



Organizational Assessment

Clear Creek Fire Authority

November 2023

MISSION  **CIT**
Critical Immersive Training



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Introduction

In July 2023, MissionCIT was contracted by Clear Creek County, Colorado to conduct an Organizational Analysis of the Clear Creek Fire Authority (CCFA). This analysis was to be thorough, and the requirements included in the Request for Proposal (RFP) included the following;

- Evaluate the effectiveness, efficiency and performance of current CCFA operations
- Analyze personnel and staffing needs to include a review of the volunteer model, the use of full-time employees or a hybrid of each
- Review of the current financial status of the CCFA to include existing revenues and projections over the next five years, indirect costs and contractual obligations and additional funding options
- Evaluate the governance structure and its effectiveness to include the Board of Director-Executive staff efficacy
- Evaluate the option for transitioning to a Title 32 District
- Review the response area characteristics, fire and non-fire risk assessments and response strategies and planning within the Authority and current efforts towards engineering solutions for fire protection such as inspections, fire prevention, etc.
- Review current and future capital needs
- Review current strategic plan, rules, regulations and personnel procedures

MissionCIT consultants conducted an onsite review of all operations of the CCFA during August 2023. During that onsite review, the team held eleven focus group sessions with internal and external stakeholders. CCFA response, deployment, and operational data was requested and reviewed by the study group. We are pleased to present our analysis and findings of the Clear Creek Fire Authority.

We would like to thank everyone involved in this assessment who provided information, comments and time to help the study team gain a full grasp of the environment and the organization.

In particular, MissionCIT would like to thank the following individuals and groups:

County Manager Brian Bosshardt
Finance Director Maria Ostrom
County Attorney Peter Lichtman
Fire Chief Kelly Babeon
Assistant Fire Chief Jeremy Jones
Clear Creek County Board of Commissioners

Clear Creek County Department Heads
Clear Creek County Sheriff's Office
Idaho Springs City Council and Administrator
Georgetown Police Judge and Administrator
Empire Town Mayor and Board of Trustees
Clear Creek County Office of Emergency Management



Executive Summary

MissionCIT conducted an extensive review and analysis of the Clear Creek Fire Authority (CCFA). The personnel of the organization are dedicated to the mission and to the residents of Clear Creek County. The CCFA has made improvements in its staffing, deployment, and training over the last few years. In addition, they have initiated several proactive fire prevention and wildland evacuation programs. However, they continue to struggle with the recruitment/retention and effective response of volunteer firefighting personnel. This is not unique to CCFA but is a nationwide issue.

The biggest challenge facing CCFA is the continued effective funding of the department for the future. The primary reason for this is the decline of revenue to the County from the Henderson Mine. Beginning last budget year, the department is running a deficit in its operations. They are having to utilize reserve funds to continue to fund their operations. This trajectory is not sustainable for CCFA and will result in the complete elimination of their reserve fund and their operation as a fire department if not corrected soon. Additional financial resources will be needed to secure the long-term success of CCFA and to meet the response needs of the residents and visitors to the County.

The governance structure of the CCFA is also an issue that will need to be addressed not only to help with the funding of the department, but also with the long-term vision, planning and leadership of the department. The current governance structure does not allow for effective communications between the CCFA Board of Directors and Intergovernmental Agreement (IGA) partners, nor does it provide effective strategic policy oversight to the fire chief. This has resulted in mistrust and ineffective communications between all parties to the IGA and a lack of strategic thinking and planning to meet the future challenges.

MissionCIT has made over 100 recommendations in the following areas included within this report.

1. Funding
2. Governance Structure
3. Health, Safety and Wellness of CCFA personnel
4. Capital equipment planning and needs
5. Staffing
6. Deployment
7. Operational policies and procedures
8. Community Risk Reduction

The most immediate needs that CCFA, and the IGA partners need to address include:

- Developing a long-term financial plan to provide resources to CCFA



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- Improving the governance structure to provide for more effective communications, planning and oversight to CCFA
- Increasing staffing to provide a minimal level of fire protection to the city/towns where most of the incidents occur, while also being able to provide a basic level of response to the unincorporated areas

The long-term financial situation for CCFA is critical to be able to provide services and maintain staffing. Additional revenues are needed immediately to continue to provide even the current level of services. MissionCIT has recommended improvements to the financial situation through increases in the millage rate, additional sources of revenue and initiating a public safety/fire sales tax.

The governance structure of CCFA also needs to be changed in order to improve the long-term policy and management oversight to providing services. The provision of fire protection services is a county wide endeavor. It should be managed as such. MissionCIT recommends that the Clear Creek County Emergency Services General Improvement District (ESD) assume oversight of the policy and strategic planning for fire protection services in all areas of the County except those currently within the jurisdiction of the Evergreen Fire Protection District. An IGA with the city and towns would still be needed as well as the creation of a Fire Advisory Group consisting of the city and town representatives to assist the ESD with recommendations.

Finally, the on-duty, available staffing for response to fire, medical and other incidents should be increased to meet minimal national standards. MissionCIT is recommending a phased-in approach over five years to increase on-duty staffing to three full-time personnel in Idaho Springs and three full-time personnel in Georgetown. In addition, CCFA must continue with an aggressive recruitment process and utilization of volunteer personnel to supplement the career staffing and to provide additional resources for response to incidents, particularly larger incidents.

In addition to these three high priority items, there is a need for sustained, long-term planning to address upcoming critical areas of focus. CCFA needs to work towards planning to address the following areas.

- Capital equipment replacement, such as fire apparatus and durable assets
- A capital facility plan to address upgrades and modernization of existing fire stations, particularly for improvements to the health and wellness aspects of those stations where 24/7 staffing will reside
- Determination of whether a new facility in Idaho Springs is possible and affordable
- A focused volunteer recruitment and retention plan to increase the level of participation in response



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- Increased efforts in Community Risk Reduction through the hiring of a full time Fire Marshal, focused fire code enforcement and dedicated community outreach in education

The future for CCFA is trending positive, and with implemented changes from these recommendations, they will have a more improved, and sustainable impact on the community and the reduction of fire risks and outcomes.

Study Report Objectives

The MissionCIT study team developed a set of study report objectives while onsite to ensure that the final report would meet the needs of the residents of Clear Creek County, the Clear Creek Fire Authority and the Clear Creek County Request for Proposal. The study report objectives are outlined below.

- To improve the level of fire protection services to the residents and visitors within the CCFA
- To develop a fire staffing deployment plan to meet the current and future needs of the CCFA
- To develop a 5–10-year financial sustainability plan for the CCFA
- To sustain and increase the number and utilization of volunteer fire personnel within the CCFA
- To improve the health and safety of personnel within the CCFA
- To improve the organizational processes and procedures within CCFA

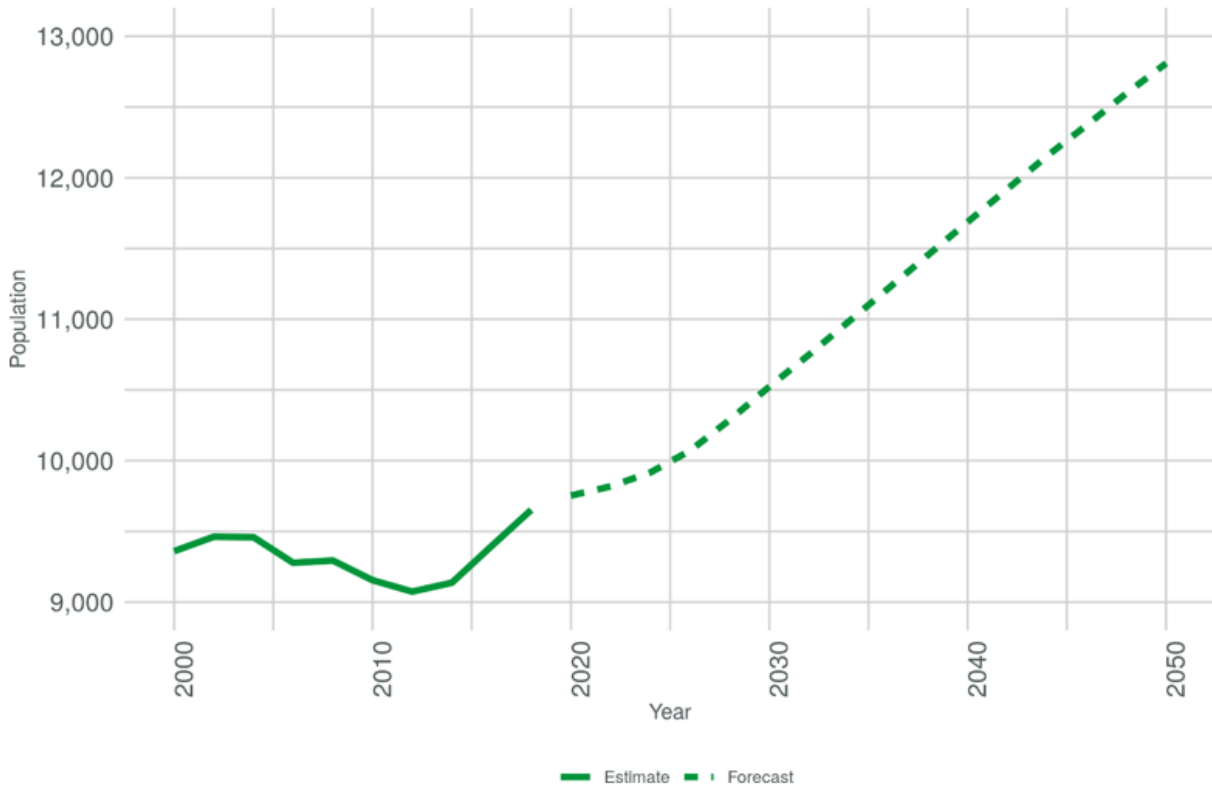
Community Description

Clear Creek County, Colorado is a rural county just to the west of the Denver metropolitan area. The county is approximately 395.2 square miles and had a population of 9,397 as of the 2020 US Census. The population density of the county is 23.7 persons per square mile. Within the county, there are four incorporated cities/towns. The towns were all founded and grew during the early days of the westward gold and mining rush in the mid to late 1800's. They are located along the Interstate 70 corridor. Interstate 70 runs east-west through the County and is a major transportation artery for Colorado and the United States. Approximately 12 million vehicles annually pass through the County on I-70.



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Figure 1.1 Clear Creek County Population and Forecasted Growth, 2000 to 2050



Source: State Demography Office 2021

Source – 2022 Clear Creek County Office of Emergency Management HMP

The localities, their size and their population densities include the following.

Table 1.1 Localities, Square Mileage and Population

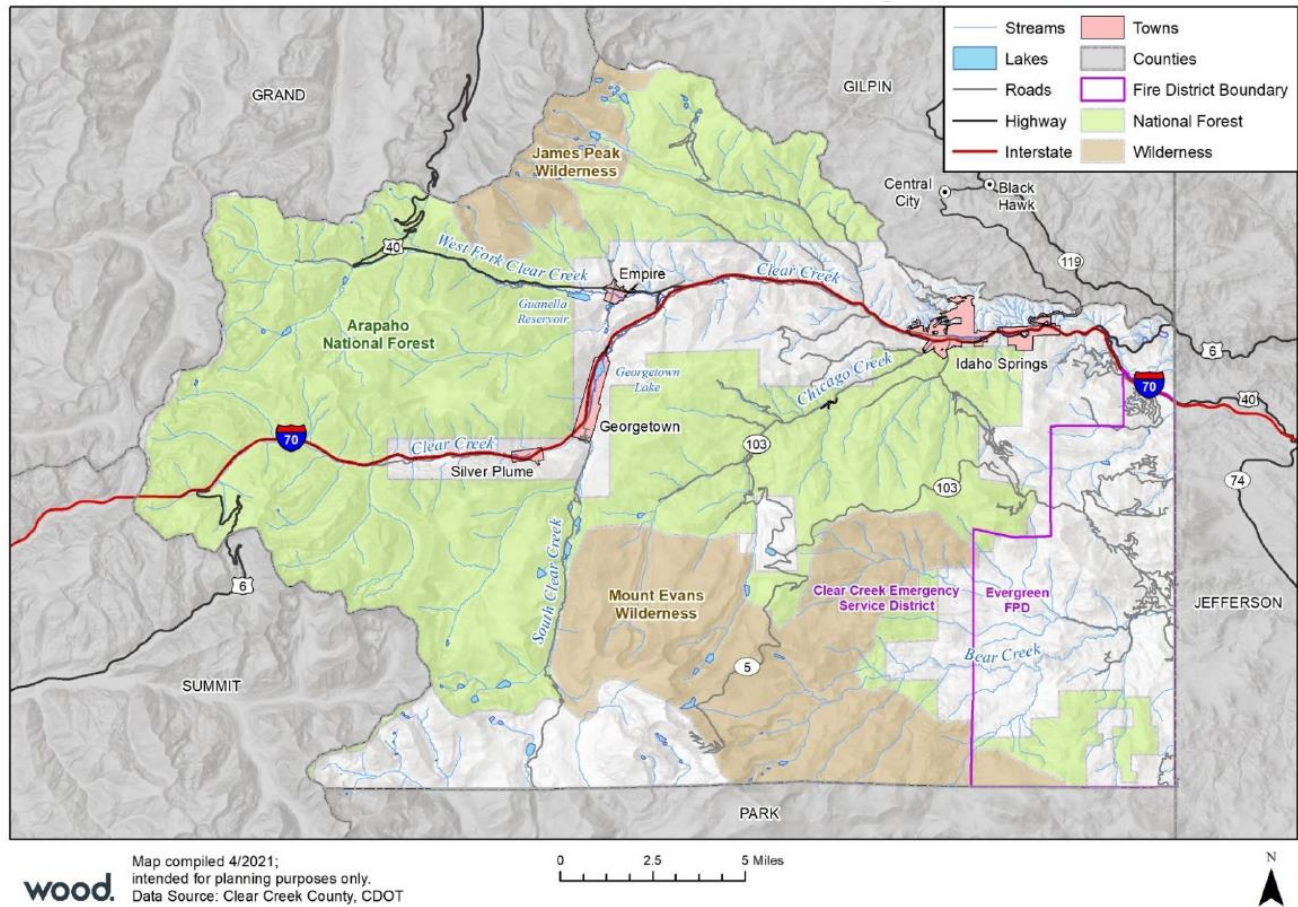
Locality	Size	2020 Population	Population Density
Empire	.271 sq. miles	345	1,286 people per square mile
Georgetown	1.098 sq. miles	1,118	1,121 people per square mile
Idaho Springs	2.28 sq. miles	1,782	780 people per square mile
Silver Plume	.26 square miles	207	800 people per square mile

From this breakout, approximately 37% of the county’s population resides in these four areas, which represents only 1% of the total land area of the county. The construction within the towns includes primarily older wood frame residential construction between 2-3 stories with a mix of wood frame and brick commercial construction. The remainder of the county outside of these I-70 towns is mountainous, fairly remote and sparsely populated with a sprinkling of other commercial occupancies. Approximately 80% of the land in the county is comprised of the Arapaho National Forest. The total property valuation in the county is estimated to be \$747,694,170 by the County Assessor’s Office.



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Figure 1.2 Map of Clear Creek County Geographical Features



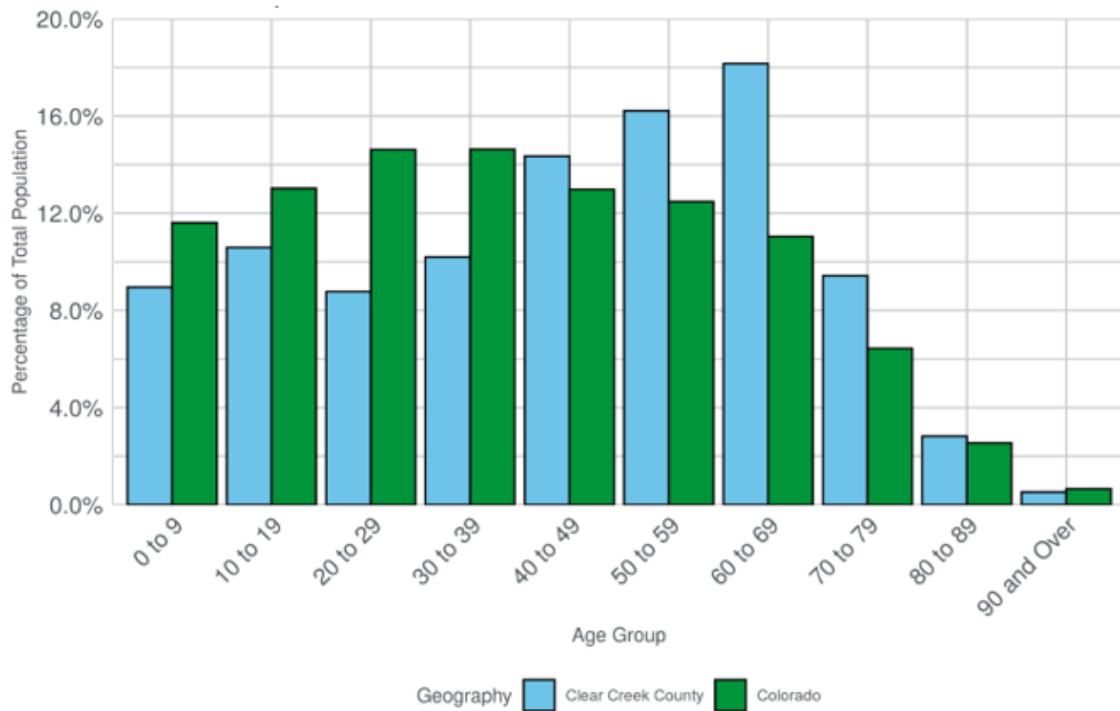
Select specific demographic features of the county from the 2020 Census include the following.

Table 1.2 Clear Creek County Demographic Features

Demographic Feature	Clear Creek County
Number of Housing Units	5,672
Total Households	4,427
Persons per household	2.1
Total Employer Establishments	333
Median Household Income	\$76,313
Median Home Price	\$471,400
Median Gross Rent	\$1,106
Employment Rate	66.9%
Percentage of Persons in Poverty	7.6%
People without health insurance coverage	9.7%
Median Age	49.5
Percentage of those 65 years old and older	20.7%



Figure 1.3 Clear Creek County Age Distribution - 2019



Source: State Demography Office 2021

Source – 2022 Clear Creek Office of Emergency Management HMP

Comparing Clear Creek County demographics to either Colorado or the United States, the population in the county is older, with more people without health insurance. The housing costs in the county have increased dramatically over the last few years, with even rental housing now costing much more. This creates availability and affordability issues for residents, future residents and CCFA personnel. It was communicated to MissionCIT that an average 2,000 square foot home costs approximately \$750k to \$900k and that rent for a two-bedroom apartment is approximately \$1,800 to \$2,300 per month. Due to the population and age demographics within the county, the condition of older housing stock may also not be able to be effectively maintained or have appropriate or safe home heating appliances. These residences may not have working or sufficient number of smoke alarms for notification nor may their residents be sufficiently mobile for self-evacuation during a fire.

Community Risks

The MissionCIT team was provided a tour of the Clear Creek County area, specifically through all of the towns/municipalities within the county. The risks within the county were evident and the impacts of an incident can be significant. As indicated in the 2022 Clear Creek County Office of Emergency Management Hazard Mitigation Plan (HMP), there are significant hazards that exist



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throughout the county. The general hazard risk rankings from the 2022 HMP are indicated below.

Table 1.3 Hazard Risk Rankings

Hazard	Overall Risk Rating
Wildfire	High
Winter Storm	High
Flood	High
Severe Wind, Hail, & Lightning	Medium
Drought	Medium
Landslide, Mud/Debris Flow, and Rockfall	Medium
Avalanche	Medium
Dam Incident	Medium
Earthquake	Low
Erosion and Deposition, Expansive Soil, and Subsidence	Low
Extreme Heat	Low
Tornado	Low
Space Weather	Low

Source – 2022 Clear Creek County Office of Emergency Management HMP

There are multiple high hazard impacts from natural disasters for Clear Creek County, most notably wildfire and flooding. Historically, these have been the biggest threats for Clear Creek County over the years. A more detailed analysis of the impacts and severity of the natural disasters possible in Clear Creek County is also included in the Clear Creek County Hazard Mitigation Plan and is indicated below.



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Table 1.4 Hazard Analysis Summary

Hazard	Spatial Extent	Potential Severity	Frequency of Occurrence	Overall Significance
Wildfire	Extensive	Critical	Likely	High
Winter Storm	Extensive	Moderate	Highly Likely	High
Flood	Significant	Critical-Moderate	Likely	High
Severe Wind	Extensive	Moderate	Highly Likely	Medium
Hail	Extensive	Moderate	Highly Likely	Medium
Lightning	Extensive	Moderate	Highly Likely	Medium
Drought	Extensive	Negligible-Moderate	Likely	Medium
Landslide	Significant	Critical	Likely	Medium
Avalanche	Significant	Moderate	Likely	Medium
Dam Incident	Limited	Critical	Unlikely	Medium
Erosion	Extensive	Negligible	Likely	Low
Earthquake	Significant	Critical	Unlikely	Low
Subsidence	Significant	Negligible	Likely	Low
Extreme Heat	Extensive	Negligible	Unlikely	Low
Space Weather	Extensive	Negligible	Unlikely	Low
Tornado	Significant	Negligible	Unlikely	Low
Expansive Soil	Limited	Negligible	Occasional	Low
Spatial Extent <u>Extensive:</u> 50-100% of planning area <u>Significant:</u> 10-50% of planning area <u>Limited:</u> Less than 10% of planning area Potential Severity <u>Catastrophic:</u> Multiple deaths, shutdown of facilities for 30 days or more, >50% of property is severely damaged <u>Critical:</u> Multiple severe injuries, shutdown of facilities for at least 2 weeks, >25% of property is severely damaged <u>Moderate:</u> Some injuries, shutdown of critical facilities for more than one week, >10% of property is severely damaged <u>Negligible:</u> Minor injuries, minimal quality-of-life impact, interruption of facilities and services for 24 hours or less, less than 10% of property is severely damaged.		Frequency of Occurrence <u>Highly Likely:</u> Near 100% probability each year. <u>Likely:</u> Between 10 and 100% probability per year or at least one chance in ten years. <u>Occasional:</u> Between 1 and 10% probability per year or at least one chance in next 100 years. <u>Unlikely:</u> Less than 1% probability in next 100 years. Significance <u>High:</u> widespread potential impact <u>Medium:</u> moderate potential impact <u>Low:</u> minimal potential impact		

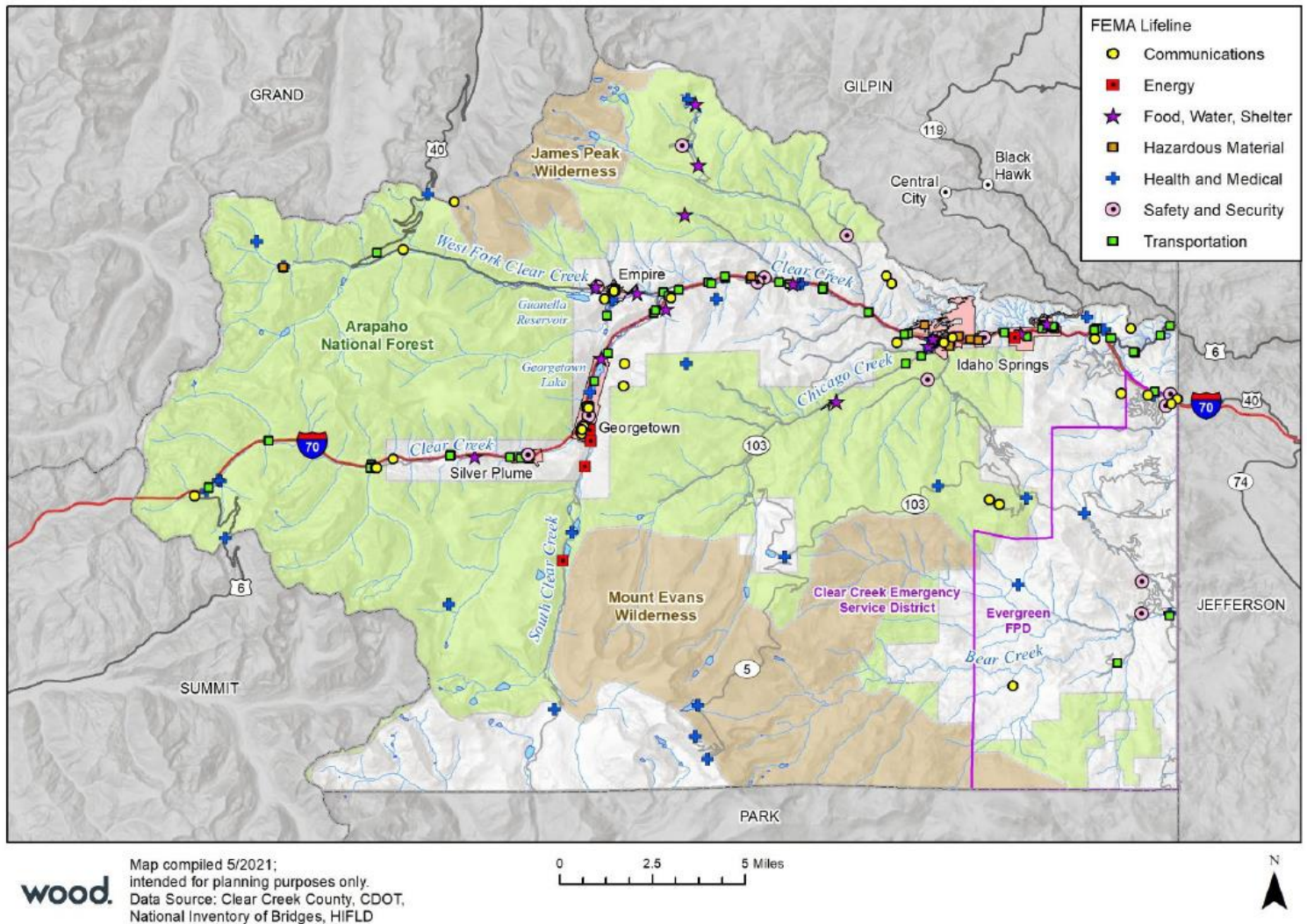
Source – 2022 Clear Creek County Office of Emergency Management HMP

The county also has its share of critical facilities. Most importantly, Interstate 70 bisects the county and is a major east-west arterial in the State of Colorado and the United States. Ensuring that this artery remains open is important. The county also contains multiple energy, hazardous materials, and communications facilities. There is an Excel Energy facility in the county as well as the Henderson Mine.



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Figure 1.4 Critical Facilities



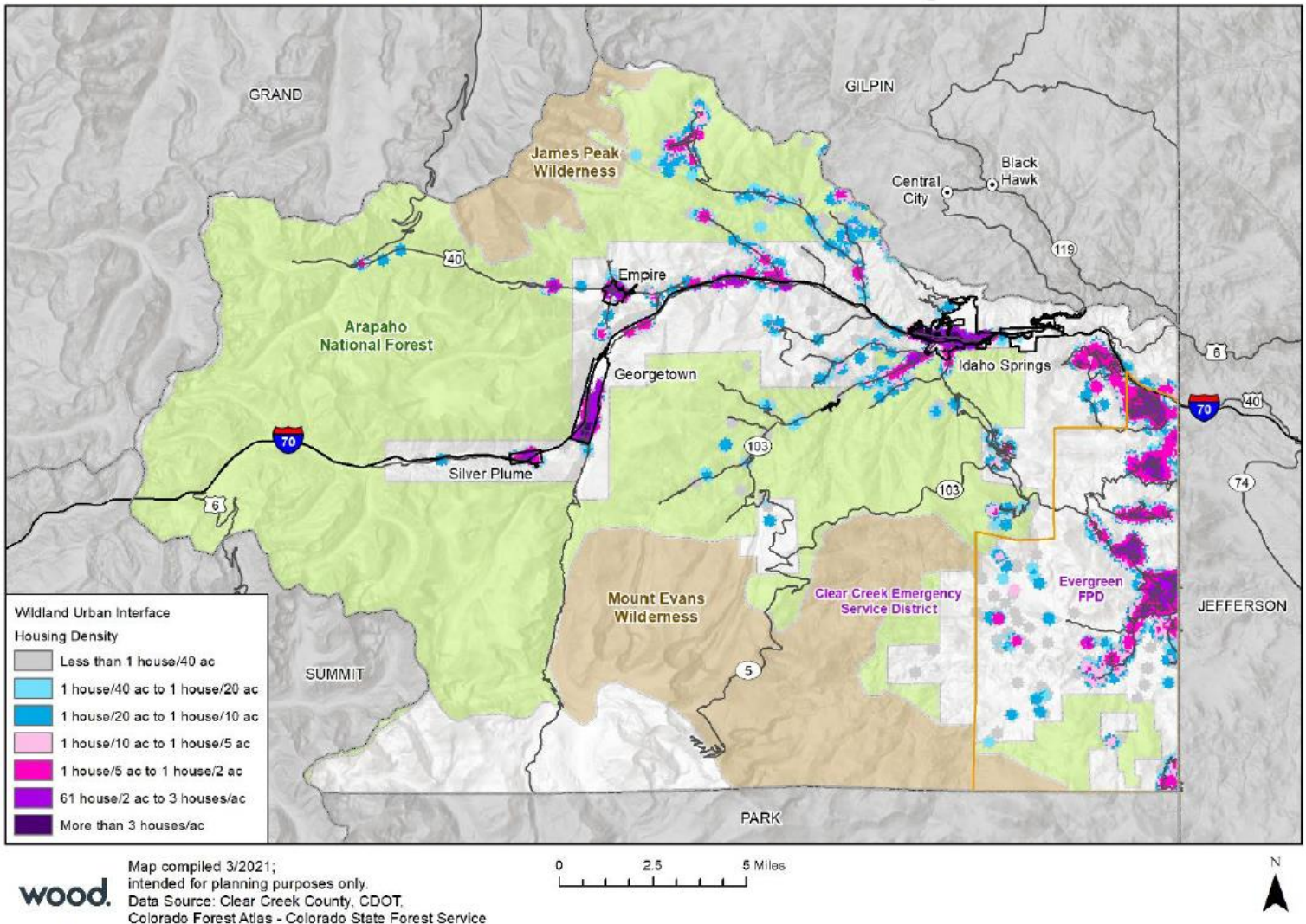
Source – 2022 Clear Creek County Office of Emergency Management HMP

The prevalent use of wood construction within the county and the density of buildings within Georgetown and Idaho Springs provides one of the most critical risks within the county. This is heightened more by the fact that these areas, along with the Idaho Springs and Floyd Hill areas are at greatest risk for wildland fires. See Figures 1.5, 1.6, and 1.7 below. This combination of wildland urban interface risks could result in significant loss of life, property loss and business income loss to the county should an urban conflagration occur. A recent noted example was the fires in Maui, Hawaii. The density of population, building construction and fast spreading wildfires resulted in terrific losses.



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Figure 1.5 Clear Creek County Housing Density within the Wildland Urban Interface



Source – 2022 Clear Creek County Office of Emergency Management HMP

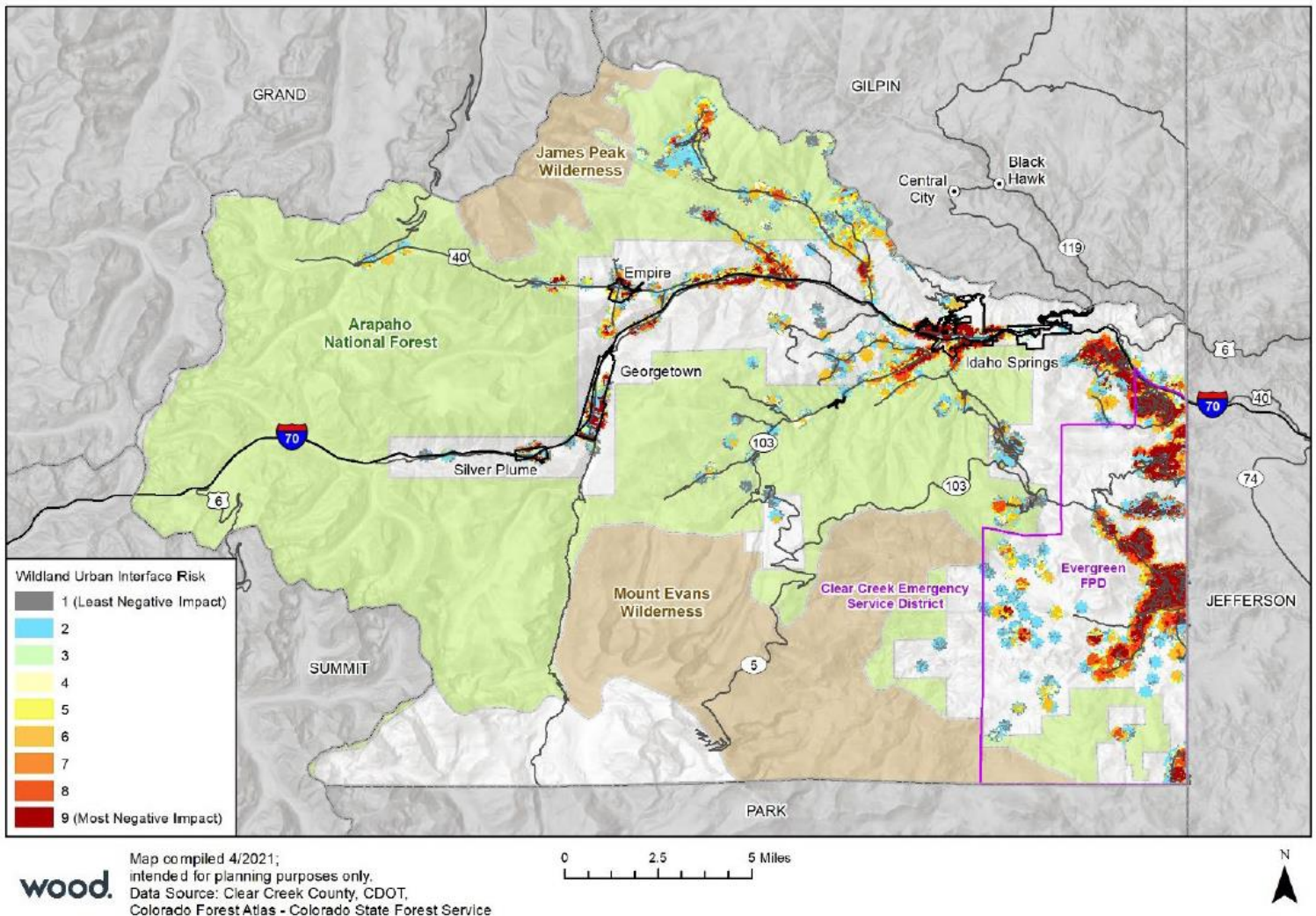
There are multiple wildfire mitigation plans or components within other plans that have been developed and published. Some of these include;

- Clear Creek County Wildfire Hazard Mitigation Plan – January 1996
- Community Wildfire Protection Plan – August 2008 for Clear Creek County Emergency Management
- Empire – Community Wildfire Protection Implementation Plan – August 2012
- Idaho Springs – Community Wildfire Protection Implementation Plan – August 2014
- Georgetown – Community Wildfire Protection Implementation Plan – February 2015
- Clear Creek County Hazard Mitigation Plan – 2022 to 2027
- Multiple area specific plans – Clear Creek Fire Authority



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Figure 1.6 Wildland Urban Interface Risk Index for Clear Creek County



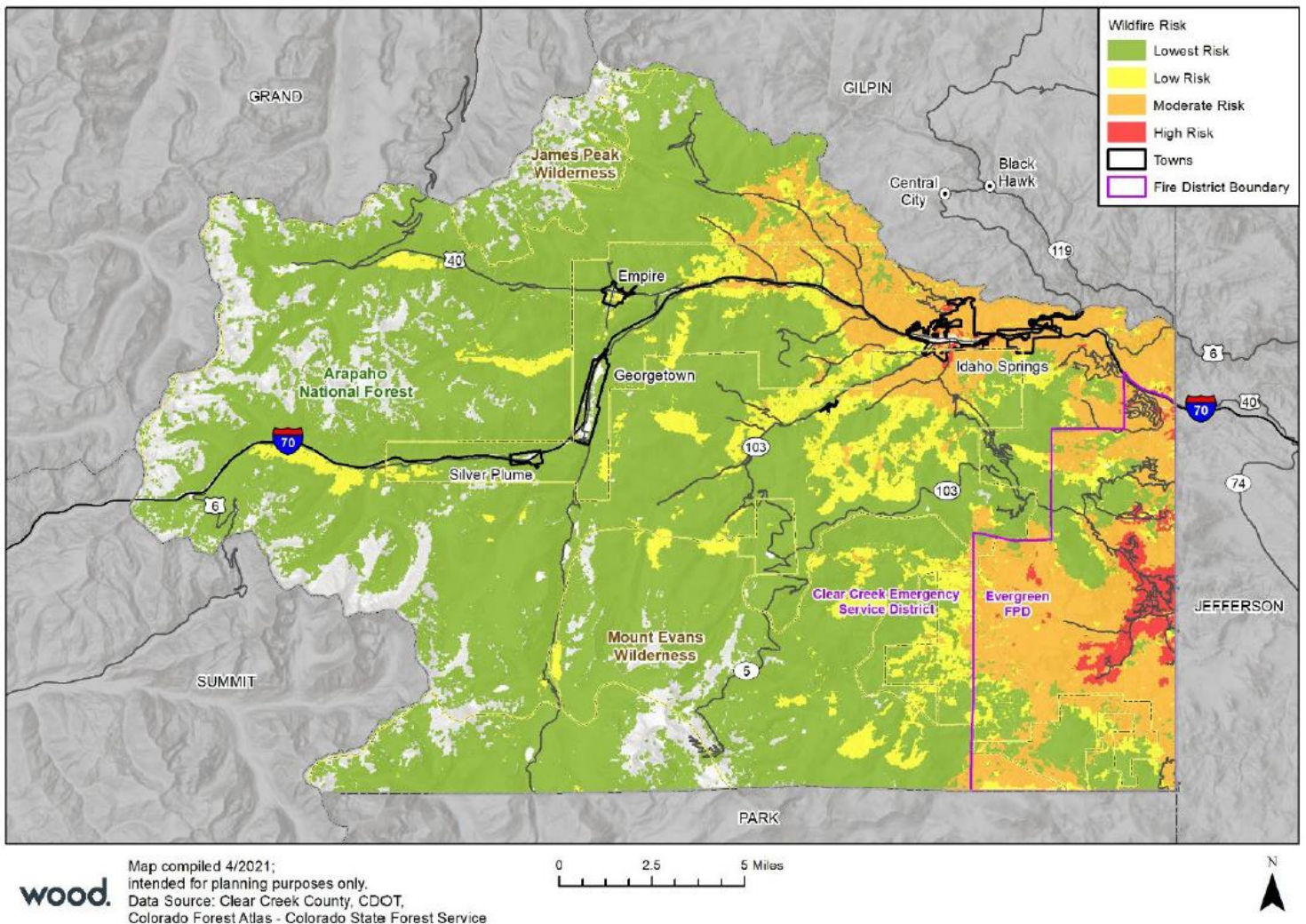
Source – 2022 Clear Creek County Office of Emergency Management HMP

Each of these plans are thorough and very detailed regarding the risks and mitigation strategies needed to reduce the wildfire risks. However, there does not appear to be much coordination between the county, jurisdictions and CCFA regarding the implementation of mitigation projects to reduce the risks.



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Figure 1.7 Wildfire Risks for Areas in Clear Creek County



Source – 2022 Clear Creek County Office of Emergency Management HMP

By knowing the community risks and their potential impacts within the county, CCFA and government officials are in a better position to determine the level of fire protection necessary and develop a plan to provide the needed resources.

Recommendations

1. With the significant risks for several types of natural disasters in the county, CCFA should maintain active communication and coordination with the Clear Creek County Office of Emergency Management to coordinate mitigation and response to incidents, including emergency operations center drills and activations.
2. With Wildland incidents being the top threat in the county, the CCFA should be the lead agency to develop, coordinate and provide mitigation to this risk through a



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comprehensive Wildland Protection Plan that encompasses those plans from all of the towns/municipalities in the County. The CCFA should provide regular information and updates on their strategies and mitigation efforts to all affected towns/municipalities.

3. CCFA should investigate the possible purchase and use of enhanced technology for the early detection and warning of wildland incidents, such as Pano AI.

Clear Creek Fire Authority

The Clear Creek Fire Authority (CCFA) was formed in 1998 in compliance with applicable Colorado law §§ 18(2)(a) and (b) of Article XIV of the Colorado Constitution, and §29-1-203.5, C.R.S. The authority allows for the formation of intergovernmental agreements (“IGA”) for the purpose of providing “public improvements, functions, services, or facilities and to create separate legal entities that are political subdivisions and public corporations of the state that are separate from the parties to intergovernmental agreement, by which governmental services may be provided.”

