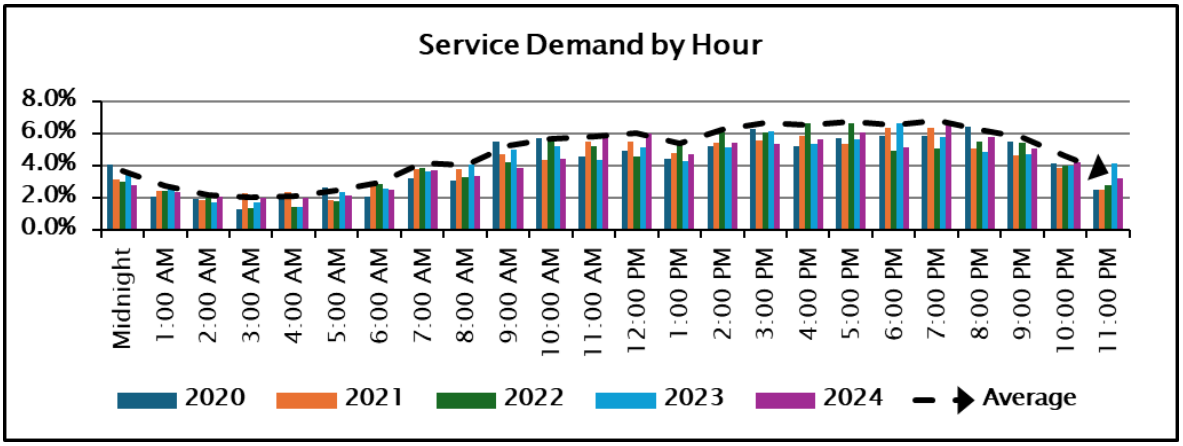


Figure 30. ESD7 Service Demand by Hour, 2019–2024.



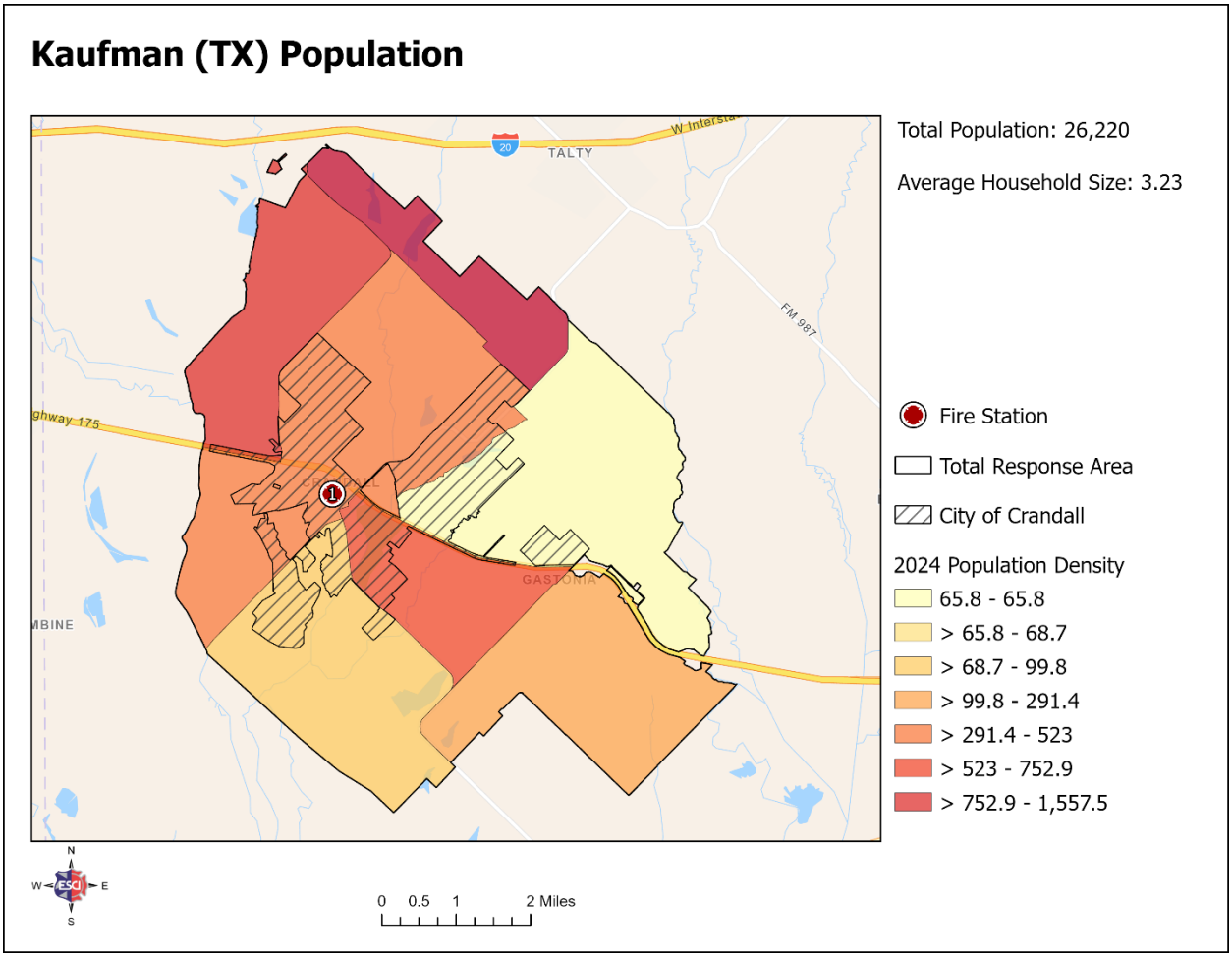

One additional note for the time of day: Based on a recent national study published from 2018 to 2020, the occurrence of residential structure fires with fatalities was highest between midnight and 1:00 AM. The 8-hour peak period (11:00 PM to 7:00 AM) accounted for 45% of residential fatal fires[4].

[4] *Fatal Fires in Residential Buildings (2018–2020), Topical Fire Report Series Volume 22, Issue 2 /June 2022, U.S. Department of Homeland Security, U.S. Fire Administration, National Fire Data Center.*

## Geographic Analysis

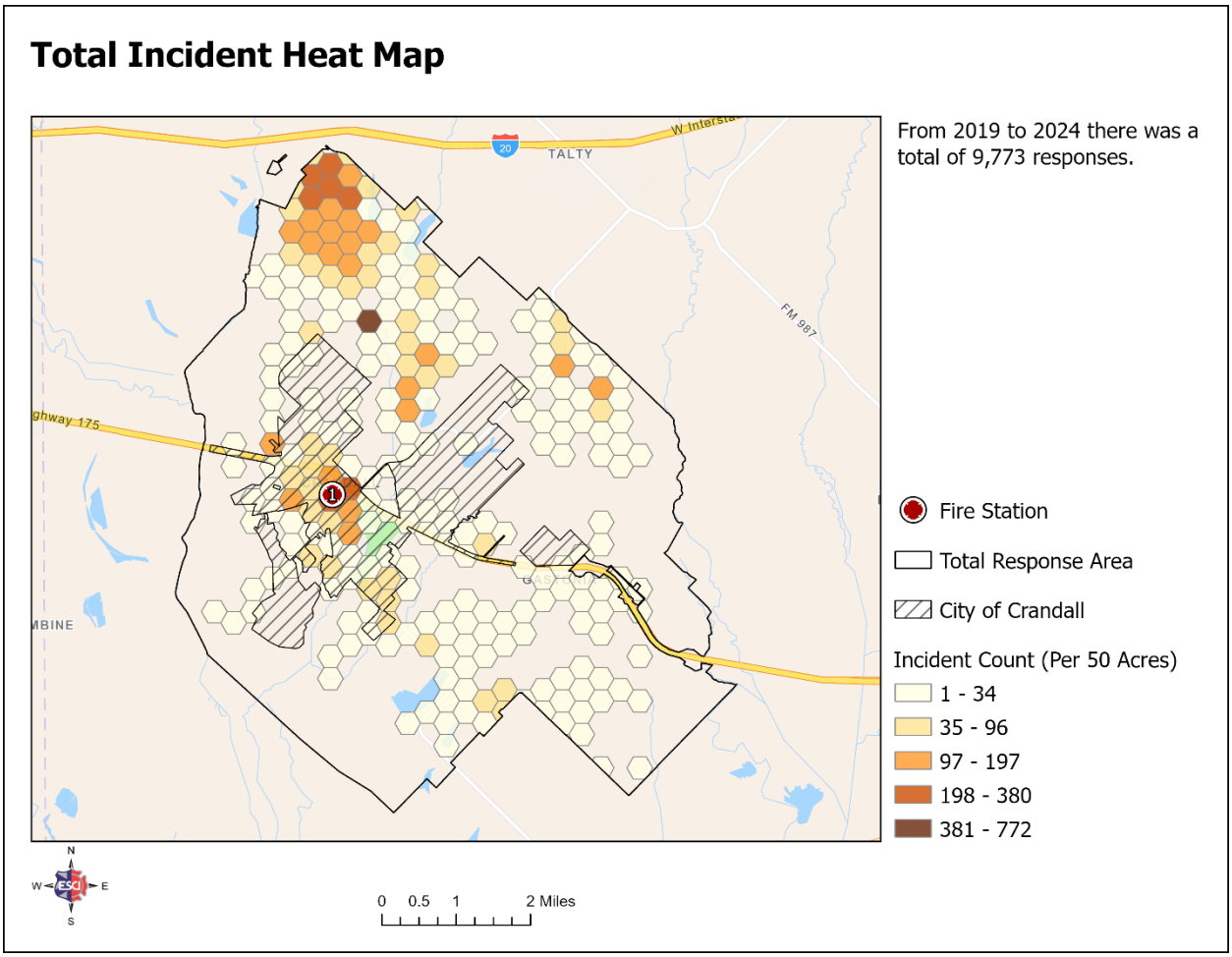
The location of incidents is closely related to the population density within the community. In other words, where there is greater population density (the number of people per unit area, such as a square mile), there tends to be greater incident density. Heat maps display this information. To compare the initial relationship of incidents and population, the first information needed is the population density, as illustrated in the following figure.

Figure 31. ESD7 Population Density, 2024.



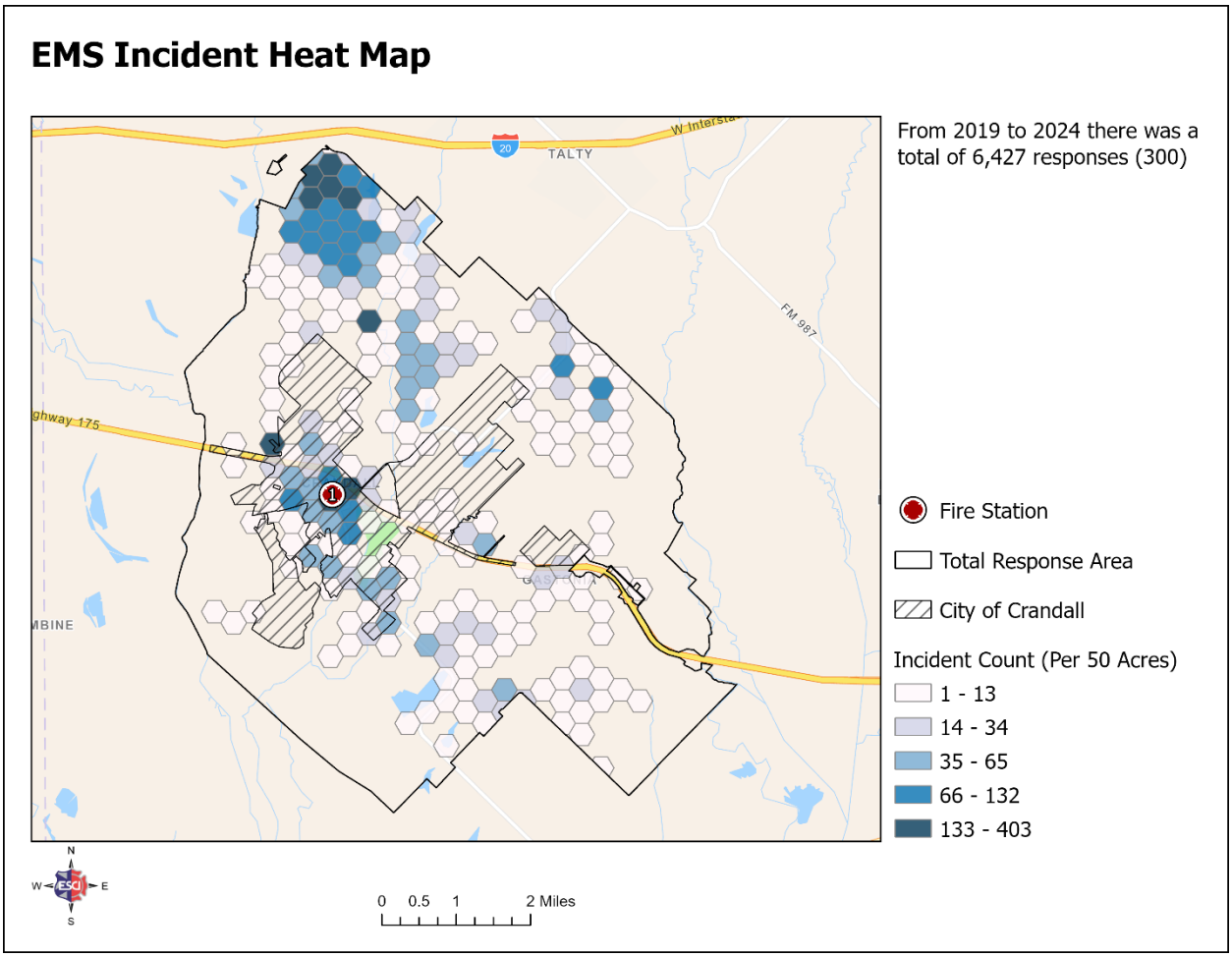
Another data point documented for each incident response is the location of the incident, either by address or latitude and longitude. The first view of incident density includes all responses within the service area, regardless of incident type, as illustrated in the following figure.

Figure 32. ESD7 Incident Density (All Incidents), 2019–2024.



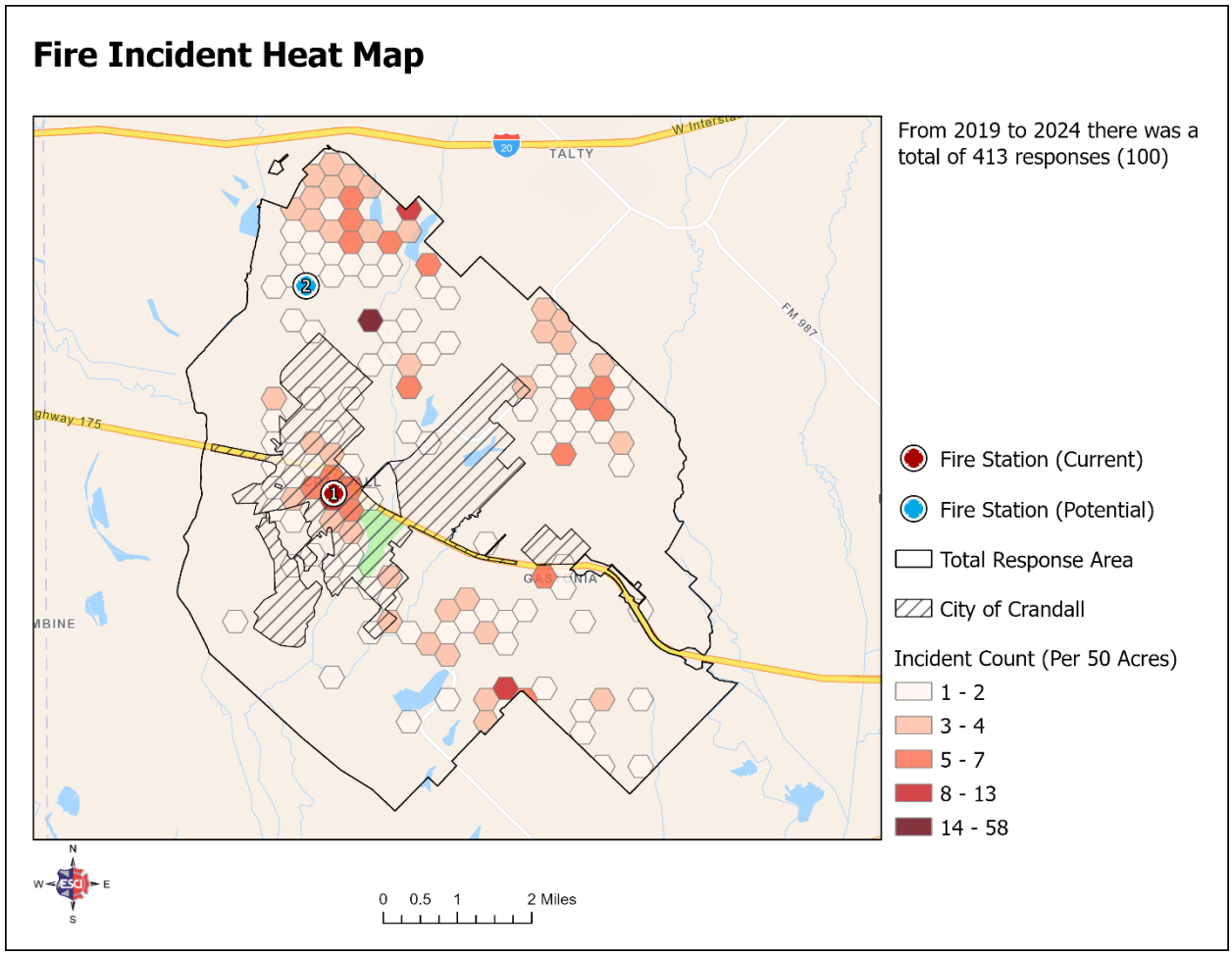
The second view of incident density includes only emergency medical services incidents, as illustrated in the following figure.

Figure 33. ESD7 Incident Density (EMS), 2019–2024.



The third view of incident density includes only fire incidents, as illustrated in the following figure.

Figure 34. ESD7 Incident Density (Fire), 2019–2024.



## Resource Distribution Analysis

The placement of emergency services resources within the community should be compared to the location of incident density and guided by various industry standards and best practices.

### ISO Distribution

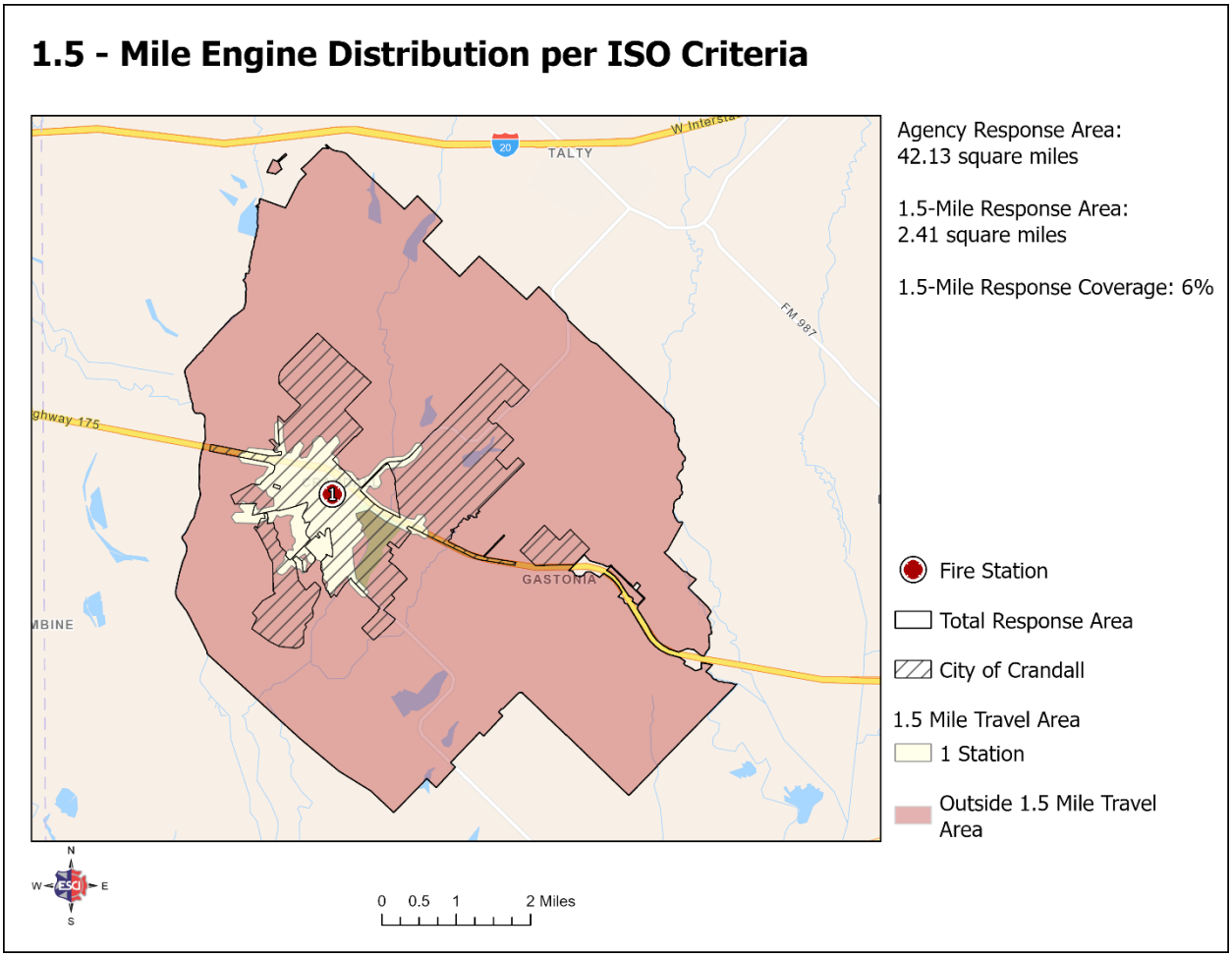
The Insurance Services Office, Inc. (ISO) is a national organization within the insurance industry that evaluates fire protection for communities nationwide. A community's ISO rating is an important factor when considering fire station and apparatus concentration, distribution, and deployment, as there is a correlation between its ISO rating and the cost of fire (homeowners) insurance for residents and businesses.