The general purpose of the CCFA IGA is to combine and coordinate resources which will result “in the delivery of greater fire protection and emergency services” possible within the limits of available funding. As part of the formation of the CCFA, all the previous independent and volunteer fire departments for the towns/municipalities were consolidated. Responsibility for the existing fire stations and apparatus, at the time of the IGA, was assumed by the fire authority, although the jurisdictions retained ownership of those properties.

Presently the parties to the CCFA IGA are:

- The Town of Silver Plume
- The Town of Empire
- The Town of Georgetown
- The City of Idaho Springs
- The Clear Creek County Emergency Services General Improvement District (ESD) (also known as the unincorporated areas of Clear Creek County)

The CCFA Board of Directors (BOD) provides overall governance for the provision of fire protection, fire suppression, and related special services. The BOD members are appointed by their respective jurisdiction and serve continuously unless a new appointment is made. The composition of the CCFA BOD is as follows:

- The Town of Silver Plume (1 member)
- The Town of Empire (1 member)
- The Town of Georgetown (2 members)
- The City of Idaho Springs (2 members)
- The Clear Creek ESD (2 members)

Since its inception, the CCFA IGA has been amended several times, with the most recent version effective December 22, 2022, for two years.



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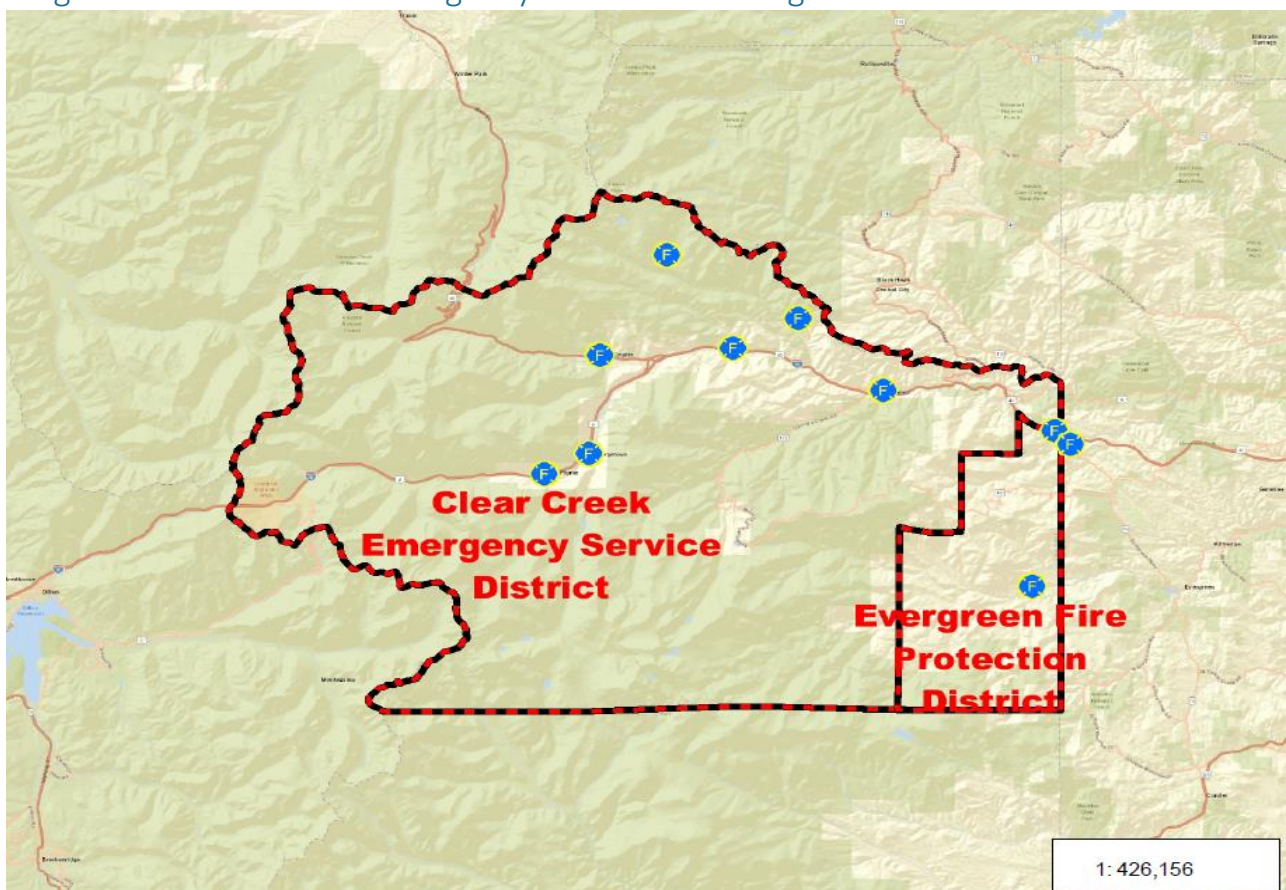
CCFA is organized under the authority of Article XIV §(2)(a); CRS § 29-1-203, the statute that allows local governments to cooperate on public improvements. Its powers are granted under the Intergovernmental Agreement (IGA) between the Clear Creek County Emergency Services General Improvement District and the participating municipalities.

Currently, the fire authority is funded by the county, through a property tax millage rate for the ESD and by the towns/municipalities through the same millage rate for their property valuation levels each year. More information regarding the funding for the CCFA will be outlined later.

Stations

The Clear Creek Fire Authority is a combination (career/volunteer) system that operates out of 8 stations throughout the county. They provide fire protection to approximately 360 miles of the county, while another fire district, the Evergreen Fire Protection District, provides fire and EMS protection coverage to approximately 36 square miles in the southeast corner of the county. The Evergreen Fire Protection District preceded the formation of the CCFA and has provided coverage to that portion of Clear Creek County for many years. The CCFA also provides response to 31 miles of Interstate 70.

Figure 1.8 Clear Creek Emergency Service and Evergreen Fire Protection Districts



Source – Clear Creek County GIS



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The Clear Creek Fire Authority Fire Stations include the following:

- Station 1 – Dumont
- Station 2 – Idaho Springs (Owned by the City of Idaho Springs)
- Station 3 – Empire
- Station 4 – Georgetown (Owned by the Town of Georgetown)
- Station 6 – Floyd Hill
- Station 7 – St. Mary's
- Station 8 – Silver Plume
- Station 9 – York Gulch

Most of their fire stations (5) are located along the I-70 corridor running through the county. Four of the stations have dorm/resident areas for either off duty career personnel or resident volunteers. The Georgetown station has bunkroom space for two people, but the facility is shared with Clear Creek EMS. Two stations do not have any bunkroom/dormitory space for nighttime duty crews or career personnel. Currently, only the main station in Dumont has sufficient dormitory space for career and volunteer personnel. The lack of dormitory space for volunteer personnel, even in those stations that house off duty career personnel, limits the ability for volunteer personnel to be utilized in nighttime duty shifts other than the station in Dumont. Once the volunteer duty shifts are full at that station, no additional volunteers can be accommodated. Currently, the CCFA is actively working to add dormitory space at the Idaho Springs Fire Station and re-configure dorm and bathroom space at the Georgetown Fire Station to allow for nighttime coverage. The CCFA is also actively working to move towards construction of an approximately 10,000 square foot replacement fire station in Idaho Springs on land recently acquired from the city. They are in the initial phases of this process. However, based on comparable new fire station construction in the state, a new station in Idaho Springs would be estimated to cost between \$8 million to \$10 million.

The overall condition of the facilities within CCFA are Fair to Good. The fire station in Empire is in great shape as it is newly constructed. The stations at York Gulch and Silver Plume, on the other hand, are in fair shape and are in need of upgrading and modernization. MissionCIT was not able to see inside of York Gulch station and did not visit the Floyd Hill station. In addition, resources have been committed to the Dumont fire station to allow for full-time staffing, so its condition is good. The remaining stations without full-time staffing do not see some of the same wear and tear, but they are older and will require upgrades and maintenance in the future. In particular, none of the stations has diesel exhaust emission systems.

Recommendations
1. Any future fire stations constructed by CCFA should have sufficient dormitory space for anticipated staffing needs, whether through career or volunteer personnel. They should also include the installation of automatic fire sprinkler systems.



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2. CCFA should update its current capital facilities plan to include future consideration and planning to add dormitory space to those stations that are the most active, yet do not have adequate facilities.
3. As part of a long-term capital facilities plan, fire station upgrades, modernization and safety improvements, such as diesel exhaust systems and fire sprinkler systems, should be included in the plan.
4. CCFA should conduct a cost/benefit analysis for a new fire station in Idaho Springs compared to a refurbishment of the existing station given their current financial situation.

Apparatus

CCFA operates a diverse fleet of various types of apparatus. They provide coverage with 10 Type 4 engines, 1 Type 6 engine, 2 tenders, 2 ladder trucks and 3 brush units. They also have several miscellaneous units including rescue units, ATV's, a mobile self-contained breathing apparatus (SCBA) fill station trailer, ice rescue trailer and Hazardous Material response trailers.

Figure 1.9 Clear Creek Type 4 Engine



Clear Creek Type 4 Engine – All Frontline Engines are Identical.

2013 International/Rosenbauer 4x4

1000 Gallons with 1000 GPM Pump



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Figure 1.10 Ladder 4 2008 Smeal 105'



Figure 1.11 Engine 11 – Type 6 Engine



300 Gallons of Water – 600 GPM pump





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The inventory of their heavy vehicle fleet consists of the following.

Table 1.5 Clear Creek Fire Authority Fleet Inventory

Vehicle Identifier	Year	Make	Model	Tank Size	Pump Size	Mileage as of 3/21/23	General Visible Condition
Engine 1	2013	International Rosenbauer	7400	1000 Gal	1000 GPM	4,813	Good
Engine 2	2013	International Rosenbauer	7400	1000 Gal	1000 GPM	7,790	Good
Engine 3	2013	International Rosenbauer	7400	1000 Gal	1000 GPM	7,057	Not Seen
Engine 4	2013	International Rosenbauer	7400	1000 Gal	1000 GPM	10,316	Good
Engine 6	2013	International Rosenbauer	7400	1000 Gal	1000 GPM	6,789	Not Seen
Engine 7	2013	International Rosenbauer	7400	1000 Gal	1000 GPM	2,838	Good
Engine 8	2013	International Rosenbauer	7400	1000 Gal	1000 GPM	8,931	Good
Engine 9	2013	International Rosenbauer	7400	1000 Gal	1000 GPM	5,208	Not Seen
Engine 10	2013	International Rosenbauer	7400	1000 Gal	1000 GPM	6,789	Not Seen
Engine 11	2017	Dodge Ram	5500	300 Gal	600 GPM	88,713	Fair
Engine 41 (Reserve)	1986	General		1000 Gal	1500 GPM	47,980	Fair
Tender 2	2001	International	4900	2000 Gal	750 GPM	11,904	Fair
Tender 6	2001	International	4900	2000 Gal	750 GPM	8,384	Not Seen
Ladder 2	2007	Smeal	75' Quint	400 Gal	2000 GPM	17,417	Good
Ladder 4	2008	Smeal	105'	400 Gal	2000 GPM	8,998	Good
Brush 2	2009	Dodge Ram	5500	300 Gal	600 GPM	61,795	Fair
Brush 4	2002	Ford	350	150 Gal	125 GPM	93,967	Fair
Rescue 21	1996	International	4900			17,366	Fair
Rescue 2	2005	Ford	250			95,500	
Rescue 9	2006	Dodge	2500			174,704	Not Seen

The current fleet for CCFA, though large and diverse is older, but is in relatively good shape overall. The engines are all 10 years old with few miles on them. They were purchased at one time through a lease/purchase agreement. CCFA regularly rotates them throughout the various stations to even out the wear and tear. Only the utility, rescue and staff vehicles have significant mileage on them. The seasonal wildland crew uses Brush 4 for their work.



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The American Public Works Association (APWA) has published guidelines for the replacement of heavy work vehicles, including fire apparatus. Apparatus is scored based on age, mileage, the type of service, reliability, maintenance and repair costs and the overall condition. In scoring the heavy apparatus with these guidelines, all of the engines fall within the “Good” category. The ladder trucks both fall within the “Qualified for Replacement” category, based primarily on their age. Both tenders fall within the “Needs Immediate Consideration” for replacement category due to their age. The current reserve engine (Engine 41) also falls within the “Needs Immediate Consideration” for replacement category due to its age. Engine 11, the primary response vehicle, though not considered a heavy vehicle, also should be considered for replacement at this time. All of the rescue vehicles and brush trucks should all be considered for replacement based on their age and mileage.

Another source for consideration with fire apparatus replacement is the National Fire Protection Association (NFPA). The NFPA is a national, consensus standards organization for fire and emergency services. Its standards are recommendations only but are relied on by the fire service to guide it in its decision making and service delivery deployment.

The main apparatus standard regarding replacement is the new 2024 NFPA 1900. This is the *“Standard for Aircraft Rescue and Firefighting Vehicles, Automotive Fire Apparatus, Wildland Fire Apparatus, and Automotive Ambulances”*. This standard took the place of the former 2016 NFPA 1901 *“Standard for Automotive Fire Apparatus”*.

In Appendix D of the NFPA 1900 Standard, NFPA recommends the following.

“It is recommended that apparatus more than 15 years old that have been properly maintained and are still in serviceable condition be placed in reserve status, be upgraded in accordance with this standard, and incorporate as many features as possible of the current fire apparatus standard”.

It also recommends that,

“Apparatus that were not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced”.

There is also the 2024 NFPA 1910, *“Standard for the Inspection, Maintenance, Refurbishment, Testing, and Retirement of In-Service Emergency Vehicles and Marine Firefighting Vessels”*. This standard is a compilation of the former NFPA 1911, 1912, 1925 and 1071 Standards and addresses the required preventative and routine maintenance for emergency vehicles.

Even with the APWA and NFPA national recognized standards, apparatus replacement can be based on several factors regarding the wear and tear of the apparatus and the availability of updated safety features on the apparatus. Some of these include:

- Local road conditions



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- Travel distances, speeds of apparatus response and engine wear
- Department preventative maintenance programs
- Department workload
- Weather impacts, such as the use of road salt, etc.
- Crew compartment air bags, updated braking systems and updated emissions systems

Based on these factors, there may be apparatus that exceed the NFPA 1900 15-year threshold for replacement but are still in relatively good shape. There may also be apparatus that are only 10 years old but are completely worn out and need immediate replacement. Though all CCFA frontline engines are currently in good shape, with low mileage, they are ten years old, with older technology and safety features. Per the NFPA guidelines, they have 5 years of service life left. They will more than likely be able to serve well past that time, however, CCFA should develop a plan for gradual phased-in replacement as they currently do not have the funds to replace all units at one time as when they purchased all of these units in 2013. In addition, the current state of the fire apparatus manufacturing processes has been significantly impacted by COVID and the state of industry in general. The current time period from placing an apparatus order until delivery is averaging between 3 to 4 years. This does not take into account the development of specifications necessary for purchase. In addition, the cost of apparatus has increased dramatically. Today, a custom fire pumper is approximately \$1 million dollars while a ladder truck is approximately \$2 million.

In discussion with the CCFA chief, he indicated that they would probably look to re-chassis the current pumper fleet as the bodies are aluminum and are holding up well. Even if CCFA commits to that process, the timeframe to secure the needed commercial chassis and have a fire apparatus manufacturer do the re-mount will need to be coordinated due to supply chain issues and availability. The costs for this process will still certainly be greater than the original purchase price for the units. In reviewing the documents provided to MissionCIT by the CCFA, they appear to have an undated light vehicle replacement plan in place, but they did not appear to have a heavy vehicle replacement plan.

Preventative maintenance on the apparatus is done by the career crew from Station 1. They will travel throughout the month to the various stations where they will check the apparatus, run them (if possible), and check the equipment. Minor items noted for repair are handled primarily in-house when possible. The assistant chief or one of the captains will perform the additional maintenance. If there is either warranty work or more significant repairs needed, the apparatus will be taken to the international dealer in the metro area or to either West Metro Fire or Max Fire in Colorado Springs. Due to their location, performing as much work as possible in-house saves them significantly.



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Recommendations

1. CCFA should prepare a heavy vehicle replacement plan and regularly work towards implementation within their budget.
2. CCFA should update its current light vehicle replacement plan and ensure that it works within their budget.
3. CCFA should ensure that any personnel/agency that works on their heavy vehicle fleet have mechanics that are Emergency Vehicle Technician (EVT) certified in order to meet NFPA requirements.

Staffing

Currently, as of the MissionCIT site visit, the department consists of;

- 1 Career Fire Chief
- 1 Career Assistant Chief
- 1 Career Administrative Assistant
- 2 Career Captains
- 3 Career Lieutenants
- 3 Career Firefighters
- 1 Volunteer Captain
- 1 Volunteer Special Operations Lieutenant
- 55 Volunteer firefighters
- 4 Seasonal wildland firefighters

Other than the command staff personnel, the fire authority was completely volunteer until they added career Lieutenant positions in 2016, career firefighter positions in 2021 and the wildland positions in 2023. The career Lieutenants and Firefighters work a 48/96 shift schedule, and the career Captains work four 10-hour days that overlap during the week.

The vast majority of volunteer firefighters live outside of the county and provide staffing through duty crew shifts. More information regarding the volunteer staffing will be provided in a separate section. The current staffing within CCFA includes the following;



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Table 1.6 CCFA Staffing

Fire Chief		
Assistant Chief		Administrative Assistant
Full Time Captain – 10 Hour Shift (Training) Full Time Captain – 10 Hour Shift (Sp. Ops., Wildland, Code Enforcement)		
Fire Station	Staffing Level	Other Staffing
Station 1 - Dumont	1 Full Time Lieutenant/shift 1 Full Time Firefighter/shift	
Station 2 – Idaho Springs	5 Volunteers	
Station 3 - Empire	2 Volunteers	Career Shift Lt. lives in apartment @ station
Station 4 - Georgetown	2 Volunteers	
Station 6 – Floyd Hill	1 Volunteer	Career Shift FF and 1 volunteer live in dorms at station – Rented @ \$450/mo.
Station 7 – St. Mary's	4 Volunteers	2 Available apartments Career Shift Lt. and Vol. FF residing there
Station 8 – Silver Plume	0 Volunteers	Fire Chief lives in upstairs apartment (\$450/mo. rent)
Station 9 – York Gulch	1 Volunteer	
Out of County Volunteers	40 Volunteers (Provide shift staffing @ Station 1)	
Wildland Response/Mitigation	4 Seasonal Workers (Serve as Shift Volunteers during off-season)	

Currently, 24/7 career staffing is provided only from the Dumont Fire Station with one Lieutenant and one Firefighter. The CCFA command staff also has offices there and responds, as do the daytime Captains to incidents. CCFA hires a seasonal wildland crew from approximately Mid-May through Mid-November. These four personnel are cross trained for wildland fire response and structural fire response. When not on incidents, these personnel are engaged in wildland mitigation projects that have been identified by the CCFA command staff. The seasonal wildland crew is stationed at Dumont and works on mitigation projects as directed.



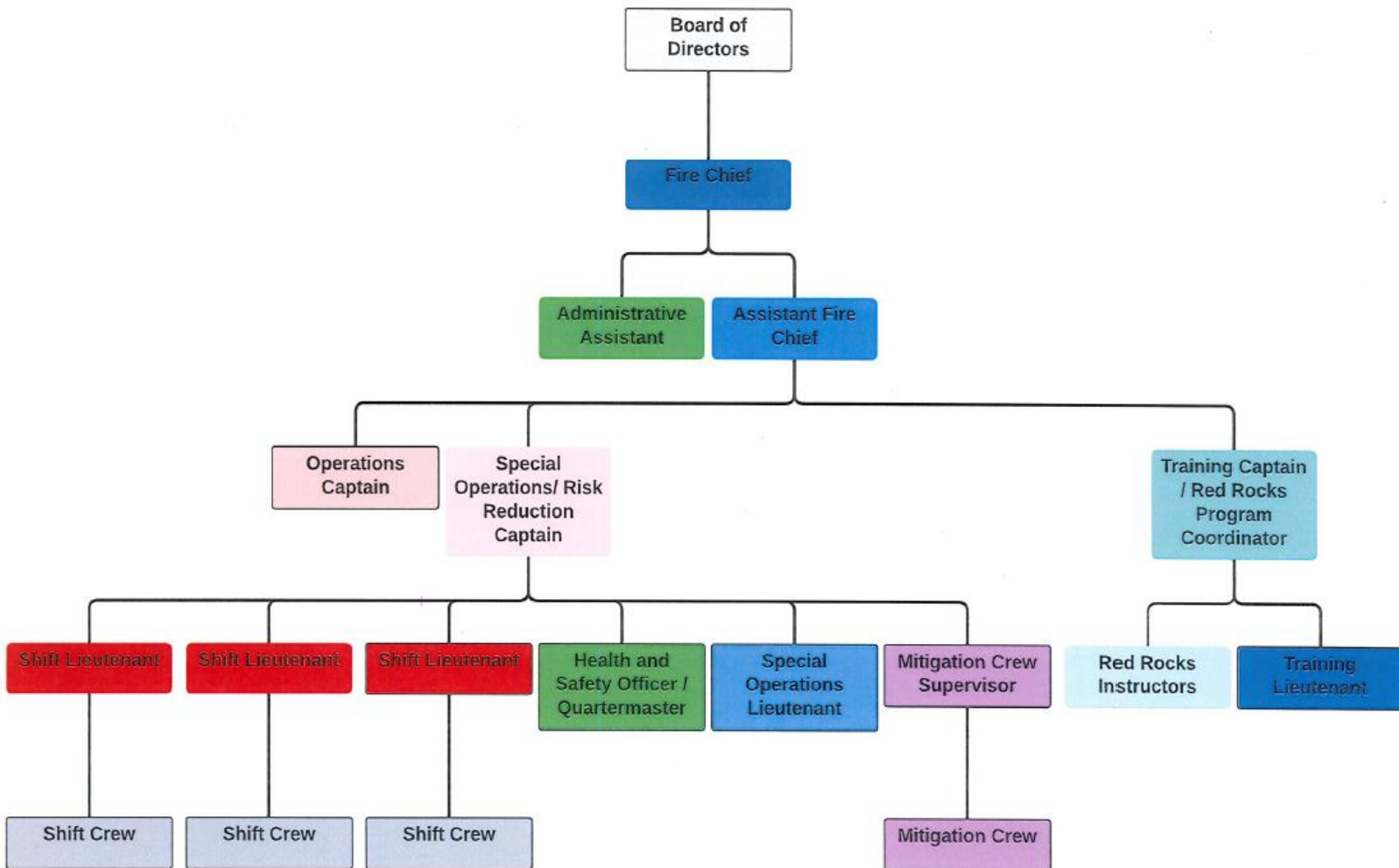
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The current organizational structure for CCFA is:

Figure 1.12 CCFA Organizational Structure

Clear Creek Fire Authority

Jeremy Jones | June 20, 2023



The current positions of Operations Captain, Special Operations Lieutenant, Training Lieutenant and Health and Safety Officer are volunteer positions in the organization. Volunteer officer positions carry the full responsibility and authority as a career officer. The Special Operations/Risk Reduction Captain, along with the Training Captain currently serve as the primary career supervisors to the shift lieutenants and firefighters.



Volunteer Program

Clear Creek Fire Authority volunteers are required to clear an interview process, background check, and a drug test upon entry into the department. Once cleared, the volunteer is assigned personal protective equipment (PPE) to include station work uniforms. CCFA provides a \$150.00 duty boot reimbursement as well. Volunteers are required to obtain their own station uniform pants. At a minimum, volunteers must complete 36 hours of state training and 36 hours of in-house training, including CPR. Additionally, volunteers must respond to a minimum of two calls per month or six calls per quarter. Out of County Volunteers who are certified Firefighters are required to complete a minimum of five 10-hour duty shifts a month.

CCFA has categorized their volunteers into four types: In-County, Out-of-County, Community, and Probationary.

- In-County Volunteer: A volunteer who resides in the county and responds to calls from their home or their station and may sign up for scheduled shifts, but it is not required.
- Out-of-County Volunteer: A volunteer who resides outside of Clear Creek County and volunteers with CCFA. Out-of-County volunteers are required to run 10-hours shifts from the station.
- Community Volunteer: A community volunteer resides in Clear Creek County and responds to calls in their local community from home as needed and available. Community volunteers may sign up for scheduled shifts, but it is not required.
- Probationary: A probationary volunteer may reside in or outside of Clear Creek County but is not released as a firefighter. A probationary volunteer may run shifts and respond to calls in a limited capacity.

CCFA has a well-established Volunteer Position Matrix defining position titles, exterior or interior, job duties, training, and participation requirements. (See [Appendix A](#)).

CCFA has a dedicated volunteer cadre. This was evident in speaking to the internal and external stakeholders. The volunteers are passionate about their role with CCFA and yet they are also the first to claim they are being spread too thin.

Due to lack of data, we were unable to assess the attrition and retention rates of the CCFA volunteers. A google spreadsheet provided historical statistics of volunteer training hours and shift count along with some personal data such as date of birth, join date, and membership type as of August 2023. The data may not be inclusive and was unable to be validated due to the type of volunteers required to record shifts or the reporting mechanism.



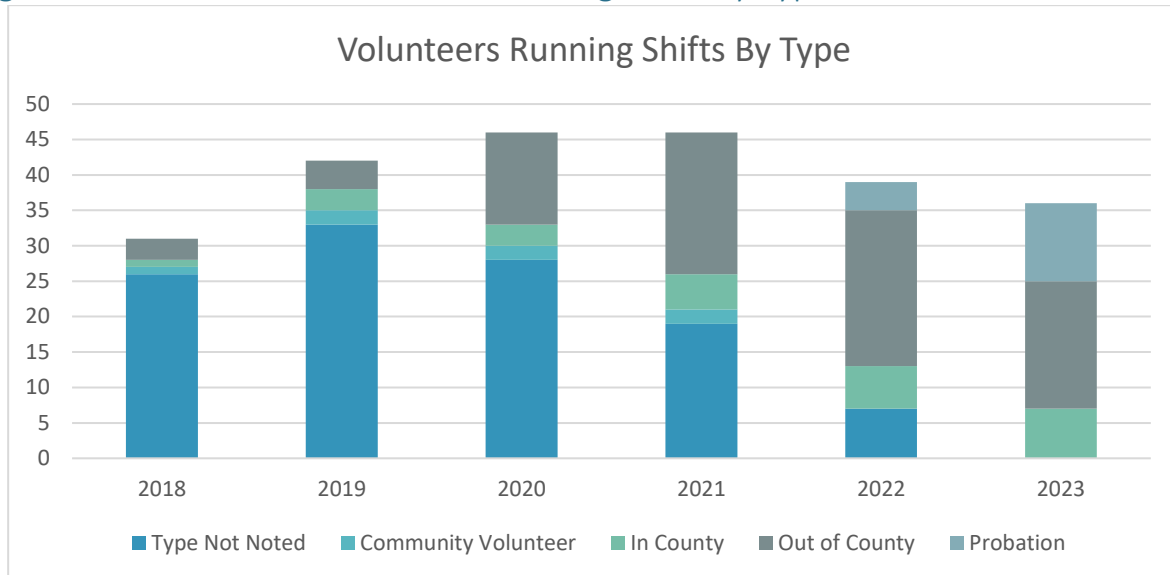
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The following is a snapshot of volunteer participation.

The August 2023 roster showed 55 volunteers on the active roster with 36 volunteers having run at least one 10-hour shift in 2023.

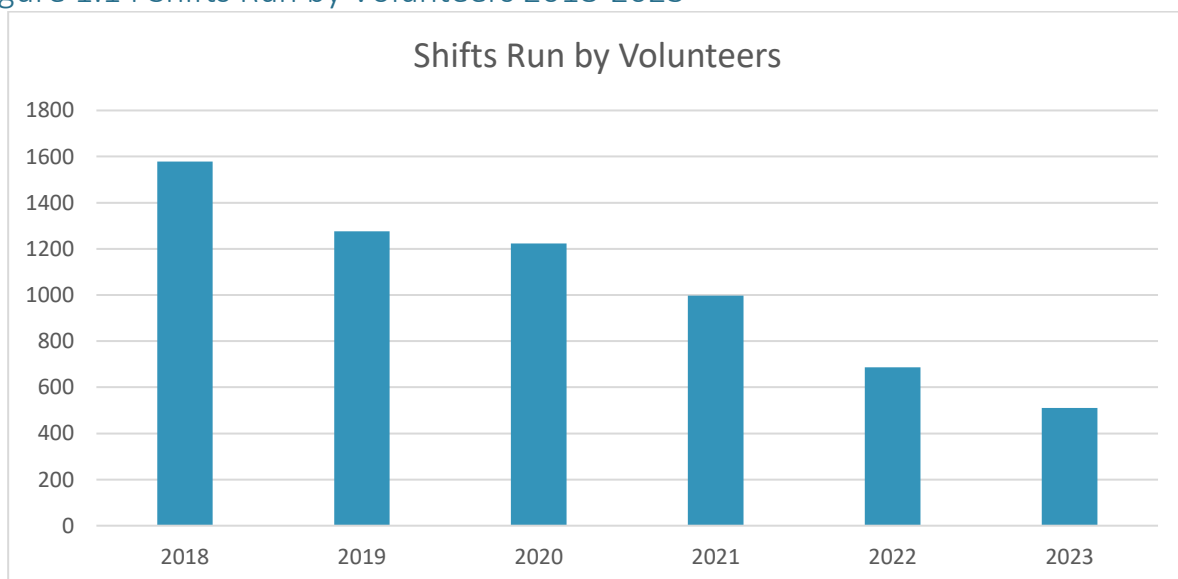
Data shows an increase in volunteer activity from 2018 to 2021 with a 22% drop from 2021 to 2023.

Figure 1.13 Number of Volunteers Running Shifts by Type 2018-2023



The number of shifts completed by volunteers shows a 68% decrease from 2018 to 2023. This may be attributed to the fact that 24/7 station staffing started in 2021 by career firefighters.

Figure 1.14 Shifts Run by Volunteers 2018-2023





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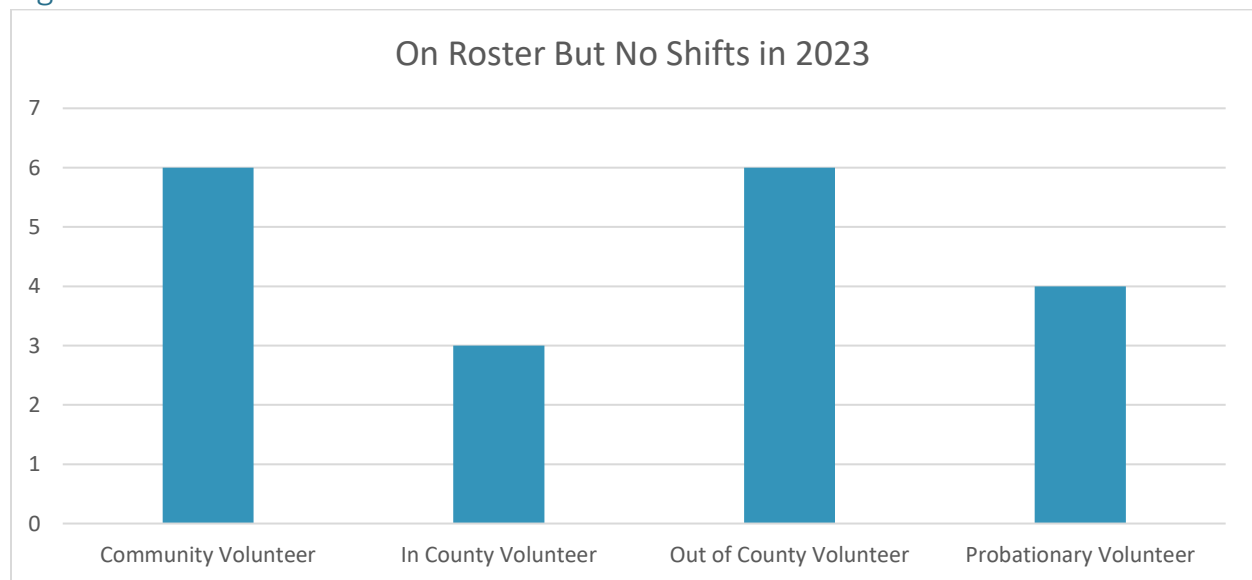
In addition to running calls, volunteers dedicate significant time to training. CCFA data shows the average training hours per volunteer per year has decreased in 2023 from prior years by 71%.

Table 1.7 Average Training Hours Per Volunteer

	2018	2019	2020	2021	2022
Average Training Hours Per Volunteer	76	53	26	34	22

In 2023, 19 volunteers did not run a shift but are recorded as active in training and on the roster.

Figure 1.15 Volunteer Members on Roster but No Shift 2023



Though no national fire agency has good statistics of a good length of service for volunteer firefighters, the National Volunteer Fire Council's 2020 Marketing for Change research report shows that most agencies hope to get 3-10 years from their volunteer firefighters. CCFA's average volunteer length of service is two years and the average age of the active volunteer who runs shifts is 36 years of age. The CCFA volunteers are older and, besides the probationary members, are in the ideal range of retention years. Volunteers at the 3-4 years of service mark should be in a leadership development or advanced skills track which would help the community and the internal department continue to grow the volunteer program.



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Table 1.8 Average of Volunteer Member Age and Length of Service

	Average Age	Average Length of Service
In County Volunteer	38	4 Years
Out of County Volunteer	36	3 Years
Probation Volunteer	34	1 Year
Average Total	37	3.5 Years (Those off probation)

Benefits provided to volunteers are a tool to help retain and attract volunteers. CCFA provides stipends to their volunteers. Volunteers receive a \$70 stipend for each 10-hour shift completed and volunteer officers receive a \$90 stipend for each 10-hour shift completed. Volunteers expressed the tangible stipend benefit is a significant benefit. The in-station housing option and tuition benefits are also appreciated by the volunteers. The sense of camaraderie and good morale in the station was a positive intangible benefit expressed by the volunteers.

Recommendations

1. Seek out a SAFER Recruitment and Retention grant for an R&R Specialist and R&R funding. SAFER grant writing can be completed internally or hired with the cost of the writer covered in the grant expense. In the interim, recruit or dedicate a volunteer for an R&R specialist role. The R&R specialist should focus on recruitment and onboarding of volunteers; re-engaging volunteers who are trained but not active; and maintaining accurate data tracking from application to termination of volunteers. Additional volunteer recruitment ideas and resources are located in [Appendix E](#).
2. CCFA should take proactive steps to affiliate the Community College students enrolled in the Fire School hosted by CCFA and the Warren tech students.
3. The CCFA should develop a centralized repository of information to enhance internal communications. A secure website will eliminate the multiple google spreadsheets and uncertainty of documented policy and procedures.
4. Develop an administrative volunteer program to remove administrative burdens from operational firefighters and officers; recruit specialty skills volunteers such as photographer, marketing, fire prevention, and public education.
5. Develop a benefits manual detailing the benefits, eligibility, and processes in obtaining the benefit. Develop a benefits flyer for recruitment events. Benefits are a strong retention and recruitment tool specifically if able to provide free training/certification and affordable housing.
6. CCFA should initiate an exit interview process for volunteers to collect data on why volunteer members are leaving. For better results, send a hard copy and digital interviews and have the interviews sent out from and returned to a non-CCFA member.
7. The number of volunteer staffing shifts have declined over the last few years, probably due to the addition of career personnel. To enhance volunteer participation, additional effort and communication should be initiated to engage those out of county volunteers to determine why the number of staffed shifts have declined and what



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improvements can be made in the system. An internal survey focusing on shifts and interest in running should be conducted.

8. CCFA should initiate a focused in-county volunteer recruitment campaign to gain greater number of in-county fire volunteers who can respond to significant incidents and also staff duty shifts when available.

Workload and Response

The CCFA provides a multitude of services to include;

- Fire Suppression
- Wildland fire response
- Basic Life Support non-transport EMS response
- Vehicle Extrication at Accidents
- Swiftwater and ice rescue
- Limited back country (mountain) rescue
- Low angle technical rescue
- Hazardous Material response (Currently re-forming their team)
- Fire Inspections
- Fire Plans Review
- Fire Investigations
- Fire training at the Red Rocks Community College

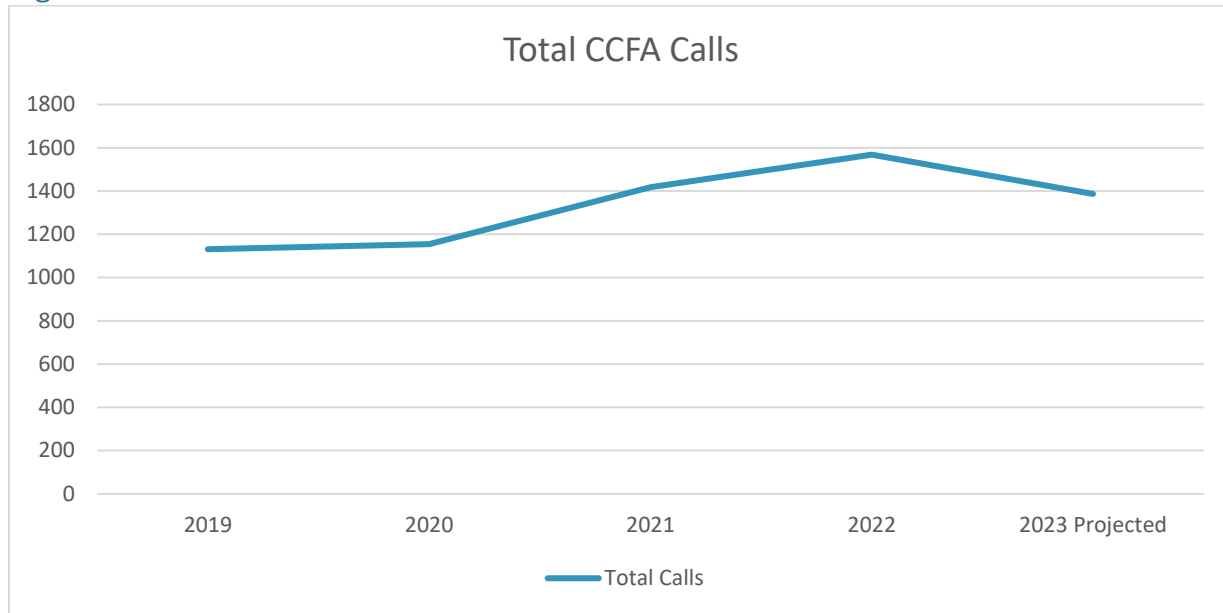
The CCFA currently has vehicle extrication equipment on multiple fire apparatus and command vehicles accessible to the interstate or other roadway incidents. The department has multiple personnel trained as rope rescue technicians. All CCFA personnel are trained as ice rescue technicians, and they have multiple personnel trained in Swiftwater rescue. This Swiftwater team is available for deployment throughout the state. CCFA has 38 personnel trained at various levels of wildland fire response. CCFA is a partner agency with the Boulder County Type II initial attack fire crew and is a resource available for national deployment. The department also has personnel available to deploy as an overhead position within the Incident Command System (ICS). CCFA is currently re-forming its Hazardous Material response capabilities. They currently have 6 people certified at the Technician level, with two more people ready to test and they have all the equipment necessary to handle a hazardous materials release from a commercial vehicle.

The CCFA responds to approximately 1,500 calls per year. The total call totals for the last few years are indicated below.



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Figure 1.16 Total CCFA Calls



Between 2019 and 2022, CCFA experienced an increase in calls of 37%. Based on the number of calls between January – August 2023, CCFA is projected to respond to 1,386 calls in 2023, or a slight decrease of 11.6% from 2022.

The distribution of calls within the CCFA response area is as expected, aligned with the population areas of the authority and along the interstate.

The fire station locations within the CCFA response area; however, align very well to the location and distribution of emergency incidents. From a GIS analysis;

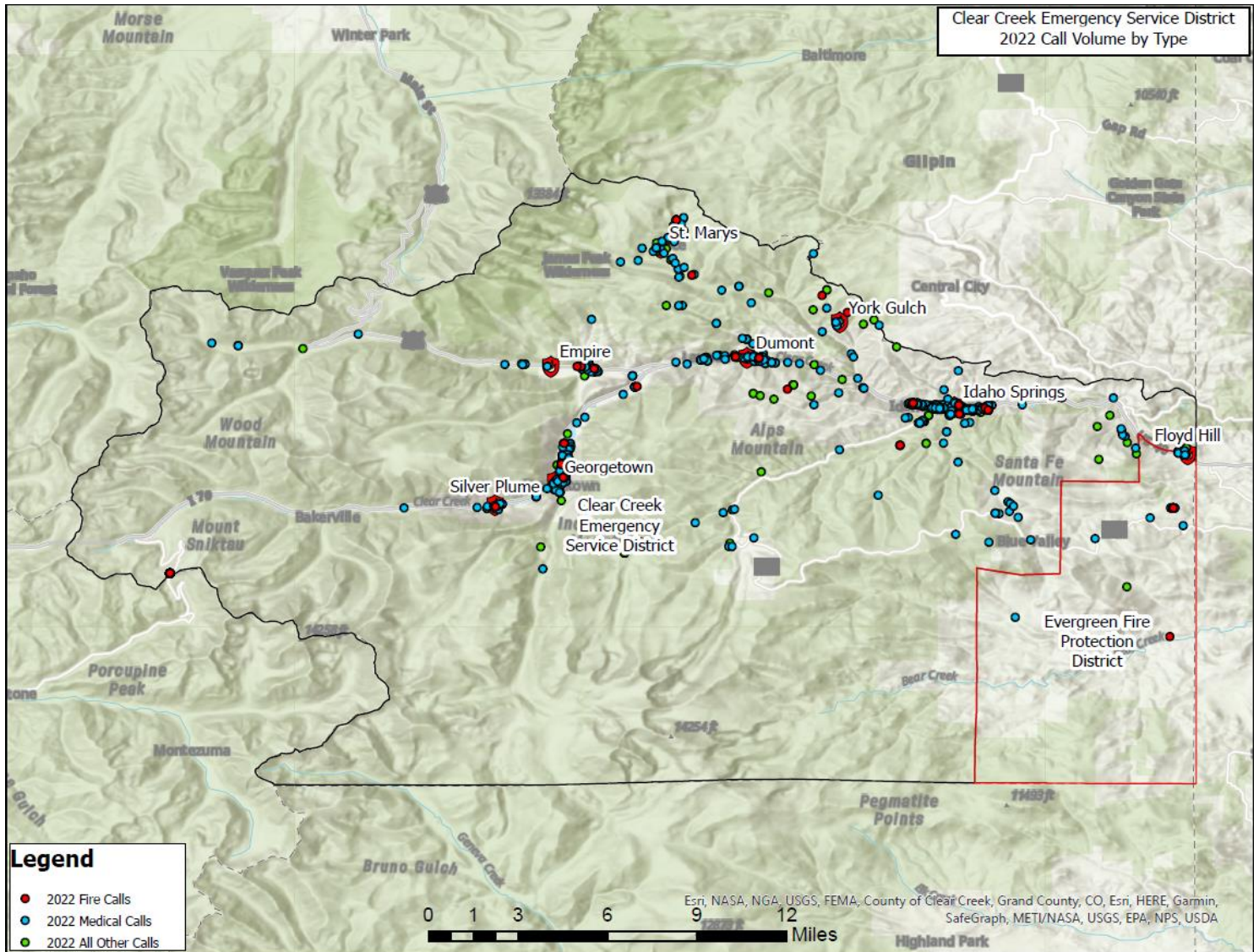
- 85% of the structures in CCFA are located within 5 miles of a fire station
- 55% of the structures in CCFA are located within 1.5 miles from a fire station
- 77% of the incidents are located within 12-minute travel times from a fire station
- 75% of the incidents are located within 8 minutes travel time from a fire station
- 78% of incidents are located within 5 miles of a fire station



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The map below shows the location of all incidents run by CCFA in 2022.

Figure 1.17 Location of All Incidents run by CCFA 2022

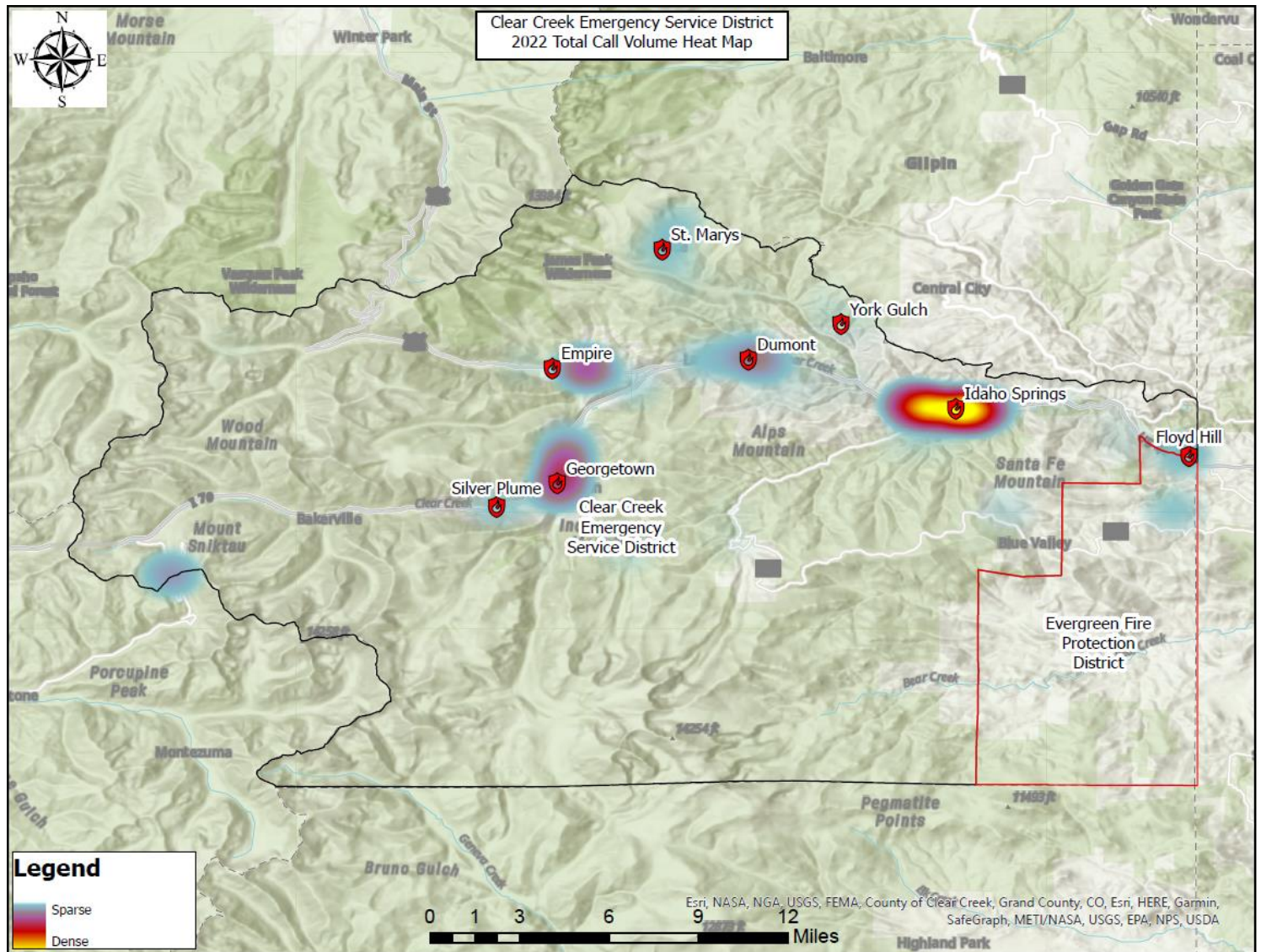




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To show this distribution of responses for 2022 in a slightly different way, a heat map was generated to show the level of the distribution of incidents. The brighter red and yellow colors show a greater density and location of incidents than the lighter blues.

Figure 1.18 Heat Map of Incident Location Distribution

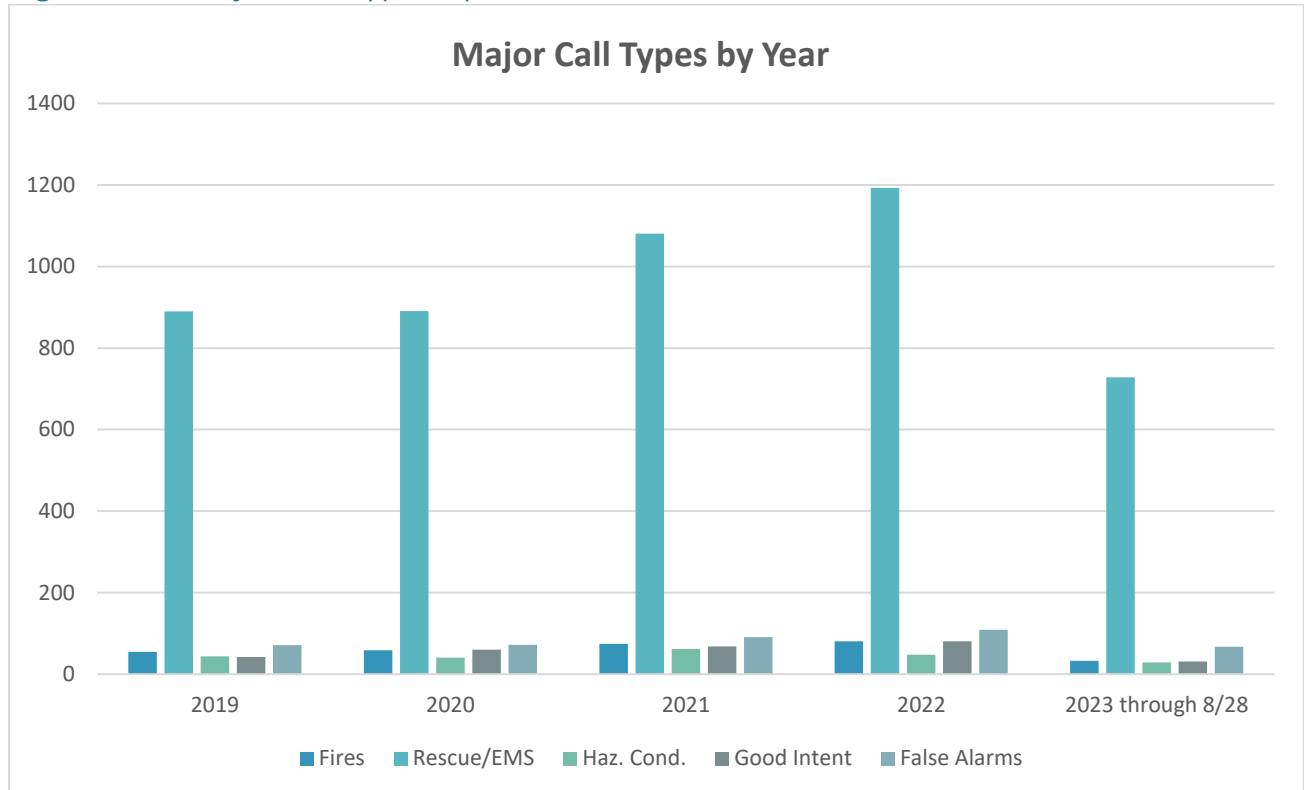




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As with most fire departments that respond to medical calls, the vast majority of those calls are medical related. Since 2019, the CCFA's average EMS/Rescue call workload is 77% of all responses.

Figure 1.19 Major Call Types by Year



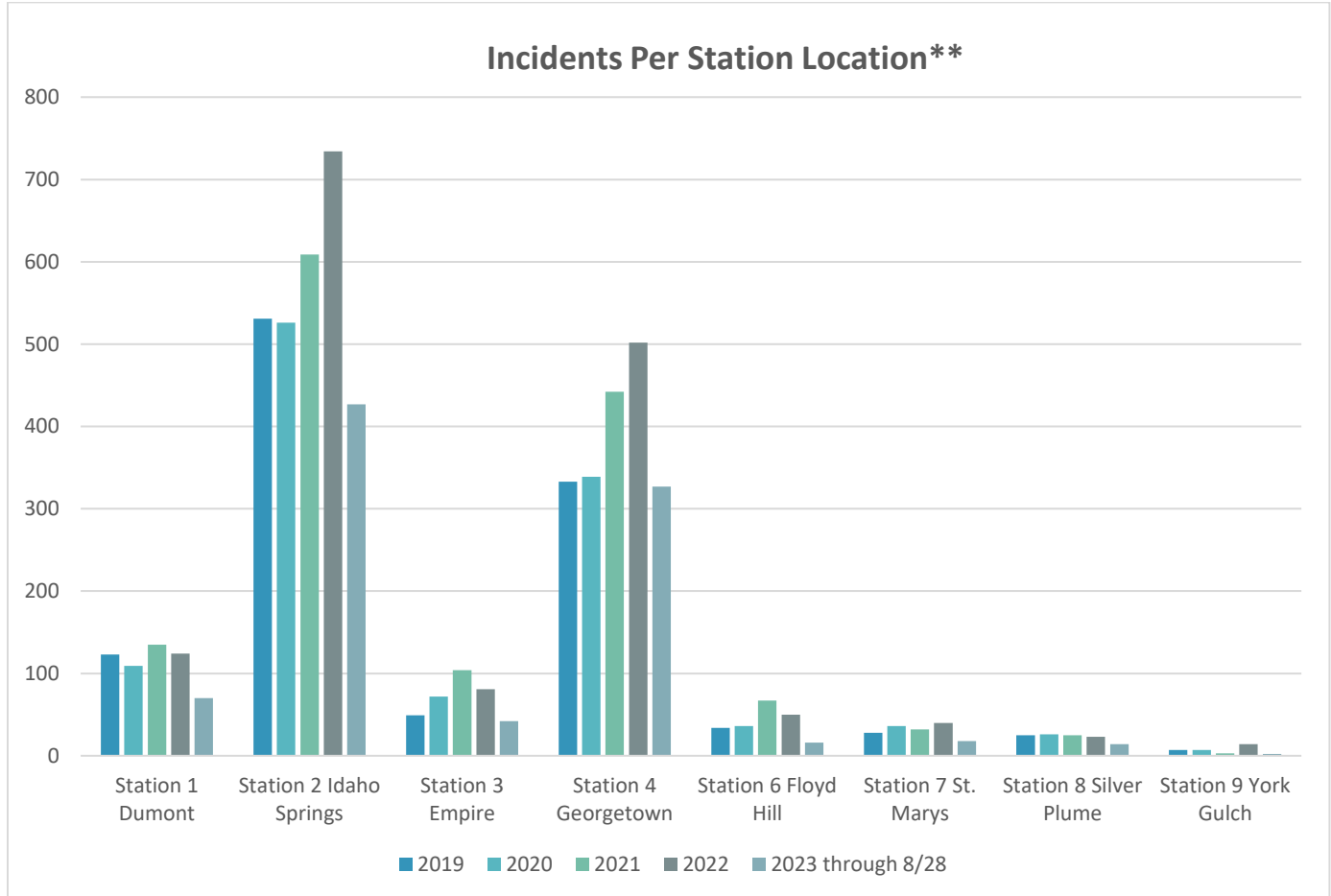
The average number of calls by day of week is fairly evenly spread among the days, with the exception of Saturday and Sunday, which had a greater number of incidents. This is to be expected with the travel on the interstate and the flow of visitors into the county during the snow season and the warmer months. Over the period of 2019 to 2022, CCFA responded to 799 calls on Saturday and 859 calls on Sunday, with the other days of the week averaging 673 to 777 calls. The fire chief indicated, during our site visit, that there have been no significant wildland fires in the county in the last 10 years.



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The average annual workload in the response area for each station from 2019 to 2022 included the following.

Figure 1.20 Incidents Per Station Location



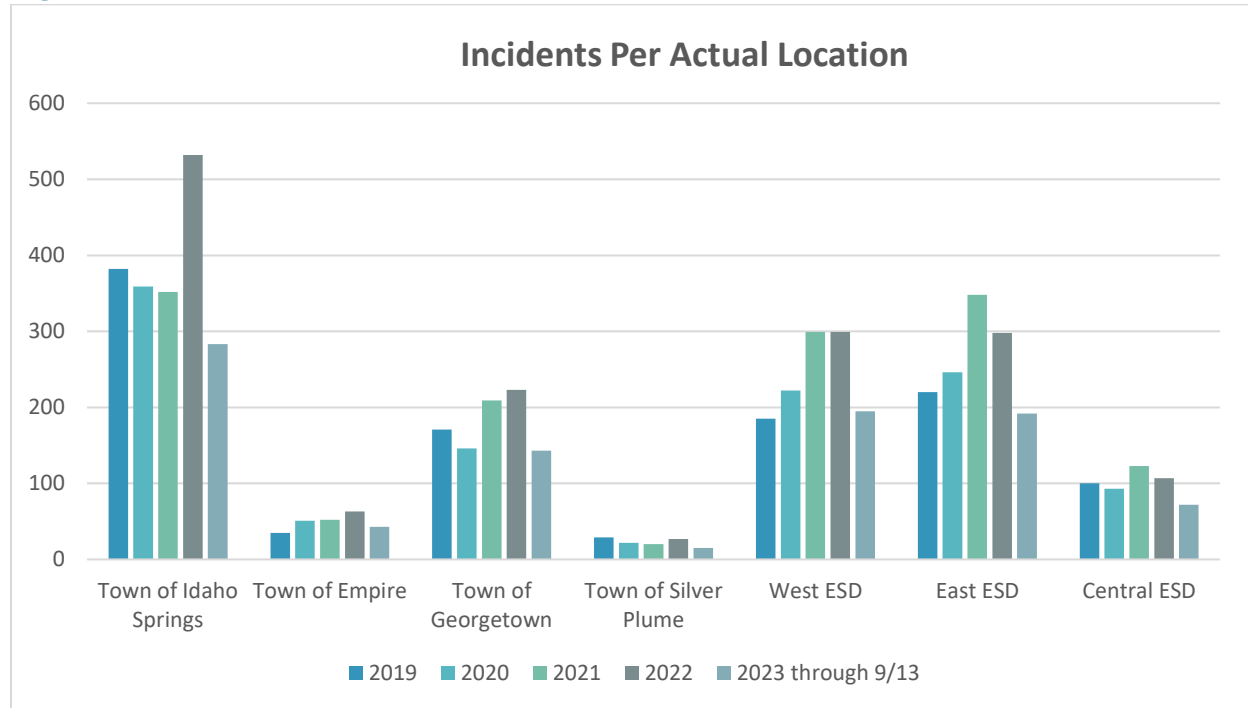
**** Within the station responses for Idaho Springs and Georgetown are included calls outside of the town limits into the ESD areas, either east, west or central within the CCFA response area**



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In order to examine the actual distribution of incidents inside the towns as compared to those in the ESD area, another view of the call distribution is indicated below.

Figure 1.21 Incidents Per Actual Location



From this distribution of incidents, the actual percentage of responses within the towns vs. the ESD involves the following.

Table 1.9 Percentage of Responses with the Towns vs. the ESD

Year	Empire	Idaho Springs	Georgetown	ESD	Silver Plume
2019	3%	34%	15%	45%	2.5%
2020	4.4%	31%	13%	49%	1.9%
2021	3.7%	25%	15%	55%	1.4%
2022	4%	34%	14%	45%	1.7%
2023 through 9/13	4.5%	30%	15%	49%	1.6%

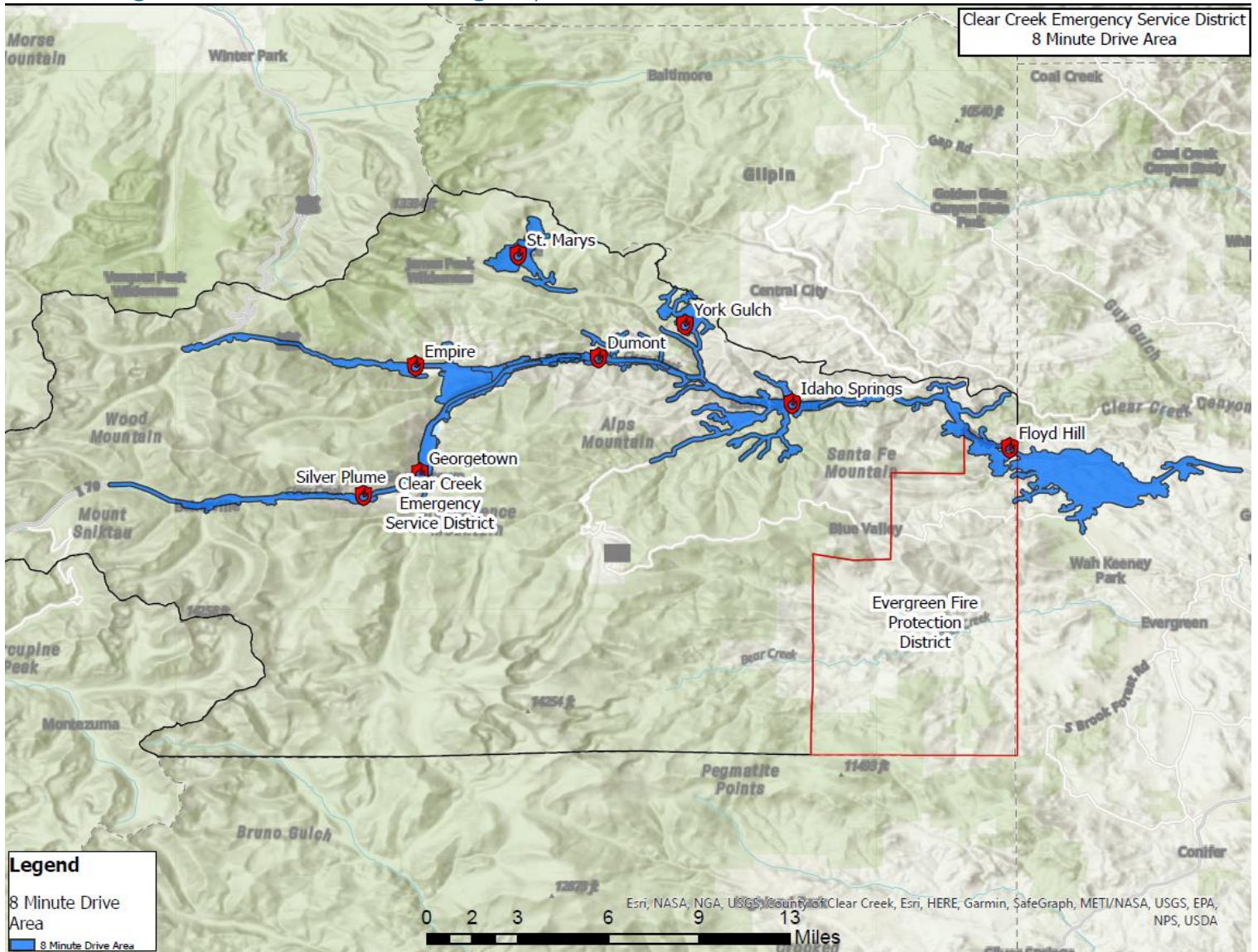
Considering a turnout time of 1-2 minutes for the stations, once alerted to an incident, the map below shows an 8-minute drive time from each station in the County. Eight minutes is based on the National Fire Protection Association (NFPA) 1720 standard, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special*



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Operations to the Public by Volunteer Fire Departments, for coverage in suburban areas. Based on this map, the station locations appear to show good coverage of the populated areas of the county.

Figure 1.22 Clear Creek Emergency Service District 8-Minute Drive Area





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The average response time performance of the CCFA from 2019 to 2022 was the following.

Table 1.10 CCFA Average Response Time Performance 2019-2022

Year	Average Turnout Time (Alarm Receipt to First Unit Enroute)	Average Response Time (Alarm Receipt to First Unit On scene)
2019	2:35	11:20
2020	3:06	13:13
2021	2:42	12:26
2022	2:16	11:20

A better way to measure response time performance is to base it on fractal measurements. That is, what percentage of the time are you meeting a certain response time objective. With average response times, you are seeing the middle of performance. There are just as many responses with greater and lesser response times than the average.

The following details the response time compliance for CCFA for an 8-minute response time (alarm receipt to first unit on scene) for 2019 through August 28, 2023.

Table 1.11 CCFA Response Time Compliance 2019-8/2023

Year	Percentage of Calls where the First Arriving Unit arrived in 8 minutes or less**
2019	25.5%
2020	21.09%
2021	24.08%
2022	33.08%
2023 through 8/28	35.04%

**** Any first arriving emergency unit stops the clock for this measurement. A command officer or an EMS unit arriving first will stop the clock for this performance measure.**

This response time compliance of 8 minutes or less has improved over the last few years, possibly due to the addition of career staffing, but it is still relatively low and in need of improvement.

From 2019 to August 2023, CCFA experienced 1,551 calls that were overlapping. Overlapping or concurrent calls are those that occur within a short time frame of a prior incident having been dispatched and are currently active. Depending on the frequency and location of these concurrent calls, fire and EMS resources can be stretched thin or incur longer response times by having to utilize resources from farther locations or leave one incident to respond to another.



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The history of overlapping or concurrent calls for CCFA since 2019 includes the following.

Table 1.12 CCFA Overlapping or Concurrent Calls 2019-2023

Year	Number of Overlapping Calls	Percentage of Total Workload
2019	209	18.48%
2020	204	17.68%
2021	302	21.31%
2022	564	35.97%
2023 through 8/28	272	29.69%

The number of overlapping calls by the CCFA is concerning as the number of calls has increased over the last few years. This increase, combined with current marginal staffing by the CCFA, can lead to further service degradation and a decline of available resources to respond to incidents. The cause of this may be related to the number of medical incidents that the CCFA responds to. Both fire and EMS officials stated that CCFA is dispatched to all EMS incidents that Clear Creek County EMS responds to, except for some minor non-emergent incidents or incidents with law enforcement involving arrests. Having CCFA resources dispatched to all EMS incidents can be a duplication of effort and take important resources out of position for future, additional calls.

The CCFA tracks its response times to various parts of its district through zones. They also conducted an analysis by tracking real time response times during the day from alternate staffed locations in the district (other than the Dumont fire station) in order to see the impact of relocating staffed apparatus to either the Idaho Springs station or the Georgetown fire station. Their actual response time averages from 2019 to 2022 and their trial data is displayed below.



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Table 1.13 Actual Response Data 2019-2022 and Response Trial Data 2021

Actual Response Data (2019 to 2022) and Response Trial Data (Summer 2021) within CCFA						
Response Zone	2019 – 2022 Actual Response Times of CCFA		Response Times from Georgetown Fire Station July-August 2021	Percent Change	Response Times from Idaho Springs Fire Station May – June 2021	Percent Change
East ESD	19.46		15.16	Decrease 22.1%	13.56	Decrease 30.3%
West ESD	17.98		12.45	Decrease 30.8%	15.20	Decrease 15.5%
Central ESD	17.98		7.05	Decrease 60.8%	7.81	Decrease 56.6%
West – Empire Town Limit	13.19		8.55	Decrease 35.1%	10.46	Decrease 20.7%
West – Georgetown Town Limit	12.19		10.50	Decrease 13.9%	9.15	Decrease 24.9%
West – Silver Plume Town Limit	13.21		11.12	Decrease 15.8%	12.41	Decrease 6.0%
East – Idaho Springs City Limit	10.73		10.42	Decrease 2.9%	8.48	Decrease 21.0%

As is clearly evident, the CCFA provides much better levels of service from a response time perspective if they deploy from either the Georgetown or Idaho Springs fire stations. This puts resources closer to most of the incidents and reduces their travel time. Further discussion of this will be in the Staffing section of the report.

During 2019 to 2022, CCFA provided mutual aid to other departments 18 times, while receiving mutual aid from other fire departments 16 times. The majority of mutual aid assistance to the CCFA comes from either the Central City Fire Department or the Foothills Fire Protection District. CCFA has mutual aid agreements with the Evergreen, Timberline and Black Hawk Fire Districts. They have an automatic aid agreement with the Evergreen Fire District for water supply in certain areas. The mutual and automatic aid agreements are older than five years old. Part of the CCFA district covers the Eisenhower Tunnel through the mountains. The tunnel is operated by the Colorado Department of Transportation (CDOT). They have their own fire



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brigade to handle incidents in the tunnel, and the tunnel has a deluge fire suppression system. The U.S. Forest Service (USFS) also operates a seasonal Type 6 engine in the county to handle fires on their property.

From 2019 to 2022, CCFA had structural property loss totaling \$854,100, or an average of \$213,525 annually. The CCFA has experienced only one firefighter injury during the time period of 2019 to 2022.

CCFA currently does not have a way to easily track or produce the average number of volunteer personnel responding to calls vs. the number of career personnel, particularly by time of day. They only capture the number of duty shifts that they complete. From the records management system of CCFA, the average number of responding members of CCFA to various call types from 2019 to 2022 includes the following.

Structure Fires	9 personnel
Vehicle Fires	3 personnel
Motor Vehicle Accidents	3 personnel
Accidents requiring patient extrication	4 personnel

It can be assumed that between 2-6 personnel in these numbers are career personnel responses with the rest being volunteer personnel response. In addition to the totals above, the department's records management system, also indicates that the average number of personnel responding, to all calls, throughout a 24-hour period has averaged approximately 2.5 personnel from 2019 through 2021, and 3-4 for 2022 and so far in 2023. This is somewhat in contrast to the other, higher response numbers, but there is no known reason for this difference in personnel.

From our discussion with the fire chief and in our analysis, CCFA does not appear to have any identified performance metrics/goals regarding their operational deployment and capabilities in the areas of response time, turnout time, fireground performance or effective response force on scene. Without having any metrics, there are no goals or standards to reach for regarding organizational improvement over time.

A discussion regarding the staffing needs and response to incidents will be further detailed in the staffing section later in the report.

Recommendations

1. All of the EMS call types should be reviewed so that the dispatch of CCFA resources compliments that of EMS and is based on a priority needs basis. As an example, all Priority 1 incidents (cardiac incidents, trauma, rescue, motor vehicle accidents, etc.)



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should have both services dispatched to provide personnel and equipment resources. Other lower priority incidents should only have fire resources dispatched due to low availability of EMS units or closest response.

2. If Clear Creek County moves to the Jefferson County Regional Communications Center, the CCFA should work with them to establish guidelines on when the response time is time stamped to stop the clock so that it is just the first arriving fire suppression unit for fire calls and the first arriving EMS unit for EMS calls. This will ensure greater accuracy in response time statistics in the future.
3. The Clear Creek Fire Authority should establish automatic aid agreements for closest unit response in the Floyd Hill area of the county with the Evergreen and Foothills Fire Protection Districts. These agreements at a minimum should be for vehicle related incidents and structure fires for both the supply of water, and personnel.
4. All mutual aid agreements with surrounding departments should be regularly reviewed and updated, at least every five years.
5. CCFA's Response by Zone by Personnel report can be utilized to track and trend general volunteer coverage. CCFA should look to develop a more comprehensive volunteer and career response tracking system by zone, time of day, certification level, etc. in order to track volunteer and career responses against developed performance standards and member expectations.
6. CCFA should work to develop organizational performance metrics for its operational deployment. These metrics should include fractal measurements for its turnout time, response time to suburban, rural and remote areas in the county and staffing in the formation of an effective response force, to include career and volunteer staffing.

Emergency Medical Services

Basic and advanced life support, including transport Emergency Medical Services (EMS) within Clear Creek County is provided by the County. Clear Creek County EMS is a department within the County government. EMS currently has 20 full-time employees, most of which are certified at the critical care level of advanced life support. Prior to the end of 2022, EMS utilized part-time and full-time employees, but due to the decline in part-time employee availability, the department moved to all full-time staff. EMS runs approximately 1700-1800 calls per year. Resources deployed from EMS include one 24/7 crew in Idaho Springs, one 24/7 crew in Georgetown and an EMS Captain in an SUV in the Dumont area. When fully staffed, an additional paramedic is available at the Dumont station so that the EMS Captain and paramedic can staff and respond to a third ambulance if the call volume dictates the need. If there are no ambulances available in Clear Creek County, typically EMS will request Gilpin County EMS be put on stand-by for response into the county for subsequent calls. This occurs approximately 35-40 times per year. Clear Creek County EMS will provide the same to Gilpin County when requested.



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Currently, there is a mix of basic life support certified personnel and advanced life support personnel. There is a requirement that at some point in the future, all personnel will be certified at the paramedic/critical care level. EMS resources are dispatched through the Clear Creek Sheriff's Office using an emergency medical dispatch (EMD) protocol system through eForce in the CAD system. EMS just launched the Clear Creek Health Assessment Team (CCHAT) in mid-August. The team will respond to non-emergent, pre-screened 911 calls that do not require transport. The intent is to provide crisis services and refer patients to non-emergency care resources. The CCHAT team will also work with patients who need assistance with scheduling physician visits or gaining access to non-emergency medical resources through pre-scheduled visits. There are no medical facilities within Clear Creek County for EMS to transport to, so they must transport out of the county to either St. Anthony's Hospital or to Denver. This causes their ambulance turnaround time to be approximately two hours.

CCFA only provides EMS at the basic, non-transport level. They currently respond to almost all calls that CCCEMS is dispatched to with the exception of ambulance only requests through law enforcement and those locations that have a medical facility onsite, such as the mine, or the ski areas. The dispatch of CCFA resources on almost all EMS incidents places a heavier than usual burden on the authority compared to most fire agencies that respond in a tiered approach to provide first response EMS with an advanced life support transport agency.

Prior to 2021, the relationship between CCFA and CCCEMS was communicated to MissionCIT as "not good". It was indicated to MissionCIT staff that there was no relationship. In discussion with EMS staff, there apparently had been conversations between CCFA and CCCEMS, around 2019, in which CCFA indicated a desire to take over EMS. This did not go over well with the CCCEMS Director or his staff and may have been the cause of the poor relationship between the agencies. However, beginning in 2021, weekly meetings were initiated between fire and EMS personnel and regular fire and EMS training was started between the on-duty crews. Today, the crews will regularly eat meals together and have a good relationship. The shift Captains from each agency meet weekly to discuss training and operational issues. The current main communications contact for CCFA with CCCEMS is the Assistant Fire Chief. There still appears to be little communication between the CCCEMS Director and the CCFA Fire Chief.

A significant concern raised by CCCEMS when MissionCIT met with them is that CCFA will not provide roadway blocking, with large apparatus, for motor vehicle incident scenes, particularly on the interstate, when their crews are operating and CDOT resources are not available. CCFA will only use brush type units for blocking. CCCEMS indicated in the past, CCFA would utilize their ladder trucks to block the road for their crews. In discussion with CCFA staff, they indicated that they provide blocking apparatus, but that they do not utilize heavy apparatus to do so, as during a prior incident, their ladder truck was struck and damaged. Currently CCFA uses their Type 6, brush unit to provide roadway blocking. CCFA staff also stressed the need for



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CCCEMS crews to quickly operate on the scene of a roadway incident so that they can quickly get into and leave the scene of such incidents.

Although Clear Creek County is responsible for Emergency Medical Services (EMS), CCFA routinely provides “first responder” services to assist with patient care. CCCEMS obtains revenue from insurance for patient care and transport, also known as EMS Billing. CCFA, however, does not receive a portion of revenue from their participation in the EMS system.

Recommendations

1. Clear Creek Fire Authority and Clear Creek County EMS leaders should regularly meet to discuss service delivery improvements, and the need for standard operating procedures. These meetings should include both the Fire Chief and EMS Director.
2. A Standard Operating Guideline (SOG) should be developed regarding roadway blocking during highway incidents that is satisfactory to both fire and EMS agency leaders.
3. CCFA should move to operate within the emergency medical dispatch system in eForce. If Clear Creek County moves to the JeffCom system, CCFA should work with that system to be included within such an EMD system. This will help to reduce the volume of EMS calls that CCFA responds to as this pulls their very thin resources out of position a significant amount of time.
4. CCFA should pursue obtaining a portion of the EMS billing fees whenever they provide first responder EMS services.

Insurance Services Organization (ISO) Rating

The Insurance Services Office (ISO) is a for-profit company that rates the ability of fire departments across the country to respond to and be able to handle the fire risks within their community. The Insurance Services Office rating of a fire department is based on four main areas. These include Emergency Communications, Water Supply, the Fire Department and Community Risk Reduction. Each component is graded on a point system after an evaluation from an ISO representative. After the points are totaled, a divergence methodology, proprietary to ISO, is used to end up with the final score to determine the class that the fire department is awarded. Classes range between a Class 1, which represents the best scoring classification and Class 10, which indicates that no fire department is available.

Currently, CCFA is rated as a Class 4/4X as of November 2022. They received 66.78 out of a possible 105.50 points. CCFA was 3.22 points from a Class 3 rating. This rating applies to any property located within 5 road miles of a recognized fire station. The 4X rating applies to those properties located beyond 1,000 feet of a fire hydrant but within the 5 road miles of a fire station. Properties located greater than 5 road miles from a fire station are rated as a Class 10. The basic fire flow requirement for the CCFA response district is 2,250 gallons per minute. (Source: ISO Public Protection Classification Document)



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From a review of their ISO report, there were several areas where they were not awarded as many points as possible. Some of these categories are sub-areas within the larger categories, so the points awarded may not necessarily equate to whole points out of the total of 105.50 in the rating system. These areas included:

- **Deployment Analysis** 7.46 out of 10 points
This area involves the number and location of fire stations and apparatus. It looks at the percentage of built-up areas within 1 ½ miles from the closest pumper and within 2 ½ miles from the closest ladder company. (Source: ISO Public Protection Classification Document)
- **Company Personnel** 1.93 out of 15 points
This area looks at the available, on-duty personnel to respond to incidents. From their report, ISO credited CCFA with 4.62 on-duty personnel and an average of 6 on-call (volunteer) personnel responding to first alarm structure fires.
- **Pre-Fire Planning** 4.8 out of 12 points
This area looks at the frequency and thoroughness of CCFA conducting pre-fire planning for target hazards within the response district.
- **Water Supply – Inspection and Flow Testing of Fire Hydrants** 1.45 out of 7 points
Fire hydrants are expected to be inspected and flow tested on a regular basis.
- **Fire Prevention Staffing** 2.74 out of 8 points
The number of resources the department allocates to fire prevention duties and fire inspections.

All of these areas represent areas of opportunity for the CCFA to improve in its operations, but also to gain additional points to improve its future ISO ratings.

Recommendations
1. CCFA should develop an intermediate plan (3-5 years) to address the areas of point deficiencies from their most recent ISO review in order to consider moving to a higher ISO rating. Some areas of improvement are already in process as noted by CCFA.

Dispatch Operations

A critical part of any emergency services system is the emergency communications center. They serve as the first link in the receipt of emergency 911 calls from the public and in the correct processing and dispatch of emergency resources to reported incidents. Currently, dispatch of CCFA resources is done by the Clear Creek County Sheriff's Office. The county operates on a digital 800 MHz system. The CCFA pays a fee, through the budget process, to the Sheriff's Office based on the usage of the system. There is an Advisory Board, that CCFA is a member of, to advise and provide recommendations regarding the dispatch system. The dispatchers are trained in Emergency Medical Dispatch (EMD). The dispatch of CCFA resources to EMS incidents



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is currently not operating within the dispatch center's EMD program. Fire and EMS have two channels each that they operate on. The normal shift staffing for the dispatch center is two per shift. However, due to staffing vacancies, there may only be one dispatcher in place to dispatch and handle radio traffic for law enforcement, fire and EMS. At the time of the site visit by MissionCIT, the county was considering switching dispatch operations to the Jefferson County Regional Emergency Communications Center (JeffCom) in order to save money and have greater resources available to handle dispatch operations.

The dispatch center has the following goals of their call receipt and call processing operations.

- Answer all 911 calls within 15 seconds
- Process 911 calls and dispatch fire resources within 1 minute

The National Fire Protection Association (NFPA) 1225, *"Standard for Emergency Services Communications"* (previously NFPA 1221, *"Standard for the Installation, Maintenance, and Use of Emergency Communications Systems"*) recommends the following regarding 911 call answering and call processing.

- Call answering – Within 15 seconds 90% of the time
Within 20 seconds 95% of the time
- Call Processing (Pick-up of 911 line until the dispatch of resources is complete)
 - For high priority calls such as fire and EMS incidents, the call processing time is recommended to be 60 seconds or less 90% of the time

The Sheriff's Office provided the following data regarding their performance in answering 911 calls. Their goal is to answer within 15 seconds; however, the data they can retrieve from the system only tracks it based on 10 and 20 seconds.

Table 1.14 Call Answering Percentage by Year

Year	911 Calls answered within 10 seconds	911 Calls answered within 20 seconds	Average Time to Answer 911 Call
2023	97.5%	99.6%	3.2 seconds
2022	98.5%	99.8%	3.2 seconds
2021	99.1%	99.9%	3.2 seconds
2020	99.6%	100.0%	3.1 seconds

Source – Clear Creek County Sheriff's Office

Based on the data from the Sheriff's Office, their dispatch center is routinely meeting the 911 call answering standard of the NFPA.



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The Sheriff's Office also provided data on their call processing times and compliance. Their system does not track the actual compliance data, so they performed a quality assurance check of 20 random fire calls for each of the last four years to come up with the following compliance data for their call processing.

Table 1.15 Dispatch Time Compliance by Year

Year	Fire Calls Dispatched within 1 Minute or Less Compliance Percentage	Average Dispatch Time for Fire Calls
2023	30%	2 minutes 28 seconds
2022	25%	2 minutes 26 seconds
2021	35%	2 minutes 11 seconds
2020	40%	2 minutes 28 seconds

Source – Clear Creek County Sheriff's Office

From the data provided by the Sheriff's Office, their compliance with the call processing and dispatch of fire calls does not currently meet NFPA 1225 recommended standards.

Recommendations
<ol style="list-style-type: none">1. If Clear Creek County retains operation of a dispatch center, the County/Sheriff's Office should work to identify the reasons for not meeting the 911 call processing standards and develop a plan to reduce this time.2. If Clear Creek County decides to move to the Jefferson County Emergency Communications System, they should work with the management of that center to identify performance standards expected from their staff in order to meet NFPA communications center standards.