To receive maximum credit for station and apparatus distribution, ISO evaluates the percentage of the community (contiguous built-up area) within specific distances of fire stations, central water supply access (fire hydrants), engine/pumper companies, and aerial/ladder apparatus.

### *1.5 Mile Engine Distribution*

ISO's first measure is the overall percentage of the service area within a 1.5-mile travel distance of the first due fire engine from a fire station, as illustrated in the following figure.

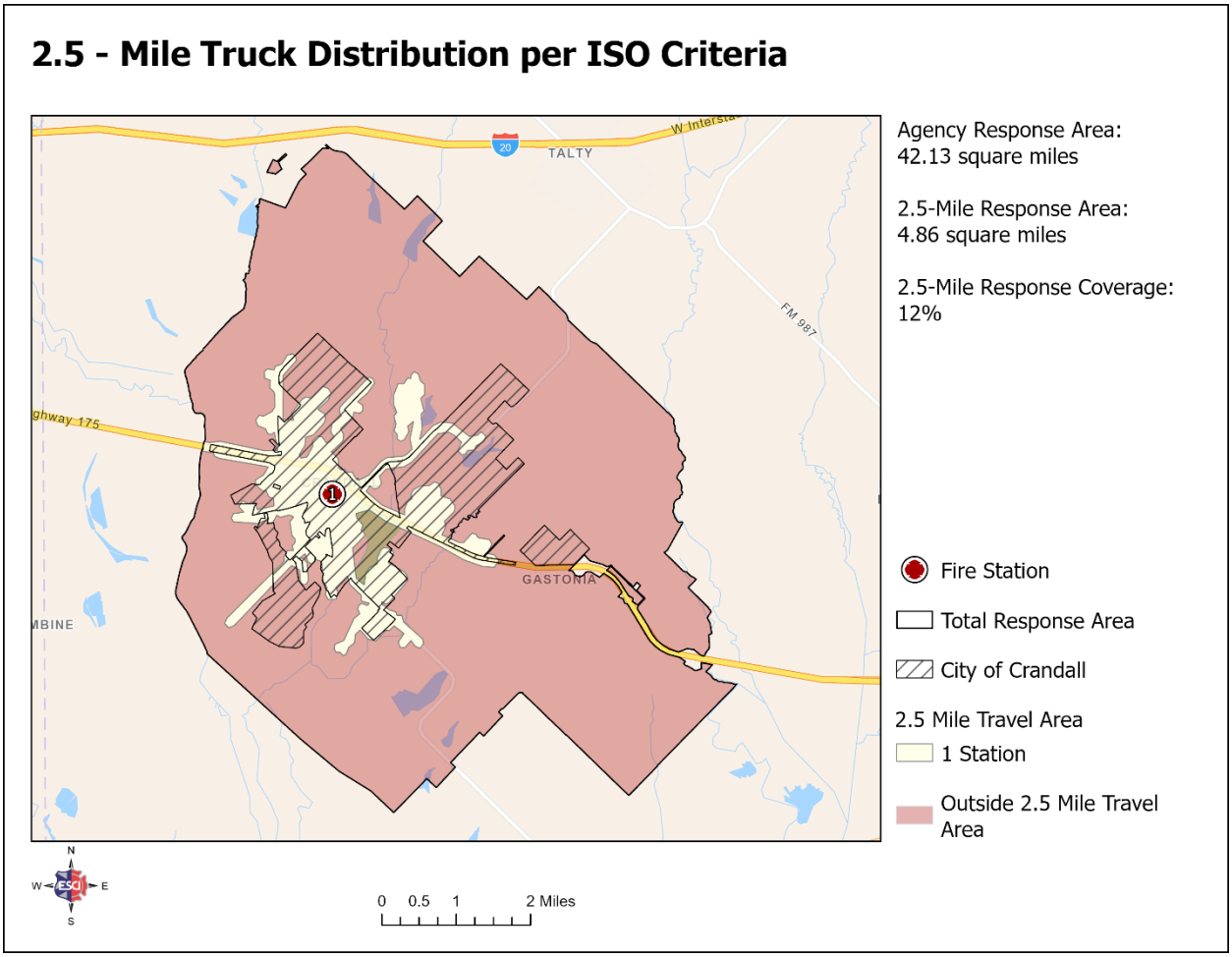
Figure 35. ESD7 Engine Distribution.



### *2.5 Mile Aerial Distribution*

ISO's second measure is the overall percentage of the service area within a 2.5-mile travel distance of the first due aerial apparatus from a fire station, as illustrated in the following figure.

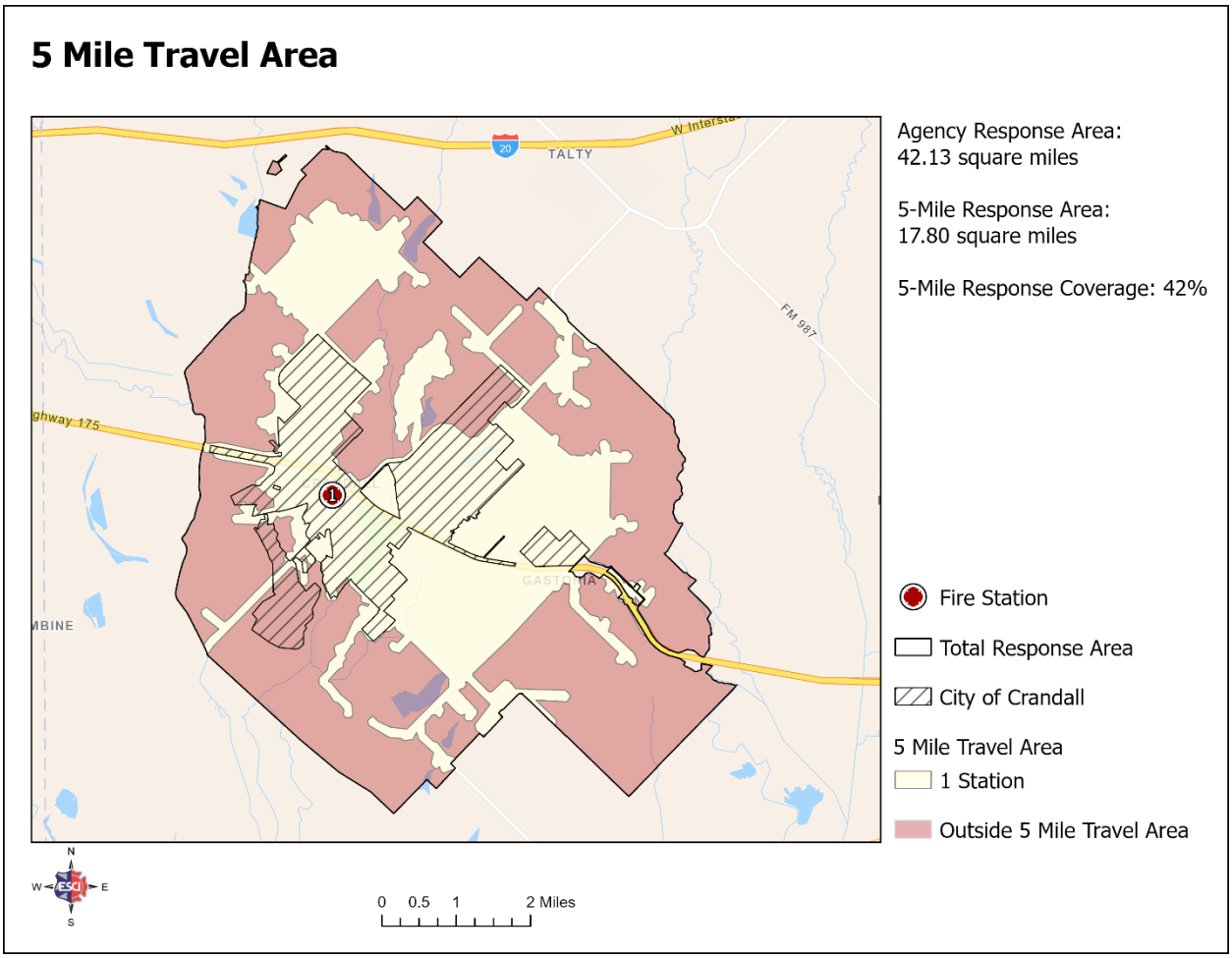
Figure 36. ESD7 Aerial Distribution.



### *5 Mile Distribution*

ISO's third measure is the overall percentage of the service area within a 5-mile travel distance of a fire station, as illustrated in the following figure. Areas outside the 5-mile travel distance are subject to a PPC® rating of 10 (no fire department protection available).

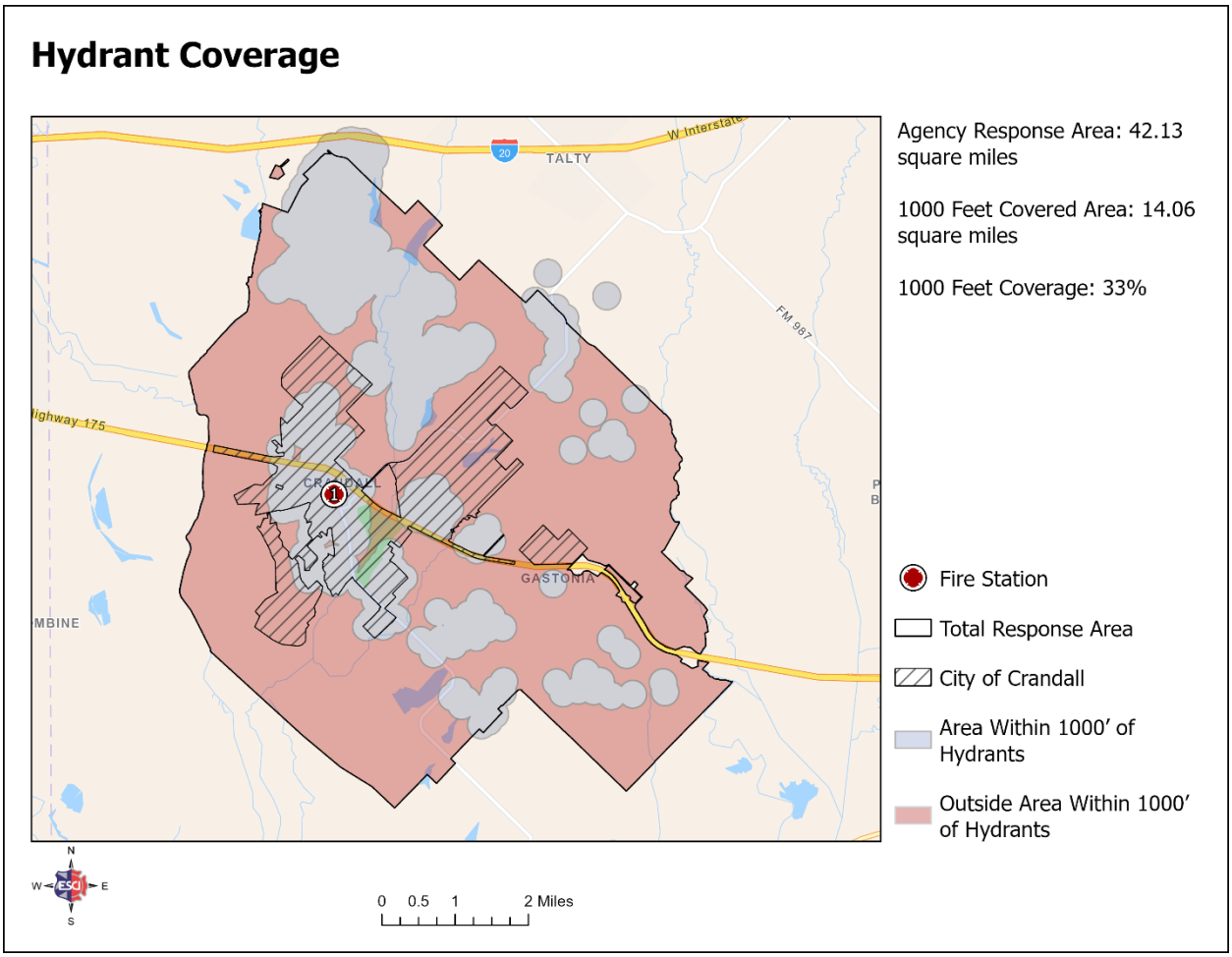
Figure 37. ESD7 Station Distribution.



### *Water Supply*

ISO's fourth measure is the overall percentage of the service area within a 1,000-foot travel distance of a fire hydrant, as illustrated in the following figure. Exceptions are made when a fire department can show that a dry hydrant or a suitable water tanker operation can provide the needed volume of water for fire suppression activities for a specific period.

Figure 38. ESD7 Hydrant Distribution.



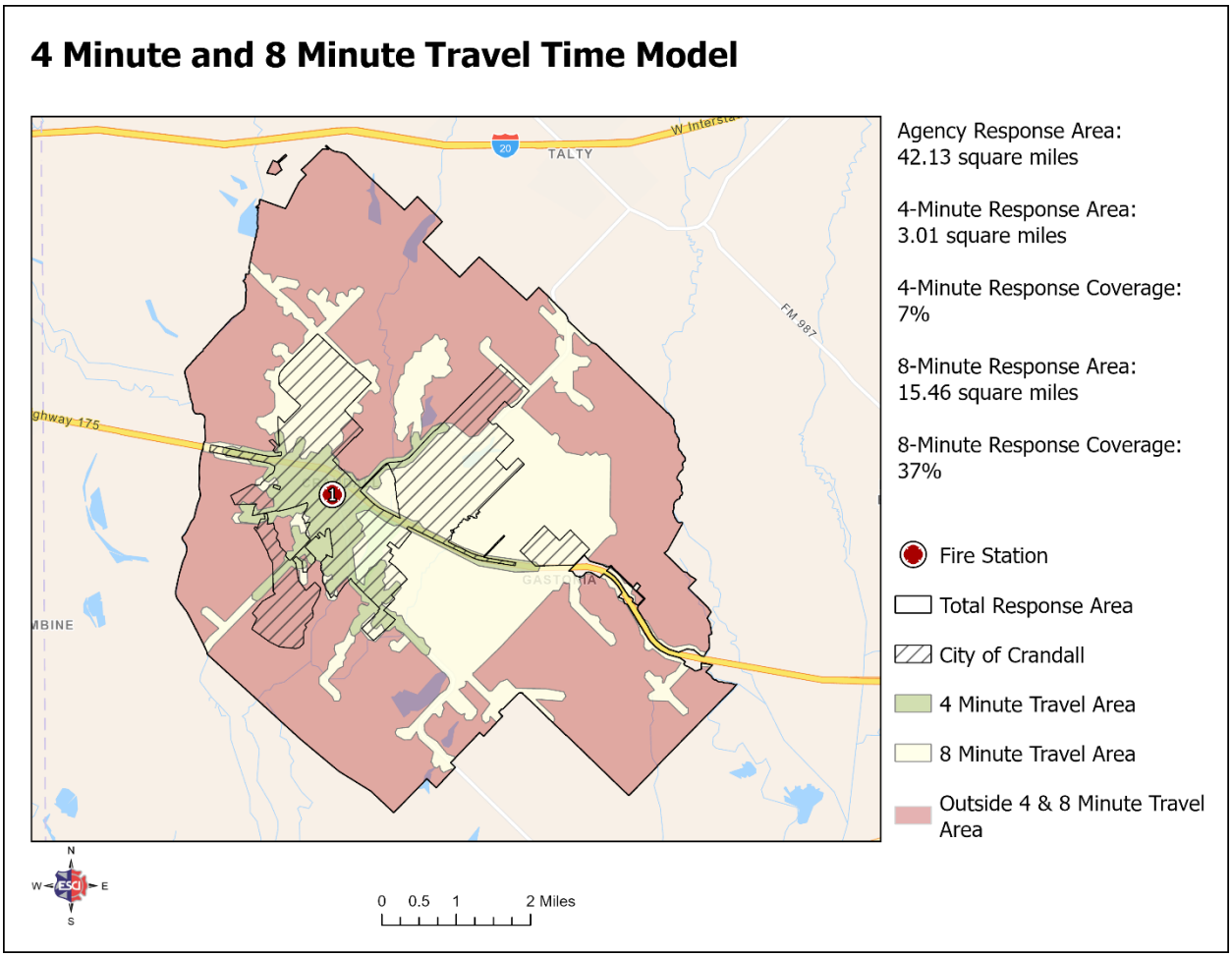
## NFPA Distribution

The National Fire Protection Association (NFPA) is a trade association that develops and provides standards and codes for use by fire departments, emergency medical services, and local governments.

The standard, 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*, serves as a national consensus standard for career fire department performance, operations, and safety. Within this standard, a travel time of 4:00 minutes, 90% of the time, is the benchmark for *career* departments to reach emergency incidents within their jurisdiction with the first arriving unit. Additionally, the balance of the response (called the effective response force or ERF) is required to arrive at the incident within 8:00 minutes, 90% of the time.

The following figure illustrates the service area within a fire station's 4-minute and 8-minute travel times.

Figure 39. ESD7 4/8-Minute Travel Time per NFPA Criteria.




The prior graphic provides theoretical travel times based on all units within the station at the time of dispatch. The following figure illustrates the percentage of travel times between 2022 and 2024, grouped into 4-minute increments.