Standard Operating Guidelines

MissionCIT reviewed the current operational Standard Operating Guidelines (SOGs) for CCFA. The guidelines provide a range of direction for CCFA personnel from incident command to wildland response. It appears as if all of the SOG's were either written or revised at the same time of August 2017. This would have been before CCFA hired career personnel. Overall, the SOG's are basically adequate in their direction, scope, and structure. Some of the SOG's appear vague and should provide additional detail in direction. One of the key points of any fire department set of SOG's is that they be enforced and followed by all personnel. Inconsistency of application and enforcement allows for significant safety risks to personnel and the public. Leaders of the organization themselves must be held accountable to follow all SOG's, or those that they lead won't see the value of following them.

As an example, during a discussion with the CCFA leadership, we were discussing their firefighter accountability procedure. From MissionCIT's observations, they utilized a "Passport"



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system for accountability and tracking personnel on scene. However, the leadership indicated that they did not use that system but relied on a paper-based tracking system for the on-scene personnel. This conflicts with the information in their current SOG's.

MissionCIT has the following recommendations regarding the CCFA Standard Operating Guidelines.

Recommendations

1. The CCFA SOG's should be regularly reviewed and updated by the organization. At a minimum every 5 years.
2. Any response, staffing or safety procedures that might have been impacted with the hiring of career personnel should be updated.
3. Any structural fire operational SOG's should be reviewed and compared against any new fireground research results from the Fire Safety Research Institute within Underwriters Laboratory (UL) in the areas of ventilation and fire attack.
4. The CCFA should ensure that SCBA fit testing of masks is done on an annual basis. This is not indicated in the SOG's.
5. SOG 225 should be updated to include a more formal and written After Action Review (AAR) process for significant incidents where information should be shared across the entire organization and with all members and used for training purposes.
6. SOG 229 on Wildland Fire Operations should include a statement or directive that wildland operations will follow accepted National Wildfire Coordinating Group (NWCG) guidelines and practices.
7. SOG 231 on the Public Information Officer indicates setting up a Law Enforcement Incident Command System. Command operations with multiple disciplines should be joined in a Unified Command Structure, not setting up their own commands. In addition, CCFA should work with the Office of Emergency Management to pre-identify shelter locations that can be used throughout the county and community evacuation plans.
8. SOG 237 on Vehicle Fire Operations should be updated to include electric vehicle (EV) fire operations.
9. SOG 239 on Pre-Fire Plans should be updated to reference the formal pre-plan process from the Fire Prevention Program policy of the department as the expected means to conduct pre-fire plans.
10. SOG 247.2 on Driver-Engineer Guidelines should include a more formal, safe method for how to backup emergency response apparatus, including those instances with driver only staffed apparatus.
11. SOG 247.5 on CCFA Response Order should be reviewed to reflect the current response deployment with career and volunteer personnel and ensure that appropriate resources are responding in order to meet NFPA 1720.
12. SOG 247 currently describes volunteer response to calls in personal vehicles; however, the CCFA does not allow volunteer personnel to keep their Personal Protective



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Equipment (PPE) with them. This SOG should be modified to reflect the current volunteer response system in place. Consideration should also be given to allowing volunteer personnel to store their PPE in their vehicles, with precautions, or allow them to store the gear at the fire station closest to their residence.

13. SOG 248.2 on Confined Space does not include oxygen deficient areas as an indicator of a confined space nor does it include providing a fresh air source to those trapped or working in confined spaces.
14. SOG 248.5 on Trench Rescue does not indicate the need for providing a fresh air source to those trapped or working in a trench. It also does not indicate the use of shoring or sheeting materials to stabilize the trench walls during rescue.
15. SOG 252 on Road Safety should be updated as it discusses volunteer personnel responding to roadway incidents, but CCFA does not allow for volunteer personnel to keep their PPE with them. The SOG also does not discuss the positioning of heavy fire apparatus as blocking barriers for personnel operating at the scene. This is critical to ensure the life safety of CCFA and EMS personnel and the public during roadway incidents.
16. CCFA should update its SOG's regarding the number and current location of Thermal Imaging Cameras (TIC) on apparatus. Per the SOG's, the Rapid Intervention Team (RIT) bags are located on the ladder trucks. These critical safety and firefighter rescue items should be placed on apparatus or vehicles that are likely to respond and be operating at the incidents that CCFA responds to. A suggestion would be to place the RIT bags on Engine 11 and either with the shift captains or with the assistant fire chief or fire chief, whomever is most likely to respond to and command structure fires.

Training

Comprehensive and effective training is essential to the delivery of quality fire, emergency medical, and related services. Today's fire service is generally expected to deliver "all hazards" services, well beyond simply firefighting and basic and advanced emergency medical care.

An effective training program covers each member, from the recruit-level to and through each rank or specialty level. Training must be introduced, practiced, mastered, and then reinforced through regular "in service" sessions. Training today must also focus on the individual firefighter and their overall health, safety, and wellness. Through modern research, the "tough guy or gal" image promoted by tradition has been determined to be a detriment to the long-term health, safety and wellness of members. Unfortunately, this has been somewhat slow to catch on as we continue to hear of bullying and harassment across the country. "Soft skill" programs are needed to build and foster effective relationships among personnel who live and work together for extended periods of time, and who are subject to the unique stresses of the job.

CCFA requires its members to possess many skills. These skills range from structural firefighting to wildland firefighting, to swift water operations, and varying levels of emergency medical



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technician. Personnel must also be proficient in hazardous materials management, vehicle extrication, ice rescue, rope rescue, and integrated incident command.

CCFA utilizes national training standards as the basis of its program, to include those developed by NFPA, National Registry of Emergency Medical Technicians (NREMT), and the State of Colorado (EMT), the Colorado Division of Fire Prevention and Control (CDFPC), and the National Wildfire Coordinating Group (NWCG).

CCFA tracks training hours in the Records Management System (RMS). All personnel are required to maintain a training class certificate book. It is the responsibility of the individual to ensure they have sufficient continuing education hours to maintain their respective certifications. From 2019 to 2022, training hours per member (career and volunteer) averaged 42 hours each year.

The following outlines the minimum training levels for career and volunteer members of CCFA:

- **Firefighter Requirements (All career and Interior Qualified volunteers)**
Certifications: CPR NIMS 100,200,300,700,800 State of Colorado Firefighter I
Emergency Medical Responder (EMR)
- **Lieutenant Requirements (career and volunteer)**
Certifications: CPR NIMS 100,200,300,700,800 State of Colorado Firefighter I
EMR
- **Captain Requirements (career and volunteer)**
Certifications: CPR NIMS 100,200,300,700,800 State of Colorado Firefighter II
EMR
- **Special Operations Captain Requirements**
Certifications: CPR ICS-100,200,300,700,800, State of Colorado Firefighter II, EMR,
Swiftwater II, NWCG FFI
- **Training Captain**
Certifications: CPR ICS-100,200,300,700,800 State of Colorado Firefighter II, State of
Colorado Fire Instructor II, State of Colorado 1403 Live Fire Fixed Facility Instructor
Swiftwater I, NWCG FFI
- **All members must attend an annual presentation of the Respectful Workplace and Harassment training program developed by the Volunteer Firemen's Insurance Services (VFIS).**

Currently all the career firefighters and lieutenants have a minimum of State of Colorado Firefighter II and EMT. Two are Basic Life Support instructors and two have their State of Colorado Fire Instructor I along with State of Colorado 1403 Live Fire Fixed Facility Instructors. All the career staff are National Wildland Coordinating Group (NWCG) certified as Wildland firefighters (at various levels), Swiftwater 1, and Rope Rescue Technician.

CCFA holds a joint training for the career staff with EMS three days per week. The topics are rotated such that the training is EMS-based one week and then fire-based the next. The shift



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lieutenants are currently responsible for developing the weekly fire training with the assistance of the Training Captain. By 2024, this responsibility will transition to a single lieutenant, who will produce training from a master list of training topics. This will ensure all required topics are covered and limit duplication. Training will be held each day at 10am and at 8pm on the four days that joint EMS/Fire training has not occurred. This will increase the annual training hours and allow for better training opportunities for the volunteer members.

The State of Colorado Division of Fire Prevention and Control certifications require written documentation of all required job performance requirements (JPRs) being completed within one year of renewal. Certifications are renewed every three years. These requirements are as follows:

- Hazardous Materials Awareness/ Operations: 9 JPRS
- Hazardous Materials Technician: 16 JPRs
- Firefighter I: 29 JPRs
- Firefighter II: 14 JPRs
- Fire Instructor I: 7 JPRs
- Fire Instructor II: 10 JPRs
- Fire Officer I: 15 JPRs
- Fire Officer II: 16 JPRs
- 1403 Live Fire Fixed Facility Instructor: 7 JPRs
- Basic Life Support: Refresher course with written test and skills verification every two years.
- Basic Life Support Instructor: Instructor renewal course every two years.
- Emergency Medical Responder: Valid CPR card and 16 hours of continuing education every three years.
- Emergency Medical Technician: Valid CPR card and 40 hours of continuing education every three years.
- Emergency Medical Technician Paramedic: Valid ALS and PALS card along with 60 hours of continuing education every three years.
- ICE Rescue Technician: Annual skills refresher.
- Swiftwater I and II: Annual skills refresher.
- CEVO Ambulance or Fire Certification: 8-hour refresher class to include drivers course every three years.
- All NWCG wildland certifications require the individual to have eight hours of annual refresher training, have a current work capacity test, and perform the job duties of their respective level of certification each year.

Per CCFA, all personnel meet the training requirements to maintain their respective certifications.

CCFA is fortunate to have a training burn facility adjacent to the Dumont Station. There are six certified live fire instructors who conduct a regional live fire training each quarter.



Recommendations

1. CCFA should begin a phased in requirement for NFPA 1021, *Standard for Fire Officers Professional Qualifications*, for the fire lieutenant and fire captain positions, career, and volunteer. As position requirements or training standards change or increase over time, CCFA should ensure that the requirements and standards are implemented for both career and volunteer personnel.

In December 2022, CCFA entered into an affiliation agreement for student clinical training with the Red Rocks Community College. Through the Firefighter Level I academy, students are prepared as candidates for entrance into the career or volunteer fire service. This includes training on subject material as well as the physical fitness component. The initial class had 24 students and was completed in May 2023. The agreement was renewed in June 2023 for 2 academies: Fall 2023 and Spring 2024. The current fall class has 32 students, 4 of which are CCFA volunteers. Two members from the first class are now employed by CCFA. CCFA nets \$50,000 from the Community College for each academy.

Health, Safety and Wellness

The overall health, safety, and wellness of firefighters is a paramount issue. Despite many advances, firefighting continues to be one of the most dangerous of occupations. Line of Duty Deaths (LODDs) have traditionally been focused on the traumatic aspect of firefighting. However, through advanced research by many organizations, great insight has been gained which has led to general safety, health, and wellness deficits which contribute greatly to LODDs and has resulted in awareness and training to prevent these occurrences.

The National Institute of Occupational Health (NIOSH), in combination with the United States Fire Administration (USFA), the International Association of Firefighters (IAFF), the International Association of Fire Chiefs (IAFC), the National Fallen Firefighters Foundation (NFFF), the NFPA, and other industry stakeholders, have developed strategies to reduce LODD events and to create a culture of survival in the fire service.

Over the last thirty-year period, there has been a downward trend in the number of firefighter LODD's. With the exception of the 9/11 tragedy (plus the on-going 343 post event LODD's) and losses related to COVID-19, firefighter deaths have averaged less than one hundred per year, or down approximately 30%.

The NFPA provides an annual summary of firefighter injuries and LODD's. Their data for 2022 revealed:

- A total of 96 on-duty U.S. firefighter fatalities in 2022;
- Of these deaths, 51 were volunteer firefighters, 38 were career firefighters, six were contractors for federal or state land management agencies, and one was a full-time federal land management employee;



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- Cardiac-related events accounted for the largest number of firefighter injuries and deaths.

The report details activities which resulted in LODD's:

- 33 firefighters died from trauma (20 internal trauma deaths, 6 deaths by crushing, 5 deaths due to unspecified traumatic injuries, and 2 deaths due to gunshot injuries or projectile wounds);
- 21 firefighters died while responding or returning from emergencies;
- 49 firefighters died from overexertion and stress.

The charts below outline the causes and nature of the 96 LODDs for 2022:

Table 1.16 Causes and Nature of Fatalities for 2022

Cause of Injury	Fatalities	Percentage
Overexertion/stress/medical	49	51%
Crashes	14	15%
Struck by vehicle, equipment	8	8%
Rapid fire progress	7	7%
Structure collapse	5	5%
Struck by falling object	4	4%
Fall from height	2	2%
Other	7	7%
Total	96	100%
Nature of Injury	Fatalities	Percentage
Sudden cardiac	36	38%
Traumatic injury	33	34%
Unspecified medical	11	11%
Asphyxiation	5	5%
Burns	4	4%
Drug overdose	2	2%
Drowning	4	4%
Other	1	1%
Total	96	100%



Current Issues and Trends

While firefighting is still considered among the most dangerous occupations, data is consistent that the most danger to life loss and injury is from occupational health and other non-firefighting causes. Fortunately, there is much more research available to equip fire departments with the information to prevent or mitigate the dangerous conditions which cause or exacerbate these conditions.

The following overview highlights nationally recognized challenges to firefighter health, safety, and wellness.

Cardiovascular Disease

Firefighters are among the highest risk groups for serious medical conditions, notably cardiovascular disease (resulting in sudden cardiac arrest) and cancer. The prevalence of cardiovascular disease is associated with many job-related factors. These include:

- Lack of sleep,
- Poor diet,
- Dehydration,
- Lack of proper exercise,
- Physical demands of the job;
- Adrenaline “rush” cycle,
- Exposure to the environment,
- Lack of “down time” in between work shifts.

Consistently, cardiovascular disease is the most common cause of death among firefighters. The NFPA routinely reports that approximately 45% of all firefighter duty related fatalities are caused by cardiac events.

Cancer

Occupational cancer has rapidly emerged as the greatest threat to firefighters’ health. NIOSH has been a leader in cancer research and has determined that, when compared to the number of cancers expected using U.S. population rates, the firefighters in this study had a modest increase in cancer diagnoses (9% increase) and cancer-related deaths (14% increase). Other partner entities have developed additional research and support programs to assist firefighters in prevention and mitigation of this disease. These include the American Cancer Society, the IAFF, and the IAFC. In 2018, Congress passed the Firefighter Cancer Registry Act which mandated the Centers for Disease Control (CDC) create a voluntary registry to collect health and occupational information to determine cancer incidence in the nation’s fire service.

Whereas the direct effects of firefighting are not the cause of most LODDs, fires today expose personnel to various hazardous substances. Firefighters can be exposed to



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hundreds of different chemicals in the form of gases, vapors, and particulates. Some of these chemical substances are known or suspected to cause cancer. Some of these hazardous substances are byproducts of combustion or burning, such as benzene and formaldehyde. Others come from the materials burning or in the fire debris, such as asbestos from older structures. Research now points to the presence of Polyfluoroalkyl Substances (PFAS), a compound found in firefighting foams and turnout gear (PPE) as contributing to occupational cancer in the fire service.

Firefighters can come into contact with chemicals by breathing them in, getting them on their skin or in their eyes, or by ingesting them. If protective clothing, known as turnout gear, is not cleaned, or stored after a fire response or training event, chemicals on the gear or equipment can contaminate vehicles and the fire station. Reusing dirty turnout gear or respiratory protection can also result in exposure to hazardous substances. These exposures can occur by skin contact with contaminated PPE or by breathing in or ingesting particles from contaminated PPE.

Suicide

Firefighter suicide is a relatively new issue which is considered by some as the greatest cause of firefighter fatalities. The National Fallen Firefighters Foundation (NFFF) estimates that 100-200 firefighters die at their own hands each year. This is double the rate of the general population. The CDC has done research in this area which reveals that firefighters are at an elevated risk for suicide because of the environments in which they work, compounded by the general “macho” culture which is very prevalent in the profession. Stress plays a role here as it may be acute or chronic, caused by exposure to violent incidents (Post Traumatic Stress Disorder, or PTSD), pandemic illness, substance abuse, and the overall work schedule which can result in strained personal relationships. Without adequate intervention, feelings of hopelessness, depression, and anxiety often lead to suicide.

Roadway Incidents

Seemingly, each month there is a story about traffic incidents where vehicles are striking fire and other emergency apparatus while they are parked on the roadway at emergency incidents. Often, response personnel are struck as well contributing to LODDs. In 2022, 4 of the 14 firefighters who died in vehicle/traffic related incidents were struck by vehicles. Impaired driving due to being drowsy, drugged, drunk or distracted (the 4 D's) has led the Emergency Responder Safety Institute (ERSI), in collaboration with the National Volunteer Fire Council (NVFC), NFFF, NFPA, and law enforcement to focus on public awareness, apparatus visibility standards and training for first responders regarding this problem. Training is available through a several organizations which highlight preventive measures to reduce these incidents and their effects.



Active Shooter

Communities across the country are having to deal increasingly with domestic violence. The “active shooter incident” has permeated communities both large and small and has forced a more coordinated response by the fire service and law enforcement (known as a Rescue Task Force, or RTF). The two primary missions- neutralizing the shooter and rapid patient extrication, now run concurrent versus in recent past where EMS waited outside until the building or area was cleared. Many lives have been lost due to large volume blood loss because of the extended time to initiate patient care. Now, thanks to Federal Assistance to Firefighters (AFG) funds availability for ballistic vests for the fire service and more aggressive exsanguination protocols, more lives may be saved. Apart from the physical danger associated with entry into a shooter’s area, the effects on short and long-term mental health of first responders are at the forefront of recovery and survival intervention efforts.

Department Safety Programs

In 2004, at a fire safety summit in Tampa, Florida, the “Everyone Goes Home” program was developed. The hallmark “16 Life Safety Initiatives” was produced as “blueprint” for reducing firefighter fatalities by 25% within 5 years and 50% within 10 years. In 2014, a second gathering, called “Tampa 2” was convened to assess the data at the 10-year mark. While substantial progress had been made in reducing firefighter fatalities, it was determined that much more work was and is needed.

Today, the 16 Life Safety Initiatives are still very relevant, and should be considered for any fire department health, safety, and wellness program. The elements are as follows:

- 1. Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability, and personal responsibility.***
- 2. Enhance the personal and organizational accountability for health and safety throughout the fire service.***
- 3. Focus greater attention on the integration of risk management with incident management at all levels, including strategic, tactical, and planning responsibilities.***
- 4. All firefighters must be empowered to stop unsafe practices.***
- 5. Develop and implement national standards for training, qualifications, and certification (including regular recertification) that are equally applicable to all firefighters based on the duties they are expected to perform.***
- 6. Develop and implement national medical and physical fitness standards that are equally applicable to all firefighters, based on the duties they are expected to perform.***
- 7. Create a national research agenda and data collection system that relates to the initiatives.***



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- 8. Utilize available technology wherever it can produce higher levels of health and safety.***
- 9. Thoroughly investigate all firefighter fatalities, injuries, and near misses.***
- 10. Grant programs should support the implementation of safe practices and/or mandate safe practices as an eligibility requirement.***
- 11. National standards for emergency response policies and procedures should be developed and championed.***
- 12. National protocols for response to violent incidents should be developed and championed.***
- 13. Firefighters and their families must have access to counseling and psychological support.***
- 14. Public education must receive more resources and be championed as a critical fire and life safety program.***
- 15. Advocacy must be strengthened for the enforcement of codes and the installation of home fire sprinklers.***
- 16. Safety must be a primary consideration in the design of apparatus and equipment.***

While CCFA has not ignored the issues associated with firefighter health, safety, and wellness, there are several program deficits which should be addressed. Many of these will require funding and time to implement. Others will depend upon the leadership and the choices that are made with regard to programs and practices.

1. CCFA lacks sufficient administrative and support staff to address the growing needs of the organization. There is one administrative assistant who is responsible for overseeing accounts payable, accounts receivable, processing payroll, administrative paperwork and providing assistance to four other staff positions. The fire chief, assistant fire chief, and captains are all considered response assets, yet they are assigned to major program administration.

Recommendations
<ol style="list-style-type: none">1. The anticipated growth of the organization will necessitate additional program managers as well as staffing to delineate “line” supervision from that of staff level responsibility. A major emphasis will be to dedicate resources to the health, safety, and wellness program as well as the training program.2. Additional office space will be needed to accompany any new staff positions.

2. CCFA does not have a medical examination process for operational personnel, career, or volunteer. It may require a phased in approach due to budget and accessibility issues.



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As noted previously, firefighters' health is a critical issue nationwide. The research is clear that success in the early detection of occupational diseases, principally cardiovascular disease, and cancer, is greatly enhanced by the administration of both entry level and on-going comprehensive medical examinations. NFPA 1500, *Standard on Fire Department Occupational Safety, Health, and Wellness Program* requires that members meet the medical requirements of NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*. This applies to members and membership candidates. NFPA 1582 is considered the "gold standard" for addressing firefighter health issues. On October 10, 2023, at the United States Fire Administration (USFA) Presidential Summit on Fire Prevention and Control, cancer was cited by the International Association of Firefighters (IAFF) as the leading cause of firefighter death and recommended that **every firefighter in the United States should receive a comprehensive annual medical examination.**

The absence of a pre-appointment medical examination may also affect the long-term medical benefits for treatment of occupational disease. The State of Colorado has enacted "presumptive" laws for members who contract cardiovascular disease and certain cancers (and other conditions) through the performance of firefighting duties. These laws "presume" these diseases are job-related, thus lessening the burden of proof for members seeking Workers Compensation benefits for coverage. Colorado law is very specific that, in order to qualify for these benefits, the firefighter must have had a pre-employment examination and regular medical examinations that would reasonably detect an illness or injury that could have caused the disease.

In addition, Colorado has established the Colorado Firefighter Heart, Cancer & Behavioral Health Benefits Trust to "help the state's fire professionals and agencies manage the human and financial burdens created by serious health issues by providing mandated cardiac and voluntary cancer benefits to the state's firefighters." The program is essentially a subscription service for supplemental benefits which requires member agency participation on a published roster. CCFA is not currently listed as a member agency for this program, however the Evergreen Fire Protection District, located within Clear Creek County, is listed.

In addition to cardiovascular disease and cancer, other potentially lethal medical conditions may be detected through medical examinations. These include diseases such as Hepatitis C, as well as behavioral health risks.

Recommendations

1. CCFA should immediately enact a comprehensive medical examination program for career and volunteer members. These examinations should meet NFPA 1582. There are mobile providers available through contract as well as the possibility of local health care facilities who may be able to conduct these examinations. At a minimum, entry and maintenance medical examinations for all operational personnel should



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include screening for cardiovascular disease, cancer, lung disease, sleep disorders, and behavioral health.

2. CCFA should seek to have the budget to administer these examinations at no cost to the employee/employee candidate. Volunteers must also be included if they are to become “operational.” Entry and annual NFPA 1582 physicals would be estimated to cost between \$400 and \$900 per member.
3. Firefighters, career, and volunteer should have access to services which promote a healthy lifestyle. These include diet and exercise management programs, substance abuse/cessation programs, and mental health resources, such as the “Yellow Ribbon Report” from the IAFC Volunteer and Career Officers Section (VCOS).
4. CCFA leadership should formalize a safety committee, comprised of supervisory as well as non-supervisory personnel to establish priorities for health, safety, and wellness programs. In addition, membership in fire department safety-oriented organizations, such as the Fire Department Safety Officers Association (FDSOA), can provide access to training and programs, as well as build important “peer-to-peer” relationships. While compliance with NFPA 1500 is important, it is a long-term challenge. More important is the need to initiate the effort, develop a realistic compliance plan, and follow the plan.

3. CCFA attempts to comply with accepted practices related to the issuance, maintenance, and testing of self-contained breathing apparatus (SCBA). SCBA is considered a required component of personal protective equipment (PPE) for structural firefighting. Properly tested and maintained SCBA supplies safe breathing air to firefighters working in a hazardous environment. SCBA also prevents the intrusion of smoke and other noxious gases into the firefighter’s respiratory system. Proper use of PPE, to include SCBA is the first line of defense for injury prevention for firefighters.

The main regulations and standards which apply to firefighters’ respiratory protection are OSHA 1910.134 and 1910.156, and NFPA 1852, *Standard on the Selection, Care, and Maintenance of Open-Circuit Breathing Apparatus*. In certain states, OSHA regulation and NFPA standards have the force of law, however in Colorado they are generally used in an advisory capacity, although legally some courts across the country have successfully argued that they establish common practice and, therefore, carry the weight of law.

CCFA does not follow these best practices:

- a. CCFA does not conduct annual flow testing for SCBA. Rather CCFA does this testing bi-annually. Flow testing is designed to measure the effective delivery of supplied air as designed by the equipment manufacturer. Whereas OSHA does



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not specify an interval for flow testing, NFPA recommends at least one flow test annually.

- b. CCFA does not perform an annual facepiece, or “fit test” for SCBA with their personnel. Rather, CCFA only performs this test upon the initial issuance of a facepiece. Firefighters vary in their physical stature, and this includes facial characteristics which necessitate that SCBA facepieces be sized properly. A proper fit ensures a tight adherence to the facial skin so as to seal out external smoke and toxins when operating in a hazardous environment. OSHA 1910.134 requires both fit testing initially and at least annually. CCFA can purchase the appropriate equipment for approximately \$5-10k and then utilize personnel in-house to conduct the annual fit testing.

Recommendations

1. CCFA should embrace full compliance with national standards for respiratory protection. This includes provision for annual flow testing for SCBA and annual fit testing as well as other best practices for use, maintenance, and testing. These components should be incorporated into a comprehensive Respiratory Protection Plan.

4. Station facilities lack design and equipment to reduce carcinogen exposure. Simply stated, it appears that many of the CCFA stations were not designed to support the 24/7 occupancy of firefighters. As a traditional volunteer service, personnel response was likely assumed to be from home versus in quarters. Additionally, as stations were built, there may not have been the emphasis and understanding practices to segregate carcinogenic contaminants.

Recommendations

1. CCFA should immediately develop a plan to address occupational exposure to carcinogens. This should start with the design and implementation of a department policy on “best practices” for cancer prevention. An excellent guide is the “Lavender Ribbon Report” which was produced through the IAFC/VCOS, and is consistent with procedures recommended in NFPA 1500, NFPA 1851, *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structure Fires*, and NFPA 1877, *Standard on Selection, Care, and Maintenance of Wildland Protective Clothing and Equipment*. **Specific attention should be given to the emerging concerns with PFAS when purchasing new turnout gear and the “clean cab” design for new apparatus.**

The plan should address:

- a. On scene and post-fire decontamination of firefighters, to include a firefighting hood exchange program and requirements for showering and use of clean uniforms. In particular, turnout gear bags, manufactured with a PVC or similar vapor proof liner material, should be available to temporarily store soiled turnout gear until it can be



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cleaned. This will also facilitate the response of volunteer personnel who respond from home, eliminating the need to travel first to a station to pick up their gear.

b. Expansion of the turnout gear cleaning program with the purchase of an additional turnout gear extractor washing machine.

c. Reduction of personnel and equipment exposure to apparatus exhaust. Apparatus exhaust, especially diesel exhaust contains particulate matter, or soot, and over forty known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including volatile organic compounds and oxides of nitrogen (NOx). Without adequate ventilation and separation, exhaust can travel from apparatus areas to living areas of the station.

Section 9.1.6 of NFPA 1500 states: “The fire department shall prevent exposure to firefighters and contamination of living and sleeping areas by exhaust emissions.”

These systems are estimated to cost approximately \$15-20,000 per vehicle hook-up.

5. The operational practices for roadway incidents are a concern raised during the report research. CCFA is responsible for 31 road miles of Interstate 70, which is a major east-west travel corridor. The highway is a 4-lane, highly traveled road, which necessitates emergency fire response for vehicle accidents, medical incidents, vehicle and outside fires, and hazardous materials incidents. An accepted fire department practice, known as “blocking,” is often used wherein fire department vehicles are used to temporarily close a lane of traffic and are staged to protect other vehicles and responders engaged in incident mitigation.

CCFA maintains 3 “corridor” response vehicles, which are front line fire apparatus equipped with additional tools and supplies for extrication and spill containment, along with Engine 11 and Brush 2. Located strategically along the Interstate 70 corridor within CCFA’s response district, they respond to these incidents along with a supervisor in another vehicle.

CCFA has experience with roadway incidents. In 2010, Fire Chief Kelly Babeon was struck by a vehicle on U.S. 40 west of Empire while assisting at a cold motor vehicle accident. He was airlifted to a hospital in serious condition and was, fortunately, able to recover and return to work. In a subsequent event, a CCFA ladder truck was struck and damaged while performing a blocking maneuver.

Over time, CCFA has stated they have altered the practice of blocking, mainly due to limited resources, compounded by the damage sustained by the ladder truck on a prior blocking assignment. Instead, they utilize the lighter response vehicle (Engine 11) to provide protection and as explained, they also employ a practice to arrive on-scene, manage the emergency, and leave the scene as quickly as possible.



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MissionCIT believes this practice to be unsafe. While it is completely logical to assert that reduction of time on the incident lessens the exposure of responders, emergency incidents do not lend themselves to a level of predictability where the risk of vehicular strike can be minimized. This concern was echoed during informational discussions with allied emergency agencies who also respond to Interstate 70 incidents, and who are also placed at risk. Notwithstanding the financial and inconvenient issues associated with damaged apparatus, personnel safety is paramount.

Recommendations

1. CCFA should reconsider its policy on roadway blocking, to include adding a heavy response vehicle on the interstate and considering all possible assistance from law enforcement, the towing industry, and the Colorado Department of Transportation (CDOT). For example, CDOT manages the “Safety Patrol Program” and offers free resources to motorists. Among their stated services is “providing back up to First Responders at incident scenes.” Continuing dialogue is needed to improve consistent response from CDOT resources to improve overall safety on highway incidents.

Fire Authority Response Deployment

Currently, the CCFA deploys fire apparatus for response primarily from the Dumont fire station with the two on-duty career personnel. This response is supplemented by any on-duty shift volunteers and the response of the career captains, fire chief or assistant chief. There may occasionally be a response of fire apparatus from another station due to response of a community volunteer or one of the live-in residents (career or volunteer).

In a review of the CCFA response order from SOG 247.5 and discussion with the fire chief, currently for structure fires, only one engine and the Type 6 engine (Engine 11) respond. For commercial fires, one engine and one ladder respond. Volunteer personnel do not typically respond unless they are part of a duty crew shift at Station 1, or they are requested due to the size and nature of the incident. If volunteer personnel, not on a duty shift, do respond, they are required to respond to Station 1 first to retrieve their PPE. They then can respond to the scene to assist. They may be requested to respond with additional apparatus, or specialty apparatus depending on the need of the incident.

This current response deployment system may not be adequate for either available water, pump capacity or number of functional firefighters to fight a fire of any size beyond the incipient phase.



Recommendations

1. CCFA should review its entire response deployment to all types of incidents to ensure that the response matches the needs in terms of available water, pump capacity, specialized equipment, and staffing.
2. CCFA should respond with their Type 4 fire apparatus along with any response of their Type 6 fire apparatus during the initial response to most all incidents. This would ensure that appropriate water and pump capacity is available on scene at a fire incident. This would also ensure a larger piece of fire apparatus is available for blocking on highway and interstate incidents.
3. When career personnel provide staffing at the Idaho Springs and Georgetown fire stations, a revised deployment plan should be developed to ensure the response of a ladder truck for structure fire incidents.
4. Volunteer fire personnel should be allowed to transport their clean personal protective equipment (PPE) in the non-passenger areas of their vehicles, within a protective storage bag, so that they can respond to incidents they are close to or provide additional staffing on significant incidents. Not having their PPE with them significantly limits the use of the volunteer members. An alternative would be to allow them to store their PPE at the closest fire station to where they reside.
5. CCFA should develop a more thorough response procedure and deployment matrix for their volunteer personnel so that they are actively engaged beyond the staffing of duty crews and can respond to more incidents on a regular basis.

CCFA Response Staffing

CCFA has historically been a volunteer-based system. There is a strong history of dedicated men and women who for years provided essential emergency response services and who were able to sustain operations through 8 independent volunteer organizations. Station construction and management, apparatus and equipment purchase, and the acquisition of firefighting supplies were done to meet the needs of the various communities served.

Over time, the needs of the community and inefficiencies in the prior IGA necessitated an organizational change which resulted in the formation of the Clear Creek IGA in 1998. The premise of the IGA was the belief that “combining and coordinating their resources through the formation of a regional fire authority will result in the delivery of greater fire protection and emergency services throughout the territory of their respective jurisdictions... and will serve the health, safety, and welfare of the citizens within their jurisdictions.”

The IGA created a governance structure known as the Clear Creek Fire Authority, led by a Board of Directors who are “appointed to serve perpetual terms at the pleasure of the governing body of the party by whom they are appointed”. (IGA Document) In 2001, a career fire chief was hired to manage the consolidated system.

Over the years, volunteer participation has declined. The fire chief confirmed not all stations had volunteers and that only a few “community based” operational volunteers were on the



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CCFA roster. CCFA also utilizes volunteers from outside of Clear Creek County. These volunteers are largely career members from other areas who provide both in-station coverage to CCFA and they also may respond from their home location.

CCFA has added career staffing over the years to increase response as well as administer critical program services. Presently, career station staffing is consolidated at Station 1 Dumont. Three shifts of 2 career staff each are on duty 24/7. Each shift has 1 career lieutenant and 1 career firefighter. There are 2 captains who work overlapping dayside shifts (0700-1700 hours). The captains share program responsibilities, notably training, fire prevention, and special operations, but they also respond to certain incidents and function as the incident commander. This includes structure fires, motor vehicle accidents and various rescue incidents. The balance of career staffing includes the fire chief, the assistant fire chief, and an administrative manager.

CCFA also employs 4 seasonal wildland firefighters. These personnel are certified as structural firefighters, but they are only seasonal employees and have dedicated primary responsibility in wildfire mitigation activities.

The following table highlights the staffing growth progression over the years.

Table 1.17 Staffing Growth Progression by Year

Year	Status	Comment
Prior to 2001	East and West Volunteer Chiefs supervised the CCFA	Positions were vestiges from the pre-consolidation timeframe.
2001	CCFA Fire Chief appointed	Fire Chief and 1 Administrative Manager were only career staff
2014	Assistant Chief hired	Career staff included Fire Chief, Assistant Chief, Administrative Manager, Part-Time Fire Inspector
2016	2 Lieutenants hired to manage programs and field operations	Lieutenants worked M-F, 0700-1700 hours (overlap).
2017	Assistant Chief position vacated 3 rd Lieutenant hired.	
2018	Captain hired	Captain assumed responsibilities of vacated Assistant Chief position
2020	Assistant Chief hired The 3 Lieutenants were moved to shift work in station.	First career staff in a station Captain assumed program responsibility.
2021	3 Firefighter positions hired	Firefighters increased station staffing to 2 per shift
2022	2 nd Captain hired	With the 2nd Captain, both work M-F, 0700-1700 hours (overlap) Both are assigned program management roles as well as field supervision as needed



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Given the fact that overall volunteer participation has declined, MissionCIT believes staffing is the most critical operational concern for the immediate future. Firefighting remains one of the most dangerous occupations. It is a task-oriented, labor-intensive team operation requiring continual training, physical stamina, and an understanding of buildings and fire behavior.

The effectiveness of structural firefighting operations requires the timely arrival of enough qualified personnel (career or volunteer) and their ability to rapidly coordinate and manage operations based upon the situation at hand. The following outlines the major tasks required by an effective firefighting force:

Table 1.18 NFPA 1710 – Recommended Staffing for First Alarm Structural Assignment Capability

Task	Single Family Dwelling (2000 sq. ft.)	Apartment (1200 sq. ft. apartment in a 3-story building)	Open- Air Strip Shopping Center (13,000 sq. ft. to 196,000 sq. ft.)
Incident Command	1	2	2
Establishing a water supply	1	2	2
Fire flow application with hose lines	4	6	6
Support for hose lines	2	3	3
Search and rescue team	2	4	4
Ventilation and raising ladders	2	4	4
Aerial ladder operator (If needed)	1	1	1
Rapid Intervention Crew	4	4	4
Initial Medical Care		2	2
Total Effective Response Force Needed	16-17 personnel	27-28 personnel	27-28 personnel

Source- 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”

Even for non-structural incidents, a need for adequate numbers of personnel to respond to mitigate the incident is necessary. Below is a representative chart showing the typical number of needed personnel on non-structural emergency incidents.



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Table 1.19 Guidelines for Minimum Staffing for Typical Non-Structural Response Incidents

Task	Vehicle Accident with person entrapment	Advanced Life Support Non- Trauma Medical Call	Brush Fire (Less than 1 acre and accessible)
Incident Command	1	1	1
Fire Unit Driver/Operator	1	1	2
Hose line operator	2		4
Rescue Tool Operator	2		
Hand Tool Operator			2
Patient Care	2	2	
Total	8	4	9

With fewer firefighters and delayed arrival of supplemental response, these tasks will require more time to complete. The more time required, the longer a building will burn, resulting in increased risk to firefighters and trapped civilians.

The concept of “safe staffing” for structural firefighting has developed nationally over the last thirty years. Much of this development has been the result of significant incidents across the country which often have killed firefighters and civilians. Through the formal reviews of these incidents, common themes have emerged, and standards have been promulgated to guide safe fire department response:

- NPFA 1500, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, Section A.8.5.1.1 recommends that “a minimum acceptable fire company staffing level should be 4 members responding on or arriving with each engine and each ladder responding to any type of fire.”
- 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*, describes the tasks the initial response assignment should be able to complete, using a 2,000 square foot, wood frame dwelling, without a basement or exposures. While it does not define the composition of the initial alarm assignment, it does require:
 - a. 4-person staffing on all engines, ladders, rescue squads, or other specialty vehicles (excludes command-type vehicles and EMS units)
 - b. Arrival of the first engine company, staffed with 4 personnel, within 240 seconds or less of driving time, ninety percent of the time



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- c. Arrival of the second engine, ladder, rescue squad, quint, or other specialty vehicle (excludes command-type vehicles and EMS units), staffed with 4 personnel, within 360 seconds, ninety percent of the time
 - d. Arrival of the total first alarm assignment in 480 seconds, ninety percent of the time
 - e. A minimum of 17 members (16 if no ladder is dispatched), to include 4 members to perform as a rescue intervention team (RIT)
- NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*, uses the same baseline 2,000 square foot, wood frame dwelling, without a basement or exposures. However, it does not recommend minimum staffing levels. Instead, it allows the local authority having jurisdiction (AHJ) to establish specific unit staffing levels and response times to meet the needs of the department. NFPA 1720 does allow an authority to identify different “demand” zones and to establish requirements to meet those needs. NFPA 1720 requires firefighting operations to begin within 2 minutes of arrival, with all of the equipment needed to fight the fire, ninety percent of the time.

Table 1.20 NFPA 1720 Staffing and Response Time

Demand Zone (a)	Demographics	Minimum Staff to Respond (b)	Response Time (minutes) (c)	Meets Objective (%)
Urban area	> 1000 people /sq. mi.	15	9	90
Suburban area	500-1000 people / sq. mi.	10	10	80
Rural area	< 500 people / sq. mi.	6	14	80
Remote area	Travel distance greater than or equal to 8 miles	4	Directly dependent on travel distance	90
Special risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90

a – A jurisdiction can have more than one demand zone

b – Minimum staffing includes members responding from the AHJ’s department and automatic aid

c – Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table

Source – 2020 Edition of NFPA 1720 – “*Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*”



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Life Safety regulations and standards are also in place to govern safe operations at a structure fire:

- The Occupational Safety and Health Administration (OHSA) has developed regulations for operating in a hazardous atmosphere (Immediately Dangerous to Life and Health, or IDLH). OSHA 1910.134 (g)(4) requires at least 2 members to enter IDLH atmosphere (such as a structure fire) and remain in contact with each other through visual, audible, or physical means, and that at least two members remain outside (Initial Rapid Intervention Crew, IRIC) to monitor the inside crew as well as conditions and be available for immediate rescue should the situation warrant. This is commonly known as the “2 in 2 out” regulation.
- Similarly, NFPA 1500, Sections 8.6.4, 8.6.5, 8.6.6, and 8.6.7, cover crew management requirements during an emergency incident. These provisions require teams of at least 2 personnel, who must be in visual, audible, or physical means when operating in hazardous areas. Further, there must be two members on the outside to act as an initial rescue team, subject to immediate deployment.
- NFPA 1710 and 1720 require upgrade of the Initial Rapid Intervention Crew (IRIC) to a Rapid Intervention Crew (RIC), consisting of 4 members, in full personal protective equipment (PPE) when the incident escalates to present significant risk to firefighters.

After review by MissionCIT staff, CCFA, does not have adequate response resources to meet NFPA 1710 and most of the response demand of NFPA 1720. Given that these staffing demands are based upon structure fires, for safety reasons, it would also be practical for other hazard prone responses (interstate highway events, rescue emergencies, wildfire incidents, etc.). During the years 2021-2022, CCFA reported 6 actual structure fires. For 2023, there were no structure fires reported at the time of the creation of this report. However, CCFA did report responding to 297 motor vehicle accidents in 2021, which represented 21% of their total emergency responses. For 2022, that number was 328 (21%) and for 2023 it was 221 (24%). It is not known how many of these incidents occurred on the interstate, but it is assumed that many occurred there.