Figure 40. ESD7 Travel Time Analysis, 2022–2024.

| Travel Time Category | 2022 | 2023 | 2024 |
|---|---|---|---|
| 4 Minutes or Less | 30.01% | 31.83% | 30.85% |
| 4–8 Minutes | 41.06% | 43.31% | 42.21% |
| 8–12 Minutes | 25.35% | 21.54% | 24.02% |
| Greater than 12 Minutes | 3.58% | 3.31% | 2.91% |

## Resource Concentration Analysis

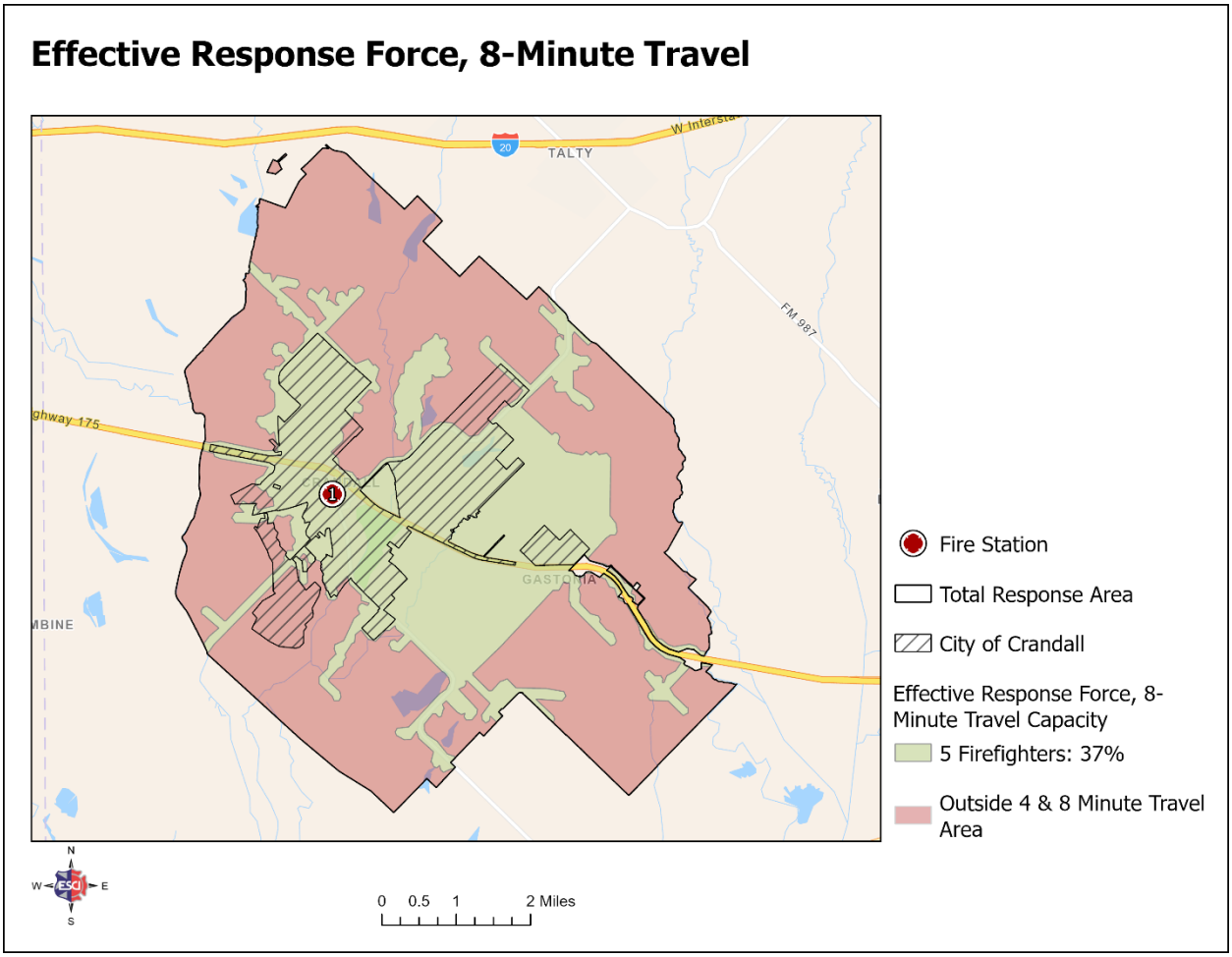
Each of the prior measures provided a view specifically associated with the arrival of the first unit at the incident scene. While arriving at an incident quickly and safely is important, the ability to safely mitigate the incident is also impacted by the arrival of sufficient resources within an appropriate amount of time. The measure of this ability is referred to as the effective response force (ERF). It ensures that sufficient personnel and resources arrive on the scene early enough to safely control a fire or mitigate other emergencies before substantial damage, injury, or loss of life. Effective Response Force (ERF) is also commonly referred to as the "full assignment" to the incident. The following graphic illustrates the ERF recommended through standards such as 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*, as well as the Commission on Fire Accreditation International (CFAI) Standards of Cover.

Figure 41. NFPA 1710 ERF Recommendations Based on Risk.

| Function/Task | Single-Family Residence (2,000 ft²) | Open Air Strip Shopping Center (13,000–196,000 ft²) | 3-Story Garden Apartment (1,200 ft²) |
|---|---|---|---|
| Command | 1 | 2 | 2 |
| Apparatus Operator | 1 | 2 | 2 |
| Handlines (2 members each) | 4 | 6 | 6 |
| Support Members | 2 | 3 | 3 |
| Victim Search and Rescue team | 2 | 4 | 4 |
| Ground Ladders/Ventilation | 2 | 4 | 4 |
| Aerial Ladder Operator (If ladder used) | (1) | (1) | (1) |
| Initial Rapid Intervention Team | 4 | 4 | 4 |
| Initial Medical Care Component | N/A | 2 | 2 |
| **Total** | **16 (17)** | **27 (28)** | **27 (28)** |

The following figure illustrates the concentration of firefighters that may arrive within the 8-minute travel time; where responses from more than one station's initial response area overlap, the number of firefighters that could arrive increases.

Figure 42. KESD7 & CoC Effective Response Force per NFPA 1710.




## Resource Reliability Analysis

The zone unit's first arrival should be analyzed to consider its reliability in responding to incidents within its primary response workload. However, the first arrival could not be analyzed with only one station.

## Commitment Time

A fair measure of each unit's workload within the department is to evaluate the amount of time assigned to incidents compared to the total time the unit is in service, called a commitment factor. Although there are limited formal performance measures to use as a target, in May 2016, the Henrico County (VA) Division of Fire published an article after studying its department's EMS workload.[5] As a result of the study, the Henrico County Division of Fire developed a commitment factor scale for its department. The next figure summarizes the findings regarding commitment factors that the department's leadership may utilize as a base for developing internal workload measures. These workload measures may vary depending on the type of apparatus (e.g., fire engine versus ambulance for transport).

Figure 43. Commitment Factors – Henrico County (VA) Division, 2016.

| Factor | Indication | Description |
|---|---|---|
| 16%–24% | Ideal Commitment Range | Personnel can maintain their training requirements and physical fitness, consistently achieving response time benchmarks. Units are available to the community more than 75% of the time. |
| 25% | System Stress | Community availability and unit sustainability are not questioned. First-due units are responding to their assigned community 75% of the time, and response benchmarks are rarely missed. |
| 26%–29% | Evaluation Range | The community served will experience delayed incident responses. Just under 30% of the day, first-due ambulances are unavailable; thus, neighboring responders will likely exceed goals. |
| 30% | "Line in the Sand" | Not Sustainable: Commitment Threshold—the community has less than a 70% chance of timely emergency service, and immediate relief is vital. Personnel assigned to units at or exceeding 0.3 may show signs of fatigue and burnout and may be at increased risk of errors. The required training and physical fitness sessions are not consistently completed. |

[5] *How Busy Is Busy?; Retrieved from https://www.fireengineering.com/articles/print/volume-169/issue-5/departments/fireems/how-busy-is-busy.html*

The following figures illustrate the commitment factors by unit.

Figure 44. EFD7 Commitment Time, 2022–2024.

| Unit | 2022 | 2023 | 2024 | Change Over Study Period |
|---|---|---|---|---|
| 5700 | 0.9% | 0.3% | 0.6% | -0.4% |
| 5701 | 0.1% | 0.3% | 0.2% | 0.1% |
| 5702 | 0.2% | 0.3% | 0.1% | 0.0% |
| BRU1 | 0.5% | 0.3% | 0.6% | 0.2% |
| BRU2 | 0.2% | 0.2% | 1.2% | 1.0% |
| ENG1 | 5.4% | 2.8% | 4.9% | -0.5% |
| ENG2 | 2.0% | 4.0% | 1.4% | -0.6% |
| ENG3 | 0.1% | 1.4% | 0.1% | 0.1% |
| SQD1 | 0.0% | 0.0% | 1.4% | 1.4% |

## Response Performance Analysis

The speed at which a unit arrives at the scene of the caller's emergency is a key factor in their evaluation of the services provided. Industry standards and best practices recommend that departments regularly monitor this performance (total response time), as well as all of the following time performance measures that are subsets of total response time:

- Alarm handling time.
- Turnout time.
- Travel time.
- Response time.
- Total response time.

In analyzing response performance, ESCI, aligned with national standards and best practices, generates percentile measurements of time performance. Percentile measurements are a more accurate way to measure compliance with performance standards. A 90$^{th}$ percentile measurement means that 10% of the values are greater than the value stated, and all other data are at or below this level. This can be used as a performance objective to determine the degree of success in achieving the goal.

As this report progresses through response performance analysis, it is important to remember that each component of response performance is not cumulative. Each is analyzed as an individual component, and the point at which the percentile is

calculated exists in a set of data unto itself. Each of the following analyses only included those incidents where the response was coded as an "emergency" priority.

The data provided by ESD7 only included valid timestamps for calendar years 2022 through 2024.

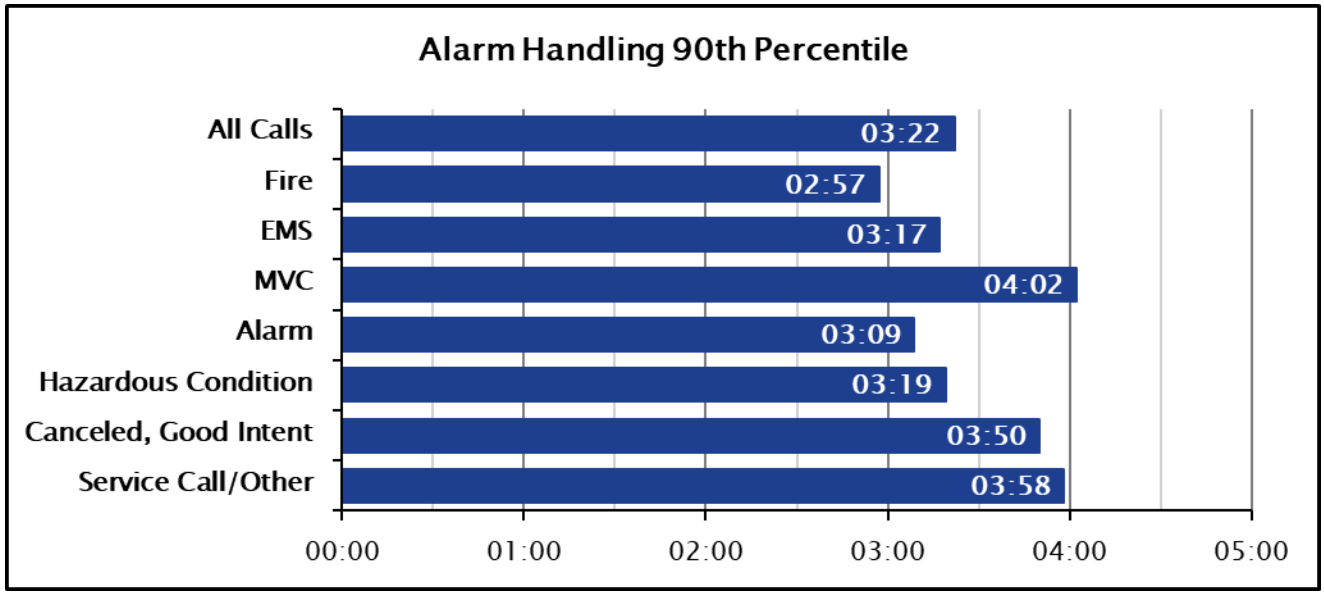
## Alarm Handling Time

The time between answering the 911 call and dispatching resources is known as alarm handling time. There is one applicable standard for this measure, as illustrated in the following figure.

| Standard | Performance |
|---|---|
| NFPA 1225: *Standard for Emergency Services Communications* (2022 Edition) | 60 seconds at the 90th percentile |

The following figure illustrates the department's alarm handling time performance.

Figure 45. ESD7 Alarm Handling Time Performance, 2022–2024.




| Incident Location | 90th Percentile |
|---|---|
| ESD7 | 03:21 |
| City | 03:27 |

As this is the first measure under the direct control of the fire department, the department's leadership may consider the various actions that occur within this measure and determine if there are areas where process changes could improve performance. These factors include:

- Systems are used to notify personnel of an incident.
- Station design relates to the movement of personnel from living quarters to the apparatus bay.
- Personnel adherence to department policies and acting with appropriate speed towards the apparatus.
- Time required to don protective equipment before responding.
- Moving equipment between apparatus when units are cross-staffed.
- From the time the apparatus is started until the radio system can transmit.

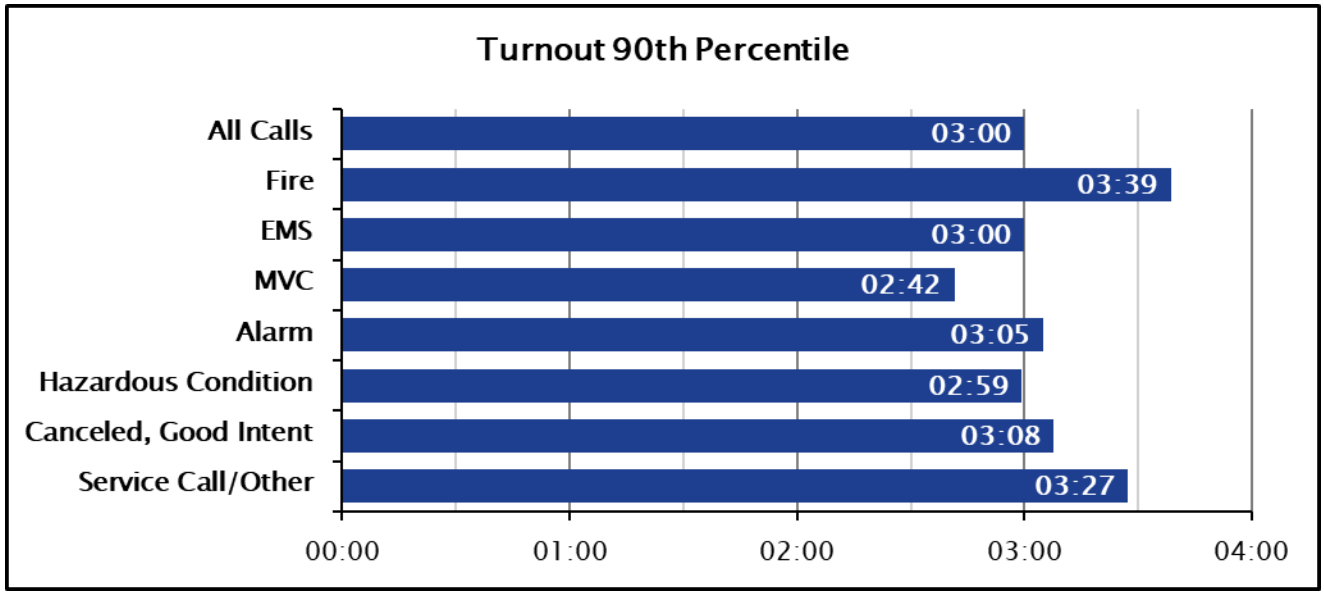
## Turnout Time

The time between notifying the fire department (dispatching) and the time the first unit goes en route is known as the turnout time.

| Standard | Performance |
|---|---|
| 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* | Fire and Special Operations Incidents<br>80 seconds at the 90th percentile<br><br>All Other Incidents<br>60 seconds at the 90th percentile |

The following figure illustrates the turnout time for the first responding units.

Figure 46. ESD7 Turnout Time Performance, 2022–2024.




| Incident Location | 90th Percentile |
|---|---|
| ESD7 | 03:02 |
| City | 02:55 |

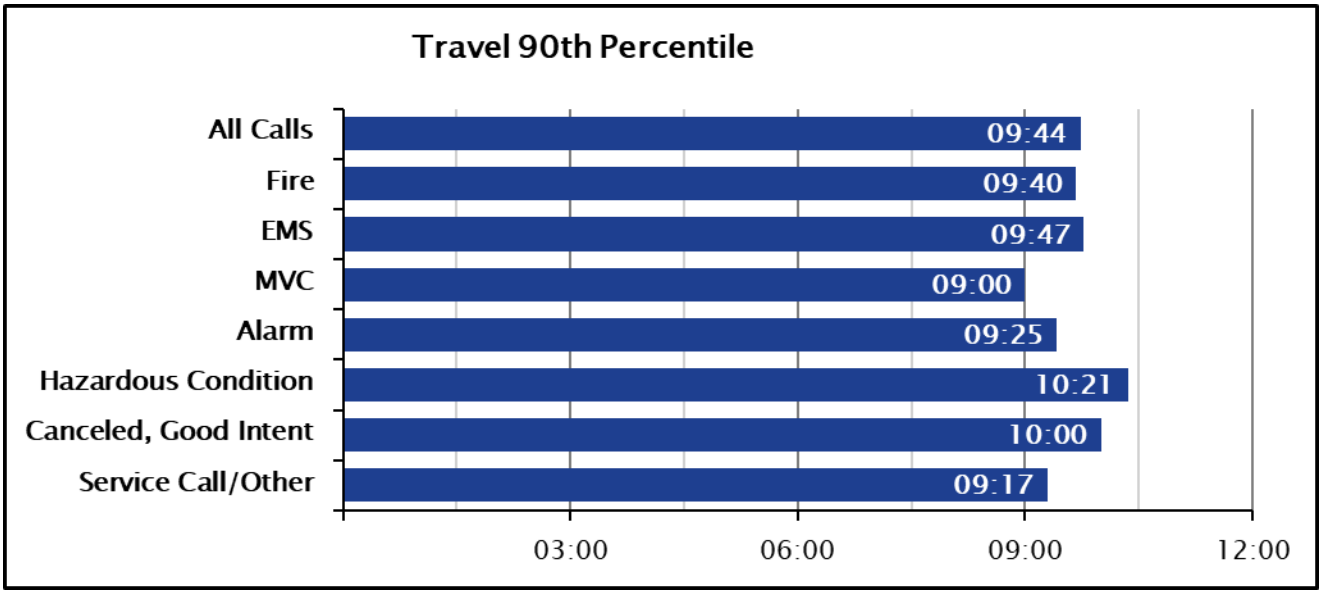
## Travel Time

The measure of time between the apparatus responding and arriving at the emergency scene is known as travel time. For this measure, there is one applicable standard, as illustrated below.

| Standard | Performance |
|---|---|
| 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* | 4 minutes at the 90th percentile |

The following figure illustrates the travel time for the first responding units.

Figure 47. ESD7 Travel Time Performance, 2022–2024.




| Incident Location | 90th Percentile |
|---|---|
| ESD7 | 10:00 |
| City | 06:12 |

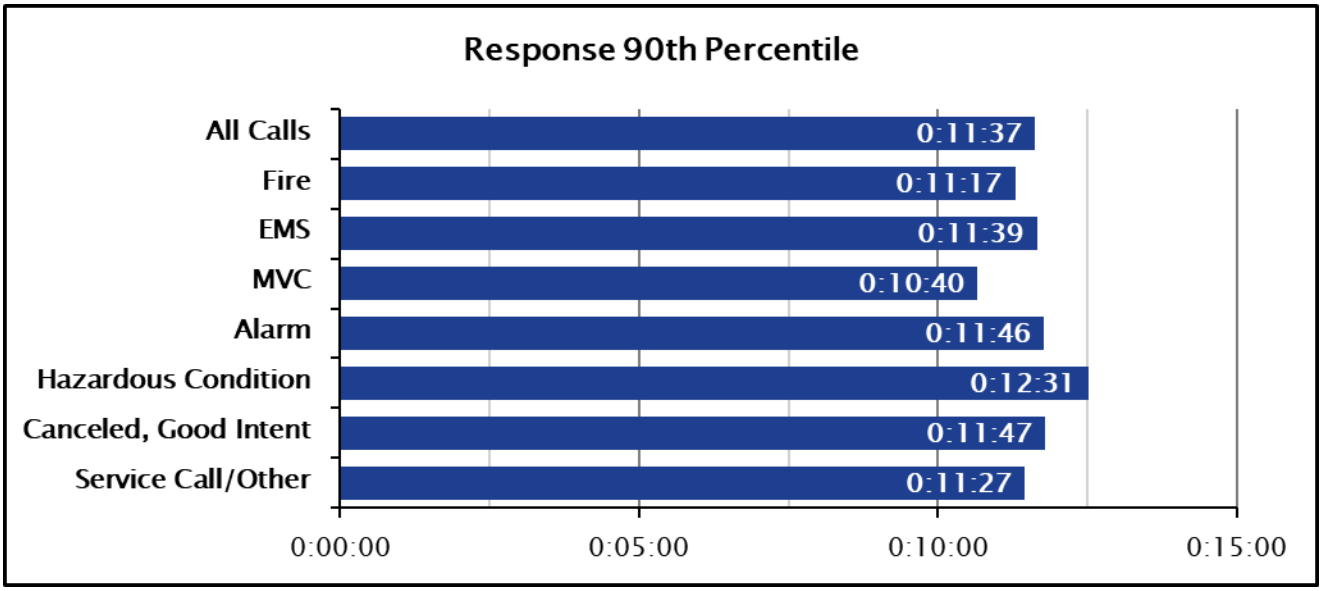
## Response Time

The time between dispatching units and arriving at the emergency scene is known as response time. There is no specific applicable standard for this measure. However, the following figure illustrates expected performance by combining the individual component standards.

| Standard | Performance |
|---|---|
| Turnout Time | Fire and Special Operations Incidents<br>80 seconds at the 90th percentile<br><br>All Other Incidents<br>60 seconds at the 90th percentile |
| Travel Time | 4 minutes at the 90th percentile |
| Combined | Fire and Special Operations Incidents<br>5 minutes, 20 seconds at the 90th percentile<br><br>All Other Incidents<br>5 Minutes at the 90th percentile |

The following figure illustrates the response time for the first responding units.

Figure 48. ESD7 Response Time Performance, 2022–2024.




| Incident Location | 90th Percentile |
|---|---|
| ESD7 | 12:05 |
| City | 07:57 |

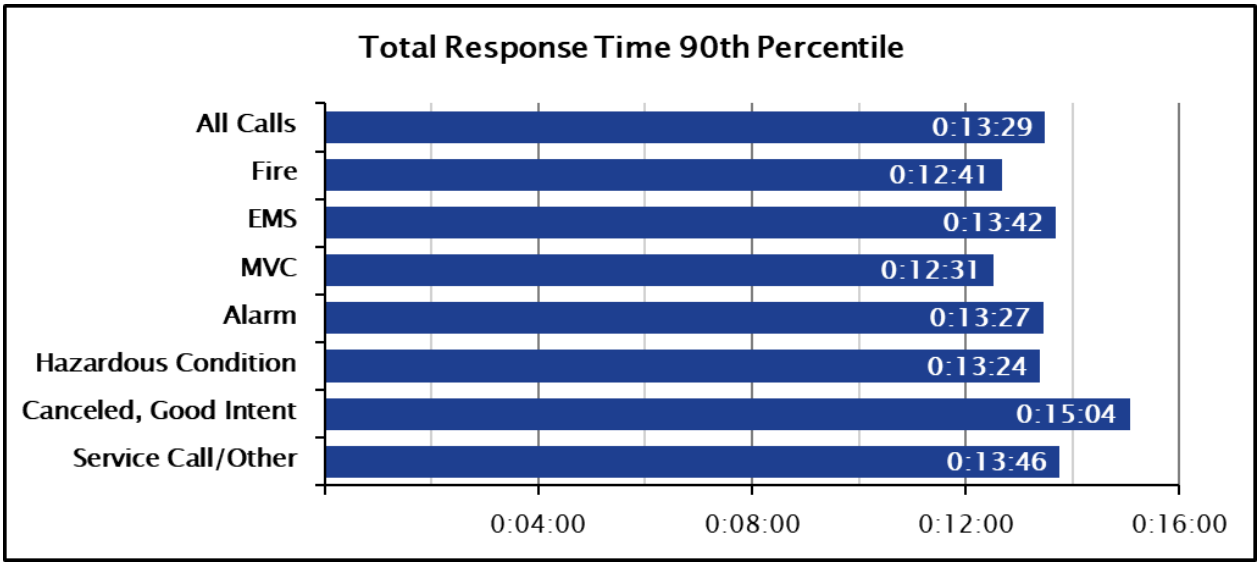
## Total Response Time

The time between answering the 911 call and arriving at the emergency scene is known as total response time. There is no specific applicable standard for this measure. However, the following figure illustrates expected performance by combining the individual component standards.

| Component | Performance |
|---|---|
| Alarm Handling Time | 60 seconds at the 90th percentile |
| Turnout Time | Fire and Special Operations Incidents<br>80 seconds at the 90th percentile<br><br>All Other Incidents<br>60 seconds at the 90th percentile |
| Travel Time | 4 minutes at the 90th percentile |
| Combined | Fire and Special Operations Incidents<br>6 minutes, 20 seconds at the 90th percentile<br><br>All Other Incidents<br>6 Minutes at the 90th percentile |

The following figure illustrates the total response time for the first responding units.

Figure 49. ESD7 Total Response Time Performance, 2022–2024.




| Incident Location | 90th Percentile |
|---|---|
| ESD7 | 13:55 |
| City | 10:15 |

## Mutual and Automatic Aid

Fire departments nationwide enter into agreements with neighboring agencies whereby resources are shared. Within an automatic aid agreement, resources from all agencies are included in an initial dispatch to the incident. Within a mutual aid agreement, outside agency resources are only dispatched upon the request of the primary agency.

The following figure illustrates the agreements currently in place for KCESD7.

Figure 50. Automatic & Mutual Aid Agencies.

| Agency | Agreement Type |
|---|---|
| Able Springs Volunteer Fire Department | Mutual |
| College Mound Volunteer Fire Department | Mutual |
| Combine Volunteer Fire Department | Mutual |
| Forney Fire Department | Mutual |
| Kaufman County Fire Marshal's Office | Mutual |
| Kaufman Fire Department | Mutual |
| Kaufman Volunteer Fire Department | Mutual |
| Scurry Volunteer Fire Department | Mutual |
| Seagoville Fire Department | Both |
| Terrell Volunteer Fire Department | Mutual |

As with other information, the use of automatic and mutual aid is documented within the system for each response. The following figure illustrates the use of automatic and mutual aid during the study period. In 2024, the CVFD provided

Figure 51. ESD7 Aid Given/Received, 2020–2024.

| Description | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Mutual aid received | 14 | 15 | 26 | 10 | 15 |
| Automatic aid received | 6 | 3 | 3 | 4 | 1 |
| Mutual aid given | 36 | 47 | 51 | 17 | 6 |
| Automatic aid given | 16 | 21 | 19 | 8 | 10 |
| Other aid given | 2 | 2 | 0 | 0 | 1 |

# Program and Special Services Deployment

## Emergency Medical Services

Emergency Medical Services (EMS) are the largest component of emergency response within fire service organizations that respond to EMS incidents.

The CVFD is licensed as a First Responder Organization (non-transport) and provides basic life support (BLS) and advanced life support (ALS) care. CareFlite, a 501(c)3 non-profit corporation, provides county-wide ground ambulance transport services under a five-year contract. The Kaufman County Office of Emergency Management manages and oversees contract management and oversight.

The Assistant Chief and EMS Captain oversee EMS activities in addition to other departmental responsibilities. EMS programmatic duties include managing training and certifications, agency licensing, patient documentation, equipment maintenance, supply maintenance, and patient care quality assurance.

Dr. Simondson is the Kaufman County Medical Program Director (MPD). The MPD provides training and medical oversight, reviews patient care reports, and serves as a liaison with the hospital(s).

## Technical Rescue Services Support and Response Capability

The department provides awareness-level technical rescue response and automobile extrication training. For incidents requiring operations and technician-level intervention, assistance is sought from the Dallas, Seagoville, or Garland Fire Departments. While many CVFD personnel possess diverse technical rescue certifications and gain experience from other agencies, the department lacks a formalized program and the necessary equipment to enhance its response capabilities. Nevertheless, the department provides training courses for these disciplines upon request.

## Haz-Mat Services Support and Response Capability

The district provides an awareness-level response to hazardous material incidents. Mutual aid support is necessary from the City of Dallas or the Mesquite Fire Department for technician-level incidents.

The Kaufman County Office of Emergency Management is the County's Hazardous Materials Designated Officer. Additionally, this office has an agreement with a private contractor to enhance response capacity, mitigation, and recovery (clean-up) efforts. All CVFD part-time and volunteer personnel receive training up to the Awareness level.

## Life Safety Services

### Public Education

Providing fire and life safety education to the public is essential for minimizing the number of emergencies and training the community to take appropriate actions in the event of an emergency. Life and fire safety education offers the best opportunity to reduce the effects of fire, injury, and illness on the community. The department provides various traditional fire department public education and outreach programs, including:

- National Fire Prevention Week
- When to Call 9-1-1
- Show and Tell events
- Career Days at local schools
- Station Tours
- City of Crandall Parades and community events

The Assistant Chief oversees public education, outreach scheduling, and delivery, with a focus on community events and Fire Prevention Week.

## Inspection Services

According to the Kaufman Fire Marshal, CVFDs involvement in the development review process includes attending pre-development meetings, overseeing tests and inspections, and ensuring compliance with fire codes when notified and available. He also noted that their office has had difficulties tracking development activities, especially in unincorporated areas, resulting from a lack of coordination with cities on projects within the ETJ. Improving data collection and enhancing collaboration among agencies and jurisdictions are key priorities for better coordination in the growth and development management process.

### *Kaufman County*

The Kaufman County Fire Marshal's Office employs nine staff members, including a plan review team of three employees. The remaining employees serve dual roles as both inspectors and investigators. Mike Taylor was appointed Fire Marshal in August, and a former City of Dallas fire marshal serves as the Chief Inspector. The office has restructured and cross-trained staff so inspectors can conduct investigations. Their responsibilities include reviewing commercial buildings, conducting site plan evaluations, ensuring fire code compliance, investigating incidents, and performing inspections for complex projects. Their experience with large developments from other jurisdictions helps them effectively manage Kaufman County's growth.

### *City of Crandall*

The code enforcement officer manages regulations within city limits in the City of Crandall. For larger planning and services, the city contracts with Bureau Veritas and uses the County Fire Marshal's office for fire investigation services on a case-by-case basis. While trained fire marshals assist with investigations, they do not generate official reports.

The city is shifting from generalist development services to more specialization in various roles. The current officer also serves as the fire inspector, and plans to hire a dedicated code enforcement officer are underway. Developing a structured pre-development meeting process, the city utilizes Bureau Veritas for external inspection support, regularly updates and adopts the International Fire Code, and collaborates with the county fire marshal to inspect large commercial and public buildings as part of its strategy to improve development services.

To enhance development services, the city aims to establish clear roles for distinct functions, create protocols for pre-development meetings, and consult with neighboring jurisdictions, such as Forney, to adopt best practices.

The specific development services transition plan involves transitioning from the current structure, where multi-role staff, such as the city secretary, handle utility and payroll, to a future structure that includes a Building Official, Code Enforcement Officer, and Permit Technician.

*Discussion*

A strong fire prevention program based on local risks, codes, and ordinances reduces property loss, life loss, and community disruption from catastrophic fires. The municipal code management official enforces building and fire codes within the city limits of Crandall. The Kaufman County Fire Marshal's Office manages fire code management and investigation for the area served by KCESD7.

CVFD's role in development site plan review, code management, and investigation was described as "inconsistent" in most cases. This inconsistency underscores the importance of having a cohesive and comprehensive fire prevention strategy that includes all relevant agencies and stakeholders. By integrating CVFD more consistently into the review and enforcement processes, the community can benefit from a more robust and effective fire prevention program. Currently, the department participates in pre-fire planning and building familiarization walk-throughs at the company level.

The involvement of fire service first responders in the code enforcement process is crucial for several reasons. Their specialized knowledge and experience in identifying fire hazards and understanding fire behavior ensure that fire codes are met and that effective measures are taken to prevent fires and minimize damage.

First Responders provide hands-on expertise in code enforcement, leveraging their unique perspective to improve the process of educating property owners and occupants about the dangers of fires and how to mitigate those potential risks.

Having fire service first responders involved also fosters better communication and collaboration between various stakeholders, including building owners, developers, and local authorities.

This collaborative approach ensures that fire safety measures are integrated seamlessly into the construction and maintenance of buildings. In a fire, first responders familiar

with the building's layout and fire safety measures can respond more efficiently, potentially saving lives and reducing property damage. Overall, the fire service first responder perspective is invaluable in the code enforcement process, ensuring that fire safety codes are practical, effective, and adhered to, ultimately safeguarding communities and enhancing public safety.

# Support Services

## Training

The department has a comprehensive training program. As an agency regulated by the Texas Commission on Fire Protection (TCFP), it must meet specific training standards for all personnel, particularly for Basic Structural Firefighter (NFPA Firefighter II), within one year of appointment.

As a general policy, the department requires certification through internal training for state accreditation as Basic (NFPA Firefighter I) and Advanced (NFPA Firefighter II) Firefighter certifications, as mandated by the Texas State Firefighters' and Fire Marshals' Association, before assigning personnel to operational firefighter duties.

All personnel have access to continuing education (CE) provided by the department. They also receive CE training from independent third-party sources, such as other employers, local departments, and regional or state-sponsored training.

### Training Administration

Department training administration is a shared responsibility between the Assistant Chief and a part-time captain, which is then delegated to company officers.

The department offers a robust training program that addresses the immediate needs of continuing education for all personnel, as well as fire/EMS certification for volunteers. This program emphasizes fire training, EMS training, and company development. All personnel have access to EMS and leadership training opportunities; others typically offer this training at the regional or state level. The administration of department training is a shared responsibility between the Assistant Chief and a part-time captain, which is then delegated to the company officers.

## Training Facilities

The CVFD lacks a dedicated training facility. As a result, the department currently must travel at least 30 miles to perform live fire training. A fire department needs immediate access to specialized training props, a structured training environment, and drill grounds to conduct meaningful and practical training. Both classroom education and outdoor training are essential for equipping emergency responders with the necessary knowledge and skills. A training facility or drill ground is vital for this purpose. These facilities provide a controlled and safe environment for simulating emergencies, enabling emergency personnel to hone and assess their skills. Training involves developing individual and group skills in operating firefighting equipment and fire apparatus.

The department has limited local training opportunities, as it primarily relies on occupied or vacant buildings and parking lots for manipulative and multi-company training.

### *Discussion*

The CVFD faces constraints regarding training props and drill facilities, primarily because it must travel 30 miles to the nearest fire training center. As a result, most practical training currently occurs in occupied or vacant structures and parking lots. Additionally, finding land for facility development is increasingly complex within the service area due to rapid residential development.

The National Fire Protection Association Standard 1402 (Guide to Building Fire Service Training Centers) addresses the design and construction of fire training facilities. ESCI observes that without suitable training facilities, the departments may forgo essential training, which could lead to diminished safety.

Proficient emergency responders must be able to handle the emergencies they encounter confidently. Best practices recommend that emergency workers have access to training grounds for repetitive drills and skill development. Training is crucial to a fire department's safety and accident prevention program. An effective and ongoing training program leads to safer, more efficient emergency operations.

Building a single training facility that meets industry standards for classrooms, practice grounds, training towers, live-fire structures, and props is a significant long-term capital investment influenced by design and land costs. Furthermore, the ongoing expenses of operating and maintaining such a facility may necessitate innovative partnerships, such as shared ownership.

The CVFD has a clear need but may face challenges in fully financing the construction of the facility. The following options might be considered: First, forming a cooperative partnership with a regional outlook that includes not only fire departments but also law enforcement, emergency management, and other local agencies could aid in cost-sharing. Second, seeking private funding can be beneficial, as collaborative efforts significantly improve the chances of securing grants.

## 911 Communications

The Kaufman County 911 Center is vital to the county's emergency response system, coordinating with multiple agencies to ensure comprehensive public safety. The center dispatches emergency calls to various services, including the Kaufman County Sheriff's Office, local police departments, fire departments, and emergency medical services. This coordination ensures that the appropriate responders are quickly sent to the scene of an emergency, whether it involves law enforcement, fire suppression, or medical assistance.

The center is staffed by a dedicated team of dispatchers who work around the clock to manage incoming calls and dispatch the necessary services. The Kaufman County Regional Communications Center handles all dispatch duties, ensuring efficient and effective communication between the public and emergency responders. While the exact number of dispatchers can vary, the center typically employs a sufficient number to maintain continuous operations and provide timely responses to emergencies.

# Future Projections

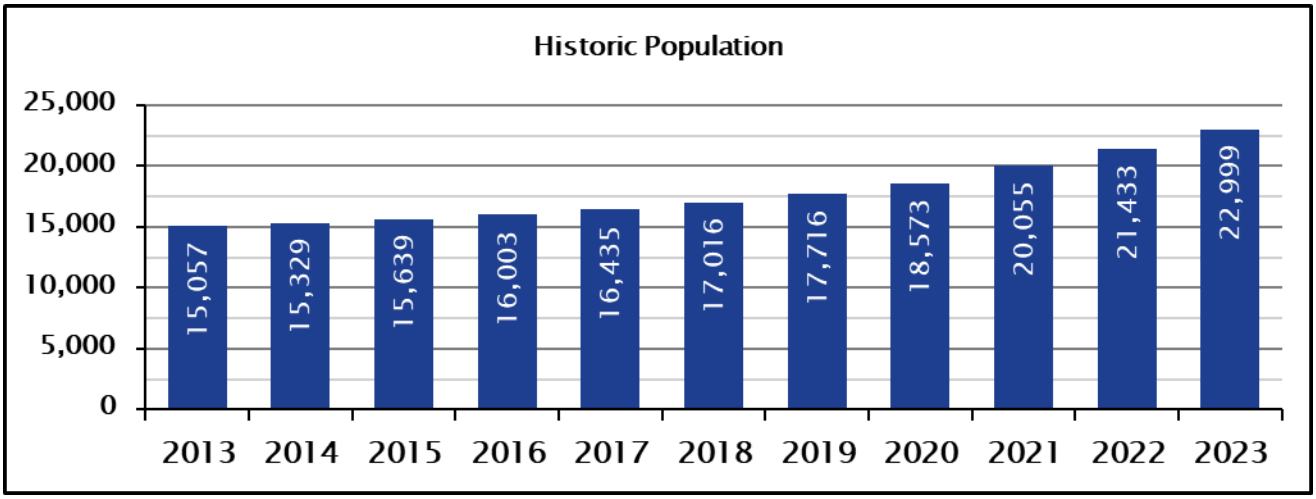
The project proceeds with assessing future community conditions, service demand, and fire protection risks that the department can be expected to encounter. ESCI will analyze potential growth projections and interpret their impact on emergency service planning and delivery.

## Population Growth Projections

### Population History

According to data from the American Community Survey (U.S. Census Bureau), the population within the KCESD7 service area increased by 52.7% from 2013 to 2023, as shown in the following figure. This equates to a compounded annual growth rate of 4.3%.

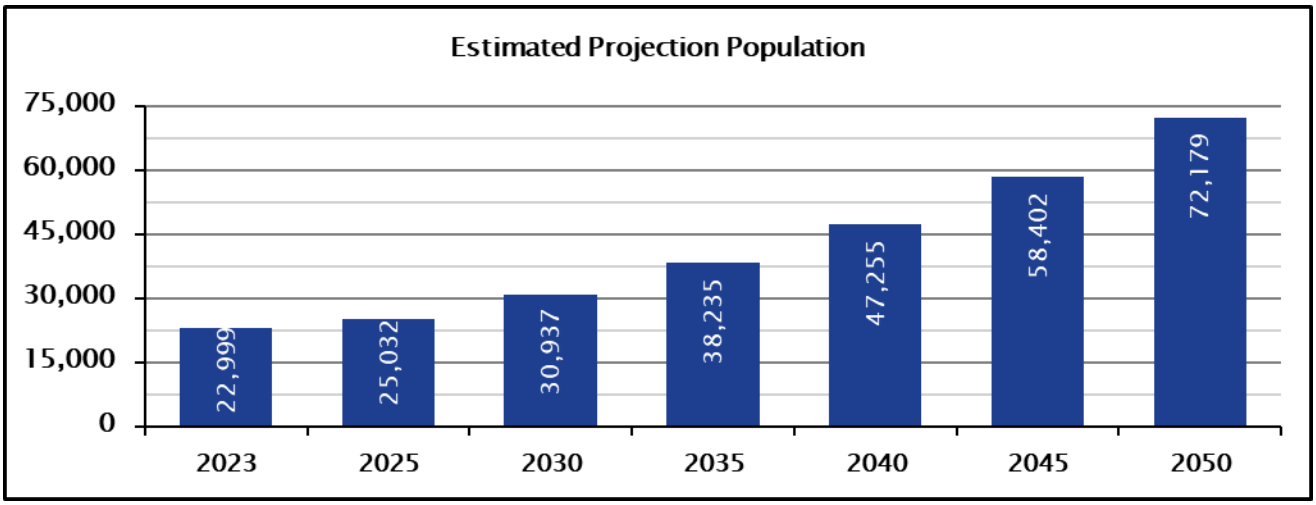
Figure 52. KCESD7 Population, 2010–2023.



## Population Projection

Future population growth may be theorized using the compounded annual growth rate of 4.3%, as illustrated in the following figure.

Figure 53. KCESD7 Population, 2023–2050.