Today, CCFA operates with a variable staffing profile which is different for dayside and nightside operations. Excluding the response of available volunteer personnel, the maximum number of career personnel available to respond to a daytime incident is 5, 6 career personnel if both captains are working:

- 2 station personnel on the first piece of fire apparatus (Lieutenant and Firefighter)
- 1 captain, as available
- The assistant fire chief, as available
- The fire chief, as available



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The Staff personnel respond in command vehicles, or they may also bring additional tactical apparatus.

After hours and on weekends, only 2 career personnel are on duty for immediate response. CCFA does maintain other supervisory staff as “available,” however their response times may be extended.

The 2020 edition of NFPA 1710 clarifies that if fifty percent or greater of the response to an initial alarm assignment is done using career personnel, the organization is considered to fall under the NFPA 1710 designation. **CCFA, as presently staffed, and excluding volunteer personnel, cannot meet this requirement.**

NFPA 1720 allows for the use of multiple “demand zones,” to include urban, suburban, rural, and remote zones, as well as classification of properties as special risk. A structure fire in the commerce districts of Georgetown and Idaho Springs would be considered as a response to a suburban zone (based upon population density). For this demand zone, NFPA 1720 requires a minimum of 10 personnel to respond and arrive within 10 minutes of response, eighty per cent of the time. **CCFA, as presently staffed, and excluding volunteer personnel, cannot meet this requirement.**

A structure fire outside of the Georgetown and Idaho Springs boundaries would fall largely under the rural or remote fractional parameters of NFPA 1720, again based upon population density. Rural response would require 6 personnel to arrive within 14 minutes of response, eighty percent of the time. **CCFA, as presently staffed, and excluding volunteer personnel, cannot meet this requirement.**

Remote response would require 4 personnel to arrive according to the travel distance needed. **CCFA would be able to meet this requirement of NFPA 1720 with career staffing, but only with the response of available supervisory staff.**

In fairness, however, CCFA desires to and does utilize volunteer personnel to increase overall station staffing. However, MissionCIT was not able to capture an actual shift-by-shift usage of volunteer staffing. If 2 volunteers were regularly on duty, this would allow 4 persons to respond initially on an incident. This would result in consistently safer initial operations on all incidents. The timely addition of 1-2 supervisory personnel could allow a response to meet the rural requirements of NFPA 1720; however, without additional staffing, this would not result in a sufficient response level to combat a structure fire in the suburban area.

Currently, CCFA does not pay overtime to its career personnel for exceeding the 53-hour weekly threshold for work hours under the Fair Labor Standards Act (FLSA). Instead, it allocates compensation time to them. This fully meets the requirements of FLSA. However, during the focus group sessions with the career firefighters, it was mentioned that they sometimes have difficulty in taking the compensation leave that they are earning. By paying the additional



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hours as overtime, this could be an incentive to keep career personnel as it would provide an increase to their pay. For the long term, CCFA should consider making this switch once their immediate staffing needs have been met and their financial situation has stabilized.

Recommendations

MissionCIT believes that a goal of 10 personnel available and on-duty 24/7, comprised of career and volunteer members, should be achieved over the next 1-2-year period. Attaining this requires several organizational advances:

1. CCFA has discussed a plan to add 6 additional career staff by 2025. This would create 3 additional shifts of 2 personnel, or an additional 2-person crew for 24/7 response. From the data, almost 50% of the total responses for CCFA are in the Georgetown and Idaho Springs areas. Thus, it is the fire chief's plan to decentralize career staff response from the Dumont station by having 1 crew each at both of those locations. MissionCIT supports this change for several reasons:
 - The additional response capability would increase from 5 to 7 personnel (excluding volunteers) for daytime incidents, Monday-Friday, which would allow CCFA to meet NFPA 1720 response guidelines for rural structure fires;
 - Response time to incidents in both of those higher demand areas would be improved;
 - Depending upon travel distance, responses to structure fires could become marginally safer as there would be the equivalent of a 4-person engine company available for initial fire attack;
 - The added response by Staff members would allow them to carry out incident command, incident safety, and other strategic responsibilities versus "hands on" tasks.
2. Assigning 2 volunteers 24/7 in both Georgetown and Idaho Springs would result in 4-person staffing for each, which would allow CCFA to fully comply with the OSHA "2 in 2 out" rule. From a risk and liability perspective, this is an important regulation even though OSHA rules in Colorado cover only private workers in the state. Additionally, depending upon the staff member response, up to 11 total personnel could be assembled on the scene of a structure fire. This could allow CCFA to meet the NFPA 1720 requirements for a structure fire in a suburban area.
3. MissionCIT recommends the hiring of 6 additional firefighters in the FY2027 time frame in order to increase staffing at Georgetown and Idaho Springs to 3 per shift within the next 3–4-year period. This would allow the immediate response of a second fire apparatus on the initial dispatch. This could include a ladder truck, tender, or other specialty vehicle. While a single-responder response is not optimum, this could improve the overall response complement arrival time.



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4. Mission CIT also believes that 1 additional captain should be hired by 2028 and that all 3 captains be assigned to 24/7 shifts. This would improve overall personnel safety and incident management, as follows:
 - Shift captains would be available for immediate response on a 24/7 basis, versus dayside only. With dedicated and timely supervision immediately enroute, the lieutenants are better able to focus on initial incident tasks;
 - The response of the fire chief and assistant chief could become discretionary, at that point and preferably in a command-level role. While MissionCIT respects the response of these positions in order to increase minimum staffing, their response should be reserved for larger or complex incidents.
 - The fire chief and assistant chief could have the flexibility to respond to a station to bring additional apparatus to a scene. While this is not typically a chief-level responsibility, it has become a necessity in certain instances.
 - Assigning captains to a shift should still allow them to maintain their collateral duties in training, fire prevention, and special operations.
5. In FY2029, MissionCIT recommends that CCFA consider hiring a full-time logistics coordinator to handle apparatus repair needs, equipment needs, etc. for the number of personnel in the department and the size of the apparatus fleet.
6. MissionCIT recommends working to obtain a Federal Assistance to Firefighters (AFG) Grant to hire a full time Volunteer Recruitment and Retention Program Manager at no cost to the CCFA. Until this happens, or if a grant is not obtained, it is recommended that a current volunteer member be appointed to fulfill this role with a small stipend payment for these services.
7. CCFA should consider developing a pool of part-time personnel to backfill positions due to sick and vacation leave as a way to reduce overtime expenditure and maintain minimum effective staffing more cost effectively. These personnel should be required to meet current CCFA training and certification requirements.
8. MissionCIT recommends CCFA consider the conversion of the 4 wildland positions to full time status. This would create additional staffing options that could be utilized by CCFA but would only be available during the “off season” periods when wildfire mitigation activities are not in demand.



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The following table illustrates the potential impact of increased use of both career and volunteer personnel.

Table 1.21 Potential Impact of Increased Use of Both Career and Volunteer Personnel

Staffing	Career Station Personnel per shift	Volunteer Personnel per shift	Supervisory Response	Total Response Personnel per shift	NFPA 1720 Compliant
Present	2	0	1-3; day/night variability	3-5	Remote, but only if 4 total responders
Add 4 Volunteers per shift ASAP	2	4	1-3; day/night variability	5-7	Rural, but only if 6 total responders
Add 6 Career staff in FY2025	4	4	1-3; day/night variability	9-11	Suburban, but only if 10 total responders
Add 3 rd Career member per shift by 2027	6	4	1 Captain initial dispatch; FC and AC as available	11-13	Suburban, but only if 10 total responders
Add career shift Captain FY2028	6	4	1 Captain initial dispatch; FC and AC as available	11-13	Suburban, but only if 10 total responders
Convert 4 PT Wildland Positions to FT (Optional)	7	4	1 Captain initial dispatch; FC and AC as available	12-14, but only "off season" due to the Wildland mitigation needs	Suburban



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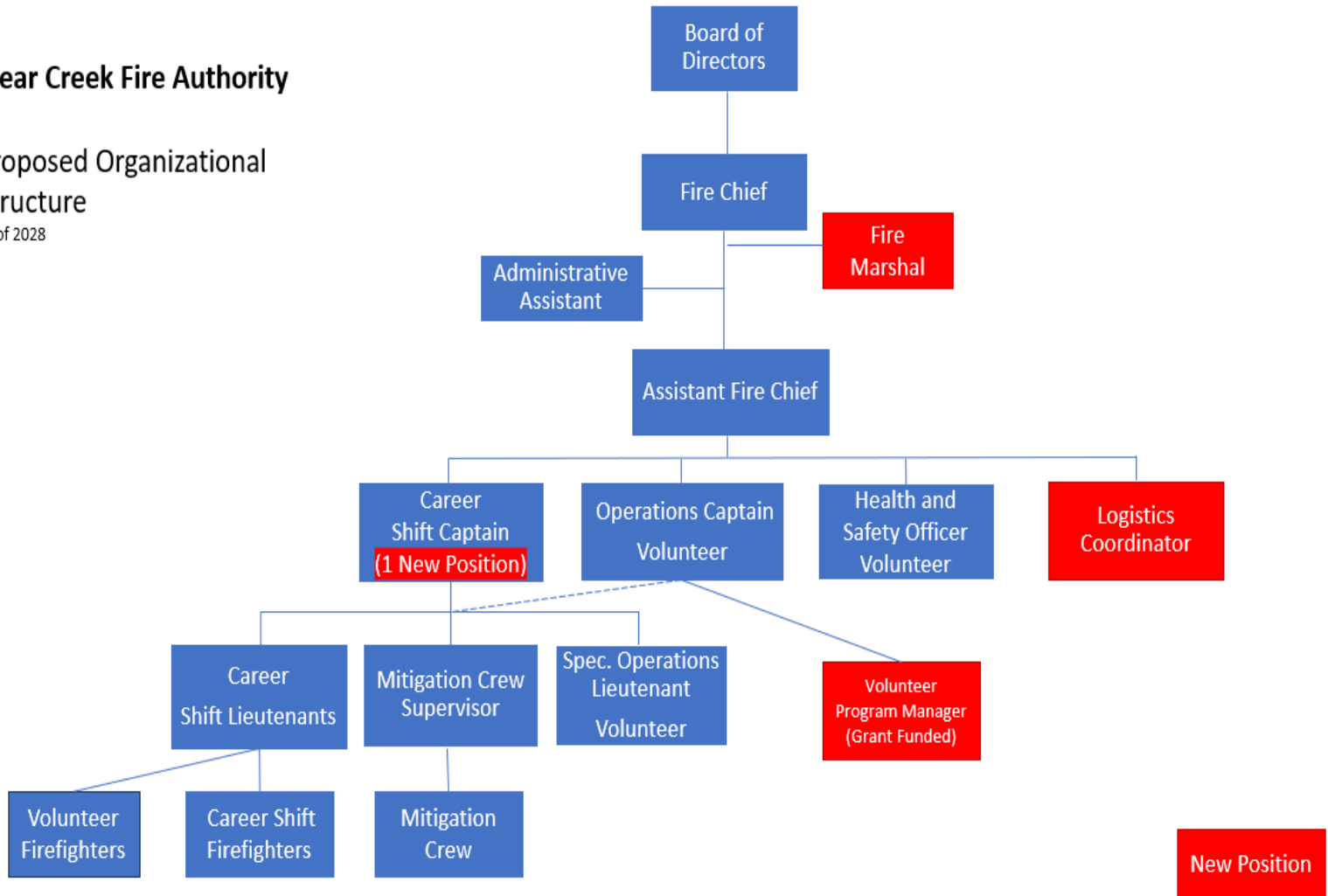
As a result of the recommended additional positions and staff, MissionCIT recommends that the CCFA organizational structure after 2028 look like the following.

Figure 1.23 Proposed Organizational Structure

Clear Creek Fire Authority

Proposed Organizational Structure

As of 2028



Increasing the coverage for 24/7 fire protection services and adding additional command and support staff positions will come at a cost. However, with the recommended financial changes later in the report, MissionCIT is confident that the improvements can be funded.



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An estimate of the total for personnel over the five-year period include:

Table 1.22 Estimated Total Cost for Personnel over 5 Years

Fiscal Year	Personnel Added	Costs (Includes Benefits, Uniforms, PPE, etc.)	Yearly Budget Increase
FY2024	<ul style="list-style-type: none"> Volunteer Recruitment and Retention Support Volunteer Program Mgr. 	Grant Funded	N/A
FY2025	<ul style="list-style-type: none"> 24/7 Personnel for Georgetown Fire Station 3 Lieutenants 3 Firefighters 	\$279,413 \$227,130	\$506,543
FY2026	<ul style="list-style-type: none"> Full Time Fire Marshal (Battalion Chief rank) 	\$127,795	\$127,795
FY2027	<ul style="list-style-type: none"> Additional Staffing for Idaho Springs and Georgetown FS 6 Firefighters 	\$475,437	\$475,437
FY2028	<ul style="list-style-type: none"> Increase command staffing to 24/7 1 Captain 	\$130,208	\$130,208
FY2029	<ul style="list-style-type: none"> Increase support staff Logistics/Equipment Coordinator @ Lt. rank 	\$102,184	\$102,184
		5 Year Total Increase For Personnel	\$1,342,167

Infrastructure

Firefighting Water Supplies

Cisterns

CCFA utilizes firefighting water from cisterns located throughout the CCFA response area. In addition, other impoundments exist, such as Georgetown Lake, from which firefighting water may be drafted from pumpers as well as during helicopter operations during a wildfire. Most of these impoundments are in elevated areas of the municipalities and provide more than adequate head pressure to supply fire apparatus.

While these water supplies are generally reliable, they can become vulnerable during periods without sufficient rain and snowfall to replenish them. With impoundments, the runoff created from rains after a wildfire in the vicinity can jeopardize these supplies due to the loss of ground



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cover which acts to shield them from mud slides and avalanches. The risks include excess silting which can inhibit effective drafting operations.

The following abbreviated table lists the locations of cisterns available for use by CCFA.

Table 1.23 Cistern Locations

Location	Station/District	Municipality	CCFA Map book
Station 1	1	Dumont	48
Floyd Hill Tech Park 1	6	Evergreen	89
Saddleback Drive	6	Evergreen	77
Sawmill Creek Road	6	Evergreen	76
Soda Creek	2	Idaho Springs	74
Central City Parkway (Valero)	2	Idaho Springs	64
Bridle Trail 1	6	Evergreen	76
Bridle Trail 2	6	Evergreen	76
Elk Valley	6	Evergreen	77
Floyd Hill Tech Park 2	6	Evergreen	89
Halter Way	6	Evergreen	77
Little Bear Creek Road	2	Idaho Springs	103
Packsaddle 1	6	Evergreen	76
Packsaddle 2	6	Evergreen	88
Packsaddle 3	6	Evergreen	Not listed
Santa Fe Mountain Road	6	Evergreen	76
Squaw Mountain Trail	2	Idaho Springs	122
York Gulch	9	Idaho Springs	36

Recommendations

1. CCFA requires sufficient funding to ensure the water supplies listed above are properly maintained. Trees and vegetation should be cleared frequently, and roadways maintained for all weather access to ensure their use when needed.
2. Where possible, dry hydrants should be added to impoundments to facilitate drafting operations. These locations should be added to the Cistern Master list. The only listed dry hydrant is at the fishing ponds at Easter Seals.

Fire Hydrants

Fire hydrants are present in the Town of Georgetown, City of Idaho Springs, Town of Empire, and the Town of Silver Plume. Fire hydrants allow for rapid access to firefighting water, but they must receive regular maintenance to ensure their proper operation, especially given the freezing climate periods.



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In addition, the water distribution system supplying the fire hydrants requires on-going maintenance and updating. An example noted was the water supply main in the Town of Empire which had recently developed a significant leak which went undetected for several days. The leak caused a significant reduction in the 100,000-gallon water storage tank, causing a major disruption to services. The town is presently undergoing review for major improvements to the water supply system.

Recommendations

1. It is recommended that leaders in the municipalities place a high priority on the maintenance of fire hydrants and water distribution systems.
2. New fire hydrant locations should be reviewed and approved by CCFA to ensure maximum access. As much as possible, hydrants should be equipped with Storz “quick connect” fittings.
3. CCFA should consider engaging the community to clear fire hydrants during heavy snowfall. “Adopt a Hydrant” is a popular program which helps the fire department and can strengthen rapport with the citizens.

Tenders

CCFA operates two (2) water supply tenders- 1 out of the Idaho Springs station and 1 out of the Empire station. Both units carry 2,000 gallons of water. Tenders are a vital component to a rural water supply firefighting incident where water is not available from municipal supplies.

Due to staffing limitations, tenders from CCFA may not be able to respond when needed. The water on an average first arriving fire department pumper usually lasts only for the initial 4-5 minutes of firefighting. Supplemental water supply from tenders is critical to sustained rural fire attack, and a lack of water can jeopardize the safety of firefighting personnel.

During a previous study for the Telluride (CO) Fire Protection District (TFPD), MissionCIT learned of a program where several water carrying vehicles from the Public Works Department were outfitted with equipment and radio communications to assist TFPD as available. This small investment and coordination with a local agency, is an example of a partnership which could be used by CCFA.

Community Risk Reduction

Building, Fire and Related Codes:

The Clear Creek community is heavily comprised of older structures, many of which are historic in nature, and as such, play a significant role in the community’s economically valuable tourism industry. The downside of older buildings is that they were generally built before modern building and fire prevention codes were established.

The successful use of a building must include the safety of occupants and must follow a concept often referred to as “cradle to grave,” meaning it must be built using the best practices of the



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construction industry and then maintained to preserve its overall integrity. The key to the latter is routine and regular fire safety inspections, designed to reduce risk caused by unpermitted change of use, alteration, and the presence of common fire hazards.

For this report, a survey of the Clear Creek communities was conducted in order to assess the use of modern buildings, fire prevention, and related codes in use. Surveys were sent to each jurisdiction as well as the county. In order to understand how development and regulation function, one must understand that towns and cities often maintain their own Chief Building Official (CBO) and regulate their own planning and development proceedings. Alternatively, it is sometimes the case that smaller municipalities elect to utilize countywide services to regulate the industry. Clear Creek County exemplifies this dichotomy, in that the Towns of Georgetown and Silver Plume, and the City of Idaho Springs manage their own building construction regulations, and the Town of Empire is covered under the arm of the county government. The exception to this is that the CCFA fire chief acts as the “agent” for the fire and life safety inspection program countywide. The fire chief is also involved in certain plans review and “pre-occupancy” fire safety inspections.

Whereas the municipalities within Clear Creek County generally subscribe to the major model codes (International or “I” Codes), there are discrepancies in terms of uniformity that could be rectified. Similarly, there are codes and beneficial local ordinances in place in some municipalities but not in others. An example has to do with abandoned buildings, which can become a fire and safety hazard. Only the City of Idaho Springs regulates this through a formal adoption of the 2018 International Property Maintenance Code (IPMC).

The following table provides an overview of the major codes in use in Clear Creek County. A more detailed description of the codes and ordinances which exist is located in [Appendix G](#) of the report.

Table 1.24 Codes Used in Clear Creek County

Codes	County, Empire, Georgetown	Silver Plume	Idaho Springs
International Building Code (IBC)	IBC 2015	IBC 2018	IBC 2018
International Residential Code (IRC)	IRC 2015	BC 2018	IRC 2018
International Property Maintenance Code (IPMC)	Not adopted	Not adopted	IPMC 2018
International Wildland-Urban Interface Code (IWUIC)	Not adopted	Not adopted	Not adopted
International Fire Code (IFC)	IFC 2015	IFC 2018	IFC 2018

The general safety concerns for Clear Creek County extend beyond buildings. As with many areas subject to wildfires, modern codes and local ordinances can greatly help with prevention



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of wildfires and the urban conflagrations they can produce such as was experienced recently in Maui, Hawaii as well as in the 2021 Marshall Fire in Boulder County, Colorado. Programs are available through many wildfire organizations to assist localities in general property maintenance, reduction of fuels, and creation of defensible spaces. CCFA appears well-aligned with wildfire organizations and the County has an up-to-date Hazard Mitigation Plan.

As with building related codes, some municipalities in Clear Creek County have adopted specific wildfire mitigation ordinances whereas others have not. For example, the county has adopted a defensible space ordinance through their site development process. New development greater than 400 square feet must comply with this requirement.

Recommendations

1. Clear Creek County (ESD) and the Town of Georgetown should pursue moving from the 2015 adopted codes to the 2018 or 2021 model code series. It is considered a “best practice” to be no more than 2 codes cycles behind.
2. The 2018 or 2021 IPMC should be adopted countywide. Only the City of Idaho Springs has adopted the IPMC (2018). This code is helpful in the maintenance of properties, especially as they age or become vacant or “nuisance” buildings and should be adopted by all municipalities.
3. All Clear Creek County municipalities should adopt, in part or in total, the 2018 or 2021 International Wildland Urban-Interface Code (IWUIC). The IWUIC regulates many factors in order to prevent wildfire. Although the IFC and local ordinances in place in the County, Georgetown and Idaho Springs are helpful in controlling vegetative hazards, the IWUIC provides a more comprehensive approach to the means and materials used in construction as well as methods for creating and maintaining a defensible space for a building.
4. CCFA should consider hiring a full time Fire Marshal to formally organize all fire and life safety programs. The position could function in part as a fire protection plans reviewer and would be responsible for participating in “pre-occupancy” inspections to ensure fire protection and related features are in place. This would allow the Fire Chief to focus on overall organizational management.
5. All municipalities should be encouraged to use this position and to cost share the expenses.

Fire and Life Safety Prevention Programs:

The best way to protect civilian and firefighter lives from fire and reduce building damage is through community-based education on high-risk behaviors. When people are made aware of the prevalence of fire in America and are equipped with accurate information about causes, the risk of accidental fires is reduced.

CCFA has implemented several traditional as well as innovative programs to reduce risk within the community. These include:



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Residential Knox box program: Through a partnership with the local Elks Lodge in 2022, a grant through the Elks National Foundation funded the purchase of an initial 18 residential Knox boxes. CCFA was able to install 6 boxes at the homes of high-risk seniors that had were included as part of the County “Safe Call” program. CCFA then sold a vehicle in 2023 and reinvested the proceeds into adding additional boxes to the program. This allowed for the installation of 14 Knox boxes in the senior living facility in Idaho springs. In addition to installing these boxes on all of the residential units within the facility, an additional \$2,500.00 was provided to upgrade the automatic fire alarm system to include heat detectors in all of the 14 living units. To date there have been 23 residential Knox boxes installed within the community.

Wildfire Property Risk Assessments: CCFA undertook wildland fire risk property assessments in 2022. The Department provided 10 risk assessments in 2022 and 25 in 2023. CCFA has provided 200 wildland risk assessment guides to residents during the same period along with holding outreach events to discuss how the residents can use the guide to perform a self-evaluation of their property. This program has been supplemented with the advent of a community chipper program. This program has provided a woodchipper to residents at no cost to allow them to mitigate their properties.

Community CPR Training: CCFA offers CPR and First Aid training to the community. The main focus of the program was providing CPR and First Aid training to 22 employees of the Georgetown Loop Railroad in 2021. This was expanded to include training for 35 employees in 2023, and the program also included Narcan for their trains and facilities. The Georgetown Loop has between 245,000 and 260,000 visitors per year. **This training has improved initial medical aid to 15 individuals that experienced a medical emergency since 2021.**

Red Cross Residential Smoke Detector Program: CCFA became a Red Cross smoke alarm partner in 2021 and has installed 40 residential smoke alarms to date. This program has included CCFA crews canvassing neighborhoods to determine what homes need alarms while performing a home safety inspection in conjunction with the alarm installation. To date, CCFA is not aware of any structure fires in the homes that have received a detector to date.

Community Evacuation Route Program: CCFA performed the first community evacuation plan for the Saint Mary’s community. This included developing an evacuation route map that would facilitate the evacuation of all of the residents at the same time, along with the visitors to the glacier hiking trail. Evacuation maps were provided and associated route signs have been installed throughout the neighborhood. This same program is currently being done in the York Gulch neighborhood this year with the signs being installed this fall. The York Gulch program included installing a water barrel to better facilitate campfire extinguishment and the installation of a new dry hydrant in a spring fed pond to facilitate wildland fire operations.

Fire Investigation Services: CCFA conducts basic fire investigations to determine accidental versus intentional or natural cause. When a fire requires a more in-depth investigation or when criminal intent is suspected, CCFA relies on the Colorado Bureau of Investigation (CBI) for



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assistance. The cause determination of a fire is important. Not only could the investigation lead to a criminal conviction, but the information produced, particularly with an accidental fire, can yield important prevention information for the public. The fact that fire investigations are done by existing staff, adding responsibilities to already overloaded positions, is further justification for the hiring of a Fire Marshal for CCFA.

Recommendations

1. CCFA should continue to place a high priority on community outreach activities. These programs impart essential fire and life safety knowledge to residents and allow CCFA to engage in organizational marketing, which could include attracting potential new volunteers. This is important at a time when budgets are stretched, and public support is critical. In addition, measures of effectiveness should be developed for the CRR programs delivered.
2. CCFA should ensure that fire investigation information related to high-risk or careless human behavior, or known faulty products, is communicated to the public as a prevention measure.
3. With staffing at a premium, CCFA should consider recruiting community members as administrative volunteers to assist with community outreach activities. Residents who are retired may have previous experience in the fire and emergency services field or may have served as educators or possess skills in public relations, marketing, or similar vocations.

Plans Review: The review of new construction and renovation plans is vital to a fire and life safety program. When designed according to modern codes, buildings are considered safe for occupants and for firefighters. In Georgetown, Silver Plume, and Idaho Springs, the 3rd Party is “SAFEbuilt.” Clear Creek County does not use SAFEbuilt. CCFA has been designated as the agent for reviewing new building construction plans and participating in new building occupancy inspections under the local building official. The fire chief, in the absence of a full-time plan reviewer, conducts these reviews. In addition, the review for special hazards and protection features, such as fire alarm systems, fire sprinklers, and commercial hood systems, is shared by the CCFA and 3rd party engineering firms.

Legislation for the review and issuance of permits for new construction/renovation and for certain operations allows for fees to be charged to offset program management, to include personnel costs. Clear Creek County has established a fee schedule for plans review for residential and commercial development. These reviews are done by county agencies who derive the benefit of these fees. The County charges 65% of the fee for the review of all commercial plans. There is also a re-inspection fee of \$100.00 per hour, however according to the county, it is rarely used.

As of May 2023, CCFA has adopted a fee schedule pursuant to the IFC and issues operational permits for certain types of hazardous use processes, slash burn operations or for uses that attract larger crowds (typically more than 49 people) or house people who may not be capable



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of self-preservation. CCFA also charges a fee of \$.017 per square foot for the review of plans for fire alarm, fire sprinkler, and commercial hood system. Lastly, CCFA is able to recover a portion of the operating costs for certain incidents. These include hazardous materials response, hazardous materials containment/mitigation, motor vehicle accident rescue, and lane protection. Due to the fact that the CCFA fee schedule is less than 6 months old, there is no historical information for revenue estimate purposes.

The CCFA fee schedule is contained in [Appendix H](#) of this report.

Recommendations

1. The Clear Creek jurisdictions should conduct a review of their fees to ensure they have kept pace with the cost of regulation and compliance, to include re-inspections.
2. A portion of the building development fee should be directed to CCFA to supplement other CCFA fees in support of the fire and life safety program. The current development fee covers the short-term plans review and inspection activities. However, the improvement will require years of on-going inspection activity, which is the responsibility of CCFA.
3. The county includes Wildland Hazard Mitigation permits in its fee schedule. The cost is \$100.00. CCFA should pursue a joint review process for this permit and receive a portion of the revenue.

Fire and Life Safety Inspections: Once a building has received a Certificate of Occupancy (CO), the local fire prevention code is used to regulate compliance with storage and various other fire safety features. This is typically done through a structured program through the fire department. While 1 and 2-family residential buildings are not covered within the scope of a fire prevention code, most other buildings are. These include schools, hospitals and institutional buildings, places of public assembly, commercial buildings, and non- 1 and 2-family residential buildings.

The frequency for conducting fire and life safety inspections is typically a function of both the degree of hazard or risk to occupants and the number of personnel available to conduct the inspections. The IBC provides guidance in prioritizing buildings for inspections.

CCFA has been the delegated authority to enforce the fire prevention code for all of the jurisdictions. This authority includes the power to conduct fire code and fire safety inspections and to set, charge and collect reasonable fees with respect thereto.

CCFA reported 416 properties which are subject to regular and routine fire safety inspections. In a perfect world, all of these buildings would be inspected one time per year, with certain buildings, such as schools, inspected every six months. However, CCFA does not have designated fire prevention staffing. CCFA attempts to inspect business properties using available personnel, however, it is not a comprehensive program. CCFA does utilize a self-inspection program, but that program does not result in an “in person” follow up inspection.



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Additionally, CCFA works to ensure that building fire alarm and fire sprinkler systems, as well as commercial hood systems are inspected pursuant to NFPA requirements and that records are maintained on premises.

Under the recent CCFA fee schedule, CCFA may charge for operational permits and routine and regular fire inspections. As noted, there is no history available to assess compliance with the code nor a revenue history for financial projections.

Recommendations

1. CCFA should begin establishing formal workload measures for permit issuance and inspections. This will assist to justify current and future fees and will be helpful in the justification of a full time Fire Marshal as well as the future expansion of the prevention program.
2. CFA should evaluate a cost increase for the issuance of slash burn permits. Presently the cost is \$25.00, whereas, according to the new CCFA fee schedule, operational permit fees are \$50.
3. CCFA should formalize a fire and life safety inspection program in order to assess the community risk profile. Given the lack of resources immediately available, CCFA should continue to use the self-inspection program for all buildings. This is further justification to support the hiring of a full-time Fire Marshal.

Fire Sprinkler Incentives: It is a fact that buildings protected with a fire sprinkler system provide the greatest level of protection to occupants. With a 98% success rate, these systems not only protect occupants from fire, but they also prevent excessive dollar loss. They also reduce the risk to firefighters operating a building.

When a commercial building is destroyed or heavily damaged by fire, there are hidden costs which are not always recognized. But the loss of a building is often the loss of a business which can have tremendous economic impact on a community. There is the loss of tax revenue. Employees may be laid off, which results in loss of income. Employees may not be able to pay their housing expenses, make a car payment, or purchase goods. The list goes on. With historic buildings, there is immeasurable loss that cannot be assessed, and no insurance can replace it. A prime example occurred in the town of Tappahannock, VA in July 2022. Located on the historic eastern shore area of the state, the tourist town suffered the loss of most buildings on an entire street in the downtown area. Many buildings were over one hundred years old. (https://richmond.com/news/state-and-regional/a-month-after-a-massive-fire-tappahannock-presses-on/article_0dc0defd-8d5a-5c3b-a8b9-81476c9e824d.html)

The 2017 Tax Cut and Job Incentives Act, also known as the Fire Sprinkler Incentive Act, allows business owners to write off the full cost of commercial fire sprinkler systems as an expense up to \$1.04 million. This benefit enables many small businesses to immediately recover the costs of the upfront investment. If funds are borrowed, the Act allows for the full deduction of the interest expense.



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The County has implemented a requirement for residential properties in excess of 4,400 square feet to have installed a residential fire sprinkler system. This is a great asset toward life safety preservation. Today in America, over 3,000 civilians die each year in fires. Seventy-five percent of these deaths occur in the residence. Despite advances over the last 35 years in early warning from fire, i.e., smoke alarms, home fires remain the primary life safety risk to communities.

There are several contributing factors to the continued risk posed by home fires. These include:

- Continued lack of public awareness (“it won’t happen to me”) of fire and fire and life safety practices;
- Lack of up-to-date building and fire code adoption in wildfire prone areas;
- Use of diminished wooden construction materials (floors and trusses) which have a shortened “burn through” timeframe, thus causing building collapse;
- Use of engineered building components which often use glue instead of nails to connect materials, which also accelerate building collapse;
- Extensive use of synthetic materials, which burn hotter with increased toxic smoke, in furnishings and fixtures;
- “Open” floor design, which allows for more rapid fire and smoke permeation throughout the home;
- Use of combustible exterior walls, which allow rapid vertical fire travel from ground level to the attic;
- Inadequate number and placement of working smoke alarms;
- Failure of government and developers to address and understand the function and value of residential fire sprinklers.

It has been documented through studies done by Underwriters Laboratories’ Fire Safety and Research Institute (FSRI) that escape time from a home fire has been drastically reduced by the construction aspects mentioned above. The main phenomenon affecting this is known as “flashover.” Flashover occurs when all of a room’s contents achieve their ignition point simultaneously, resulting in total flame development with associated temperatures in excess of 1,000 degrees Fahrenheit. This situation is non-survivable, for both occupants and firefighters, whose arrival and entry into a home coincides with the flashover.

(<https://homefiresprinkler.org/product/side-by-side-animation-and-live-burn/>)

Whereas the timeframe for occupant escape in older (1970’s and earlier) homes was 10-13 minutes, that timeframe is now 3-5 minutes, thanks to flashover. This timeframe assumes the successful early warning of fire from working smoke alarms, placed on all living levels of a home, inside and outside of sleeping areas, and enhanced by the practice of closing bedroom doors while sleeping and practicing home escape drills.



Recommendations

1. The county should develop a public awareness package to encourage business owners to retrofit non-sprinklered properties and to evaluate the Fire Sprinkler Incentive Act to recoup costs.
2. The municipalities should evaluate other construction alternatives which could incentivize the installation of sprinklers on a voluntary basis. This could take the form of increased density for a residential project, reducing the spacing for fire hydrant requirement placement, or narrowing of certain road width requirements.
3. The county should work with the other local jurisdictions to develop a residential sprinkler requirement similar its own 4,400 square foot threshold.

CCFA Governance Structure

As part of the Request for Proposal, MissionCIT was asked to evaluate the current governance structure of the CCFA. Currently, the CCFA is a formed fire authority under the intergovernmental agreement. The IGA is between Clear Creek County as the Emergency Services District (ESD) and the City of Idaho Springs and the Towns of Georgetown, Silver Plume and Empire. The CCFA board of directors are appointed by the representative jurisdictions. They oversee the fire chief and make policy decisions for the CCFA.

During the interviews conducted, there were concerns that the current structure has limitations and that the board of directors does not provide appropriate oversight and policy guidance to the fire chief or that there is not enough long-term planning for the future of the CCFA. The current CCFA Board of Directors does not regularly provide the fire chief with an annual performance evaluation or department performance goals for him to work towards. This provides inconsistency in the policy and strategic direction of CCFA and can allow for inadequate communications between the fire chief and BOD with limited accountability to the operations of the department. In our interviews, there was also a desire from some that an elected board of directors, as with a Title 32 special district, would provide greater oversight to the operations of the CCFA.

MissionCIT researched the options regarding the governance structure and developed the following three options for the future structure of the CCFA;

- Remain as a Fire Authority
- Transition to a Title 32 Special District
- Become a countywide ESD including the towns and city

Each option has its advantages and disadvantages. The following chart shows how the different options may impact the organization and operation of CCFA.



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Table 1.25 Organizational and Operational Impact of Available Options

Structural Option	Independent Oversight From ESD	Oversight of Fire Chief	Equitable Funding from All Jurisdictions	Taxing Authority	Levy Millage	Levy Impact Fees	Levy Sales Tax	Collect Cost Recovery Fees for Calls	Internal Support Services (IT, Legal, HR, Finance)	Able to accomplish consolidated Services with EMS and likely retain EMS sales tax
Fire Authority	Yes	Appointed Board of Directors	No	No	No	Yes	No	Yes	Contracted	No
Title 32 – Special District	Yes	Elected Board of Directors	Yes	Yes	Yes	Yes	No	Yes	Contracted	No
Countywide ESD (Minus coverage area of Evergreen Fire Protection District)	No	Elected ESD Board of Directors**	Possible	Yes	Yes	Yes	Receive sales tax through County	Yes	County Could Provide as specified in IGA	Yes

** The formation of an Advisory Committee of Town Representatives to provide recommendations to the ESD Board would also be part of a recommendation with this option.

A review by MissionCIT of the three governance options is outlined below:

Fire Authority

Advantage

- Current structure in place since formation of CCFA
- Each jurisdiction is represented on the CCFA BOD

Disadvantage

- No ability to levy millage
- Limited level of oversight by CCFA BOD
- Likely no ability to merge with CCCEMS and retain EMS sales tax
- Cannot create a sales tax to diversify funding

Title 32 Special District

Advantage

- Ability to levy millage for funding
- Elected Board of Directors

Disadvantage



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- Creation of another special district in county when there is already some voter fatigue on the issue
- Likely no ability to merge with CCCEMS and retain EMS sales tax
- Election of independent BOD – No specific jurisdictional representation

Countywide ESD

Advantage

- County ESD structure is already in place – No further action needed, except new IGA with municipalities
- Uses current ESD directors for oversight of ESD functions
- Greater alignment of operations and resources countywide and to other countywide emergency service operations
- Ability to merge with CCCEMS if desired
- Greater direct oversight to ESD Director through County Manager assigned by BOD
- Potential for the County to create a public safety sales tax, the proceeds of which could be directed to the ESD for diversification of funding
- Ability to levy millage
- Able to utilize county support resources (IT, finance, HR, legal)

Disadvantage

- City/towns do not have direct oversight to fire department operations
- County charges for administrative support resources

After a review of the options and the impacts to service delivery and the future of the CCFA, MissionCIT has the following recommendations.

Recommendations
<ol style="list-style-type: none">1. Transition the structural governance of the CCFA to a Countywide ESD with oversight provided by the ESD Board of Directors (County Commissioners) at the end of the current IGA. Since the ESD currently exists, no additional action is necessary on the part of the County or voters. However, a new IGA would need to be created with the City and Towns.2. Create an Advisory Committee with representation from the remaining City and Towns to provide consultation to and recommendations regarding the CCFA to the ESD BOD.3. Whatever governance structure is adopted, annual performance evaluations for the fire chief and the setting of annual organizational goals should be adopted by the governing body.



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The reasons for these recommendations include:

- Creation of a Countywide ESD does not require any further ballot actions or actions of the County Commissioners. The ESD already exists. A new IGA would need to be drafted and approved by the City and Towns to work with the ESD for the provision of fire services.
- The new structure allows for the ESD BOD to establish the future funding mechanism for CCFA, including potentially spreading the cost of fire service equally across the county to all residents through a revised funding approach in the IGA.
- The new structure allows for improved policy decisions at the county level for fire protection that integrate with other county level emergency services policy decisions
- The new structure allows access to greater support service resources from existing county departments (IT, Finance, Legal, HR) that can be included in the IGA
- It allows for greater coordination with other county level emergency services organizations such as EMS and Law Enforcement
- Allows for delegated oversight to the county manager to provide leadership development and oversight to the fire chief
- Works to provide a singular, long-term vision/plan for countywide provided fire services
- Can help to improve long term financial stability and access to resources
- Continues with City/Town input provided through the Advisory Committee to the ESD BOD
- Facilitates establishment of countywide performance and response standards as well as staffing levels
- Future potential to merge with CCCEMS if desired

As with any elected body, the level of support and funding that the future CCFA receives from the ESD BOD is dependent on their knowledge and support for fire protection within Clear Creek County. However, during our focus group meetings with all elected and appointed boards, there was support for the fire protection services in the county and for improving the staffing and level of service delivery by the department.

CCFA Finances

CCFA is funded in several ways. Currently, there is a 4.569 millage rate levied for the area of the Emergency Services District (ESD), which is the unincorporated area of the County. Each of the four towns provides a direct contribution to the CCFA budget based on the similar 4.569 rate within their jurisdiction. In addition to the millage revenue amounts and town contributions, the CCFA receives revenues from other sources to include contract services (Red Rocks Community College fire training, investment income and some grants). One of the grants is a \$90,000 grant provided to fund the seasonal wildland crew in place.



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For FY2023, the breakdown of revenue sources for the CCFA included the following for their estimated budget of \$1,822,325.