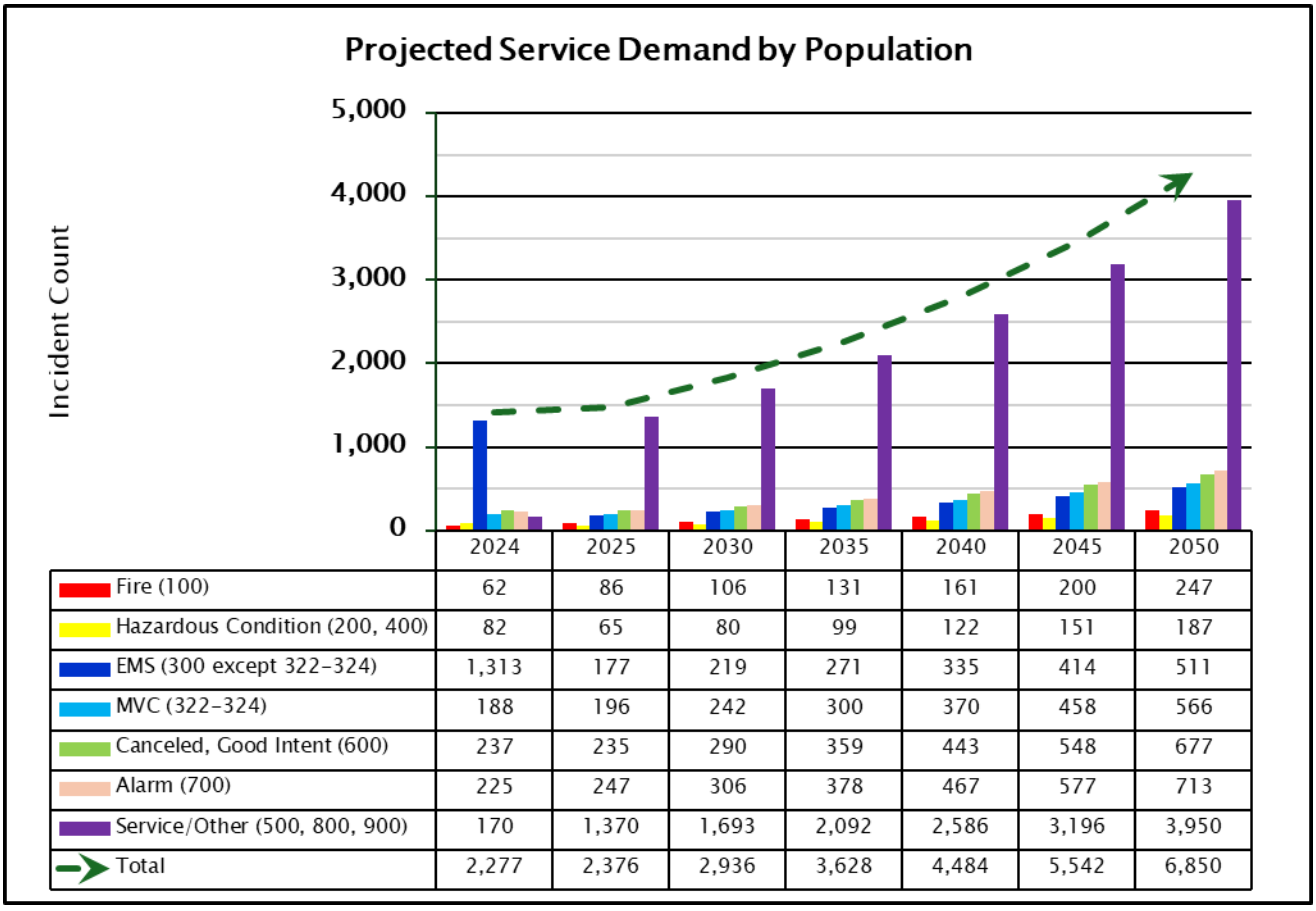
## Service Demand Projections

ESCI uses two formulas to compute future service projections: incident historical and population trends. These two trends provide upper and lower boundaries for forecasting call volumes.

### Future Service Demand by Population

By evaluating the current number of incidents per 1,000 population and applying that to the projected population growth from the preceding figure, a lower future service demand boundary within the community can be forecasted, as illustrated in the following figure.

Figure 54. KCESD7 Projected Service Demand by Population Change, 2025–2050.

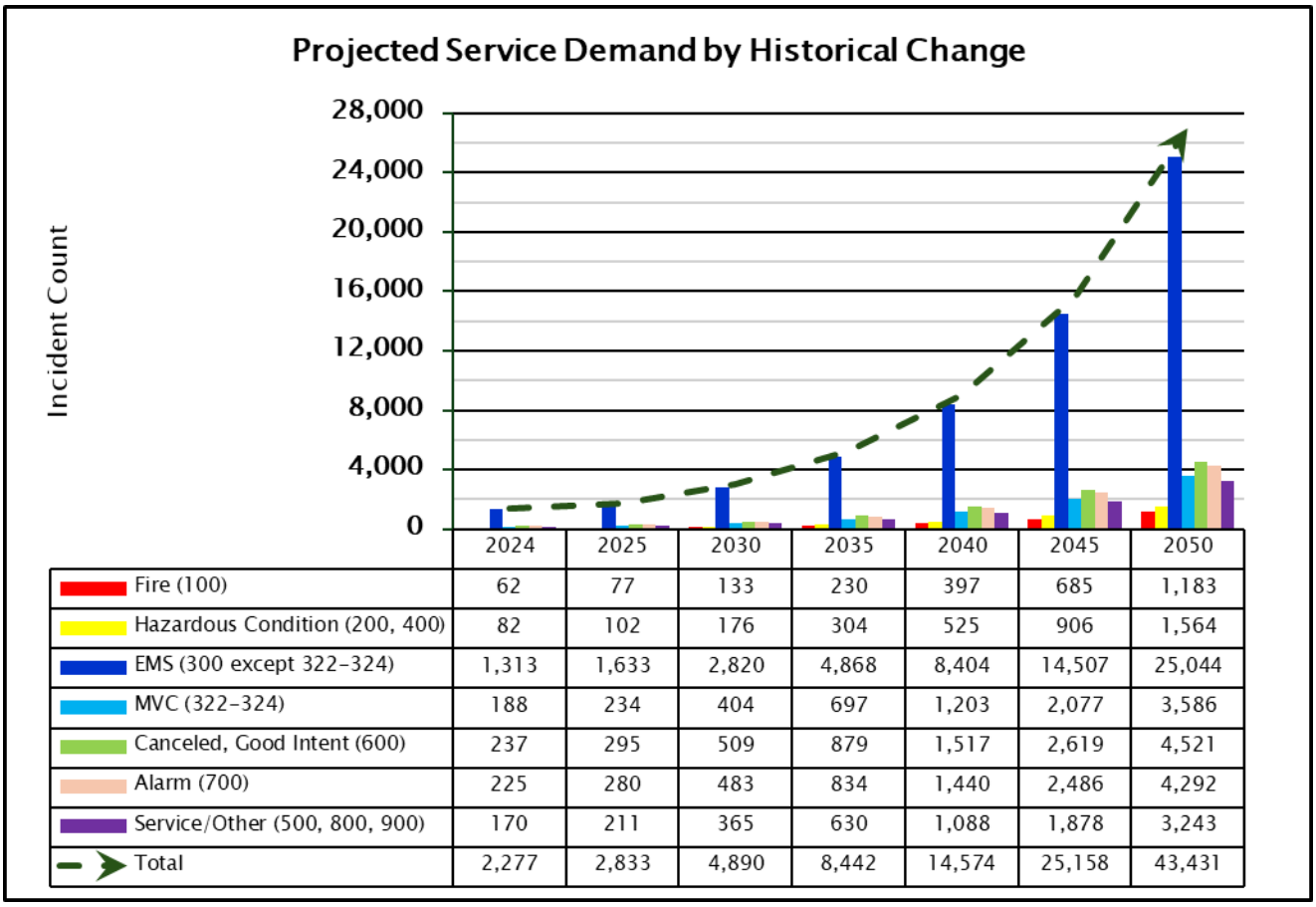



| | 2024 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---|---|---|---|---|---|---|
| Fire (100) | 62 | 86 | 106 | 131 | 161 | 200 | 247 |
| Hazardous Condition (200, 400) | 82 | 65 | 80 | 99 | 122 | 151 | 187 |
| EMS (300 except 322–324) | 1,313 | 177 | 219 | 271 | 335 | 414 | 511 |
| MVC (322–324) | 188 | 196 | 242 | 300 | 370 | 458 | 566 |
| Canceled, Good Intent (600) | 237 | 235 | 290 | 359 | 443 | 548 | 677 |
| Alarm (700) | 225 | 247 | 306 | 378 | 467 | 577 | 713 |
| Service/Other (500, 800, 900) | 170 | 1,370 | 1,693 | 2,092 | 2,586 | 3,196 | 3,950 |
| Total | 2,277 | 2,376 | 2,936 | 3,628 | 4,484 | 5,542 | 6,850 |

## Future Service Demand by Historical Change

Applying the compounded annual growth rate (11.5%) derived from the incident type analysis, an upper boundary for future service demand within the community can be forecast, as illustrated in the following figure.

Figure 55. ESD7 Projected Service Demand by Historical Change, 2025–2050.




| | 2024 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---|---|---|---|---|---|---|
| Fire (100) | 62 | 77 | 133 | 230 | 397 | 685 | 1,183 |
| Hazardous Condition (200, 400) | 82 | 102 | 176 | 304 | 525 | 906 | 1,564 |
| EMS (300 except 322–324) | 1,313 | 1,633 | 2,820 | 4,868 | 8,404 | 14,507 | 25,044 |
| MVC (322–324) | 188 | 234 | 404 | 697 | 1,203 | 2,077 | 3,586 |
| Canceled, Good Intent (600) | 237 | 295 | 509 | 879 | 1,517 | 2,619 | 4,521 |
| Alarm (700) | 225 | 280 | 483 | 834 | 1,440 | 2,486 | 4,292 |
| Service/Other (500, 800, 900) | 170 | 211 | 365 | 630 | 1,088 | 1,878 | 3,243 |
| Total | 2,277 | 2,833 | 4,890 | 8,442 | 14,574 | 25,158 | 43,431 |

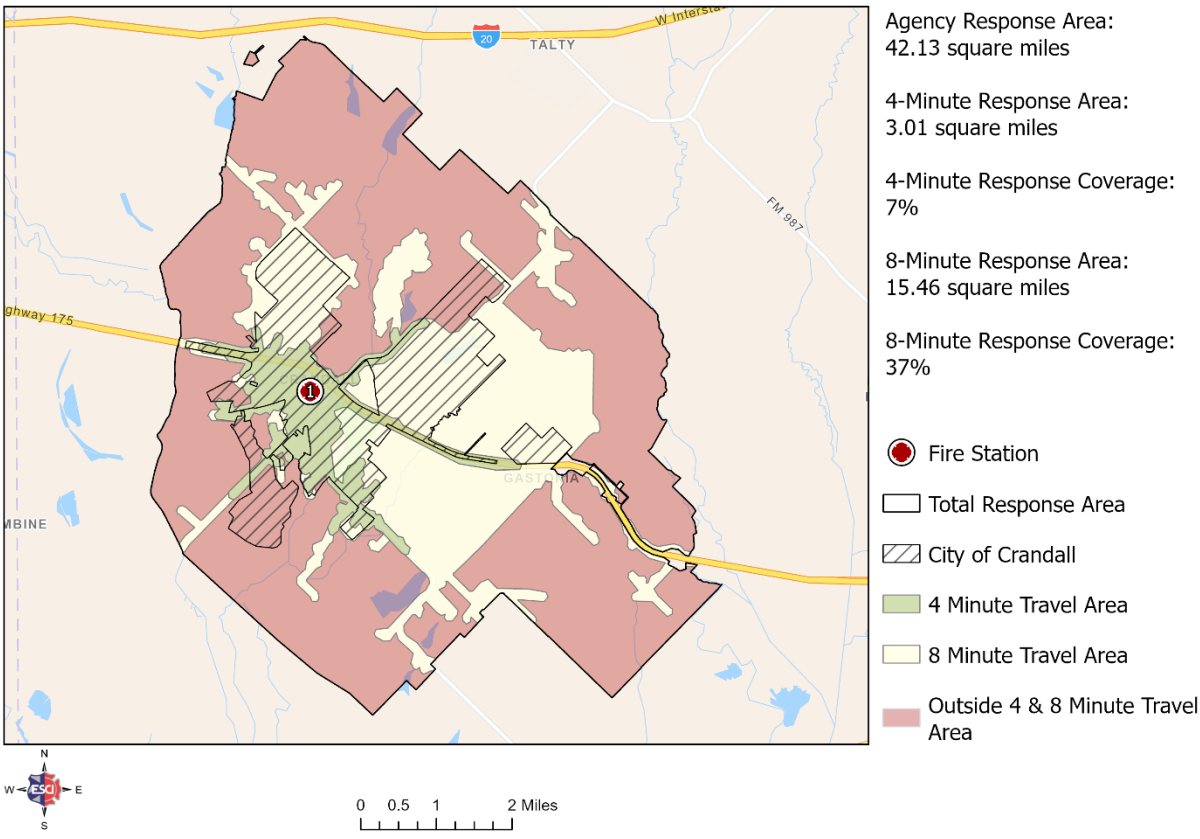
# Future Delivery System Modeling

## Potential Service from Mutual Aid Agencies

### First Due Response

Currently, the first due response zone (4-minute travel (green)) is provided by a single station, Crandall Station 1. Generally, primary response areas should encompass most of the jurisdictional boundary. However, the following analysis shows that the first due response zone can only protect 7% of the jurisdictional boundary.

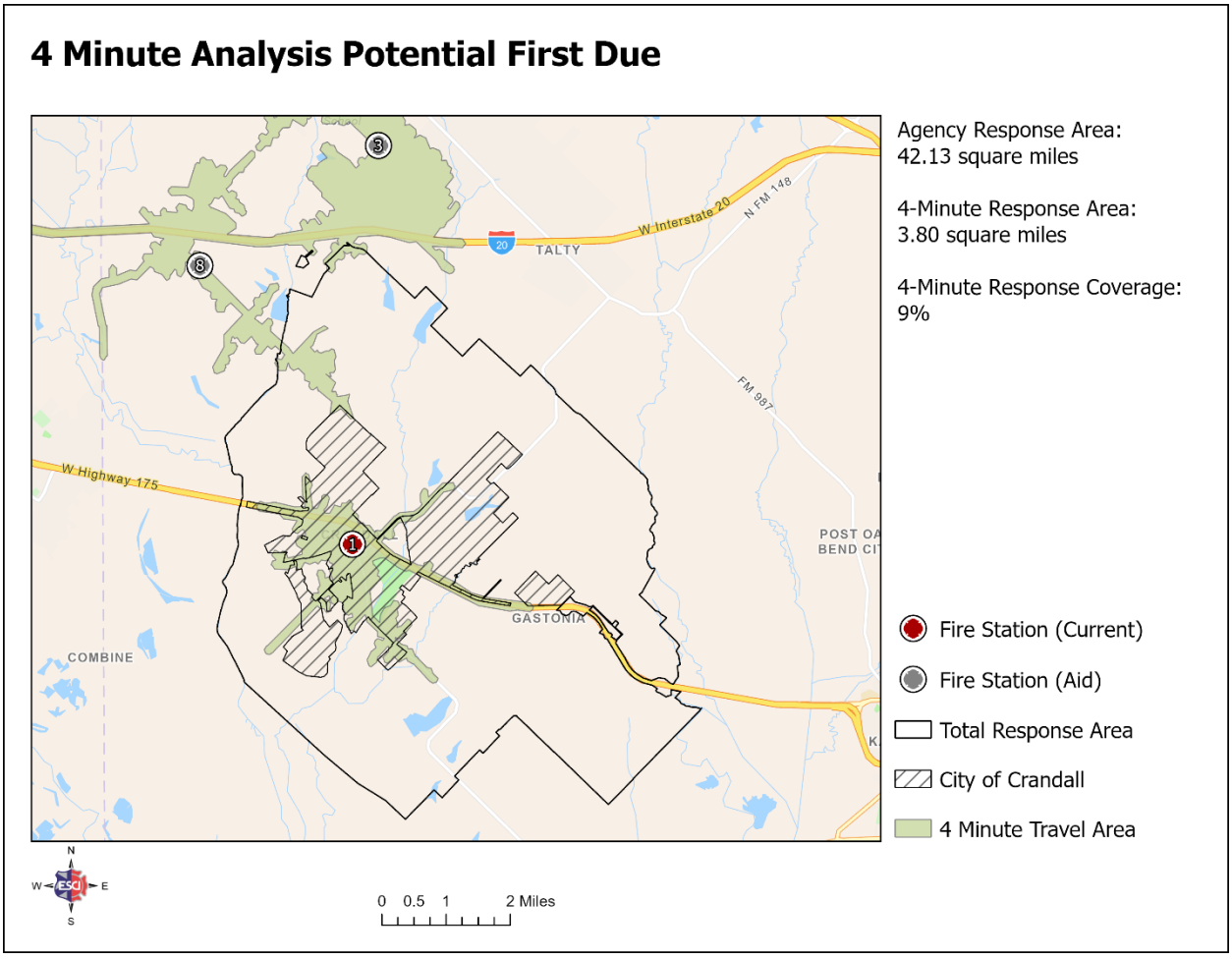
**4 Minute and 8 Minute Travel Time Model**



## Evaluation of Adjacent Facilities

Policymakers should consider fire protection infrastructure that may effectively provide service to the KCESD7 and CoC through a contract for service or other means from adjacent agencies. Therefore, ESCI evaluated the first due 4-minute travel distance from two of the closest mutual aid fire stations: Mesquite Fire Department Station #8, which is currently under Construction (FM 2757 & Buckingham Ct.), and Forney Fire Department Station #3. Based on the following analysis and mapping, neither station provides substantial coverage in the KCESD7 Service area, each covering approximately 1% of the service area for first-due protection. However, in the absence of the much-needed Station 2, each station should provide interim coverage.

Figure 56: Evaluation of First Due Mutual Aid

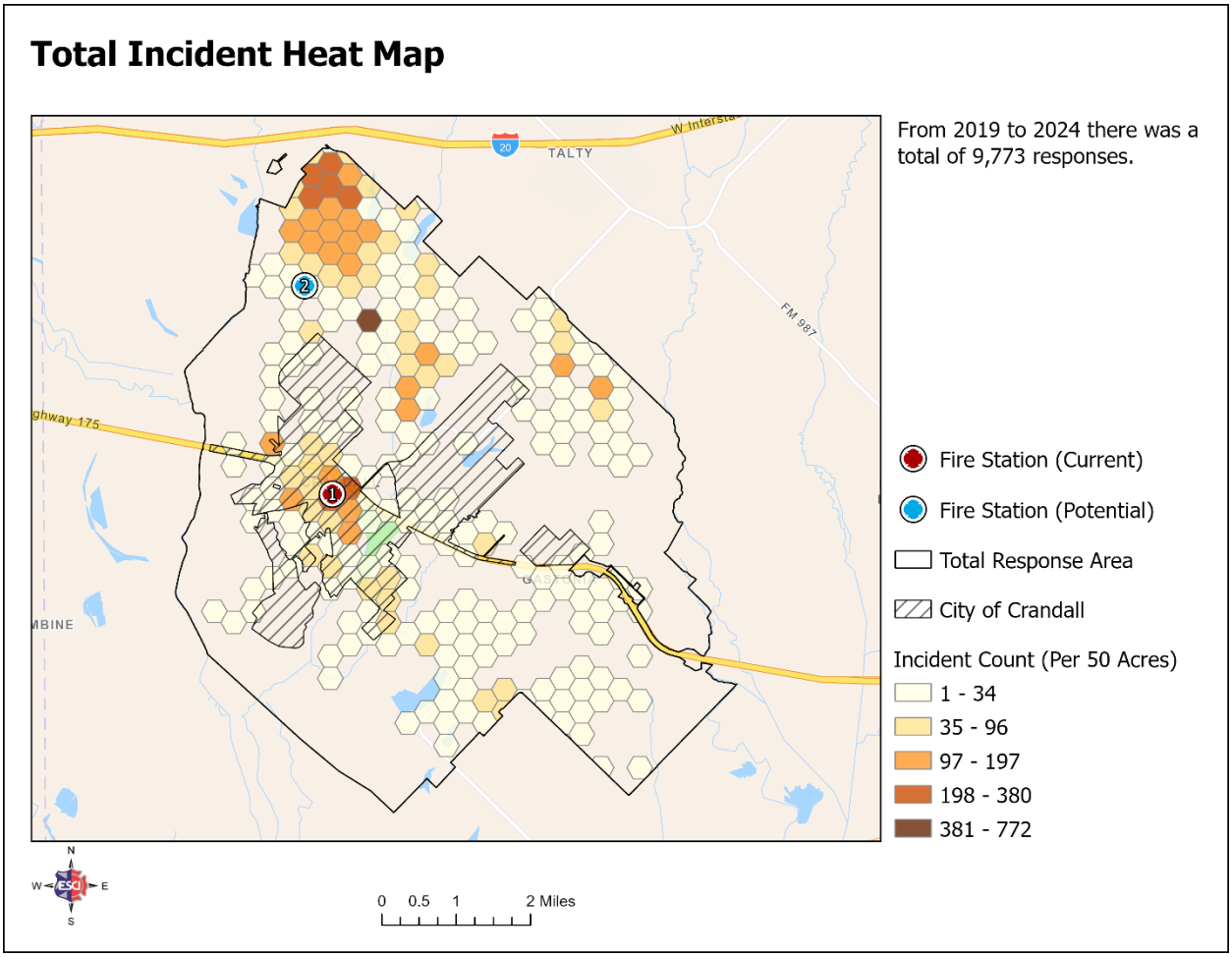


# Future Development

## Heartland

One of the fastest-growing areas in KCESD7 is located in the northern portion of the district, known as the Heartland development. This is a master-planned residential community located between Crandall and Forney. Spanning over 2,100 acres, it is designed to offer a balance of suburban living and urban accessibility. The development is expanding with new phases that will add hundreds of homes featuring a variety of lot sizes. The developer deeded two acres of property at the intersection of Kraft Road and Hometown Blvd to develop a fire station. The property is indicated in a blue Icon labeled as a potential Fire Station 2 overlayed with the total incident heat map.

Figure 57: Future Station 2

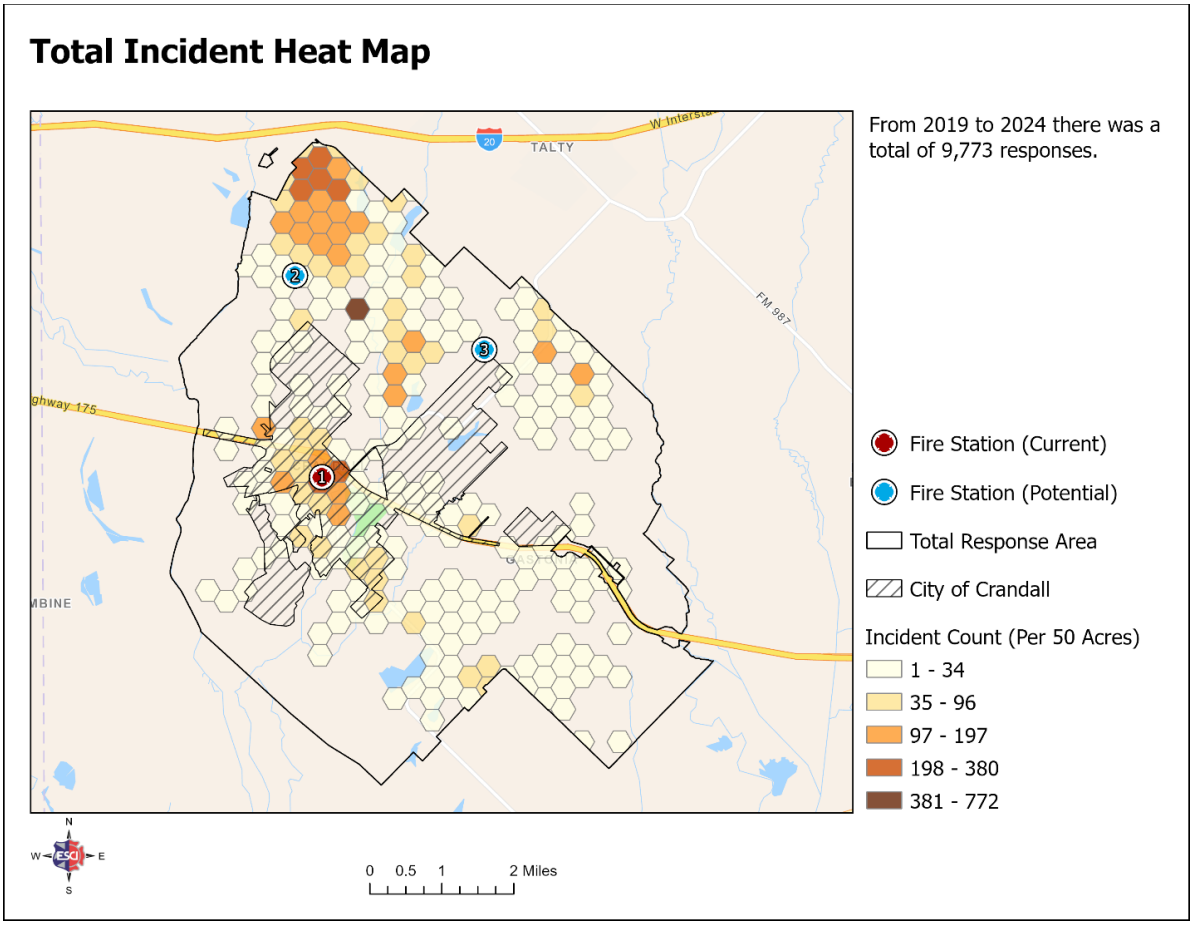


## Wildcat Development

Wildcat Ranch is another master-planned residential community in Crandall, located to the East. The development includes about 3,100 single-family homes. Nine residential phases are planned for complete build-out, with the first phase scheduled to commence in 2019. The planned development also includes a new elementary school and other amenities.

Chief Sheller stated that Crandall City and a developer are discussing property deeds for a future fire station at Blair Drive and Evans Road in the Wildcat Ranch Housing Development (Phase 4). The donated land will support a fire, EMS, and law enforcement facility. The two-acre site features water and sewer connections, while site improvements on CR 260, from 260 to 741, and down to CR 261 are now complete. DR Horton owns most of the nearby land, but the timeline for future road development is uncertain. The property for the potential station is marked with a blue icon labeled "Potential Fire Station 3."

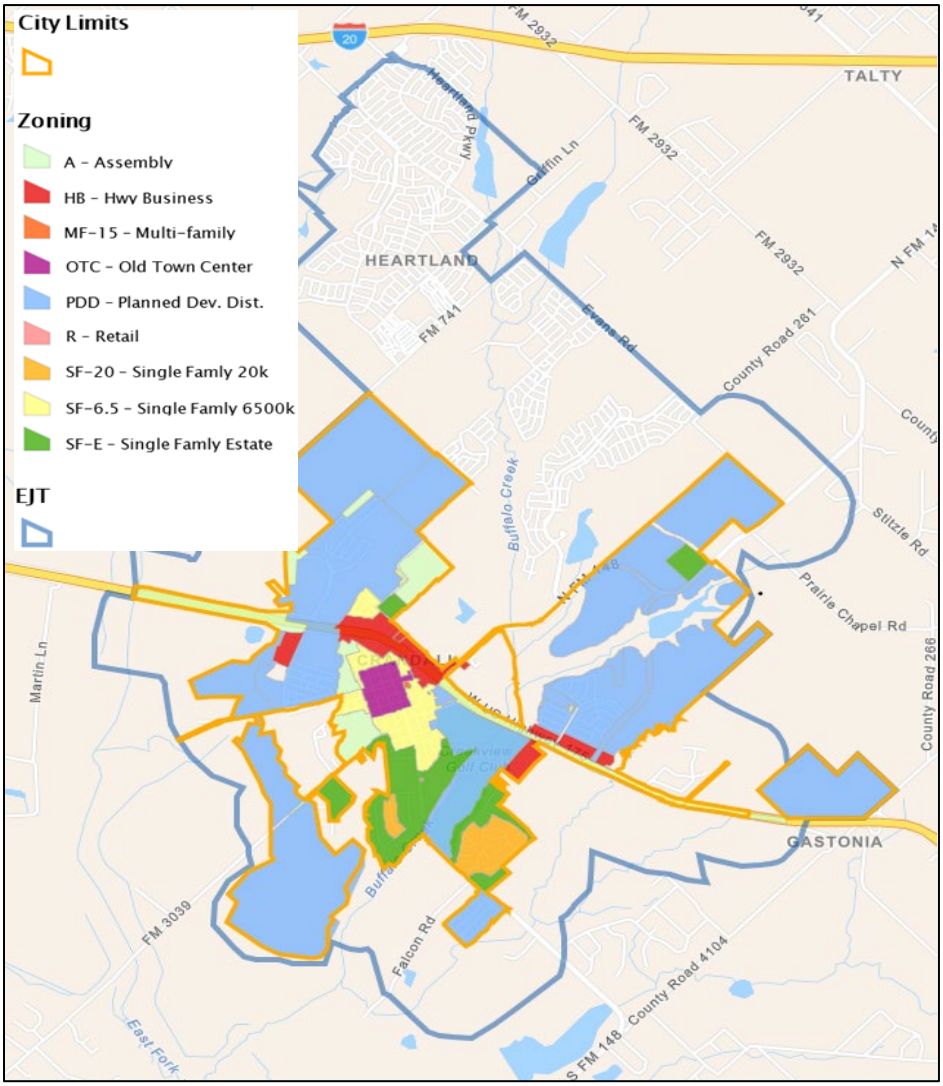
Figure 58: Future Station 3



## Southern Development within KCESD7

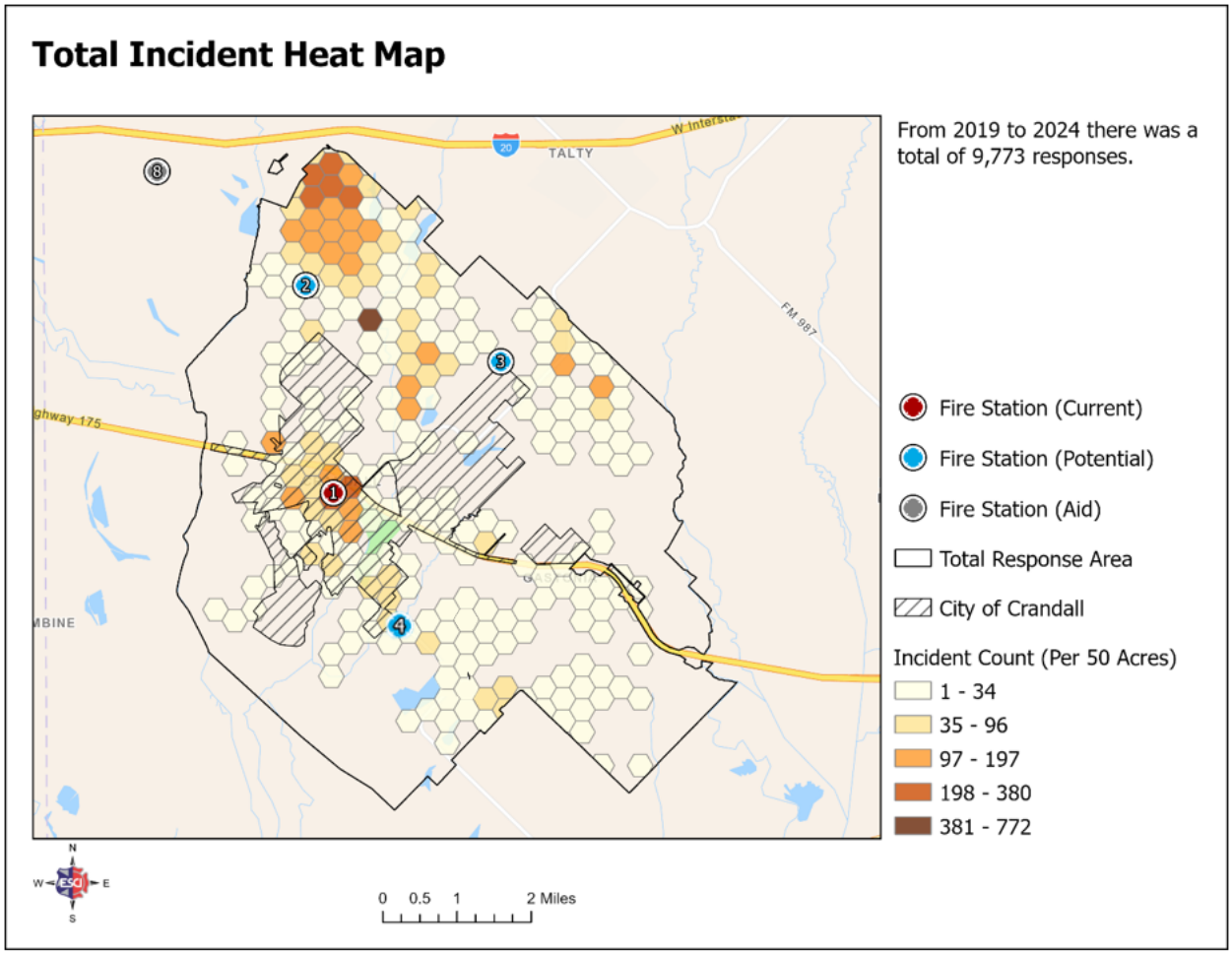
The CoC population has more than doubled since 2010 and is expected to continue growing, reaching over 10,000 residents by 2030, which will also influence growth within KCESD7. While much of KCESD7's growth is initially anticipated in the Northeast, the southern portion of KCESD7, outside the city's current boundary, is also expected to experience growth. The area South of the city and within KCESD7 encompasses approximately 15,000 acres of undeveloped land with existing and sparse housing developments. The following is the City of Crandall's Zoning map along with the ETJ boundary.

Figure 59: City of Crandall Zoning Map



Based on current incident demand, distribution, and concentration standards, ESCI has identified the proximity of “Potential Fire Station 4” as shown in the following figure. Several locations were evaluated to provide the maximum distribution and concentration coverage. Ultimately, based on the current street network, the chosen site is located near the intersection of South FM 148 and County Road 4104. However, locating a station within a quarter mile of that intersection will provide excellent coverage for the KCESD7. The following map depicts this potential location with the total incident heat map.

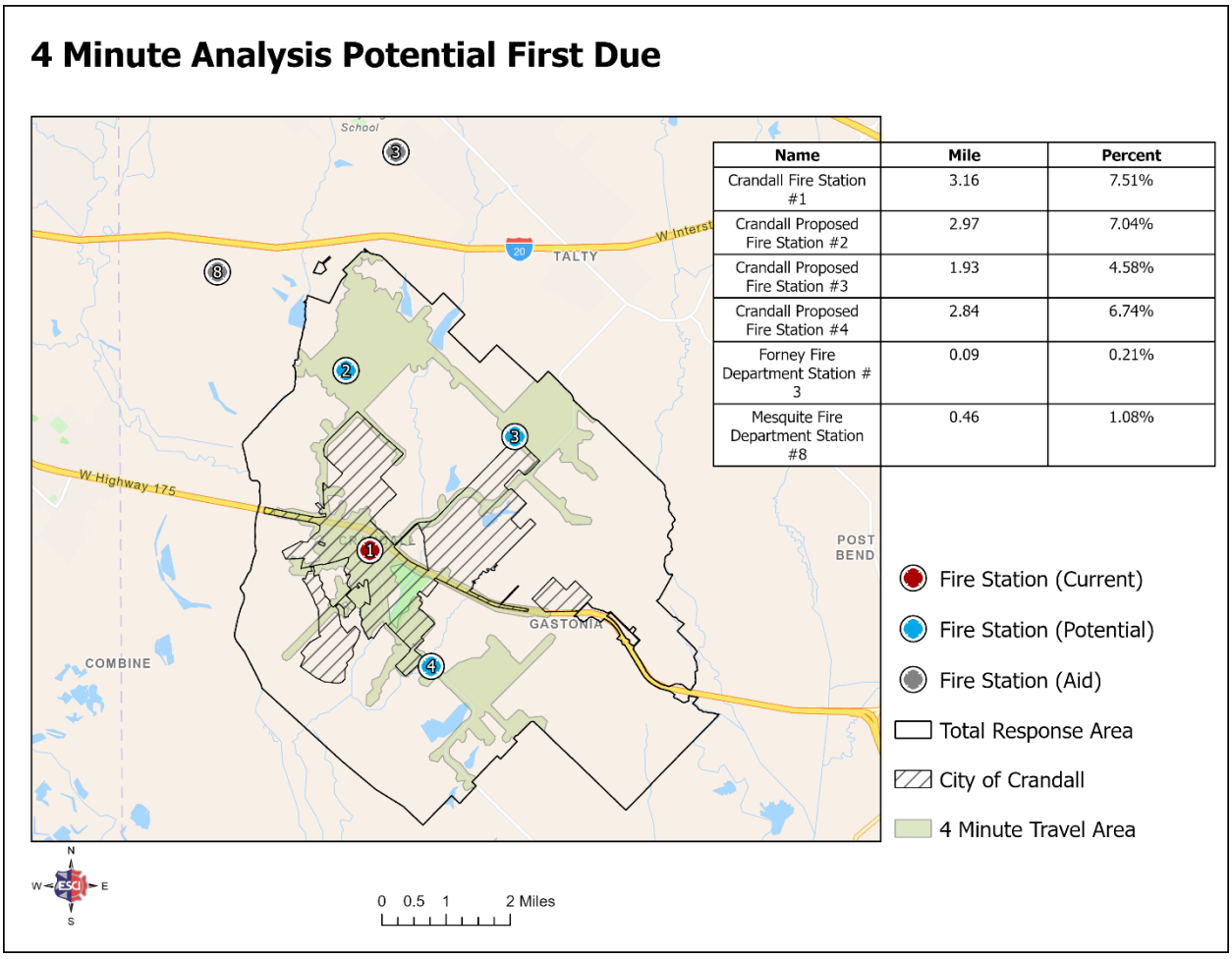
Figure 60: Future Station 4



## First Due Response (Distribution)

Based on existing facilities and available property deeded by developers, ESCI evaluated the first due response coverage from each facility. The following figure provides the 4-minute travel boundary from each existing and potential future facility. The addition of potential stations 2, 3, and 4 demonstrates an effective distribution of coverage to the northern, eastern, and southern portions of the KCESD7 service area. Station 1 marginally serves the KCESD7 boundary under first due standards, but does provide benefit for coverage within the effective response force, as will be described in the next section. ESCI was not able to model the bypass currently under construction between U.S. Highway 175 and Road 148. However, we are confident that the bypass will significantly improve the coverage of the future response boundary.

Figure 61: First Due with Potential Stations

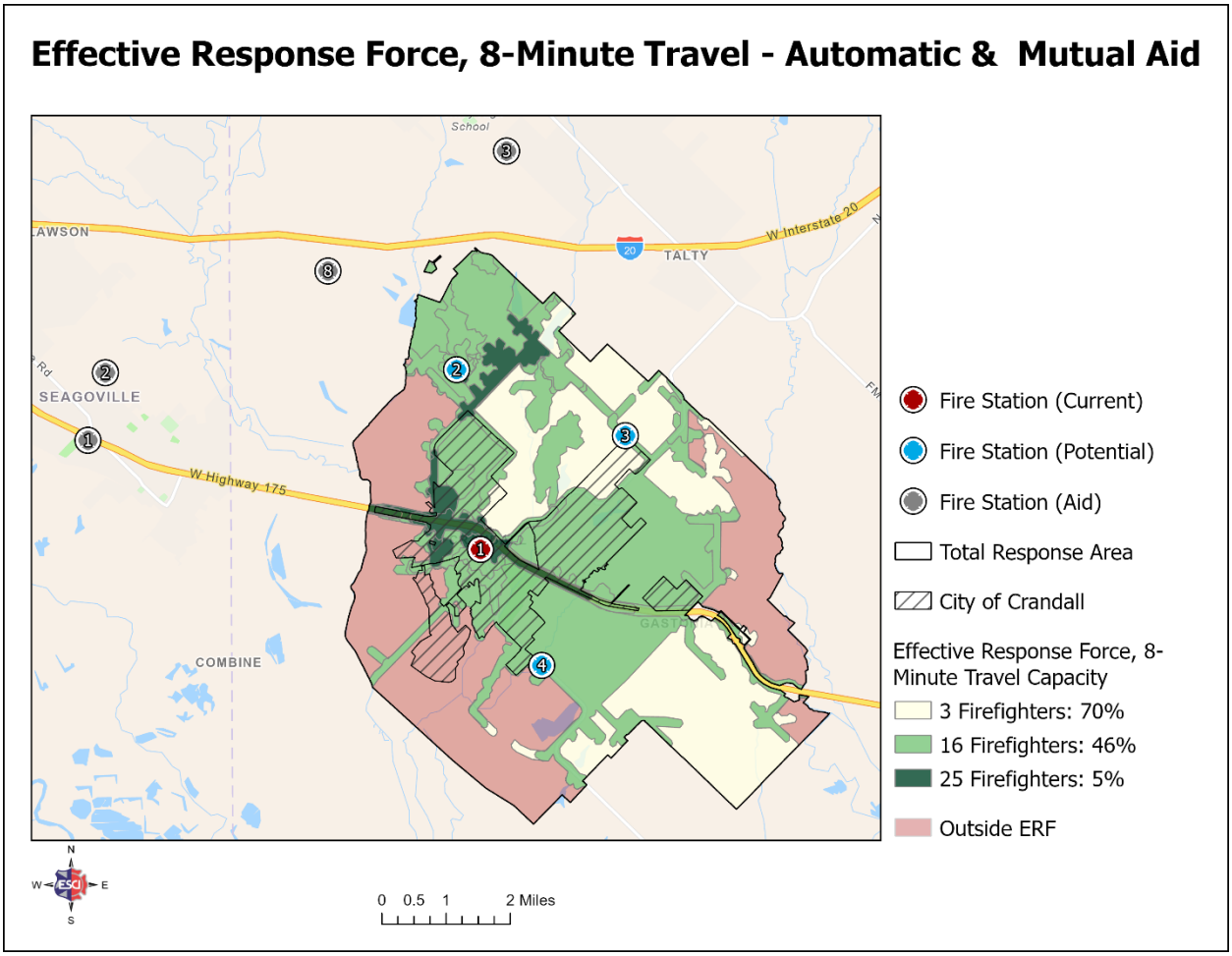



| Name | Mile | Percent |
|---|---|---|
| Crandall Fire Station #1 | 3.16 | 7.51% |
| Crandall Proposed Fire Station #2 | 2.97 | 7.04% |
| Crandall Proposed Fire Station #3 | 1.93 | 4.58% |
| Crandall Proposed Fire Station #4 | 2.84 | 6.74% |
| Forney Fire Department Station # 3 | 0.09 | 0.21% |
| Mesquite Fire Department Station #8 | 0.46 | 1.08% |