Table 1.26 Breakdown of Revenue Sources

FY2023 Funding Source	Amount	Percentage of Budget
ESD	\$739,574	40.6%
Idaho Springs	\$141,225	7.7%
Georgetown	\$131,510	7.2%
Empire	\$20,000	1.1%
Silver Plume	\$14,500	.8%
Grants, Interest, Fees, etc.	\$419,556	23%
	Total Amount of Budget Funded	80.4%

Unfortunately, the amount of revenue generated within the ESD or provided by the towns has not kept pace with the needs of the department. For FY2023, the department's financial status is projected to be the following:

Total Revenues	\$1,496,490
Total Projected Expenses	<u>\$1,822,325</u>
Total Shortfall	(\$325,835)

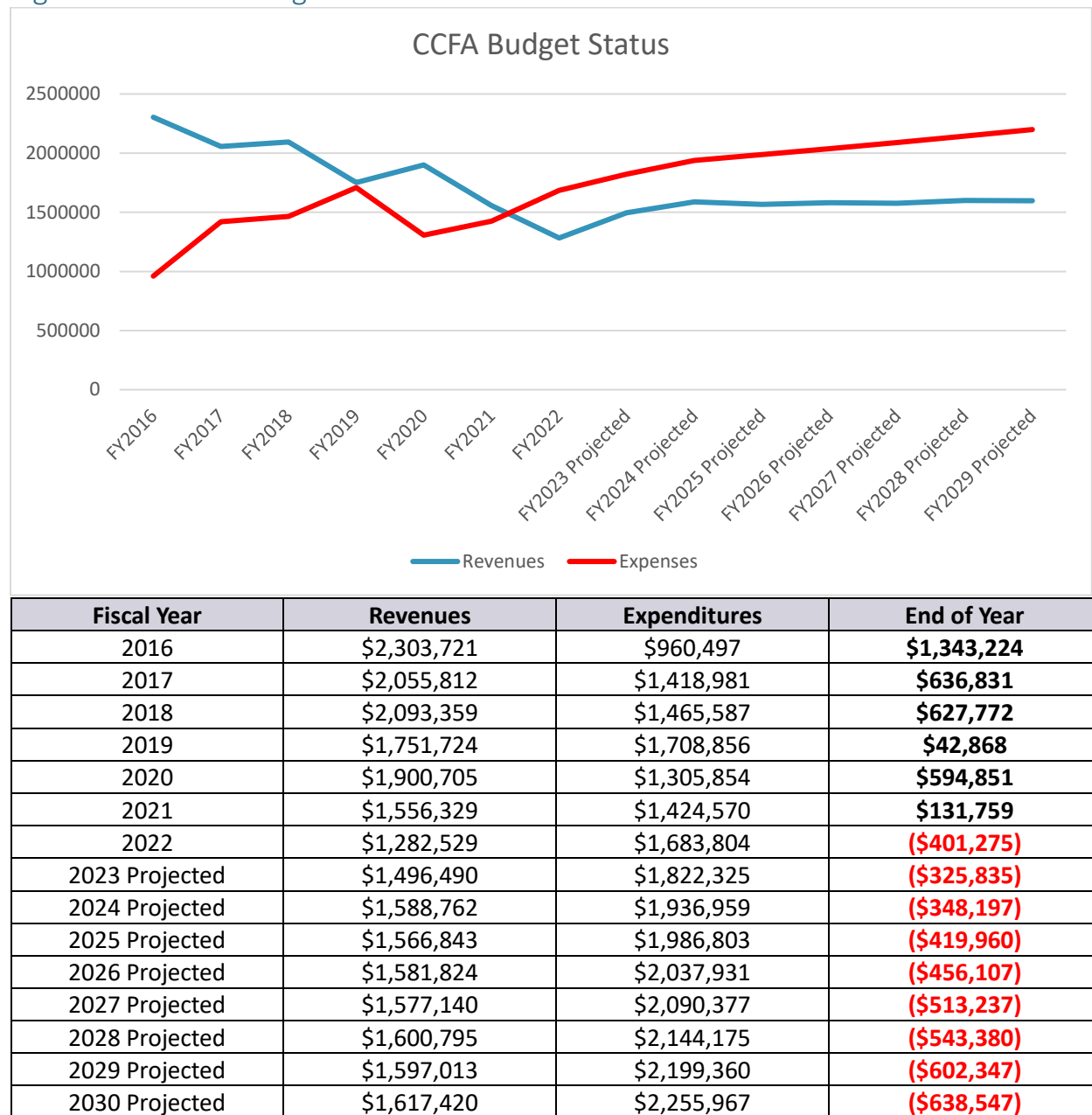
The CCFA has a current cash reserve of approximately \$5.5 million. This cash reserve is required for emergency expenses and required by state law.

The financial picture of the CCFA over the last eight years shows the following. Beginning in FY2022, CCFA began using funds from its reserve account. This is estimated to continue through FY2033 at an increasing pace, exhausting the reserve account at that time. The projected expenses below beyond FY2023 are based on projections from CCFA and the County Finance Director.



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Figure 1.24 CCFA Budget Status



In a review of the CCFA actual budget information from 2016 through 2022, the most significant items or changes during that time included:

- A decrease in the amount of ESD contributions by 64.4%. This was due to declining revenues from the Henderson Mine.
- An increase in personnel costs of 103.9% due to the hiring of career personnel in 2021 and 2022 to improve response to incidents.
- There were some minor increases in fire operations, apparatus expenses and overhead expenses as would be anticipated over that time period.



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- There was fluctuation in expenditures for capital projects over that time period from \$17k to over \$600k and then back down to \$5k for FY2022.

Currently, approximately 50% of the incidents that CCCEMS runs are for patients who are not county residents. CCFA runs on almost all of these same incidents. It can be assumed that the calls that CCFA runs have mostly this same distribution, with the exception of fire incidents, which would have a much higher resident component. Thus, a large portion of the public safety responses are for those who have not contributed to the tax base within Clear Creek County. There needs to be a method for CCFA to be able to capture the necessary funds for operation from this base.

Future Finance Issues

The fire authority is facing several significant issues regarding its operations and finances for the future. Without a change in the structure and financing of the CCFA, they will be insolvent in 10 years or less with no addition of personnel or adding significant expenditures, such as for a new fire station. The major financial impact issues that the CCFA faces includes:

- Declining revenue generated by the ESD due to the closing of the Henderson Mine
- Increased personnel costs associated with the career staffing hired
- Several fire stations that need repairs and upgrades
- The need for a new fire station in Idaho Springs
- Declining or stagnant participation by volunteer fire personnel
- The need for additional career staffing to ensure appropriate minimal response to incidents
- Apparatus and equipment repair and purchase costs that continue to rise dramatically
- Limits within Colorado to raise appropriate funds for operations

The availability of revenue from the ESD and the towns will remain limited under the current millage rate and contribution levels. The anticipated revenue from the ESD should level off as the Henderson Mine contribution has almost been exhausted. The creation of additional revenue sources for CCFA is limited.

The cost of doing business within emergency services has dramatically increased over the last few years as supply chains have been affected, businesses are having trouble finding workers and inflation has increased costs. In the past, new fire apparatus that was ordered could be delivered in approximately 12-16 months at a cost of \$500k to \$1 million depending on the type of apparatus ordered. Today, deliveries for fire apparatus take 36-40 months and can cost \$1 million to \$2 million.



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Typically, salaries and benefits for career personnel account for 70-80% of a fire department's budget. Within CCFA, that ratio is just over 60%. With the need for additional career staffing to meet national response staffing standards, this percentage ratio will only increase.

CCFA has identified a need for a new fire station in Idaho Springs. They would like to build a station of approximately 10,000 square feet to accommodate the apparatus and a complement of career personnel. The land has already been obtained through the town of Idaho Springs. With the increased cost of construction labor and materials, the station would be projected to cost between \$8 - \$10 million.

CCFA also needs to establish and annually fund a capital reserve account. The funds in this account would be used to fund the purchase of fire apparatus, large cost equipment, fire station upgrades, new fire stations, etc.

Finance Options

After reviewing the financial options available to CCFA for future sustainability, MissionCIT provides the following recommended options moving forward. These options help sustain the operations of CCFA through FY2033. These options are inclusive of the costs based on the staffing improvements recommended by MissionCIT along with the creation of a capital reserve account for \$500k annually. Details of the funding options are in [Appendix I](#). The options are in no priority order.

Option 1

If CCFA remains as a fire authority or moves to a Countywide ESD and the jurisdictions desire to continue to fund the department as is done currently, then the millage rate will need to increase to provide a positive revenue flow into the department. The additional revenue will allow for the staffing improvements recommended by MissionCIT. The millage rates are suggested to increase to the following.

FY2025	9.5 mills
FY2027	13.5 mills



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Option 1A

To stagger the funding out with an additional year between the millage increases, the rates could increase as indicated below to maintain sustainability. In this scenario, the FY2027 budget would have a small deficit, but would then increase to a positive balance moving forward.

FY2025	10.5 mills
FY2028	13.5 mills

Option 2

Creating a more equitable funding mechanism should be considered for the future funding of CCFA. Currently, Georgetown and Idaho Springs fund only 15% the budget for CCFA while 50% of the calls are within their city/town limits. The residents in the city/town utilize the services more. In addition, the staffing recommendations included in this report will provide much greater increased levels of staffing, on a 24/7 basis to these two jurisdictions, if adopted. Therefore, with Option 2, funding levels for CCFA should be modified so that the 4 jurisdictions provide approximately 50% of the funding for CCFA while the county ESD provides 50% of the future funding. This option provides a positive budget through FY2032. There is a very small deficit beginning in FY2033. The implementation of this would include moving the millage rates to the following.

FY2025	ESD	7.5 mills
	Towns	14.5 mills
FY2027	ESD	10.5 mills
	Towns	18.5 mills

Option 3

Create a more diverse revenue stream for CCFA through the formation of a county public safety/fire sales tax. This would capture revenues from those visitors and tourists who are not residents, but who utilize the fire protection and medical services from CCFA. Since a portion of the county population is protected by another fire district, the implementation of a fire sales tax is estimated to provide approximately 66% of the generated revenues to CCFA. The anticipated changes to the CCFA funding would include:

- FY2025 - Increase the current 4.569 mil rate to 9.0 mills
- Institute a county fire sales tax in the amount of 1 cent



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The intent of all three of these options is to ensure the long-term sustainability of the CCFA in whatever structural governance model it evolves to and to ensure appropriate staffing and response services to meet the needs of the county.

Recommendations

1. The CCFA should fully investigate and obtain clear cost estimates for the new Idaho Springs fire station to ensure that it will fit into its long-term financial projections. It is possible a refurbishment of the existing fire station will be required instead to keep costs lower.
2. The CCFA should consider obtaining bonds for the construction of a new fire station so that costs can be spread out over multiple years and work within a long-term financial plan for the authority.
3. The CCFA should investigate obtaining a long term, low cost, Rural Development Grant from the USDA for the station, if applicable. This would assist with lowering interest rates and costs for CCFA.
4. CCFA should establish a capital reserve fund as part of its budgeting process, utilizing funds through increases in the millage rate. MissionCIT recommends an annual fund contribution of \$500,000, starting with a phase-in process beginning in FY2025. This fund would be used to fund replacement fire apparatus, large cost equipment such as breathing apparatus, diesel exhaust systems in fire stations, personal protective equipment, etc. and to make upgrades and modifications to fire stations.

Billing for Services

CCFA has the ability to bill for the non-EMS services that it provides. Since the county bills for EMS, CCFA would not be able to also bill for those services. This process would allow the CCFA to bill for fire responses, motor vehicle accidents, hazardous materials incidents, etc. At each incident, CCFA would capture information from the homeowner, driver, etc. to include their homeowners or auto insurance information. There are several companies in the U.S. that provide such services and include entering the call information online at a website. The company then bills the appropriate insurance and provides the fire department with the collected amount, minus approximately 22% for their collection fee. While performing the work for CCFA, MissionCIT reached out to one of the national firms and provided call workload information to them to obtain an estimate of potential revenue. Based on the call load of CCFA, it was estimated that they could receive approximately \$100,000 per year through this process after removal of the collection fee from the company.

Recommendations

1. CCFA should immediately investigate and implement the ability to bill for its services. The projected revenues can greatly assist with the future financial stability of the CCFA.



Grants

There are several federal grant programs available to CCFA to assist with either the hiring of career personnel, the recruitment and retention of volunteer personnel or the purchase of firefighting equipment. These programs are administered through the Department of Homeland Security (DHS) and the Federal Emergency Management Agency (FEMA). The two programs include the Assistance to Firefighter Grant (AFG) Program and the Staffing for Adequate Fire and Emergency Response (SAFER) Program. These grant programs open for a set period each year to accept applications and then close while applications are reviewed, and awards made. The information on the grant programs comes from the most recent FY22 Notice of Funding Opportunities (NOFO) for these programs. Any new information or changes to these programs should be announced early in 2024.

Within the current AFG program, fire departments can apply to purchase firefighting equipment such as personal protective equipment, breathing apparatus, fire apparatus, safety equipment such as vehicle exhaust systems at stations, etc. During each yearly cycle, program requirements and priority funded items are published. In the AFG program, departments the size of CCFA would only be required to provide 5% of the necessary funds for the purchase of approved items. Departments who are experiencing significant fiscal stress can apply for a waiver to DHS to have the 5% match waived.

The SAFER grant program is available to departments for the hiring of career personnel or for the recruitment and retention of volunteer firefighters. Typically, priority is given to those departments who do not currently meet national NFPA standards regarding staffing. In this program, recipient departments are awarded funds to hire and pay full time personnel for a three-year period at no cost share by the department. Funds can also be provided to pay for the initial personal protective equipment and training of these personnel. Departments desiring to increase their volunteer membership can apply for SAFER grants to fund recruitment campaigns, entry level physicals, training, uniform, and personal protective equipment costs and even fund salaries and benefits for volunteer recruitment and retention program managers. Departments are limited to submitting only one application per year for either the hiring of career personnel or volunteer recruitment and retention.

Recommendations

1. CCFA should strongly consider submitting applications to the AFG and SAFER programs for the upcoming grant cycle, when open, to improve their staffing on fire apparatus or response from in-county volunteer personnel. Receiving funds for hiring additional career personnel or increasing volunteer personnel with no cost to CCFA for three years can provide immediate assistance to service delivery and the financial needs of CCFA. MissionCIT can provide assistance with the grant writing for these programs if needed.



Internal and External Survey Results

MissionCIT conducted a multi-faceted process as part of developing this assessment for the CCFA. Online assessment surveys were distributed by the county and CCFA to both internal and external stakeholders. The surveys provided anonymity to respondents and were designed to obtain the perspective of each group regarding the operations of the CCFA, and where they can improve. The surveys provided to the external stakeholders were also designed to capture their priorities regarding the services that should be provided by the CCFA and where they need to concentrate their efforts.

Of the internal members, there are a total of eleven career members (operational and administrative) and fifty-five volunteer members, twenty of whom have active status. A total of twenty-seven members responded to the Internal Member Survey. Upon closer inspection of the demographic information, a 91% response rate was obtained from career members and a 29% response rate from the total volunteer population. Of the sample size, 38% of respondents identified as career members with 62% identified as volunteer members. Fifteen percent of respondents indicated their status as Command Staff, with 15% of respondents as Company Officers, 58% as Line Firefighters, 8% as Support Personnel, and 4% as administrative. Finally, the breakdown of respondents' years of service are as follows: 73% are between 1 and 5 years; 19% are between 6 and 10 years; 4% are between 11 and 15 years; and 4% have 26+ years of service. For a full visual summary of each survey item, please see [Appendix B](#).

Internal stakeholders showed agreement with most aspects of the survey to include Training and Development, Communication, Work Environment, Safety, Leadership Direction, Service Delivery, & Feature Appraisal. One question to highlight was the internal stakeholders' agreement to: "Our staffing is too thin." This recognition of being short-staffed was also emphasized in the stakeholders' comments. Additionally, several common themes for internal stakeholders included: staff salary increases, lack of transparency, more training needed, and digital improvements needed to enhance communication and services.

With regards to the external stakeholders, there were thirty-nine respondents. Of these respondents, 62% identified as Citizens; 21% identified as Service Partners; 8% identified as Elected Officials; 5% identified as Local Government Administrator; 3% identified as Authorized Agent for a state organization & a citizen; and 3% identified as Citizens and Town of Empire employee. For a full visual summary of each survey items, please see [Appendix C](#).

External stakeholders' responses were more diverse with limited inclusive agreement on any one topic. The top three most important services for the external stakeholders are Fire Suppression Response, Fire Prevention, and Wildland Fire Response. The majority of the external stakeholders' highest expectation is Fast Response Time with Well Trained Firefighters being their second highest priority. The majority of the external stakeholders would be willing to support additional funding allocated to the fire authority in order to hire additional personnel. Under open ended comments, the external stakeholders listed knowledge of area,



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local knowledge as strengths, and quick response time. Common themes for current challenges and challenges to address in the next 5 years for the external stakeholders are Resources-Funding & Staffing, Wildfires, and Leadership.

Benchmark Department Information

Using benchmark data from other fire departments can be an alternate way to assess the performance or operations of an organization. As part of this project, MissionCIT, LLC conducted a basic benchmark survey with seven other fire protection districts within Colorado identified by the CCCFA fire chief or MissionCIT as being similar. Of the seven districts surveyed, four responded, for a 57% return rate.

Some of the fire districts operated very close to that of CCFA, while others do not for various reasons. All of the respondents use a combination of career and volunteer staffing to provide both fire and EMS response. In addition, most do not staff all their fire stations, but rely on volunteer or call back responses. Regarding response activity, CCFA has the second most active calls per 1,000 population rate. CCFA also has a high number of firefighters per 1,000 population, but this is somewhat deceiving as the vast majority of the volunteer firefighters live outside of the county and either do not regularly respond to calls, due to the duty crew concept, or are not readily available. All the responding agencies have times of the year with an influx of population due to tourists, some of which more than double their coverage population at any given time. The millage funding rates for all the benchmark agencies, except one, are higher than that of CCFA. Telluride Fire Protection District is lower, but they recently passed a millage rate increase for 2024 that is doubling their current millage rate. In looking at the cost per capita basis, CCFA has the second lowest cost.



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A small summary of each fire protection district who responded to the survey is below.

Table 1.27 Responding Fire Protection District Characteristics

District Characteristics	Clear Creek County Fire Authority	Telluride	Crested Butte	Pagosa	Carbondale
Coverage area	348 square miles	350 square miles	220 square miles	327 square miles	300 square miles
Population Protected	6,223	5,900	5,100	15,000	15,000
Millage Rate	4.569	4.465	11.445	7.85	10.472
Number of Fire Stations	8	4	4	7	5
Number of Staffed Fire Stations	1	2	2	1	2
Total Operational Staffing	8 full time 55 volunteer	24 full time 40 volunteer	21 full time 12 part time 18 volunteer	17 full time 40 volunteers	26 full time 2 part-time 29 volunteer
Number of Engine Co.	8	4	4	6	6
Number of Aerial Co.	2	2	1	2	2
Provide Transport EMS	No	Yes	Yes	No	No
Total Calls per Year - 2022	1,568	1,693	615	1,376	1,590

A selected summary of graphs from the benchmark data compared to that of the CCFA are below. A summary of the full survey results is included in [Appendix F](#) of the report.



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Figure 1.25 Calls per 1,000 Population

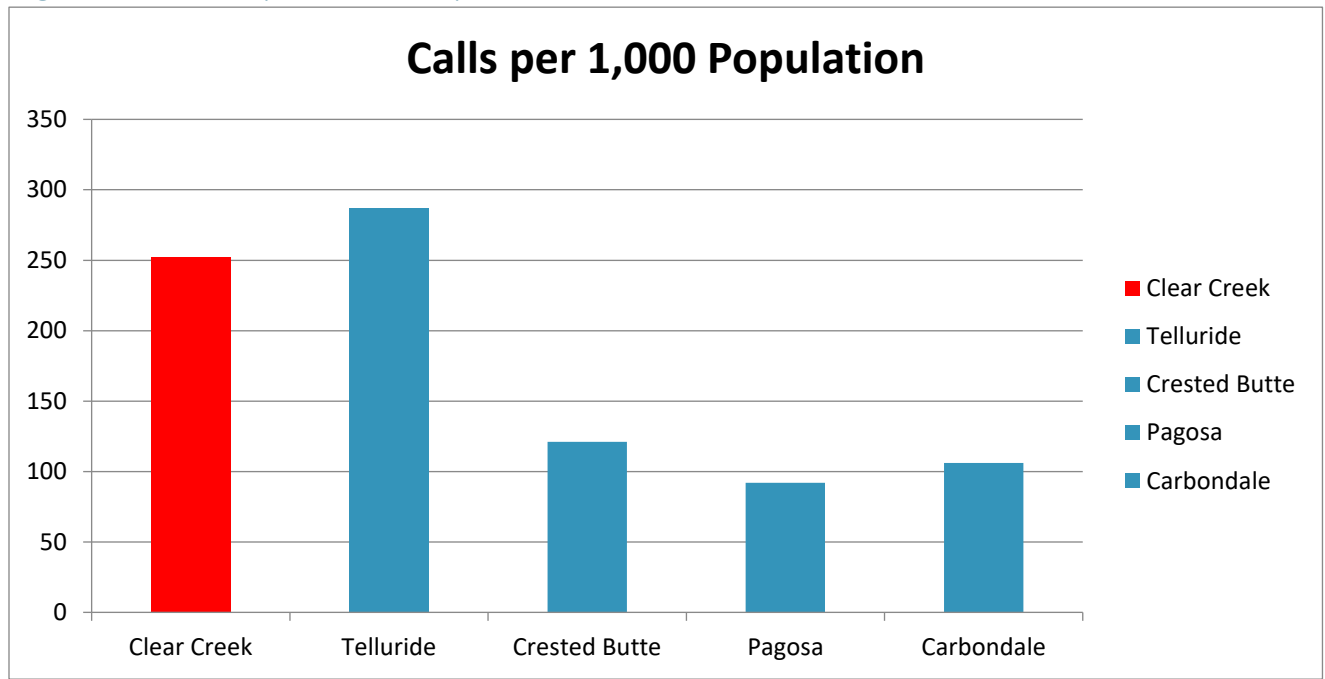
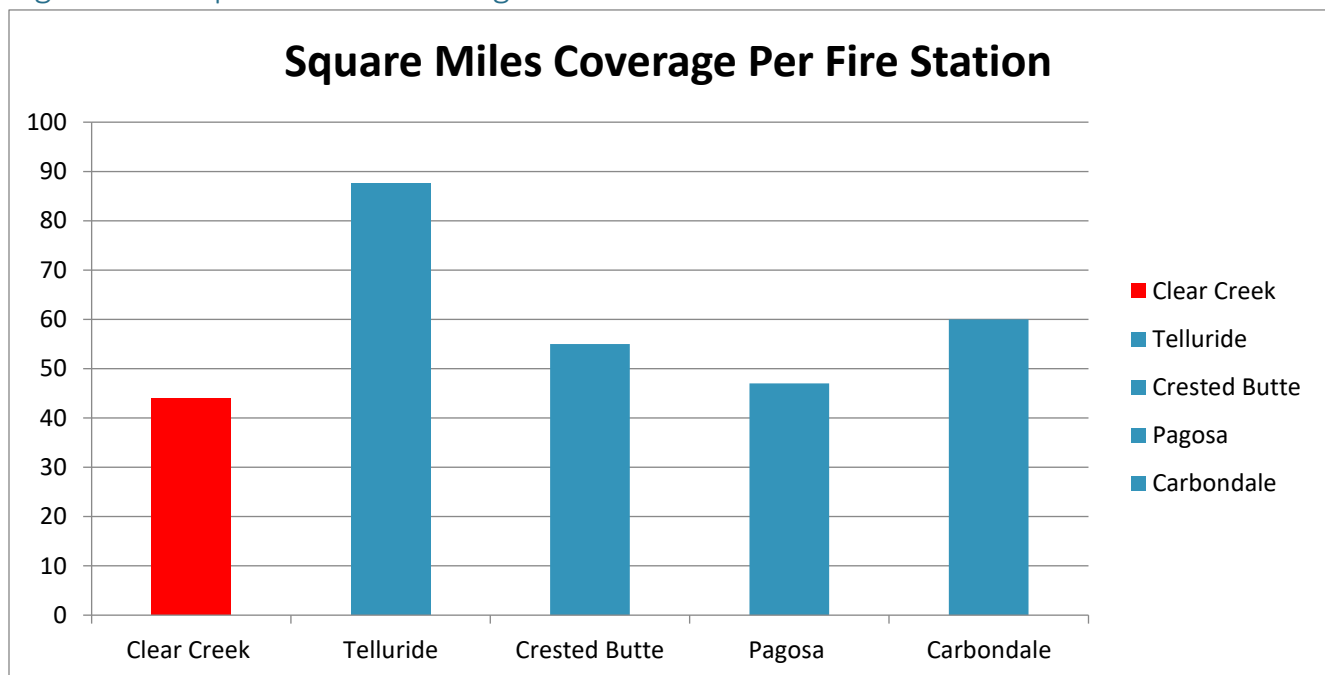


Figure 1.26 Square Miles Coverage Per Fire Station





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Figure 1.27 Firefighters Per 1,000 Population

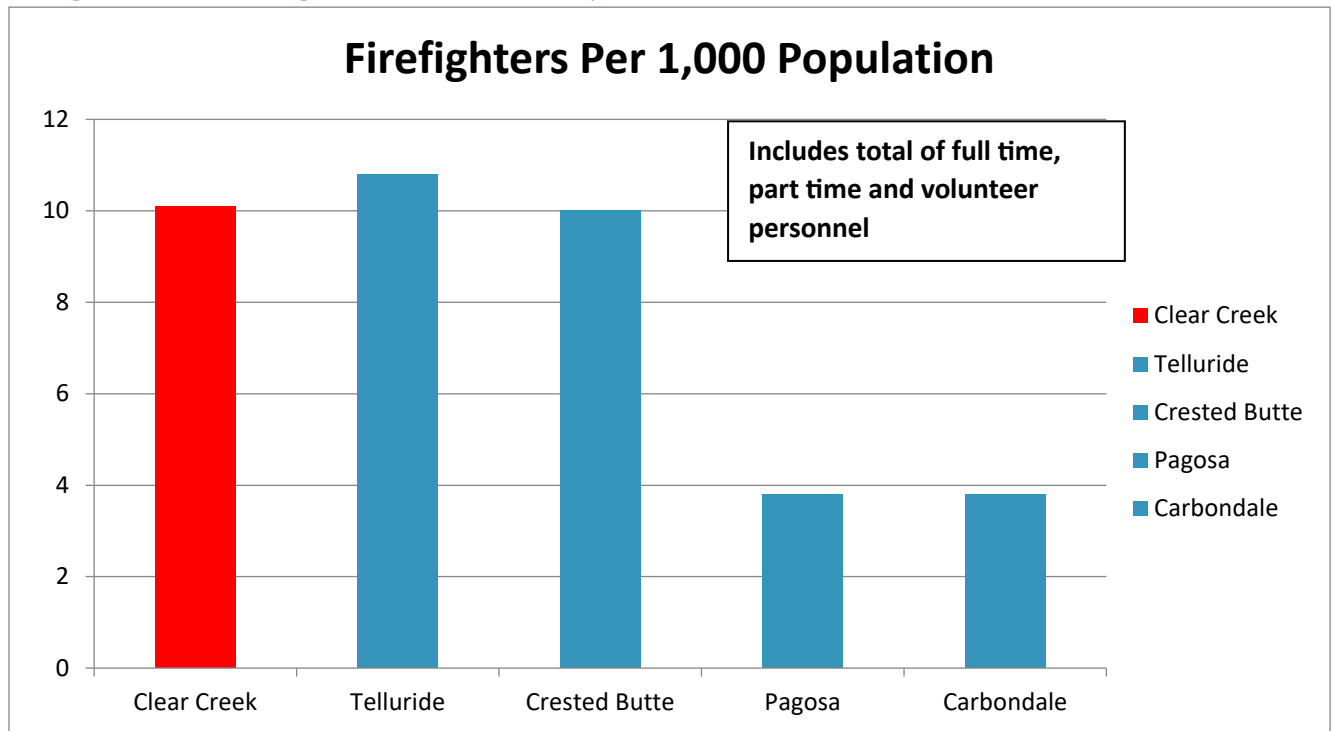


Figure 1.28 Cost Per Capita

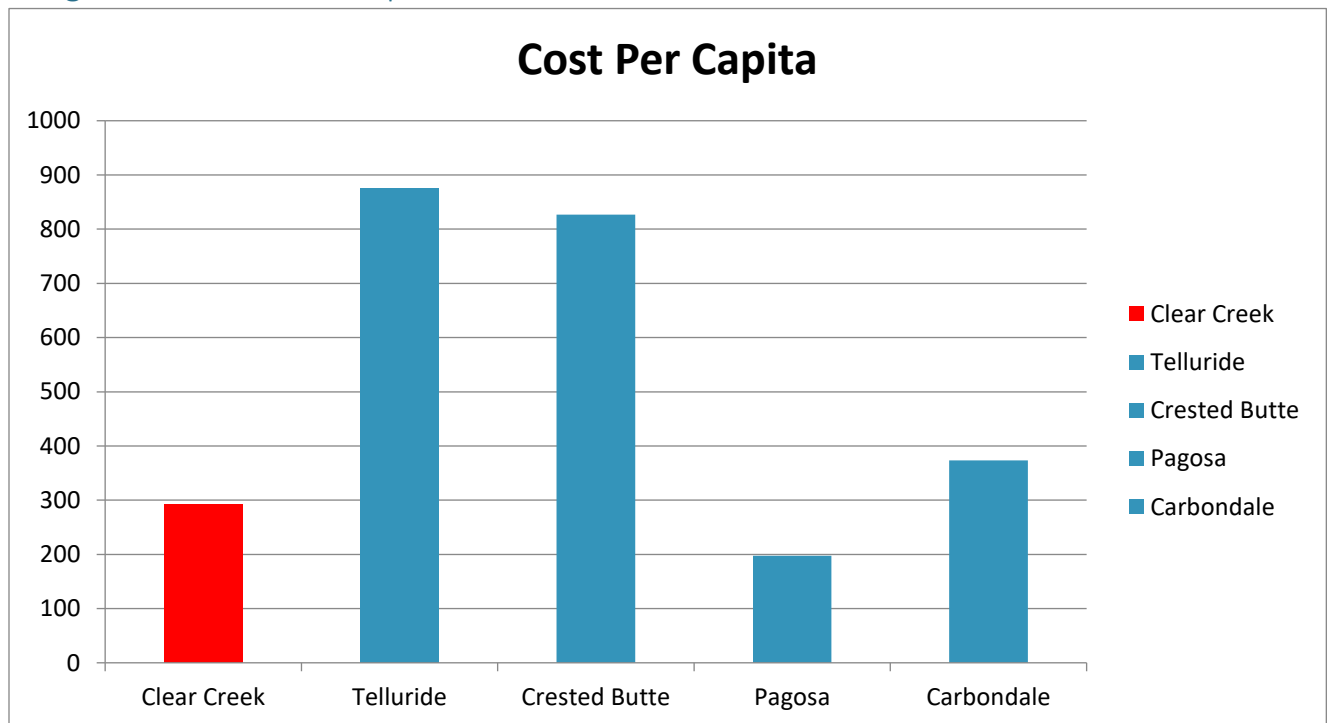
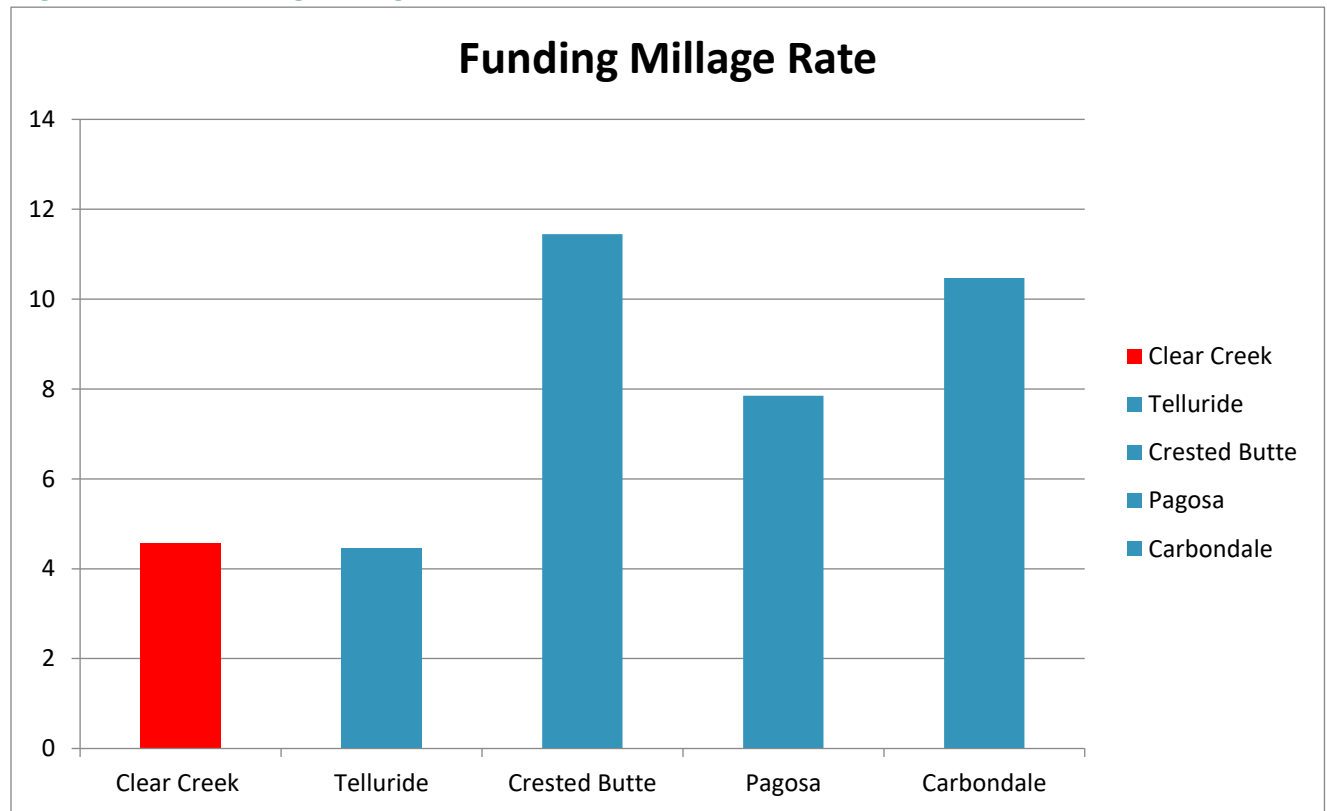




Figure 1.29 Funding Millage Rate



Focus Group Sessions (Strengths, Weaknesses, Opportunities, Challenges)

MissionCIT conducted nine in-person meetings with internal and external stakeholders to gain their perspective on the Strengths, Weaknesses, Opportunities and Challenges (SWOC) within CCFA. It is important, when looking at an organization for an assessment, that the perspective of both members and outside stakeholders be taken into consideration. Each group has its own, unique view of the organization and can add value to the end product and direction of the organization. The following groups are included in the SWOC summaries.

Table 1.28 SWOC Session Participants

External SWOC Sessions	Internal SWOC Sessions
<ul style="list-style-type: none">• Empire Town Council/Administrator• Georgetown Council/Administrator• Idaho Springs Council/Administrator• Clear Creek County Commissioners• Clear Creek County Fire Authority Board of Directors• Other Emergency Services Partners	<ul style="list-style-type: none">• Career Firefighters• Volunteer Firefighters



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The full results of the in-person SWOC sessions are provided at the end of the report in [Appendix D](#).

A summary of the External and Internal SWOC sessions is provided below.

External Stakeholders Summary

Strengths	Weaknesses
<ul style="list-style-type: none">• Apparatus & Equipment• Strong Presence in the Community• Strong Training Regime• Collaboration in the Field• Wildland Mitigation• Institutional Knowledge – Local & Experience• Fire Authority Represents All Jurisdictions• Flexible Services• Consolidated Effort – Funding and Coverage• Good Organizational Leadership• Key Staff	<ul style="list-style-type: none">• Lack of Strategic Organizational Leadership & Vision• Funding• Inconsistent/Lack of Volunteers• Ineffective Internal and External Communication• On-Scene Command and Coordination• Water Monitoring/Distribution System• Inability to Levy Mills• Lack of Affordable Housing• Lack of Cohesion between BOD & ESD
Opportunities	Challenges
<ul style="list-style-type: none">• Funding-Cost Recovery, Grants, Adjust Funding Formula• Fire & EMS Partnership• Expand Mitigation Crews/Services• Growth & Utilization of Volunteers• Review of Fire Authority• Code Enforcement• Workforce Housing In-Stations	<ul style="list-style-type: none">• Funding-Costs Increasing, Limited Opportunity for Tax Revenue.• Housing – Stations and Community• Career & Volunteer Recruitment & Retention• Wildland Threat• Aging Community Population – Impacts EMS & Personnel Recruitment• Structure & Conflict of Interest with Fire Authority• Title 32



Internal Stakeholders Summary

Strengths	Weaknesses
<ul style="list-style-type: none"> • Positive Culture • Comradery/Morale • Peer Support Team • Electronic Communication Via Email/Paging • Interagency Cooperation • Operational Flexibility • Resident Program • Training • Stipends (Volunteers) • Wealth of Knowledge 	<ul style="list-style-type: none"> • Retention – Volunteer & Career • Staffing – Need More, Stretched Thin • Limited Affordable Housing • Compensation – No OT, Comp is Burning Out Staff • Funding • Lack of Centralized Information
Opportunities	Challenges
<ul style="list-style-type: none"> • Staffing – Part-time, East End, Volunteer to Career • Administrative Personnel – Volunteer Liaison, PIO, R&R • Expand Residency Housing & Program • Recruitment with Warren Tech & RRCC. • Hazmat Team Staffing • Training – Basic and Advanced Skills/Certs • Update SOPs & Strategic Plan • Benefits – Salaries & Physicals • Mitigation Crew- Expand, Fund, Experience 	<ul style="list-style-type: none"> • Staffing- Lack of, Bandwidth, Wages, Lack of Opportunity for Volunteer to Transition to Career • Geographic Area & Topography Difficult on Response and Apparatus • Building Maintenance & Accommodations • Professional Development Complacency



Organizational Communications with Political Jurisdictions

During the onsite visit by MissionCIT staff, multiple groups reported a lack of effective communications between CCFA and the city/towns and county. Operating as a fire authority, the CCFA BOD or the fire chief may feel that their level of communication with the political jurisdictions is limited to setting the annual funding millage rate. However, as an emergency service provider with a countywide scope across multiple jurisdictions, constant and effective communication is important. Each city/town may have specific concerns regarding the risks and hazards within their community, the level of services they are being provided or have community events that they would like the CCFA represented at. As the leader of the department, the fire chief is the champion and key spokesperson for the department. This includes communication of CCFA needs, successes, and plans. In today's world, frequent, yet concise communications are critical. Having all parties associated with CCFA through the IGA hearing regularly from the fire chief has been lacking. MissionCIT makes the following recommendations.

Recommendations

1. CCFA should establish a regular method/system of communications with all of the parties of the IGA regarding its needs, its programs and services delivered and its strategic or long-term plans for the future. In addition, this communication should include data in meeting established performance metrics regarding fire protection in the county. One consideration is that the CCFA attends the county/city/town commissioner/council meetings on a semi-annual basis to provide updates.
2. It appears as if each jurisdiction and the CCFA have their own wildland mitigation plans. Each may be initiating projects to combat the risk without understanding what the other is doing or why. Consideration should be given to the development of only one, countywide wildland mitigation plan that is monitored and mitigation projects tracked by the CCFA.

Consolidation with EMS

From a prior consultant report, it was recommended that CCFA not merge with CCCEMS at that time. However, consideration should be given to doing a consolidation at some point in the future once the organizational structure and finances for CCFA were determined/stabilized.

After review by MissionCIT staff, we would also recommend that at some point in the future a consolidation of CCFA with CCCEMS be further discussed and considered. The ability to consolidate would be easier to facilitate through the recommended Countywide ESD structure so as not to eliminate the EMS sales tax as a revenue source. There are many facets that will need to be considered in a consolidation effort. Most of all, any effort will require open and honest communication between the CCFA and CCCEMS leadership. The elimination of turf



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concerns will be important. In addition, maintaining service delivery levels and individual skill levels of fire and EMS providers will be an important item.

A consolidation between fire and EMS could provide some of the following benefits;

- Having personnel dual certified to provide a broader range of services to the public
- Providing greater economies of scale for the purchase of equipment and supplies and streamlined procurement processes
- More effective utilization of resources during significant incidents, i.e., having a greater number of EMS certified personnel on large EMS incidents and a greater number of fire certified personnel on fire incidents than is available today
- Having a greater utilization of resources through a tiered dispatch process where CCFA resources are dispatched to priority EMS incidents where they are in closer proximity. Having dual role personnel would allow for a standard level of care to be provided faster to compliment EMS resources.
- With having a greater number of full-time, dual role personnel in the system, additional decisions can be made regarding resource deployment for an enhanced fire/EMS delivery system.
- With having dual role certified personnel, you create a greater pool of people to backfill and staff vacant positions.
- Depending on the level of consolidation, a reduction in the amount of overtime spent for CCCEMS could occur. For dual certified personnel, the work hours under FLSA are increased to allow for 53 hours/week before overtime is required, so the amount of overtime hours for CCCEMS services would decrease. Currently, CCCEMS personnel are paid overtime after 40 hours/week, and they currently work 24-hour shifts. Due to the elimination of the part time positions in the EMS Division last year, the overtime budgeted for CCCEMS in FY2023 was increased by 71% due to the work hours each of their staff works.
- Improve the recruitment and retention of emergency services personnel as most systems in the Denver metro area provide dual role systems, thus the pool is larger to recruit from.

Moving towards consolidation will not necessarily be fast or without bumps. It will require dedicated leaders, thought and a thorough discussion and vetting of the issues and needs during a transition. A good project management plan should be developed before initiation of such efforts.