## Effective Response Force (Concentration)

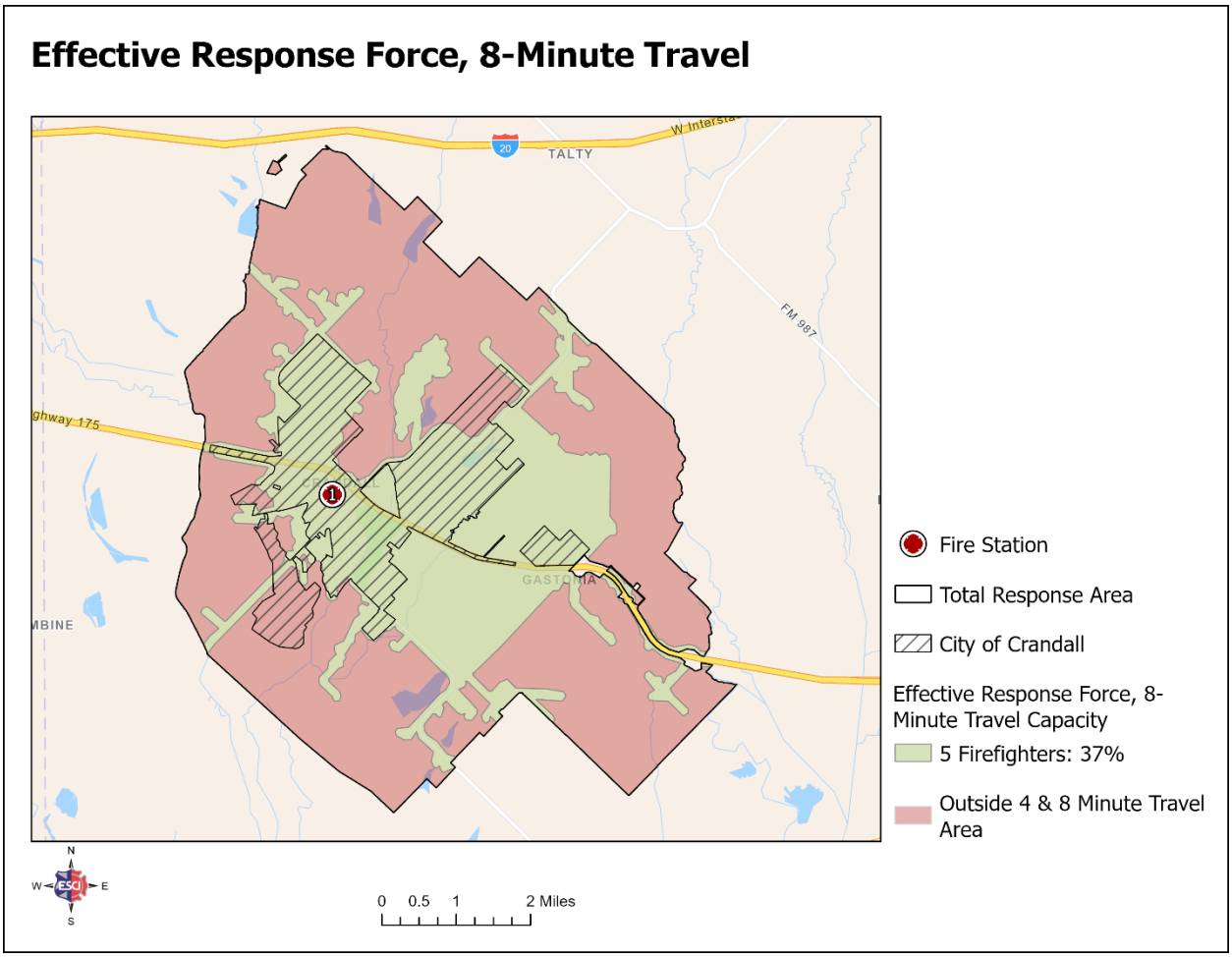
ESCI analyzed the Effective Response Force by incorporating the nearest fire stations of the Seagoville, Mesquite, and Forney fire departments, as well as Crandall's current and future fire station resources, to assess their contributions to serving both KCESD7 and CoC service areas. In this analysis, ESCI assumed that the five-person staffing remains in Station 1, adding three-person staffing for potential future Stations 2, 3, and 4. Significant improvement is noted as compared to the existing ERF capability. Using the NFPA 1710 standard, an 8-minute travel distance is utilized for this Effective Response Force (ERF) evaluation, which indicates that the assembly of 16 firefighters can cover 46% of the total jurisdictional boundary. The number of firefighters is sufficient to complete the simultaneous tasks required for a 2500-square-foot residential structure fire.

Figure 62: ERF Mutual Aid & Potential Stations



In contrast, the current ERF shows that only five firefighters can be assembled, protecting 37% of the jurisdictional boundary. This means that the current number of firefighters can only extinguish a vehicle, dumpster, or shed fire and would have to wait for distant mutual aid to effectively fight a residential or commercial structure fire. The following figure shows the coverage by five firefighters.

Figure 63: Current ERF Analysis



## Discussion

The first due response distribution analysis indicates that Mesquite Station 8 and Forney Station 3 cannot provide adequate coverage alone for the KCESD7. However, on an interim basis, automatic aid response will improve the response by combining it with a lone response from Crandall Station 1, until KCESD7 can establish its response from Station 2.

Adding potential new stations on the deeded properties will significantly improve coverage, serving current and anticipated growth. Specifically, as the street network in the eastern portion of the jurisdiction improves, the coverage area of Station 3 is expected to enhance its protection from 4.5% to approximately 7%.

Regarding resource concentration, the existing effective response force (ERF) musters only five firefighters, protecting 37% of the jurisdiction. The proposed addition of Stations 2, 3, and 4, each staffed with three firefighters per shift, along with mutual aid, will elevate the capacity to assemble 16 firefighters and expand protection to 46% of the jurisdiction. This strategic enhancement is crucial for addressing the increasing demands and ensuring robust emergency response capabilities.

# Cooperative Strategies

## General Partnering Approaches

KCESD7 plays a vital role in delivering effective and efficient emergency services to residents in the ESD. ESCI has developed various cooperative strategies and partnership approaches to enhance capabilities and improve operational effectiveness. This section outlines several alternatives, including full consolidation with the City of Crandall, consolidation with adjacent Emergency Service Districts, KCESD7's withdrawal from the contract with the CVFD, and a hybrid consolidation model enabled by various agreements and contracts.

## Options for Shared Services

The level of collaboration and partnership between KCESD7 and other emergency service agencies varies significantly across different strategies and approaches. The timeframe for implementing the chosen strategy depends on the complexity and scope of the necessary changes.

Though specific goals may vary, every strategy aims to enhance emergency service delivery. Each approach aims to enhance service quality and deliver excellent emergency services to the entire community, yet various methodologies exist to explore. Nevertheless, these strategies necessitate careful planning, effective communication, and active stakeholder involvement.

When evaluating these partnership approaches, ESCI will highlight the following factors that should be considered to ensure a comprehensive assessment:

- Level of cooperation
- Estimated timeline for completion
- Affected stakeholders
- Objective of the strategy
- Summary of strategy
- Guidance
- Fiscal considerations
- Social considerations
- Policy actions

## Option A (Preferred Strategy) – Full Consolidation with the City of Crandall

KCESD7, as the successor entity, consolidates the CoC into the existing ESD under the framework provided by Texas Title 9.

**Level of Cooperation** – The success of this strategy depends on the level of collaboration between KCESD7 and the CoC. Both entities must collaborate, share resources, and align their goals to achieve seamless integration. A comprehensive plan must also be developed to identify contracts and agreements for delivering fire, EMS, and rescue services throughout the ESD, including the CoC.

**Estimated Timeline for Completion –** The consolidation process is recommended to occur in phases: short-term (0–3 years), mid-term (4–6 years), and long-term (7–12 years). Each phase accounts for the time required for legal processes, stakeholder engagement, addressing voter concerns, voter consideration, executing agreements with regional partners, hiring personnel, acquiring equipment, and implementing a capital facility plan.

**Affected Stakeholders –** The primary stakeholders include KCESD7 and the residents of the CoC. As part of the suggested transition, KCESD7 will likely need to consider entering into a new contract for services with the CVFD.

**Objective of the Strategy –** The main goal of this strategy is to unify the CoC related to the provision of fire, rescue, and emergency medical services with KCESD7 under Texas Title 9 and transition from a contract for service with the CVFD to KCESD7 becoming the service provider and employer of the personnel and volunteers.

**Summary of Strategy** – The strategy entails the legal and administrative processes necessary to consolidate the existing ESD and the CoC into a single ESD. This includes determining the level of cooperation between entities, establishing an estimated timeline for completion, addressing fiscal and social considerations, and implementing the necessary policy and governance actions.

**Guidance** – Guidance for the consolidation process would involve detailed steps to ensure compliance with the legal framework provided in Title 9. This includes submitting required documentation, obtaining approvals, and ensuring that all stakeholders are informed and engaged throughout the process

**Fiscal Considerations** – Consolidating resources, including budgets, funding sources, and financial obligations. A comprehensive financial plan is necessary to support the transition and ongoing operations. Furthermore, this option requires the construction of Fire Stations 2, 3, and 4, the acquisition of new emergency vehicles, and investment in communication systems.

**Social Considerations** – Social considerations include addressing the needs and concerns of the community, volunteers, and other stakeholders. Effective communication and community engagement will ensure support and cooperation during the transition.

**Policy Actions** – This will entail formulating and enforcing new policies to guide the newly unified KCESD7, as well as ensuring adherence to state regulations.

## Preferred Strategy Plan

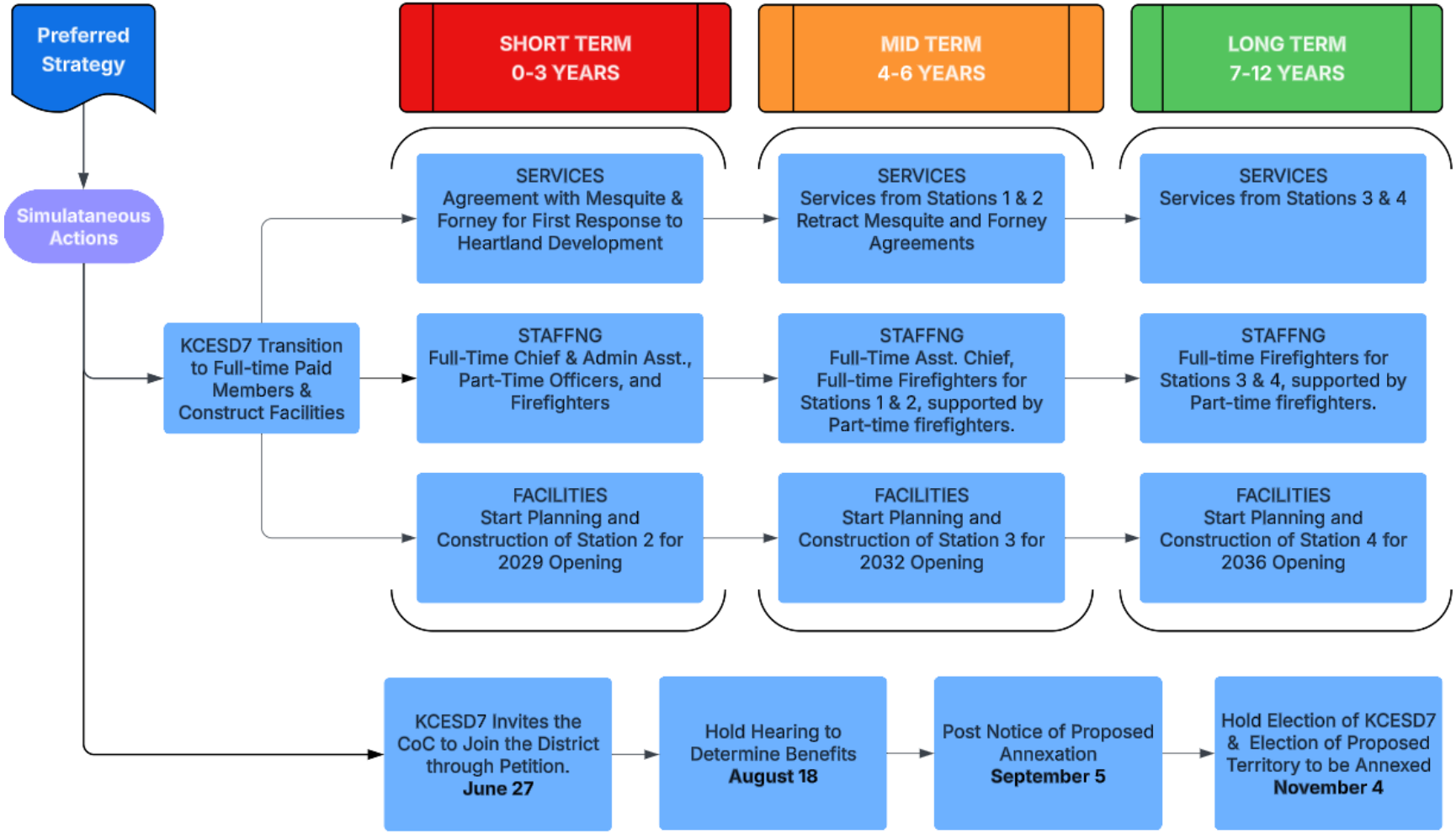
ESCI proposes a strategy to manage the region's rapid growth by coordinating services within the ESD boundary and enhancing efficiency through consolidation within the City of Crandall. The recommended strategy is to shift from contracting services with the Crandal Volunteer Fire Department to KCESD7 hiring its own staff and serving as the service provider. Additionally, consolidating services for the City of Crandall under KCESD7 will lead to long-term efficiencies.

In the short term, agreements should be temporarily established with the City of Mesquite and the City of Forney Fire Departments to provide initial response services to Heartland residents until Station 2 is completed and staffed. Additionally, a full-time fire chief and an administrative assistant should be hired to lead the organization, oversee service delivery, and facilitate a smooth transition.

In the mid-term, it is recommended that Station 2 be opened, a Deputy Fire Chief hired, and full-time paid officers and firefighters be employed to staff both Station 1 and Station 2. In the long term, the construction and opening of Stations 3 and 4 should be completed based on several key considerations: incident demand exceeding adopted response time standards, the economic capacity of the ESD, and the feasibility of part-time members supporting full-time officers and firefighters.

ESCI finds it would be in the region's best interest to provide an efficient regional emergency service delivery system by inviting the City of Crandall to consolidate under the governance of the KCESD7 through the legal process outlined in Texas Code 775.051 of the Health & Safety Code. If the residents of the City of Crandall opt not to pursue this option, ESCI believes it would best serve the residents of the ESD to implement the Contingent Strategy over a longer timeframe. The following figure illustrates the preferred strategy graphically.

Figure 64: Preferred Strategy Plan Graphic Display



## Preferred Plan Strategy Cost

Several key assumptions inform the implementation plan. First, the salary schedules are based on 95% of the Forney Fire Department's 2024 salary schedule, with an estimated 25% of the salaries allocated for benefits, ensuring that employees receive comprehensive benefits. An annual inflation factor of 3% is applied over the ten-year implementation period to account for economic changes. Fire Station Debt Service is based on a 12,000-square-foot facility at $900 per square foot and a bond repayment interest of 3.5%, amortized over 20 years.

Regarding leadership and administrative support, the plan includes hiring a full-time Fire Chief and Administrative Assistant in 2025 to provide strategic direction and administrative efficiency. By 2029, a full-time Assistant Chief is scheduled to be hired to further strengthen the leadership team. The plan also assumes the continued use of the part-time paid program to staff Station 1 throughout 2029. For Stations 1-4, a full-time three-person engine company is expected to be established. The annual costs for an engine company beginning in 2026 are estimated at $1,164,280. The following figure outlines the timing and estimated implementation costs for the program.

Figure 65: Preferred Plan Strategy Cost Estimates *(Yellow Highlight=Start of Phase)*

| Preferred Plan Actions | Short –Term | | |
|---|---|---|---|
| | 2026 | 2027 | 2028 |
| Fire Chief Salary +25% Benefits | $178,122 | $183,466 | $188,970 |
| Admin Asst. + 25% Benefits | $74,675 | $76,915 | $79,223 |
| Station 1 Eng. Co. (Part-Time) | $667,687 | $687,718 | $708,349 |
| Asst. Chief Salary + 25% Benefits | | | |
| Station 1 Eng. Co. (Full-Time) | | | |
| Station 2 Eng Co. (Full-Time) | | | |
| Station 3 Eng. Co. (Full-Time) | | | |
| Station 4 Eng. Co. (Full-Time) | | | |
| Fire Station #2 Debt Service | | | $818,329 |
| Fire Station #3 Debt Service | | | |
| Fire Station #4 Debt Service | | | |
| Estimated Annual Expend. | **$920,484** | **$948,099** | **$1,794,871** |

| Preferred Plan Actions | Mid-Term | | |
|---|---|---|---|
| | 2029 | 2030 | 2031 |
| Fire Chief Salary +25% Benefits | $194,639 | $200,478 | $206,493 |
| Admin Asst. + 25% Benefits | $81,599 | $84,047 | $86,569 |
| Station 1 Eng. Co. (Part-Time) | | | |
| Asst. Chief Salary + 25% Benefits | $161,562 | $166,409 | $171,402 |
| Station 1 Eng. Co. (Full-Time) | $1,308,382 | $1,347,633 | $1,388,062 |
| Station 2 Eng Co. (Full-Time) | $1,308,382 | $1,347,633 | $1,388,062 |
| Station 3 Eng. Co. (Full-Time) | | | |
| Station 4 Eng. Co. (Full-Time) | | | |
| Fire Station #2 Debt Service | $818,329 | $818,329 | $818,329 |
| Fire Station #3 Debt Service | | | $947,318 |
| Fire Station #4 Debt Service | | | |
| Estimated Annual Expend. | **$3,872,893** | **$3,964,530** | **$5,006,234** |

| Preferred Plan Actions | Long-Term | | | | | |
|---|---|---|---|---|---|---|
| | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 |
| Fire Chief Salary +25% Benefits | $212,687 | $219,068 | $225,640 | $232,409 | $239,381 | $246,563 |
| Admin Asst. + 25% Benefits | $89,166 | $91,841 | $94,596 | $97,434 | $100,357 | $103,368 |
| Station 1 Eng. Co. (Part-Time) | | | | | | |
| Asst. Chief Salary + 25% Benefits | $176,544 | $181,840 | $187,295 | $192,914 | $198,701 | $204,662 |
| Station 1 Eng. Co. (Full-Time) | $1,429,704 | $1,472,595 | $1,516,773 | $1,562,276 | $1,609,144 | $1,657,419 |
| Station 2 Eng Co. (Full-Time) | $1,429,704 | $1,472,595 | $1,516,773 | $1,562,276 | $1,609,144 | $1,657,419 |
| Station 3 Eng. Co. (Full-Time) | $1,429,704 | $1,472,595 | $1,516,773 | $1,562,276 | $1,609,144 | $1,657,419 |
| Station 4 Eng. Co. (Full-Time) | | | | | $1,609,144 | $1,657,419 |
| Fire Station #2 Debt Service | $818,329 | $818,329 | $818,329 | $818,329 | $818,329 | $818,329 |
| Fire Station #3 Debt Service | $947,318 | $947,318 | $947,318 | $947,318 | $947,318 | $947,318 |
| Fire Station #4 Debt Service | | | | $1,151,471 | $1,151,471 | $1,151,471 |
| **Estimated Annual Expend.** | **$6,533,156** | **$6,676,181** | **$6,823,497** | **$8,126,703** | **$9,892,135** | **$10,101,386** |

## Option B (Contingent Strategy) – KCESD7 as Service Provider

If the petition and election to incorporate the City of Crandall is unsuccessful, ESCI believes the same approach is necessary to serve the citizens in the ESD, except the implementation is extended to over an 18-year timeframe.