Some potential steps toward a consolidation effort could include the following:

- Form a Fire/EMS workgroup to begin and facilitate communications regarding a long-term approach



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- Begin a phase-in of dual role certified personnel for all new hires in either department beginning in 2028. For CCFA, this could begin with the hiring of any additional paid personnel through the implementation of this report's recommendations regarding staffing. This phase-in would allow existing single role fire or EMS personnel to remain as such but begin the process to reduce single role personnel. A Firefighter/EMT, Firefighter/Paramedic and Firefighter/CCP position description and pay scale would have to be created and those increased salaries funded as part of this process.
- Equipment purchased for the provision of services could be done jointly to ensure standardization, training and utilization in the field.
- Determine the level of consolidation desired and whether it would all be done at once or phased in as well. It could include a full consolidation, an administrative consolidation only, or only an operational consolidation.
- Set an end goal of completion around the FY2033 time period. This would allow eight years of hiring cross-trained personnel and would give appropriate staff about nine years for planning as there will be a great deal of human resource issues/decisions that will have to be made.



Appendix A – Volunteer Categories and Requirements

CCFA Volunteer Position Matrix

All positions will maintain a BLS Provider certification and be trained on the operation of the LUCAS CPR Device. Officer positions and all TECH Rescue positions must have a minimum of Emergency Medical Responder certification.

Position	Job Duties	Training	Participation Requirements
Exterior Firefighter			
Support	Support all aspects of CCFA operations including community programs.	36 hours of initial training with 36 hours of annual training for each subsequent year. Training topics can be adjusted to better focus on support operations.	Must respond to 2 calls per month of 6 calls per quarter.
Firefighter	Conduct fire suppression operations outside of the IDLH environment.	36 hours of initial training with 36 hours of annual training for each subsequent year.	Must respond to 2 calls per month of 6 calls per quarter.
Engineer	Operate CCFA apparatus and serve as the pump operator on all fires.	36 hour initial training with an additional 24 hour Engineer Course. 36 hours of annual training with annual 24 hours of engineer training for each subsequent year.	Must have 5 calls/shifts per month or 15 calls/shifts per quarter. <i>In county volunteers can receive shift credit for calls run at a rate of 1 to 1.</i>
Officer	Manage all exterior operations assigned. Assist the Captains in managing daily CCFA operations.	Complete a designated CCFA fire officer course and complete position JPR packet. ICS 300 is required within 13 months of promotion.	Must have 5 calls/shifts per month or 15 calls/shifts per quarter. <i>In county volunteers can receive shift credit for calls run at a rate of 1 to 1.</i>

Interior Firefighter	Job Duties	Training	Participation Requirements
Firefighter	Conduct suppression operations in an IDLH environment.	Complete CCFA Firefighter I academy along with successfully completing DFPC FF I JPRs. Complete 36 hours of annual training each subsequent year and maintain JPRs.	Must have 5 calls/shifts per month or 15 calls/shifts per quarter. <i>In county volunteers can receive shift credit for calls run at a rate of 1 to 1.</i>
Officer	Manage all interior operations assigned. Assist the Captains in managing daily CCFA operations.	Complete a designated CCFA fire officer course and complete position JPR packet. Maintain DFPC FF II certification. DFPC FF II certification and ICS 300 must be completed within 13 months of promotion.	Must have 5 calls/shifts per month or 15 calls/shifts per quarter. <i>In county volunteers can receive shift credit for calls run at a rate of 1 to 1.</i>

All positions will maintain a BLS Provider certification and be trained on the operation of the LUCAS CPR Device. Officer positions and all TECH Rescue positions must have a minimum of Emergency Medical Responder certification.



Clear Creek Fire Authority – Organizational Assessment

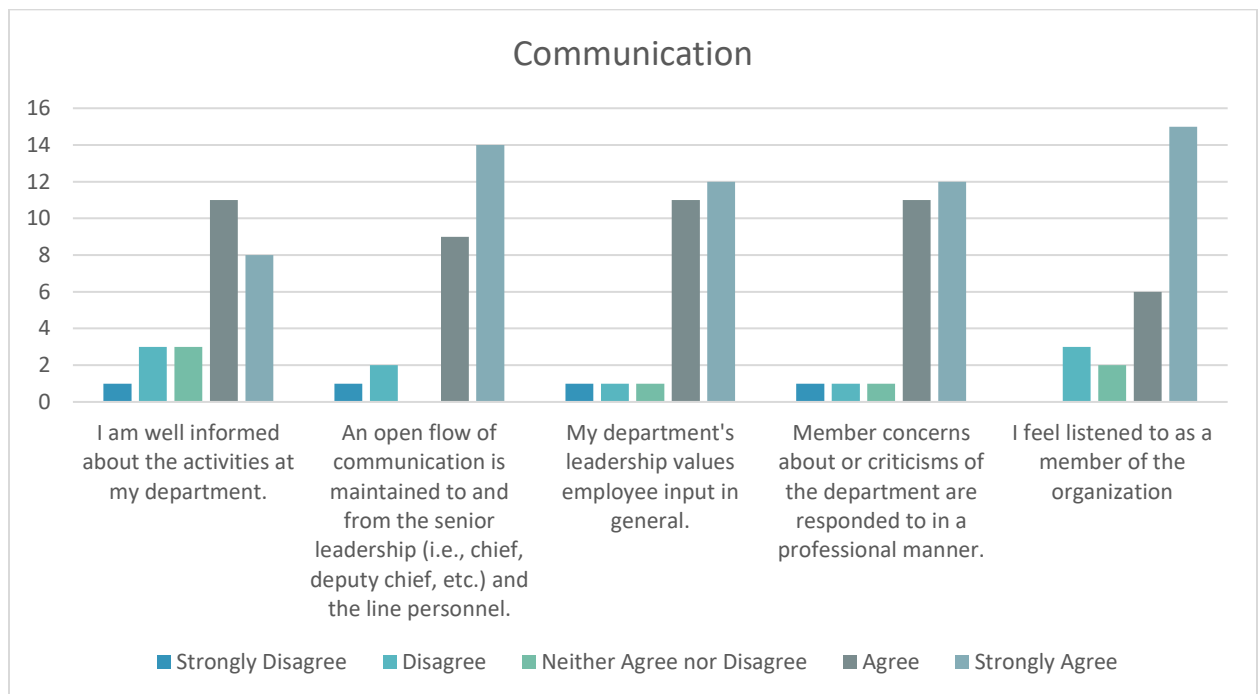
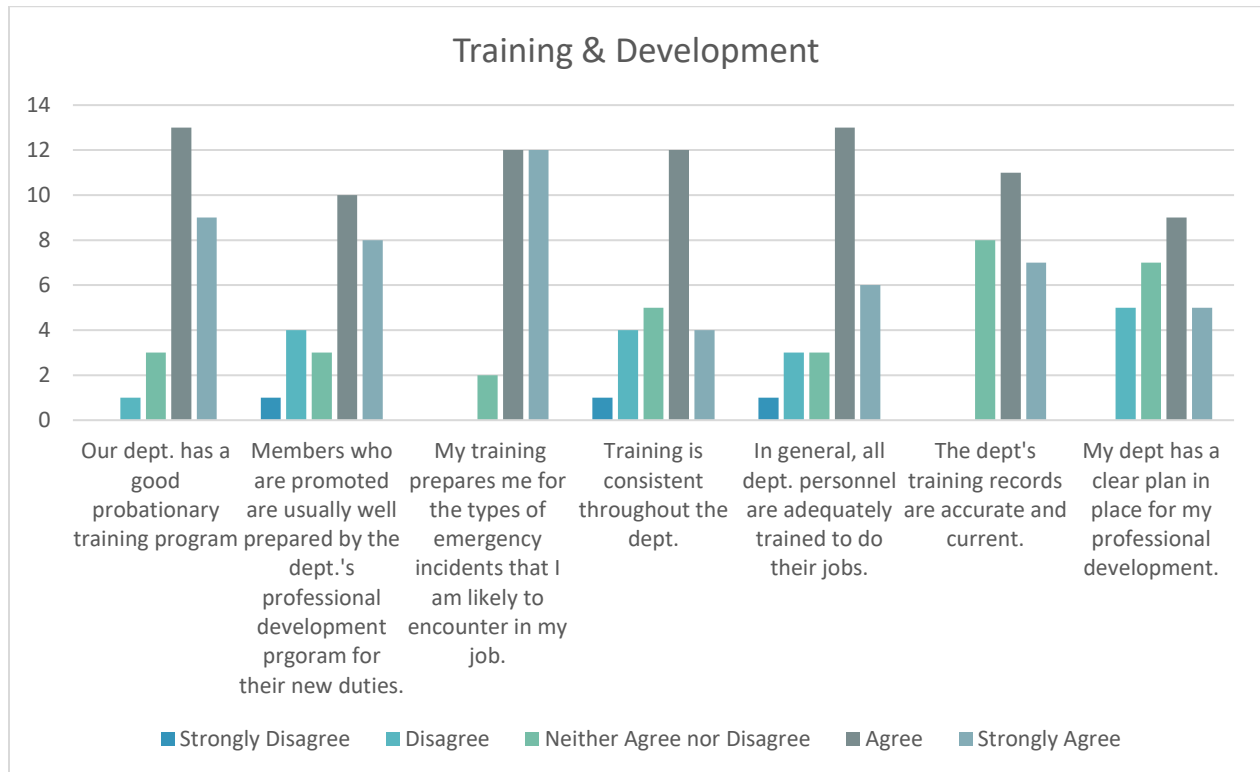
Wildland Firefighter	Job Duties	Training	Participation Requirements
Type II Firefighter	Perform wildland fire suppression as part of a handcrew or engine crew.	S130/S190 with field day and standard arduous pack test. 12 hours of annual training along with RT 130 each subsequent year.	Must complete annual refresher training and complete annual pack test.
Module Firefighter	Perform wildland fire suppression in remote or limited access areas.	S130/S190 with extended arduous pack test. Two years of wildland fire experience. Complete 24 hours of annual training along with RT 130 each subsequent year.	Must complete annual refresher training and complete annual pack test.
All positions will maintain a BLS Provider certification and be trained on the operation of the LUCAS CPR Device. Officer positions and all TECH Rescue positions must have a minimum of Emergency Medical Responder certification.			Wildland Module Firefighters will be selected annually through a team application process.

Tech Rescue	Job Duties	Training	Participation Requirements
Operations	Perform system rigging operations and assist techs in all operations.	Complete CCFA Rope Rescue I class along with team JPR packet. Must complete 24 hours of annual training each subsequent year.	Must attend 1/2 of the scheduled team trainings and participate in 1/2 of the teams annual responses.
Rope Tech 1/2	Perform rope rescue operations under the guidance of a Rope Tech 3.	Complete CCFA Rope Rescue I and II class along with team JPR packet. Must complete 36 hours of annual training for each subsequent year.	Must attend 1/2 of the scheduled team trainings and participate in 1/2 of the teams annual responses.
Rope Tech 3	Responsible for the supervision of all operations and team training.	Complete CCFA Rope Rescue I, II and III class along with team JPR packet. Must also complete an approved external ropes class. Must complete 36 hours of annual training for each subsequent year.	Must attend 1/2 of the scheduled team trainings and participate in 1/2 of the teams annual responses.
All positions will maintain a BLS Provider certification and be trained on the operation of the LUCAS CPR Device. Officer positions and all TECH Rescue positions must have a minimum of Emergency Medical Responder certification.			Team members will be selected annually through a team application process. Tech levels will be determined after review of training and performance by the team leadership group.



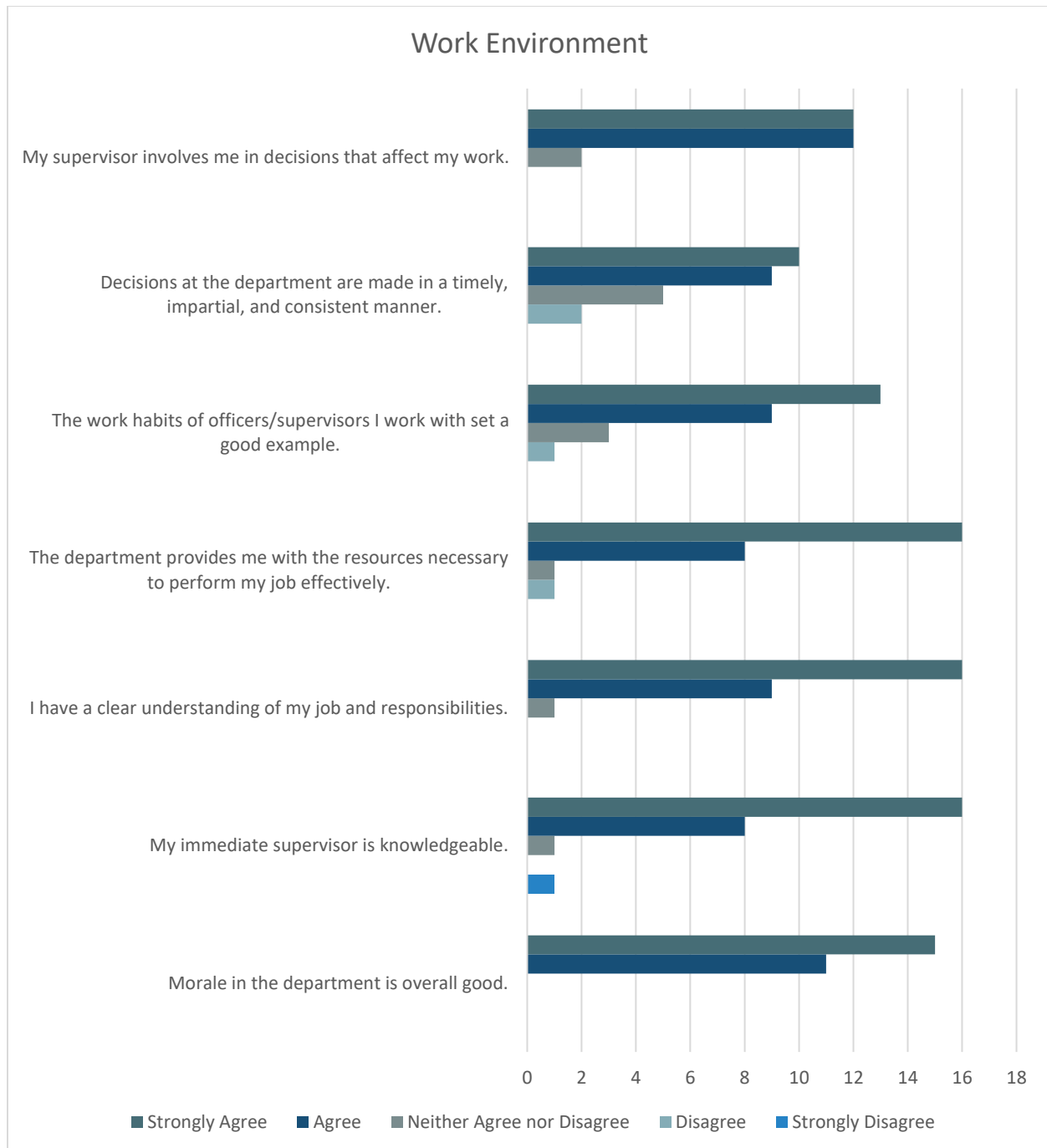
Clear Creek Fire Authority – Organizational Assessment

Appendix B- Internal Survey Results



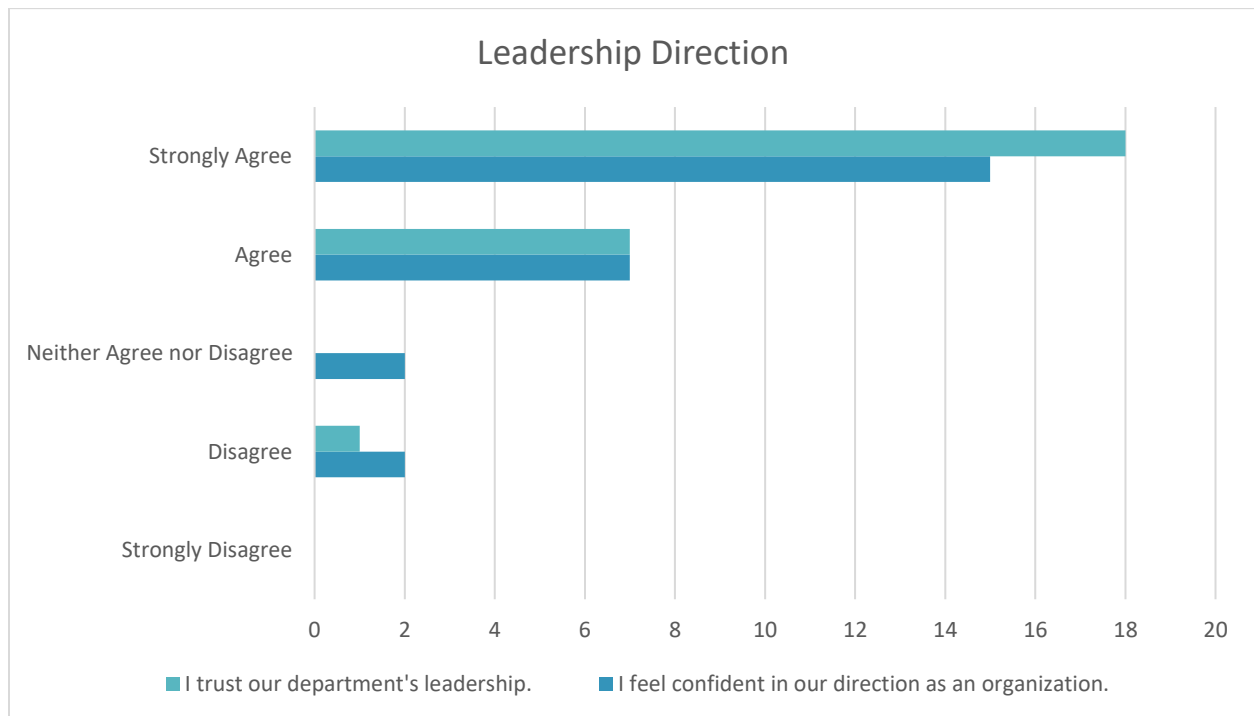
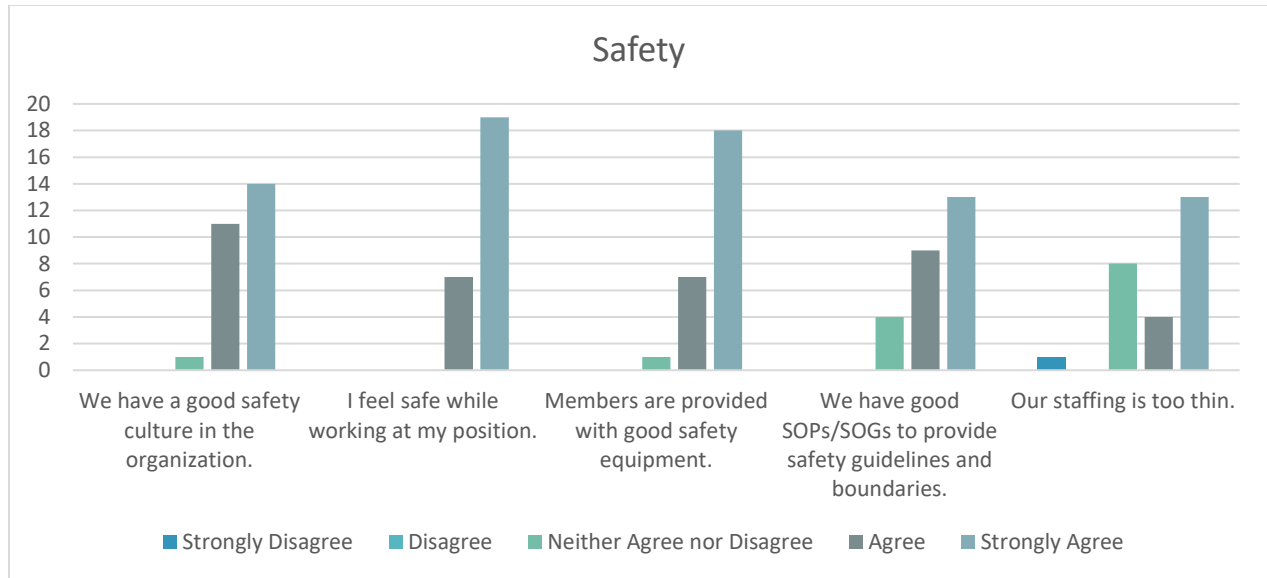


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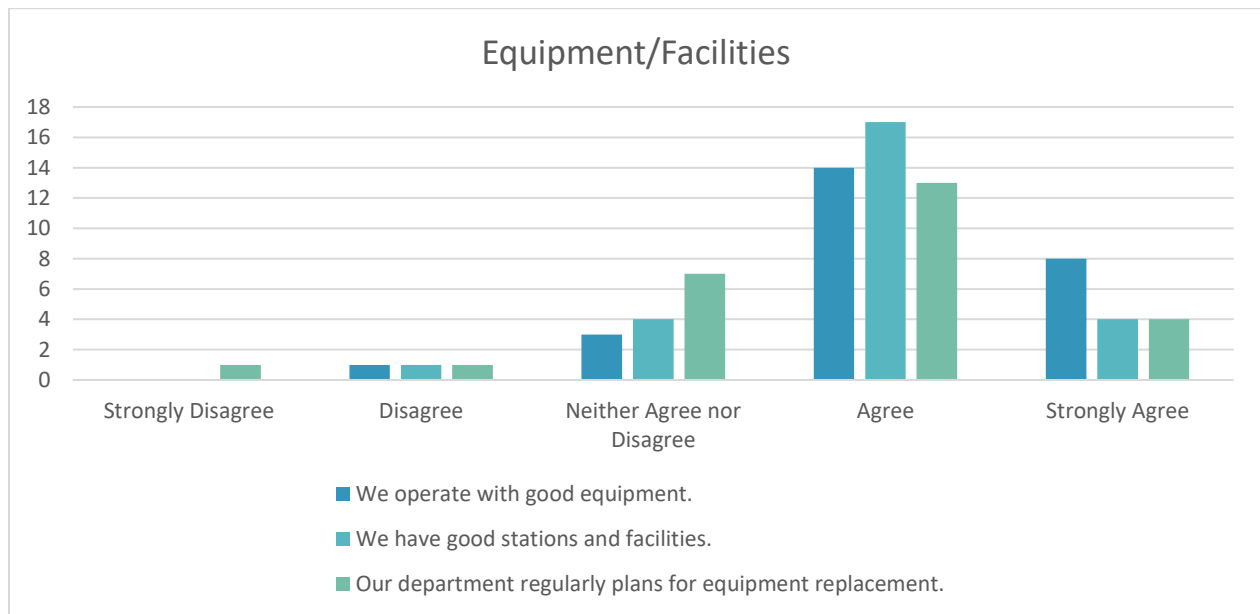
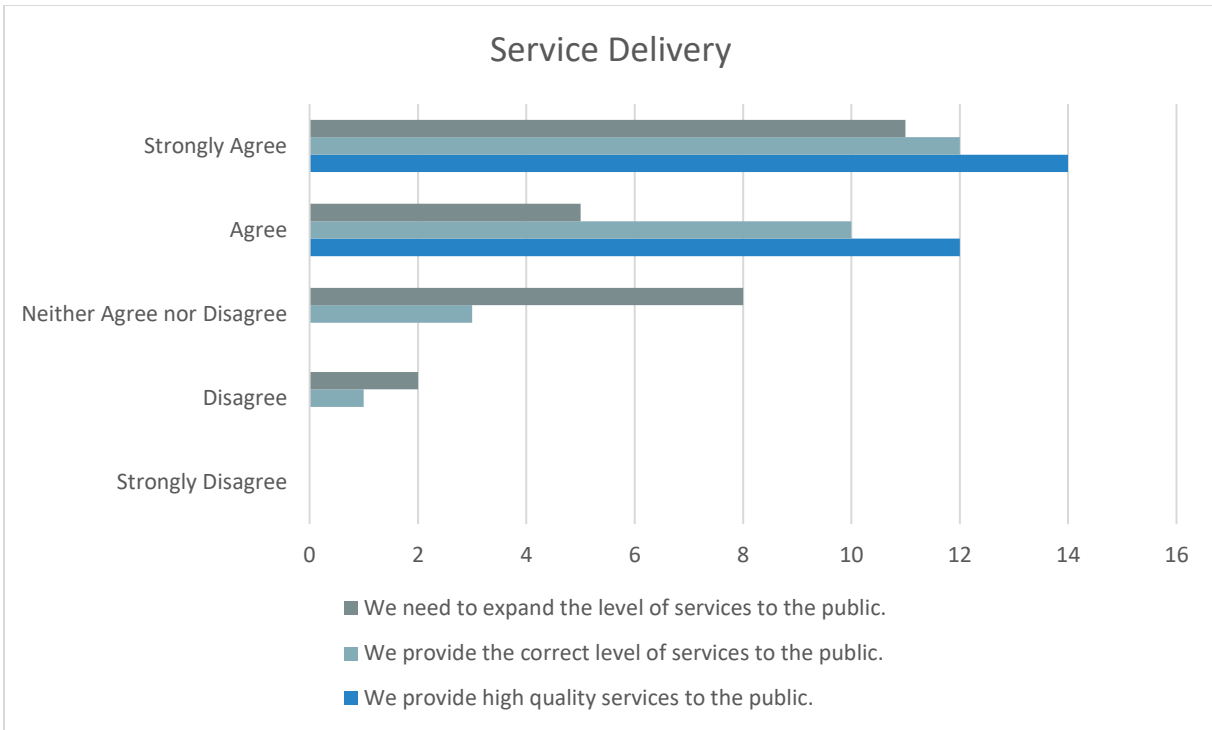


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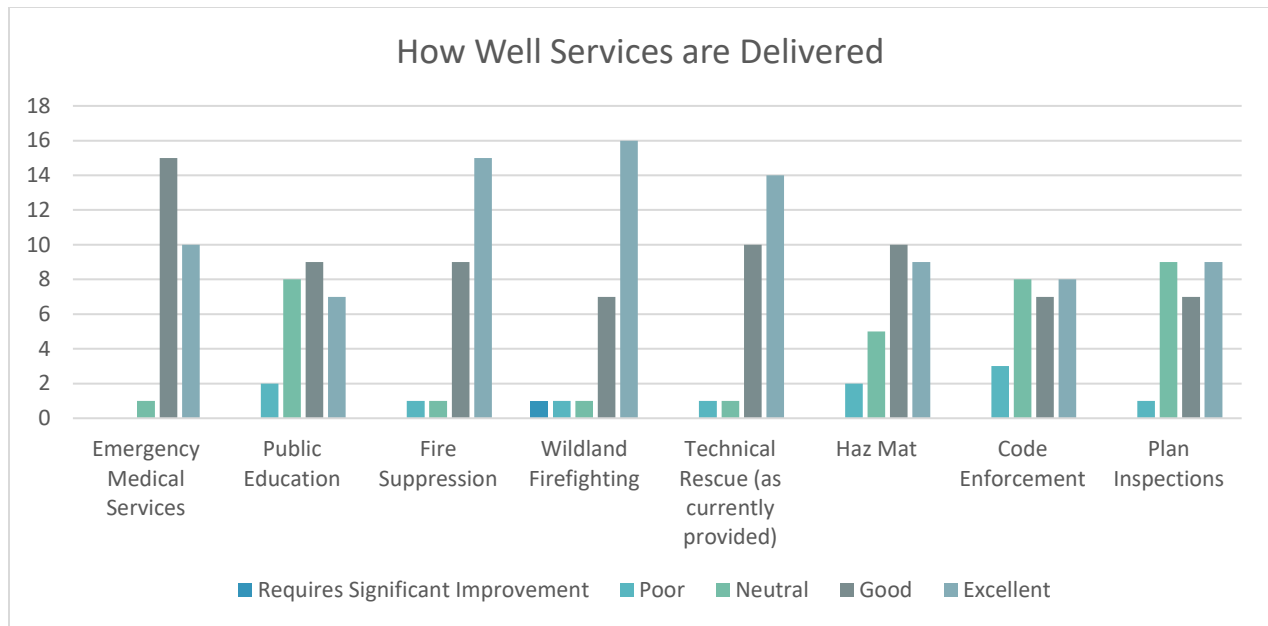


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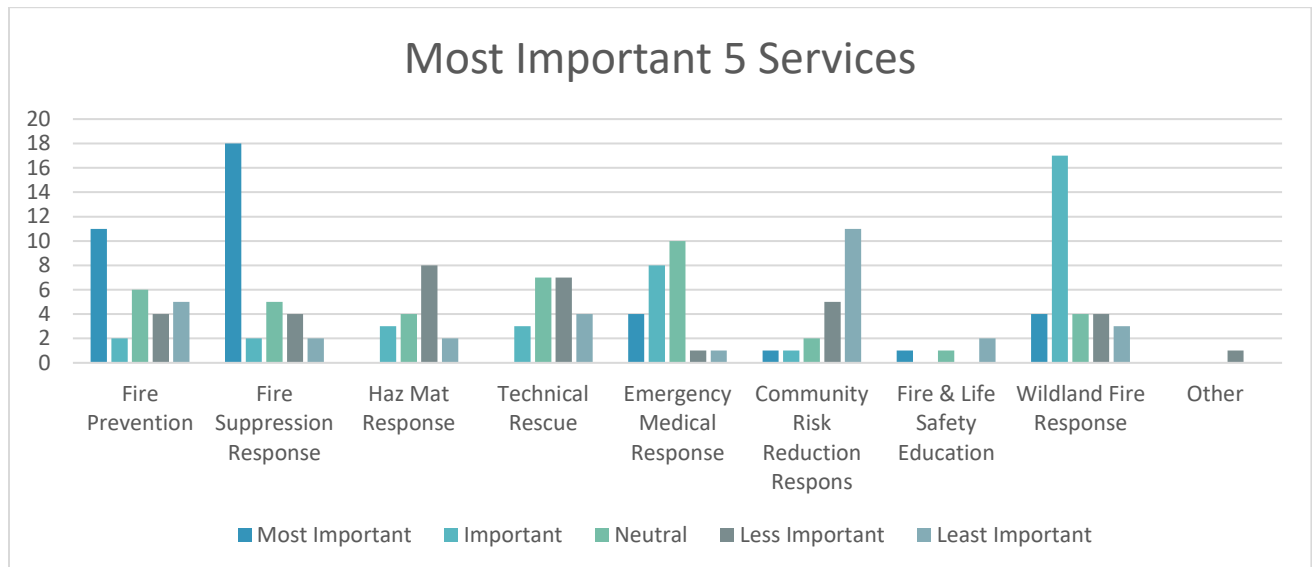


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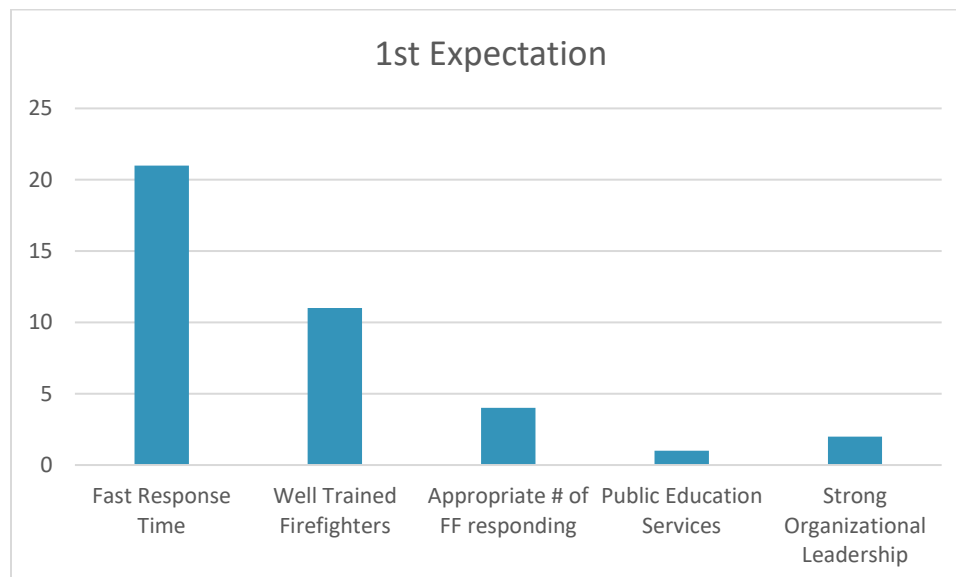




Appendix C- External Survey Results

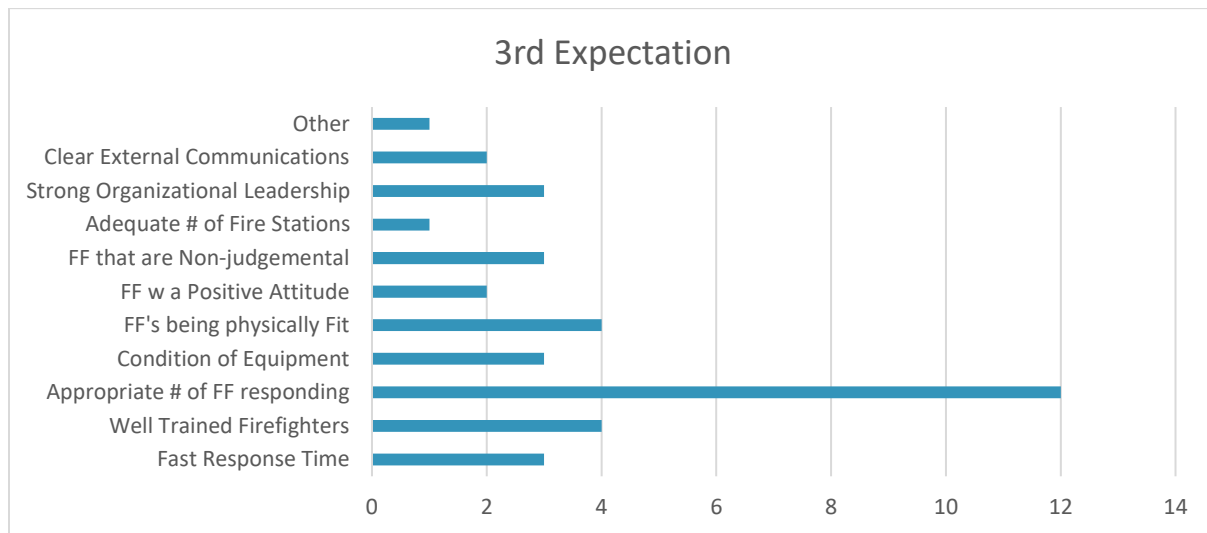
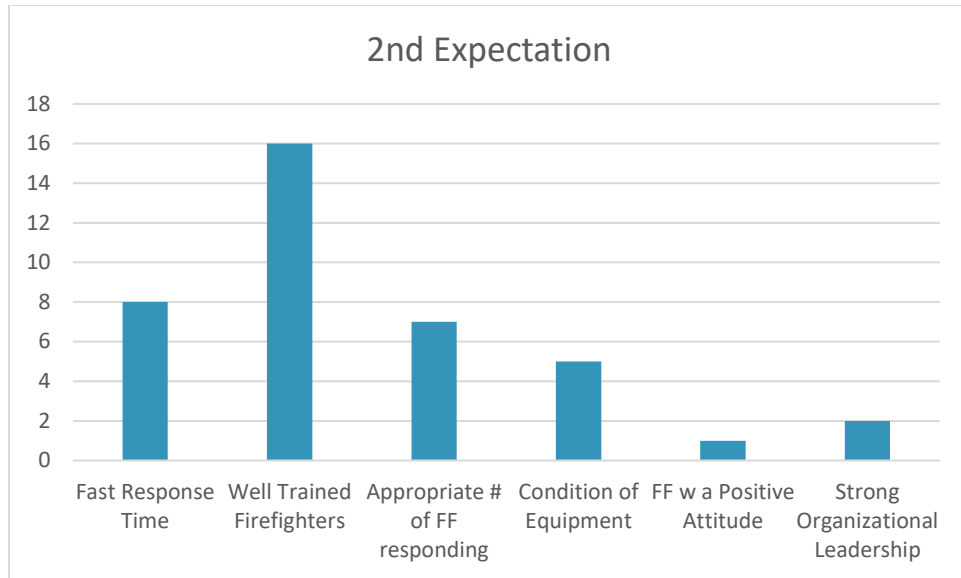


Top 5 Expectations



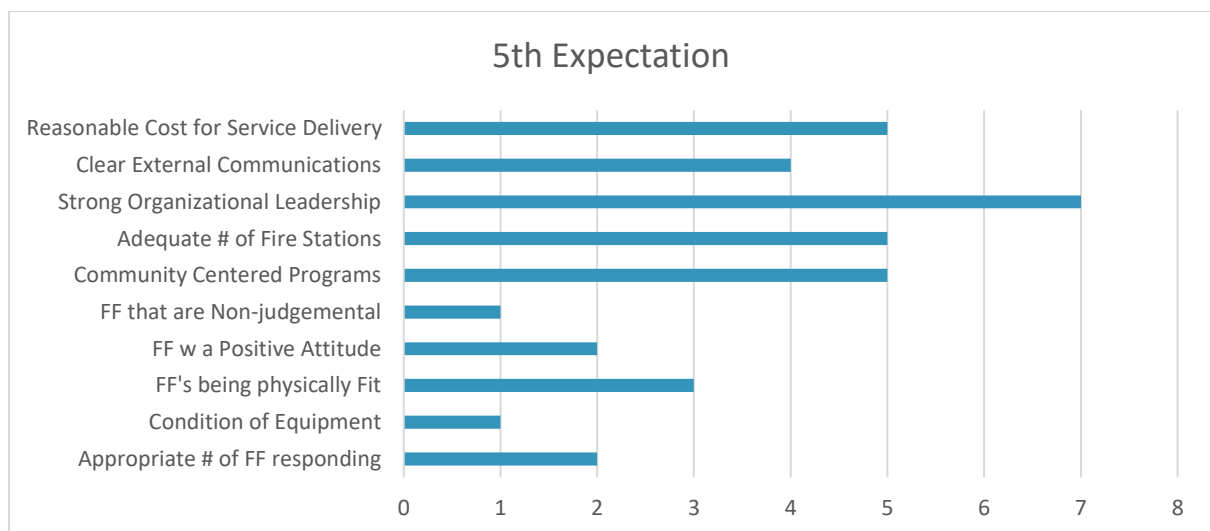
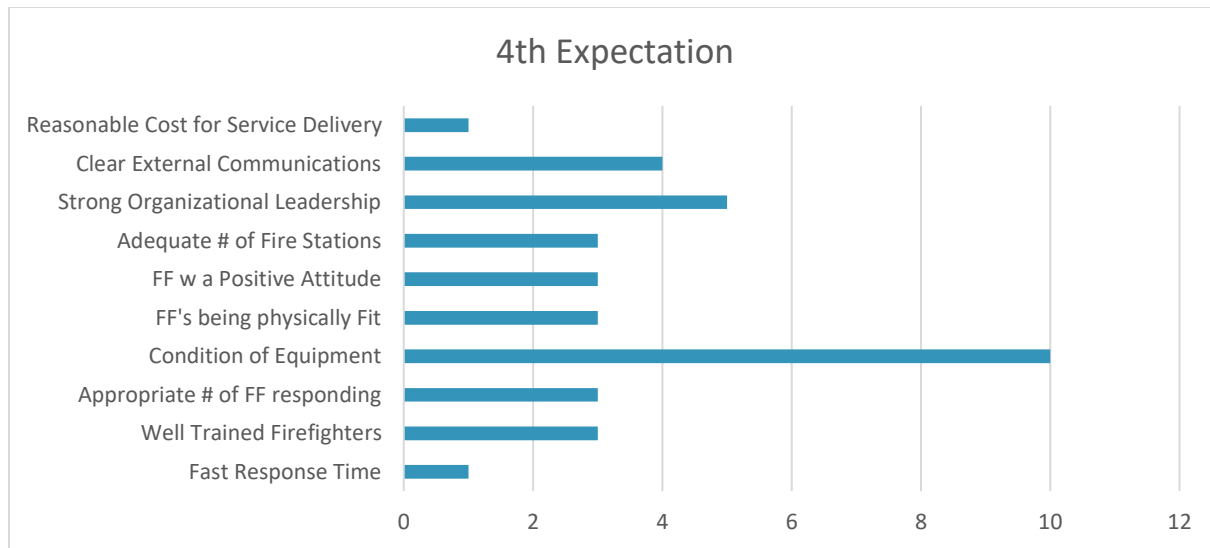


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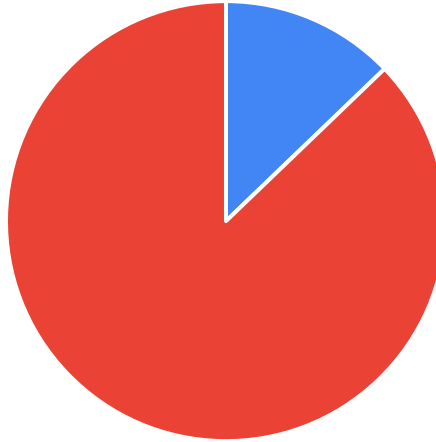
Clear Creek Fire Authority – Organizational Assessment





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As a citizen of the community, would you be willing to support additional funding allocated to the fire authority in order to hire additional personnel.