**Level of Cooperation** – Effective coordination with the CVFD to ensure a seamless transition of services, including regular meetings and open communication channels. Assuming the CoC maintains the CVFD contract and service, collaboration with the city to develop automatic aid agreements will be crucial.

**Estimated Timeline for Completion** – The estimated timeline for completing the consolidation process is 6 to 8 months.

**Affected Stakeholders** – The primary stakeholders include KCESD7 and the citizens within the ESD service area. The CVFD is a secondary stakeholder, as the contractual agreement between KCESD7 and CVFD will be transitioned to KCESD7. Furthermore, the ESD must resolve its shared ownership of property, facilities, apparatus, and equipment with the CoC.

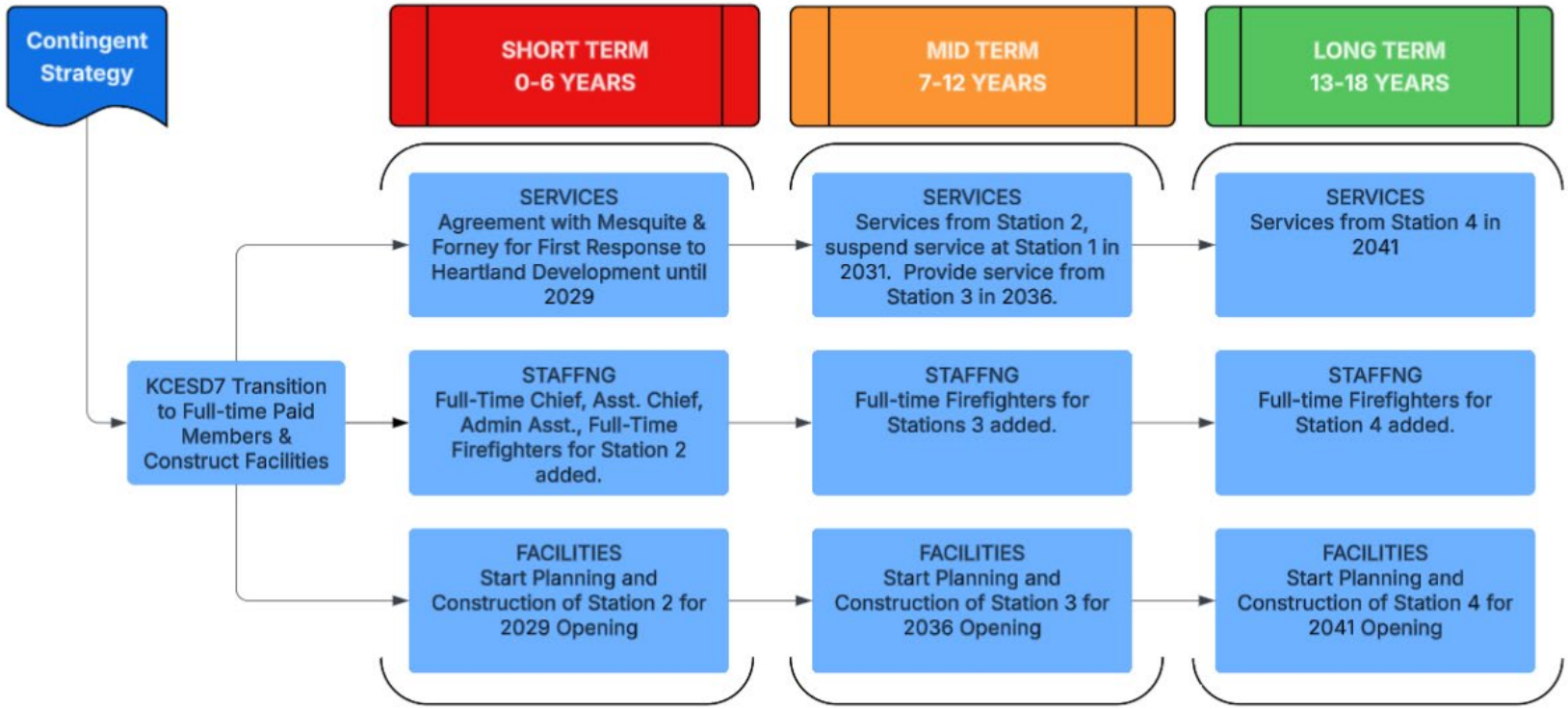
**Objective of Strategy** – To maintain uninterrupted emergency services while KCESD7 transitions out of the existing service contract.

**Summary of Strategy** – The strategy emphasizes collaboration, clear communication, and phased implementation to guarantee that all parties are sufficiently prepared and informed throughout the transition.

**Guidance** – Establish a transition team comprising representatives from affected stakeholders to oversee the implementation of the plan and address any issues that may arise during the process.

**Fiscal Considerations** – KCESD7 needs to evaluate the financial obligations associated with becoming a service provider, including hiring employees and volunteers to provide services, such as debt service, apparatus purchases, personnel costs, and operational expenses. Furthermore, shared ownership of Fire Station 1 must be reconciled with the CoC after the ESD suspends service from that site. The construction of Fire Stations 2, 3, and 4, the acquisition of new emergency vehicles, and investments in communication and coordination systems will need to be planned for as the community grows. The following figure illustrates the contingency strategy graphically.

Figure 66: Contingent Strategy Graphic Display



## Contingent Strategy Cost

The same elements and assumptions of projected costs are used in the following estimates. The implementation timeline spans over 18 years, rather than 9 years, which utilizes a different time range for the Short, Mid, and Long Term periods. ESCI suggests that without a joint operating arrangement with the CoC, the response from Station 1 would be discontinued in the mid-term, after Station 2 has been constructed and is fully operational with a full-time staff. The following figure illustrates the costs of a phased implementation plan for the contingent plan.

Figure 67: Contingent Strategy Cost Estimates *(Yellow Highlight=Start of Phase)*

| Preferred Plan Actions | Short -Term | | | | | |
|---|---|---|---|---|---|---|
| | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
| Fire Chief Salary +25% Benefits | $178,122 | $183,466 | $188,970 | $194,639 | $200,478 | $206,493 |
| Admin Asst. + 25% Benefits | $74,675 | $76,915 | $79,223 | $81,599 | $84,047 | $86,569 |
| Station 1 Eng. Co. (Part-Time) | $667,687 | $687,718 | $708,349 | $729,600 | $751,488 | |
| Asst. Chief Salary + 25% Benefits | | | | | | $171,402 |
| Station 1 Eng. Co. (Full-Time) | | | | | | |
| Station 2 Eng Co. (Full-Time) | | | | $1,308,382 | $1,347,633 | $1,388,062 |
| Station 3 Eng. Co. (Full-Time) | | | | | | |
| Station 4 Eng. Co. (Full-Time) | | | | | | |
| Fire Station #2 Debt Service | | | $994,684 | $994,684 | $994,684 | $994,684 |
| Fire Station #3 Debt Service | | | | | | |
| Fire Station #4 Debt Service | | | | | | |
| **Estimated Annual Expend.** | **$920,484** | **$948,099** | **$1,971,226** | **$3,308,904** | **$3,378,330** | **$2,847,209** |

| Preferred Plan Actions | Mid -Term | | | | | |
|---|---|---|---|---|---|---|
| | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 |
| Fire Chief Salary +25% Benefits | $212,687 | $219,068 | $225,640 | $232,409 | $239,381 | $246,563 |
| Admin Asst. + 25% Benefits | $89,166 | $91,841 | $94,596 | $97,434 | $100,357 | $103,368 |
| Station 1 Eng. Co. (Part-Time) | | | | | | |
| Asst. Chief Salary + 25% Benefits | $176,544 | $181,840 | $187,295 | $192,914 | $198,701 | $204,662 |
| Station 1 Eng. Co. (Full-Time) | | | | | | |
| Station 2 Eng Co. (Full-Time) | $1,429,704 | $1,472,595 | $1,516,773 | $1,562,276 | $1,609,144 | $1,657,419 |
| Station 3 Eng. Co. (Full-Time) | $0 | | | | $1,609,144 | $1,657,419 |
| Station 4 Eng. Co. (Full-Time) | | | | | | |
| Fire Station #2 Debt Service | $994,684 | $994,684 | $994,684 | $994,684 | $994,684 | $994,684 |
| Fire Station #3 Debt Service | | | | $1,399,620 | $1,399,620 | $1,399,620 |
| Fire Station #4 Debt Service | | | | | | |
| **Estimated Annual Expend.** | **$2,902,785** | **$2,960,028** | **$3,018,988** | **$4,479,337** | **$6,151,033** | **$6,263,734** |

| Preferred Plan Actions | Log -Term | | | | | |
|---|---|---|---|---|---|---|
| | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 |
| Fire Chief Salary +25% Benefits | $253,960 | $261,579 | $269,426 | $277,509 | $285,834 | $294,409 |
| Admin Asst. + 25% Benefits | $106,469 | $109,663 | $112,953 | $116,341 | $119,831 | $123,426 |
| Station 1 Eng. Co. (Part-Time) | | | | | | |
| Asst. Chief Salary + 25% Benefits | $210,802 | $217,126 | $223,640 | $230,349 | $237,260 | $244,378 |
| Station 1 Eng. Co. (Full-Time) | | | | | | |
| Station 2 Eng Co. (Full-Time) | $1,707,141 | $1,758,355 | $1,811,106 | $1,865,439 | $1,921,403 | $1,979,045 |
| Station 3 Eng. Co. (Full-Time) | $1,707,141 | $1,758,355 | $1,811,106 | $1,865,439 | $1,921,403 | $1,979,045 |
| Station 4 Eng. Co. (Full-Time) | | | | $1,865,439 | $1,921,403 | $1,979,045 |
| Fire Station #2 Debt Service | $994,684 | $994,684 | $994,684 | $994,684 | $994,684 | $994,684 |
| Fire Station #3 Debt Service | $1,399,620 | $1,399,620 | $1,399,620 | $1,399,620 | $1,399,620 | $1,399,620 |
| Fire Station #4 Debt Service | | | $1,786,309 | $1,786,309 | $1,786,309 | $1,786,309 |
| **Estimated Annual Expend.** | **$6,379,817** | **$6,499,383** | **$8,408,844** | **$10,401,130** | **$10,587,746** | **$10,779,960** |

## Option C – Consolidation with Adjacent ESDs

This option would consolidate Kaufman County Emergency Service District #7 with an adjacent existing Emergency Service District under Texas Title 9.

**Level of Cooperation** – The success of this strategy depends on the level of collaboration between KCESD7, adjacent ESD(s), and the electorate's will. Participating entities must collaborate, share resources, and align their goals to achieve seamless integration. This involves regular meetings, joint planning sessions, and mutual agreements on resource sharing and operational protocols.

**Estimated Timeline for Completion** – The estimated timeline for completing the consolidation process is projected to be 12–18 months. This includes time for legal procedures, stakeholder engagement, policy development, and implementing necessary changes. Establishing a timeline with specific milestones is crucial to tracking progress and ensuring timely completion.

**Affected Stakeholders** – The primary stakeholders include KCESD7, the governing bodies of the adjacent ESDs, and the residents of each participating service area. Involving all stakeholders in the development is essential. Regular communication and engagement with stakeholders will help address concerns and garner support for consolidation.

**Objective of Strategy –** The primary goal of this strategy is to merge KCESD7 with a neighboring ESD, such as ESD 1, 3, or 5, as outlined in Texas Title 9. This consolidation aims to enhance the efficiency and effectiveness of the emergency services provided to the community.

**Summary of Strategy** – The strategy involves the legal and administrative processes required to consolidate KCESD7 with an adjacent ESD, as outlined in Texas Title 9. This includes determining the level of cooperation between entities, establishing an estimated timeline for completion, addressing fiscal and social considerations, and implementing necessary policy actions.

**Guidance** – Guidance for the consolidation process will involve detailed steps to comply with the legal framework provided by Texas Title 9. This includes submitting required documentation, obtaining approvals, and ensuring all stakeholders are informed and engaged throughout the process.

Specific guidance will cover the following areas:

- Preparation and submission of the consolidation proposal
- Legal review and approval processes
- Public notification and stakeholder engagement
- Implementation of operational and administrative changes

**Fiscal Considerations** – Combining KCESD7 with an adjacent ESD will require a thorough assessment of fiscal resources, including budgets, funding sources, and financial obligations. A comprehensive financial plan is essential to support the transition and ongoing operations. This plan should include:

- Financial status assessment of the participating ESDs.
- Identification of funding sources for consolidation.
- Development of a unified budget for the consolidated ESD.
- Financial impact analysis and cost-benefit evaluation.

**Social Considerations** – Social considerations include addressing the needs and concerns of the community, personnel, appointed officials, volunteers, and other stakeholders. Effective communication and community engagement will ensure support and cooperation throughout the development process. Key actions include:

- Organizing community meetings and forums
- Providing regular updates and information to stakeholders
- Addressing concerns and feedback from residents
- Promoting the benefits of consolidation for improved emergency services

**Policy Actions** – Requires developing and implementing new policies to govern the unified ESD. This includes updating existing policies, creating new guidelines, and ensuring compliance with state regulations. Specific policy actions may include:

- Review and revision of existing policies and procedures.
- Development of new policies for the consolidated district.
- Training and orientation for staff and operations personnel.
- Monitoring and evaluation of policy implementation.

## Option D – Hybrid Consolidation through Agreements

This option would functionally consolidate the existing agencies by enabling agreements that clearly define responsibilities, authorities, and decision-making processes and establishing a designated governance board to make policy decisions.

**Level of Cooperation** – The CVFD, CoC, and KCESD7 maintain their existing partnership through multiple enabling agreements. This option necessitates addressing several complexities to enhance organizational efficiency and simplify governance.

**Estimated Timeline to Completion** – The estimated timeline for executing new and/or revised agreements is projected to be 6 months. This includes time for legal procedures, document revision, services provided, governance revisions, policy development, and official action by the parties.

**Affected Stakeholders** – The primary stakeholders include the CVFD, CoC, KCESD7, and the residents of the combined service area.

**Objective of Strategy** – To maintain and enhance the existing service agreements among the parties.

**Summary of Strategy** – Revise enabling agreements to streamline decision-making processes and ensure consistent communication.

**Fiscal Considerations** – Develop a coordinated budget plan that aligns the financial contributions and expenditures of both the CoC and KCESD7. This plan should be reviewed and adjusted annually to reflect changes in priorities and needs.

**Social Considerations** – During the process, address the community's needs and concerns, as well as those of volunteers, part-time employees, and other stakeholders.

**Policy Actions** – Establish a hybrid organizational structure in which the Fire Chief reports to a unified oversight body or governance board composed of representatives from the CoC and KCESD7. Long-term sustainability should be assessed at pre-determined intervals if this option is chosen.

# Findings and Recommendations

## Organizational Structure and Governance

**Dual Governance Structure:** The department faces administrative challenges due to its dual governance structure. The fire chief reports to both the City of Crandall and the Emergency Services District, which complicates coordination, decision-making, and budget alignment.

> **Recommendation:** Implement ESCIs Preferred Strategy to transition the KCESD as the primary service provider for the City of Crandall, using employees and volunteers hired by KCESD7. In addition, engage in a temporary contract for service with the City of Mesquite and the City of Forney Fire Department to serve the Heartland area until the construction and staffing of Fire Station 2 is complete.

**Absence of Unified Mission, Vision, and Values Statements:** Neither the CVFD nor KCESD7 has formalized mission, vision, and values statements, which are essential for clearly outlining the organization's purpose and strategic direction.

> **Recommendation:** Utilize a community-centered strategic planning process to create and formalize the joint organization's mission, vision, and core values statements. This will provide clear direction and purpose, guide decision-making and behavior, and ensure a consistent culture and standards of excellence. Develop a 3-5 year plan that includes goals, objectives, and tasks with reasonable timelines and assigned responsibilities.

**Policies and Procedures:** Rules, regulations, and procedural policy documents should be reviewed and revised regularly according to a planned cycle. Existing policies do not address many of the critical issues facing emergency services. The current system lacks a mechanism to track acknowledgment of issued policies and procedures, as well as a system for refresher training.

> **Recommendation:** Consider implementing a third-party subscription system to complement existing policies and procedures. Begin reviewing and updating at least one-third of all policies and procedures yearly to ensure the entire set is reviewed and revised every three years.

## Emergency Service Deployment and Staffing

**Organizational Management:** The organization's leadership comprises paid volunteers who maintain full-time careers in other fields. The management and complexities of a fire service organization necessitate dedicated, full-time attention to various aspects of organizational leadership.

> **Recommendation:** Employ a full-time Fire Chief, Administrative Assistant, and Deputy Fire Chief to manage the organization, who are accountable for implementing policy decisions and reporting to the governance board.

**Inadequate Staffing Levels:** The shift from an entirely volunteer workforce to a combination of part-time and volunteer staff has introduced challenges in maintaining consistency and effective communication. Insufficient staffing and the lack of an aerial truck prevent the department from achieving the recommendations in NFPA 1710 standards.

> **Recommendation:** Recruit and hire full-time firefighters following the Preferred Strategy Plan. ESCI recommends a minimum 24-hour staffing level for engine and ladder companies of three firefighters. Staff each fire station with at least one engine company utilizing full-time firefighters following the Preferred Strategy plan timeline. Alternatively, implement the Contingent Strategy plan timeline if the CoC consolidation is unsuccessful. Utilize part-time firefighters to continue staffing Station 1 to the greatest extent feasible.

**Distribution and Concentration:** Sixty percent of emergency incidents have response times exceeding the recommended NFPA standards. There is inadequate distribution of fire protection and EMS delivery facilities and personnel to meet these response time goals.

> **Recommendation:** Begin architectural design, planning, and secure financial sources for Stations 2, 3, and 4 . Begin construction and the opening of Station 2 at the recommended site in 2029. Begin construction of Station 3 at the recommended site, with an anticipated opening in 2032.

**Performance Monitoring:** Departments must regularly monitor key performance metrics, including total response time, alarm handling time, turnout time, travel time, and overall response time.

> **Recommendation:** Consistently monitor performance metrics and utilize percentile measurements for a more precise performance evaluation. Annually publish a formal report on the department's performance, identify the gaps from the formally adopted level of service statements (Standards of Cover), and provide means to mitigate gaps.

## Infrastructure and Equipment

**Facilities:** The ESD service area is rapidly growing and requires the addition of several fire protection facilities to deploy a consistent level of service to the residents.

> **Recommendation:** Construct Stations 2, 3, and 4 following the Preferred Strategy plan timeline. Alternatively, implement the Contingent Strategy plan timeline if the CoC consolidation is unsuccessful.

**Aging Equipment:** Many of the department's apparatus and equipment require replacement to remain operational. The lack of a published replacement schedule leads to short-term planning.

> **Recommendation:** Establish a capital apparatus plan that identifies the timing and future costs, as well as funding sources based on future station recommendations, current apparatus purchases, apparatus service life, and needed reserve apparatus.

**Need for a Training Facility: A new training facility is needed that is closer than the current one, which is** 40 miles away. KCESD7 should acquire land and build a facility to house a new fire station.

> **Recommendation:** Acquire real estate and build a training facility, potentially co-located with a new fire station, centrally located within the KCESD7 service area.

**Health and Safety Concerns:** The current fire station lacks an exhaust system to remove carcinogenic diesel particles in the bays.

> **Recommendation:** Install a diesel exhaust capture system in Fire Station #1 and future Stations 2 and 3 to minimize personnel exposure to carcinogens.

## Financial Management

**Challenges in Budget Planning:** The dual governance framework introduces complexities in budget planning and financial management, leading to inconsistencies.

> **Recommendation:** Create a budget plan that aligns with CoC and KCESD7 financial contributions and expenditures.

**Absence of Proactive Financial Strategy:** An extensive, long-term financial strategy is lacking to address capital enhancements and operational requirements.

> **Recommendation:** Develop a long-term financial and Capital Improvement Plan (CIP) for sustainable funding and implement strong fiscal controls for transparency and accountability.

## Community Engagement and Public Education

**Public Education Programs:** Limited public education efforts restrict opportunities to teach the community about fire safety and emergency preparedness.

> **Recommendation:** Offer more public education classes, such as CPR, First Aid, Citizens Fire Academy, and CERT training.

**Development Planning Involvement:** Inconsistent participation in development reviews results in gaps in the fire safety and emergency preparedness of new developments.

> **Recommendation:** Boost the department's participation in building plan reviews and pre-development meetings. Actively engage and advocate for risk mitigation measures and design features that enhance firefighter and community safety.

# Appendix 'A' – Table of Figures