■ No ■ Yes



Appendix D- Organizational SWOC Responses.

SWOC Responses from Georgetown Council/Administrator	
Strengths	Weaknesses
<ul style="list-style-type: none">• Consolidated effort – Funding and Coverage• Strong leadership – Chiefs & Board• Adaptive• Resources – Equipment & facilities• Strong presence in the community• Consolidated services in Georgetown station (Fire-EMS-Police)• New Programs – Firewood program, Defense space chipper	<ul style="list-style-type: none">• Relationship – Chief and Staff<ul style="list-style-type: none">○ Issued based conversations○ Negative communication approach from Chief• Lack of administrative responsiveness
Opportunities	Challenges
<ul style="list-style-type: none">• Earlier event planning meetings• Innovative funding• Consultant’s review of Fire Authority provides fresh eyes• Greater internal delegation within Fire Authority<ul style="list-style-type: none">○ Shift responsibility to coordinate with talent & skills	<ul style="list-style-type: none">• Funding• Response due to location• Staffing• Wildfire prevention
SWOC Results from Empire Town Council	
Strengths	Weaknesses
<ul style="list-style-type: none">• Internal cohesiveness• Community Outreach<ul style="list-style-type: none">○ Electronic media○ Flyers○ Code red• Apparatus & Equipment• New water storage	<ul style="list-style-type: none">• Hydrant familiarity<ul style="list-style-type: none">○ Recent fire• Lack of volunteers• Lacking of funding• Water distribution system• Water monitoring• Housing
Opportunities	Challenges
<ul style="list-style-type: none">• Grants<ul style="list-style-type: none">○ Recruitment & retention• Cost recovery• Attracting new volunteers – admin and operational• Hazard mitigation – traffic• Training• Pursue uniform codes• Consolidation	<ul style="list-style-type: none">• Housing• Aging population – volunteers• Aging population – strain on EMS• Title 32• Traffic & Evacuation• Apparatus replacement• Consolidation



Clear Creek Fire Authority – Organizational Assessment

SWOC results from Idaho Springs Council/Administrator	
Strengths	Weaknesses
<ul style="list-style-type: none"> • All communities have positions on Fire Authority • Well equipped & apparatus • Long history – don't forget heritage • Added key paid staff <ul style="list-style-type: none"> ○ FT staff can lead ○ Vibrant combo dept • Personnel go to Red Rock College – fire science program • Training facilities at Dumont • Strong water supply • Sprinklers for new residential (limited) • Forest Service staffed unit in Idaho Springs 	<ul style="list-style-type: none"> • Fire Authority can't levy Mills • Staffing – lack of 24/7 personnel in Idaho Springs • Lack of sprinklers – no sprinklers required for residential properties • Concern for wind driven fires – Homes are wood frame, Victorian, 15 ft apart • Stored water reservoir – Fire authority doesn't have the ability to help fund improvements • No reimbursement for I-70 calls. (38% +/- calls are I-70) • Lack of affordable housing • Staffed fire unit response is 10+ minutes away
Opportunities	Challenges
<ul style="list-style-type: none"> • Update wildland plan • Code enforcement • Merge EMS & Fire <ul style="list-style-type: none"> ○ Coordination ○ Funding ○ Cross train staff • Flexible staffing opportunity – Fire, EMS, Fire-EMS • Timing is right to request additional funding • More fire inspections in Idaho Springs • Adjust funding formula for CCFA <ul style="list-style-type: none"> ○ Silver Plume & Empire VS Georgetown & Idaho Springs • Possible forestry staffed unit in Idaho Springs • More aggressive wildland mitigation and funding 	<ul style="list-style-type: none"> • Tax increase may be a hard sell • Max on sales tax in Idaho Springs • SB303 • Rising costs – Construction & Apparatus • Recruiting volunteers • Hiring career staff



Clear Creek Fire Authority – Organizational Assessment

SWOC results from Clear Creek County Commission	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Apparatus & Equipment • Out of county volunteers – paid by shift • Institutional knowledge – Local & experience • Dedication to mission, but... • Leadership knows the area well. Knows assets and neighborhoods • Stellar performance on initial attack • Focus on capital improvement & enhancing training • Improving Wildland mitigation • Younger staff – hungry to show they can do a good job 	<ul style="list-style-type: none"> • Weak oversight by CCFA board • Internal & external effective communication • Some resistance to change • Inconsistent onboarding of volunteers • Lack of a safety culture & unnecessary risk taking which affects professionalism. • Lack of strategic vision – short term solutions • Parochialism – long standing views • Lack of In-County volunteers • Limited wildfire resources • Elected BOD – More accountability • Title 32 • Revenue structure – Budget is in the red • Lack of strategic organizational leadership • Poor board governance – Fire authority board lacks quorum • Lack of volunteers • Unprofessional communication - Chief
Opportunities	Challenges
<ul style="list-style-type: none"> • Open for long-term planning • Better cooperation & collaboration with EMS • Possible recruitment pool – younger population & better physically fit • Specialized • Administrative support • More joint fire & EMS training • Growth & utilization of volunteers • Build and emphasize our opportunity to train. • Federal and state funding with wildfire activity- hire staffing • Acute public interest and fear around suppression and mitigation 	<ul style="list-style-type: none"> • Resistance to change • Wildfire Risk – Human caused fires • Affordable housing • Limited opportunity for tax revenue to fund fire department. • Georgetown and Idaho Springs stations are in a bad state – no bunk space • Wildland threat



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SWOC results from Emergency Response Partners	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Training regime • Teamwork <ul style="list-style-type: none"> ○ Search & Rescue ○ Help in field ○ Traffic management • Collaborative • Asst. Chief is efficient • Flexible service • Flexible in their organization chart • Good organizational leadership • Wildland mitigation • Proactive community service • Visible in the communities last 5 years <ul style="list-style-type: none"> ○ National Night Out ○ HOA reach out • Walls break down - credit to Asst Chief • Scene Ops training • Fire Authority is at their best functioning point. • EMS-Fire collaboration • Chief & Asst Chief roles are complimentary • Funding- Finding grants and strategizing with other agencies • Having a combination system • Instructors for RRCC – growing department 	<ul style="list-style-type: none"> • Resources – staffing specifically in Idaho Springs • Budget – Equipment and Staffing • Consistent volunteer staffing • On scene command & Coordination – inexperience, inconsistent communication • ICS Command– not enough hands (lack of staffing) • There are political interactions in daily actions – maintain at a 10,000 ft view • Policy VS. Executive
Opportunities	Challenges
<ul style="list-style-type: none"> • Assistant Chief keep doing outreach • Expand mitigation crew • Dial in on major events <ul style="list-style-type: none"> ○ Joint training ○ Active shooter ○ SWAT • Improve EOC equipment resources • Fire Authority Board to be trained in EOC rules • New equipment for HazMat team • Partnership between fire & EMS. 	<ul style="list-style-type: none"> • Funding • Staffing • Volunteer retention • Political conflict of interest with Fire Authority board



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SWOC results from Clear Creek County Fire Authority Board	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Strong training program • RRCC training brings in volunteers • Represent all jurisdictions • Wildland Fire Mitigation Program • Well defined and executed budget • Vehicle Assets paid off • Equipment – Top notch or will replace • Volunteer base is high – collective In and Out of County. 	<ul style="list-style-type: none"> • County demographics becoming older • Future funding <ul style="list-style-type: none"> ○ Mining, Housing ○ Haven't gone to public for increase in 20 years ○ Spending reserves • Out of county staffing – fewer in-county volunteers • Lack of longevity – lack of historical knowledge • BOD not able to set Mil Rate • 5 different funding sources that can afford different things/rates • Majority of calls due to highway • Uncertainty in dispatch <ul style="list-style-type: none"> ○ Cost per call ○ Political ○ Board driven contract ○ staffing • Lack of cohesiveness between BOD and ESD
Opportunities	Challenges
<ul style="list-style-type: none"> • Grant Opportunities – DOLA • Recoup money for I-70 calls – Hazmat Recovery • Increase volunteers – in and out of county • Increase housing for personnel at station or stand alone • Housing stipend – workforce housing • US Forest Service Wildland Mitigation state crew deploy in county 	<ul style="list-style-type: none"> • Funding • Staffing <ul style="list-style-type: none"> ○ Paid staffing ○ Benefits for staffing • Housing • Organizational structure of Fire Authority • Title 32 • Water Supply <ul style="list-style-type: none"> ○ No reservoir in the east ○ Distribution • ISO Rating



Clear Creek Fire Authority – Organizational Assessment

SWOC results from Clear Creek Fire Career personnel	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Adaptability <ul style="list-style-type: none"> ○ Add hazmat ○ Mitigation ○ Response to meet need • Positive culture – inclusive to old and new members • No elitism • Training • Contract to teach FF through Red Rock Community College 1070 & 1001 • Volunteers are in the community (in county volunteers) for bigger incidents. • Good communication <ul style="list-style-type: none"> ○ Email ○ Paging through I Am Responding • 48/96 schedule • Equipment • Reduced rate housing • Health Insurance is good • Rec Center Membership • State defined benefits • Volunteer Recruitment <ul style="list-style-type: none"> ○ Red Rock Community College ○ Warren Tech ○ Stipend for calls • Peer support team • Self-funded mental health & resilience support • Municipality support • Structure loss is small as compared to others 	<ul style="list-style-type: none"> • Resources – Personnel • Interrupt training for response • Staffing <ul style="list-style-type: none"> ○ 3rd Captain needed ○ More firefighters needed • Pay <ul style="list-style-type: none"> ○ Pay us what we are worth ○ May attract more personnel • Limited affordable housing • Retain volunteers-get them up here • No Overtime – only allowed comp time <ul style="list-style-type: none"> ○ When Comp use staff shortage – overworking staff ○ MIT crew covers Firefighter's comp leave • Seasonal staff – MIT crew • Community outreach <ul style="list-style-type: none"> ○ No PIO ○ Don't sell ourselves • GIS – No building preplans built in • No hazmat recovery money
Opportunities	Challenges
<ul style="list-style-type: none"> • Accountability • Training <ul style="list-style-type: none"> ○ Maintain skills ○ Day to Day skills ○ No money to attend national trainings/conferences • Equipment schedule • Salary study • Yearly physicals • Financial planner • Volunteer FF to Full-time transition – nothing formal in place • Part-time career staff year round 	<ul style="list-style-type: none"> • Volunteer to Full-time – only 6 spots available for volunteers to transition. • Retention-career & volunteer • Staffing <ul style="list-style-type: none"> ○ Housing makes it difficult ○ Lack of in-county volunteers • All responses are not fully staffed • Combine fire & EMS would be a challenge • Our stations – Old buildings need maintenance • Title 32 vs. Authority • I Am Responding software – inaccurate, reports lack, messing, CAD info



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<ul style="list-style-type: none">• Staffing – at least one more crew shift• Transparency from Commissioners<ul style="list-style-type: none">○ What do they want?○ Forward thinking and service to community• Updated strategic plan• Updated SOG's -2013 was last update• Combine Fire & EMS• Community Volunteer with diverse roles• Auxiliary volunteers on books but have none• Swearing In – Badges, ceremony & involve the family• Wildland evaluation -private consult• Building preplans into GIS• Red Rock Community College recruitment• Meeting with the board -they need to know what we do.	<ul style="list-style-type: none">• Lack of bandwidth to update SOGs• When will Station #2 (Idaho Springs) be built?• Complacency with professional development
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Clear Creek Fire Authority – Organizational Assessment

SWOC results from Clear Creek Fire Volunteers	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Comradery – career and volunteer • Morale • Quality training opportunity • Onboarding – open to help • Operational preparedness • Dissemination of information • Interagency Cooperation <ul style="list-style-type: none"> ○ Emergency services ○ CDOT ○ Community response ○ EMS • Interagency trainings with outside agencies • Approachability • Community engagement/projects • Professional development • Depth of experience in multiple specialty areas • Utilize strengths of individuals <ul style="list-style-type: none"> ○ There is a place for everyone • Lack of Egos • Operational Flexibility • Wealth of knowledge • Resident program • Stipends • FF Wellness program 	<ul style="list-style-type: none"> • Staffing for call volume and coverage across the county • Stretched thin • Funding • Retention – volunteer & career • Feeder for other agencies • Lack of centralized information • Hard to retain out of county volunteers • Cost of living • No affordable housing
Opportunities	Challenges
<ul style="list-style-type: none"> • Hazmat team restarting • Staffing for Hazmat • Tech level rope certification • Red Rock Academy – recruit, training, funding • Warren Tech – recruiting • Mitigation crew <ul style="list-style-type: none"> ○ Expand opportunities ○ Funding ○ Experience ○ Shadow canyon work • Implementing risk reduction • Community education • Increase social media presence • Volunteer liaison • East end staffing • Expand residency program • Expand dorm space • Investigate tiered notification • Continue to get CAD notes 	<ul style="list-style-type: none"> • Funding • Staffing – Volunteer and career • Emergency notification <ul style="list-style-type: none"> ○ Eforce ○ CAD ○ Dispatch ○ I Am Responding ○ Technology • Competitive wages for career • Geographic area & topography • Off road wear and tear on apparatus • Type 5 apparatus mileage • I-70 Corridor – Tourist traffic • Lack of County support of Fire



Appendix E- Volunteer Recruitment Ideas and Resources

1. To enhance in-county recruitment and improve public education of the Fire Authority, it is recommended to utilize a local resource. Clear Creek has a local radio station, KYGT, which is truly focused on the Clear Creek community. Though KYGT can be heard nationally, their content is focused on Clear Creek. They are heard live on the radio at 102.7 FM or 103.9 FM and stream live on their website and Facebook. KYGT has an intergovernmental agreement with all the towns and districts within Clear Creek and appears to stream Clear Creek County Commissioner meetings. This would be a great avenue for recruitment and retention of volunteers. Request to host weekly 30-minute information sessions from CCFA regarding household and wildland fire prevention and plug the utilization and acceptance of volunteers. Highlight a member of the month and sell to the community the opportunity to volunteer. Have an officer “interviewed” by KYGT as to why they volunteer, how they got into it, and the opportunity to volunteer.
2. CCFA should develop an inclusive onboarding/tracking document to improve the understanding of the trends of volunteers applying, screening out, completing clearances, completing orientation, completing fire school, and being released as a firefighter. The document should include details such as how the applicant heard about volunteering, their date of birth for age trending, their occupation/student status, and family status. The details obtained can help understand the type of volunteer applying and succeeding to being a released firefighter. To further enhance onboarding, each step should have a date when the action was taken. This provides a timeline of the process and can help improve processes if there is a significant drop from one step to another. It should be noted, national resources recommend action and responses within 24-48 hours in volunteer onboarding processes. Knowing this data helps improve recruitment and onboarding for the future. This tracking should be the responsibility of one or two people and be on a secured shared drive or site. Reporting findings to the membership monthly or quarterly helps membership share in the success of those who go from applications to release firefighter.
3. CCFA has a great audience with the Red Rocks and Warren Tech fire school students to enhance volunteer recruitment. To hook in the fire students, who are attending fire school through Clear Creek, offer the students who attend a ride-along shift. During the shift, make sure the students are given a strong and amiable guide to show them the station, understand their role on a call, and encourage them to continue hands-on training and experience by becoming a volunteer. Before the end of the shift, speak to the students about becoming a volunteer and provide them with the online or hard copy application. Have the guide or the dedicated recruitment person reach out to them after their shift and tell them about the onboarding process and initiate the process if they are interested.
4. CCFA is very involved in their community and every event should be an indirect marketing event. Apparatus and leave behind material should have a QR code which directs the



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community member to ClearCreekFire.com's website. Additionally, all the CCFA community events should be posted to the Clear Creek County Calendar, if suitable.

5. CCFA has a strong social media presence, but could benefit from new and eye-catching hard copy marketing material. If funds are available, it would be helpful to have marketing material developed and unique to Clear Creek and provide Clear Creek Fire Authority's selling points. If funds are not available, then the International Association of Fire Chiefs has free volunteer firefighter recruitment material which Clear Creek can plug in their information and use for marketing. IAFC.org>Fillable Marketing Material Use. Rotating marketing methods such as mailers, leave behinds, diner placemats, community signage, and posters in businesses, helps improves the odds of applicants recognizing their marketing efforts and the needs.

6. CCFA could be more proactive to let the community know they accept volunteers. CCFA is included in Clear Creek County's volunteer resource list which is a great first step. Other free resource are websites that are repository for agencies seeking volunteers and citizens seeking to volunteer in their community. Clear Creek has to enter themselves as a willing agency on the sites: Make Me a Firefighter through National Volunteer Fire Council; Spark the Change Colorado.org; and Volunteer Match.

Additional Free online resources to help improve firefighter retention and recruitment:

National Volunteer Fire Council	www.NVFC.org
International Association of Fire Chiefs	www.IAFC.org
Oregon Fire Recruitment Network	www.oregonfirerecruitmentnetwork.com
National R&R online group:	rrcs@googlegroups.com

To opt into the national R&R online group and view their discussions visit:
<https://groups.google.com/d/optout>.



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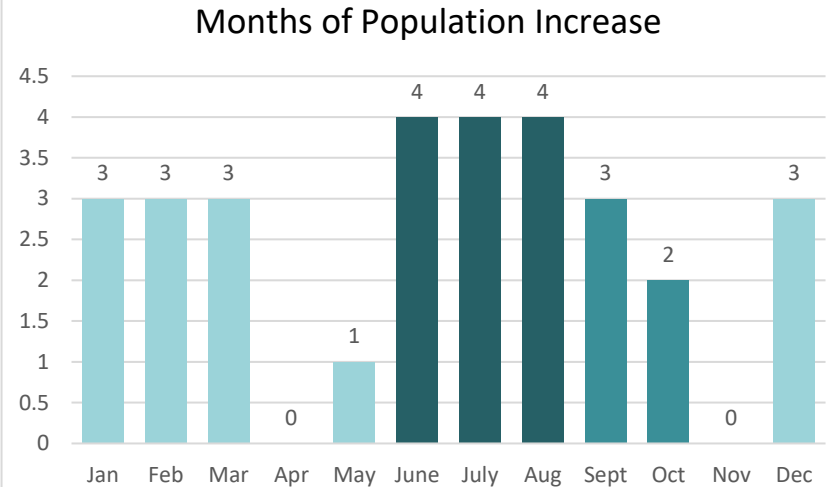
Appendix F- Benchmark Department Information

	🏠 Highest and lowest in group	💎 Group Average
What is your service area in square miles?	200 ← 220 299 350 → 400	
If your service area is different for fire and EMS, please specify each.	Service area for fire and EMS are the same for three out of four respondents. One responded indicated that they have a hospital-based EMS with the FD as a first Responder only.	
What is the total population served by your organization?	4,500 ← 5,100 8,666 15,000 → 20,000	
What is the total population served at the height of the tourist season by your organization?	10,000 ← 15,000 25,500 45,000 → 50,000	



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Please list the months of population influx.



What is your total **Operational Budget** for 2023?



What is your total **Capital Budget** for 2023?



What are the **main sources** of your budget funds?

All four respondents reported special district millage as the source of their budgetary funds.

One respondent reported that they also have an ambulance service and fire prevention fee as funding source.

If a main source of your budget funds is from **Special District Millage**, what is the millage rate?





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How is your department structured?

Three of the four respondents indicated Title 32 Special District.

One respondent indicated Fire Authority

What services does your organization provide?

All responding fire organizations provide fire response, technical rescue, fire inspection, and community risk reduction.

Three of the four responding fire organizations provide transport EMS, Haz Mat, fire code enforcement, and wildland fire mitigation.

Two of the responding fire organizations provide non-transport EMS.

One responding fire organization provides emergency management.

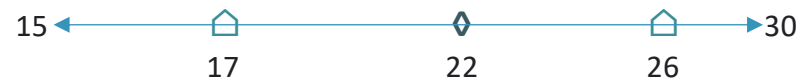
How many **fire stations** are there in your organization?



How many of your **fire stations are staffed** in your organization?



What is the total number of **full-time** operational fire/EMS personnel in your organization?



What is the total number of **part-time** operational fire/EMS personnel in your organization?





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What is the total number of **volunteer** fire/EMS personnel in your organization?



What is the total number of **administrative/support** personnel in your organization?



Do you utilize a **Volunteer Recruitment and Retention Coordinator**?

Two of the four respondents have a Volunteer Recruitment and Retention Coordinator.

If your organization utilizes a Volunteer Recruitment and Retention Coordinator, how is that position recognized?

Of the two respondents who indicated that they have a Volunteer Recruitment and Retention Coordinator, that position is filled by a full-time member who also serves as a fire training officer in one organization. The other organization fulfills this role through the HR Director.

What best describes your organization's **average turnover rate** for the last 3 years?

Two of the four respondents indicated a turnover rate range of 0%-10%.

The remaining two respondents indicated a turnover rate range of 11%-20%.

Do you utilize full-time and/or part-time wildland crews?

Half of respondents utilize full-time and/or part-time wildland crews.

If so, how many?



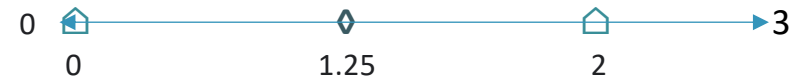


Clear Creek Fire Authority – Organizational Assessment

Please indicate the **number of engine companies** in your organization.



Please indicate the **number of staffed engines** in your organization.



Please indicate the **number of ladder companies** in your organization.



Please indicate the **number of staffed ladders** in your organization.



What is the normal unit staffing for **engines**?



What is the normal unit staffing for **ladders**?



What is your organization's **fire response time** goals/standards?

R1- 4-8 minutes within the two towns

R2- None

R3- Depending on location 3-7 minutes but possibly 30 minutes in some locations.

R4- Strive to meet NFPA Standards



Clear Creek Fire Authority – Organizational Assessment

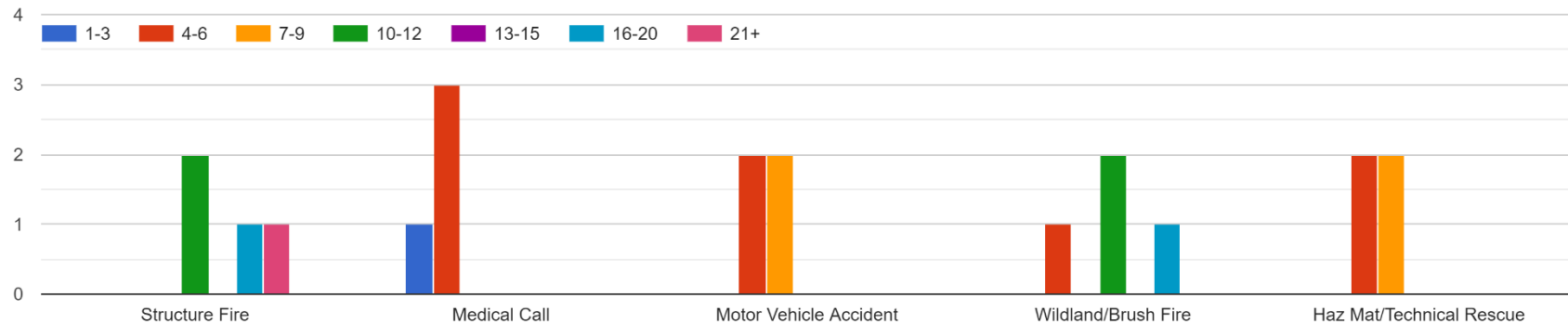
What is your organization's **EMS response time** goals/standards?

R1- 4-6 minutes within the two towns
R2- None
R3- Depending on location 3-7 minutes
R4- Strive to meet NFPA Standards

What is your organization's **effective response force** goals/standards?

R1- Goal 12-18 Standard not established at this point
R2- 0
R3- 2 Command staff/4 paid staff/12 volunteers
R4- Strive to meet NFPA Standards

What is your average actual personnel response to the following call types?



In 2022, what were the **total number of calls** for your organization?



In 2022, how many of your organization's calls were **structure fires**?



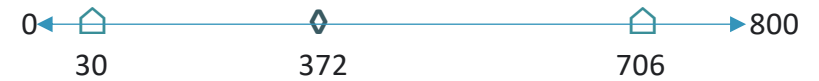


Clear Creek Fire Authority – Organizational Assessment

In 2022, how many of your organization's calls were **EMS calls**?



In 2022, how many of your organization's calls were **other/outside calls**?





Clear Creek Fire Authority – Organizational Assessment

Appendix G- Code Information

Clear Creek Fire Authority

Building and Fire Prevention

	County Unincorporated areas, Town of Empire	Town of Silver Plume	Town of Georgetown	City of Idaho Springs	Recommendations
International Building Code	IBC 2015	IBC 2018	IBC 2015	IBC 2018	At a minimum all municipalities should adopt the 2018 I-Codes. Optimally, they should consider adopting the 2021 I-Codes.
International Residential Code	IRC 2015	IRC 2018	IRC 2015	IRC 2018	Ditto
International Fire Code	IFC 2015	IFC 2018	IFC 2015	IFC 2018	Ditto
Sprinklers, Standpipes, Commercial Hoods	IFC 2015	IFC 2018	IFC 2015	IFC 2018	Ditto
International Wildland-Urban Interface Code (IWUIC)	Not adopted	Not adopted	Not adopted	Not adopted	All municipalities should adopt the 2021 IWUIC. At a minimum, Georgetown, Empire, Silver Plume, and Idaho Springs should adopt a defensible space ordinance similar to Clear Creek County.
Property Maintenance; Removal of Public Nuisance	None	Not specified	Georgetown Town Code 8.04	IPMC 2018	All municipalities should adopt the 2018 or 2021 IPMC or, at a minimum adopt a local ordinance similar to the Town of Georgetown.
Defensible Space	IFC 2015 and Wildfire Hazard Mitigation Plan; Site Development Permit	IFC 2018	IFC 2015	IFC 2018	Georgetown and Idaho Springs should adopt defensible space local ordinance.
Weed Abatement (fire control)	None	Not specified	None	Idaho Springs Municipal Code 16-41 and 42	The County, Empire, Silver Plume and Georgetown should adopt an ordinance similar to Idaho Springs. All municipalities should adopt the 2018 or 2021 IPMC.
Blight/Abandoned Buildings	None	None	None	IPMC 2018	The County and Empire should evaluate SAFEbuilt to possibly save money.
Construction/ Renovation Plans Review	Clear Creek CBO	SAFEbuilt (3rd Party)	SAFEbuilt (3rd Party)	SAFEbuilt (3rd Party)	The County and the Town of Empire should adopt the 2018 or 2021 IFC.
Fire Sprinkler/Fire Alarm Inspections and Testing	IFC 2015; 3rd Party	IFC 2018; 3rd Party	IFC 2015; 3rd Party	IFC 2018; 3rd Party	
Business Fire Inspection Frequency	Every 1-2 years; CCFA is agent	Every 1-2 years; CCFA is agent	Every 1-2 years; CCFA is agent	Every 1-2 years; CCFA is agent	
Residential Sprinklers	4,400 SF or larger	None	None	None	Georgetown, Silver Plume and Idaho Springs should adopt a residential sprinkler ordinance similar to the County.



Appendix H- Fee Structure Chart

FEE SCHEDULE Clear Creek Fire Authority

Effective May 10, 2023

I. Fees for Hazmat Services, Motor Vehicle Accidents and Safety Services

1. General Provisions

Fees will be charged for roadway response Services provided by the Authority, including, but not limited to, Hazmat materials response, containment and mitigation Services and motor vehicle accident rescue and lane safety protection provided by the Authority. Roadway response Services are subject to the Base Response Fee, as well as any Response Apparatus and Command/Staff Fees applicable to the response.

A. Response Apparatus and Command/Staff Fees will be rounded up or down to the nearest half-hour increment, with a half-hour minimum. Hours charged is determined by the en-- route time and in-service time logged for the response per the dispatch records.

2. Base Response Fee by Type of Incident

A. Hazardous Materials Response	
B. Motor Vehicle Accident	\$250
Response	\$250

3. Response Apparatus & Command/Staff Fees

A. Type I Engine	\$250/hr
B. Type III Engine	\$220/hr
C. Heavy Rescue/Hazmat	\$220/hr
D. Water Tender	\$190/hr
E. Type VI Engine	\$165/hr
F. Aerial Truck	\$280/hr
G. Command/Staff Vehicles	\$60/hr



Clear Creek Fire Authority – Organizational Assessment

6. **Use of District Fire Apparatus:** The hourly rate for use of a Type 1 Engine incident to inspections (e.g. standpipe flow testing) is \$250.00 per hour with a one hour minimum. This rate provides for an operational manned apparatus for connection up to the FDC only. No additional hose or equipment is supplied beyond the FDC.
7. **Special Event Coverage:** The hourly rate for dedicated standby on a special event is \$100.00 per hour with a two-hour minimum.
8. **Operational Permits:** The fee for business operational permits required by the currently adopted Fire Code as amended shall be \$50.00.
Exception: A \$25.00 fee for open burning permits within the Authority's boundaries will be assessed.
9. **Vehicle Access Equipment and Access Gates:** The fee for all construction permits to install vehicle access equipment and all access gates across fire apparatus access roads shall be \$100.00, regardless whether it is a public or private road.
10. **Fire Mitigation Inspections:** The fee for all new construction, additions and deck/patio construction and/or replacement shall be \$150.00.
11. **AST/UST Permanent Installation/Removal:** The fee for the 1st tank shall be \$300.00, and the fee for each subsequent tank at the same site shall be \$150.00.
12. **Fuel Dispensers:** The fee for the 1st dispenser shall be \$100.00, and the fee for each subsequent dispenser at the same site shall be \$25.00.
13. **Required Additional and Re-inspections:** Required additional and re-inspections will be charged \$200.00 for the first two hours (minimum), and \$75.00 for each additional hour or portion thereof. Requests for re-inspections shall be included in this section.
14. **Construction or Installation without a Permit:** Work started without appropriate permits, as required by currently adopted Fire Code and this Fee Schedule, may be subject to additional fees. Permit fees set forth above may be doubled.



Clear Creek Fire Authority – Organizational Assessment

III. Fees for False Alarms

1. False alarms require Authority response and mandate inspection to determine the cause of the alarm. Excessive false alarms are charged fees in accordance with this section.
2. **Category I Alarms:** Category I alarms will not be assessed a fee. A Category I alarm is any alarm requiring District response where the system operated properly under the following conditions:
 - **Accidental:** Any alarms caused by a guest or circumstances beyond the control of management, or a single accidental smoke or fire condition.
3. **Category II Alarms:** The owner of any fire alarm system found to have three or more Category II alarms in a calendar year shall be charged a fee pursuant to Table 1. A Category II alarm is any alarm requiring District response under the following conditions.
 - **System Malfunction:** Any alarm caused by poor or improper maintenance, or improper installation of alarm equipment, hardware or wiring. An improper action by the alarm monitoring center shall also be considered a system malfunction.
 - **User Error:** The act or omission of an agent, employee or contractor of management.
 - **Undetermined Cause:** Any alarm which, after inspection by the Authority, does not reveal the apparent cause of the alarm. If the alarm system owner, or their agent, can provide proof of cause within two (2) working days from the alarm time, the Authority may re-evaluate its assessment.

Except for fees charged pursuant to sections III(3)(A) and III(3)(B) below, within 30 days following a Category II alarm that results in the assessment of a fee pursuant to this section, the owner of a fire alarm system may provide the Authority with written proof that necessary repairs or corrections have been made to the fire alarm system by a qualified agency. Upon the District's determination that all necessary repairs to the fire alarm system have been made, the system owner is eligible to receive a fifty percent rebate on the fee, if requested within 30 days of the Authority's determination.

- A. **Fire Alarm Monitoring or Fire Protection Maintenance Companies:** The fee set forth in this section shall apply to any fire alarm installation/testing company, fire alarm monitoring company, or fire protection maintenance company found to have three or more Category II alarms at any combination of properties in a calendar year.

In general, the fee shall be charged to the fire alarm installation/testing company, fire alarm monitoring company, or fire protection maintenance company that is found to be the cause of the false alarm. However, if designation of cause cannot be distinguished between such companies, the fee shall be charged to the owner of the property.

- B. **New Construction:** The fee set forth in this section shall apply to any new construction site found to have three or more Category II alarms. The fee shall be charged to the owner of the property.



Clear Creek Fire Authority – Organizational Assessment

Appendix I- CCFA Funding Options

FIRE AUTHORITY - Option 1													
Description	2021	2022	23 Proj	2024 Budget	2025 Proj	2026 Proj	2027 Proj	2028 Proj	2029 Proj	2030 Proj	2031 Proj	2032 Proj	2033 Proj
Clear Creek ESD	1,157,000	736,700	739,574	840,094	1,746,749	1,799,151	2,556,689	2,633,389	2,633,389	2,712,391	2,712,391	2,793,763	2,793,763
Town contributions	265,775	312,500	305,860	365,519	782,797	806,281	1,180,141	1,215,545	1,252,011	1,289,572	1,328,259	1,368,107	1,409,150
Charges for services	31,818	26,736	31,500	32,357	33,237	34,141	35,070	36,023	37,003	38,010	39,044	40,106	41,197
Grants	92,254	96,465	96,465	99,089	101,784	104,553	107,396	110,318	113,318	116,400	119,567	122,819	126,159
Investment Earnings	2,849	97,553	290,691	234,501	194,518	189,353	192,052	213,157	223,976	229,610	236,494	241,701	248,167
Other revenue	6,633	12,575	32,400	17,203	20,726	23,443	20,457	21,542	21,814	21,271	21,542	21,542	21,452
TOTAL REVENUE	1,556,329	1,282,529	1,496,490	1,588,762	2,879,811	2,956,921	4,091,805	4,229,974	4,281,512	4,407,254	4,457,296	4,588,037	4,639,887
% change			16.7%	6.2%	81.3%	2.7%	38.4%	3.4%	1.2%	2.9%	1.1%	2.9%	1.1%
Payroll and benefits	840,868	1,047,749	1,194,165	1,291,713	1,324,006	1,357,106	1,391,034	1,425,810	1,461,455	1,497,991	1,535,441	1,573,827	1,613,173
Cost of new FTE's				-	506,550	647,009	1,138,624	1,297,298	1,431,915	1,467,713	1,504,406	1,542,016	1,580,566
Other operating	461,307	534,547	513,160	527,118	541,456	556,183	571,311	586,851	602,813	619,210	636,052	653,353	671,124
Pension	100,000	75,000	50,000	51,360	52,757	54,192	55,666	57,180	58,735	60,333	61,974	63,660	65,391
Capital Outlay	22,395	26,508	65,000	66,768	68,584	70,450	72,366	74,334	76,356	78,433	80,566	82,758	85,009
Capital Reserve					200,000	200,000	300,000	500,000	500,000	500,000	500,000	500,000	500,000
TOTAL EXPENDITURES	1,424,570	1,683,804	1,822,325	1,936,959	2,693,353	2,884,939	3,529,001	3,941,472	4,131,275	4,223,680	4,318,439	4,415,613	4,515,263
Net change	131,759	(401,275)	(325,835)	(348,197)	186,458	71,982	562,804	288,502	150,238	183,574	138,857	172,424	124,624
Beg FB	5,806,490	5,938,249	5,536,974	5,211,139	4,862,943	5,049,401	5,121,382	5,684,186	5,972,688	6,122,926	6,306,500	6,445,357	6,617,781
End FB	5,938,249	5,536,974	5,211,139	4,862,943	5,049,401	5,121,382	5,684,186	5,972,688	6,122,926	6,306,500	6,445,357	6,617,781	6,742,405
VARIABLES													
Mill Levy	4.5690	4.5690	4.5690	4.5690	9.5000	9.5000	13.5000	13.5000	13.5000	13.5000	13.5000	13.5000	13.5000
CC ESD Property Tax			0.4%	13.6%	0.0%	3.0%	0.0%	3.0%	0.0%	3.0%	0.0%	3.0%	0.0%
Town Contributions				20%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Investment Earnings			5.25%	4.50%	4.00%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
COLA				2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
New FTE's					6.00	1.00	6.00	1.00	1.00	-	-	-	-
Proj salary + benefits					84,425	127,795	79,240	130,208	102,185	-	-	-	-
Inflation				2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%



Clear Creek Fire Authority – Organizational Assessment

FIRE AUTHORITY - Option 1A													
Description	2021	2022	23 Proj	2024 Budget	2025 Proj	2026 Proj	2027 Proj	2028 Proj	2029 Proj	2030 Proj	2031 Proj	2032 Proj	2033 Proj
Clear Creek ESD	1,157,000	736,700	739,574	840,094	1,930,617	1,988,536	1,988,536	2,633,389	2,633,389	2,712,391	2,712,391	2,793,763	2,793,763
Town contributions	265,775	312,500	305,860	365,519	865,197	891,153	917,887	1,215,545	1,252,011	1,289,572	1,328,259	1,368,107	1,409,150
Charges for services	31,818	26,736	31,500	32,357	33,237	34,141	35,070	36,023	37,003	38,010	39,044	40,106	41,197
Grants	92,254	96,465	96,465	99,089	101,784	104,553	107,396	110,318	113,318	116,400	119,567	122,819	126,159
Investment Earnings	2,849	97,553	290,691	234,501	194,518	199,338	212,696	203,435	213,889	219,145	225,636	230,436	236,480
Other revenue	6,633	12,575	32,400	17,203	20,726	23,443	20,457	21,542	21,814	21,271	21,542	21,542	21,452
TOTAL REVENUE	1,556,329	1,282,529	1,496,490	1,588,762	3,146,079	3,241,162	3,282,042	4,220,252	4,271,426	4,396,789	4,446,439	4,576,773	4,628,201
% change			16.7%	6.2%	98.0%	3.0%	1.3%	28.6%	1.2%	2.9%	1.1%	2.9%	1.1%
Payroll and benefits	840,868	1,047,749	1,194,165	1,291,713	1,324,006	1,357,106	1,391,034	1,425,810	1,461,455	1,497,991	1,535,441	1,573,827	1,613,173
Cost of new FTE's				-	506,550	647,009	1,138,624	1,297,298	1,431,915	1,467,713	1,504,406	1,542,016	1,580,566
Other operating	461,307	534,547	513,160	527,118	541,456	556,183	571,311	586,851	602,813	619,210	636,052	653,353	671,124
Pension	100,000	75,000	50,000	51,360	52,757	54,192	55,666	57,180	58,735	60,333	61,974	63,660	65,391
Capital Outlay	22,395	26,508	65,000	66,768	68,584	70,450	72,366	74,334	76,356	78,433	80,566	82,758	85,009
Capital Reserve					200,000	200,000	300,000	500,000	500,000	500,000	500,000	500,000	500,000
TOTAL EXPENDITURES	1,424,570	1,683,804	1,822,325	1,936,959	2,693,353	2,884,939	3,529,001	3,941,472	4,131,275	4,223,680	4,318,439	4,415,613	4,515,263
Net change	131,759	(401,275)	(325,835)	(348,197)	452,726	356,223	(246,959)	278,780	140,151	173,109	128,000	161,160	112,937
Beg FB	5,806,490	5,938,249	5,536,974	5,211,139	4,862,943	5,315,669	5,671,892	5,424,933	5,703,713	5,843,864	6,016,973	6,144,973	6,306,132
End FB	5,938,249	5,536,974	5,211,139	4,862,943	5,315,669	5,671,892	5,424,933	5,703,713	5,843,864	6,016,973	6,144,973	6,306,132	6,419,070
VARIABLES													
Mill Levy	4.5690	4.5690	4.5690	4.5690	10.5000	10.5000	10.5000	13.5000	13.5000	13.5000	13.5000	13.5000	13.5000
CC ESD Property Tax			0.4%	13.6%	0.0%	3.0%	0.0%	3.0%	0.0%	3.0%	0.0%	3.0%	0.0%
Town Contributions				20%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Investment Earnings			5.25%	4.50%	4.00%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
COLA				2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
New FTE's					6.00	1.00	6.00	1.00	1.00	-	-	-	-
Proj salary + benefits					84,425	127,795	79,240	130,208	102,185	-	-	-	-
Inflation				2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%



Clear Creek Fire Authority – Organizational Assessment

FIRE AUTHORITY - Option 2													
Description	2021	2022	23 Proj	2024 Budget	2025 Proj	2026 Proj	2027 Proj	2028 Proj	2029 Proj	2030 Proj	2031 Proj	2032 Proj	2033 Proj
Clear Creek ESD	1,157,000	736,700	739,574	840,094	1,379,012	1,420,383	1,988,536	2,048,192	2,048,192	2,109,637	2,109,637	2,172,927	2,172,927
Town contributions	265,775	312,500	305,860	365,519	1,194,796	1,230,640	1,617,230	1,665,747	1,715,719	1,767,191	1,820,207	1,874,813	1,931,057
Charges for services	31,818	26,736	31,500	32,357	33,237	34,141	35,070	36,023	37,003	38,010	39,044	40,106	41,197
Grants	92,254	96,465	96,465	99,089	101,784	104,553	107,396	110,318	113,318	116,400	119,567	122,819	126,159
Investment Earnings	2,849	97,553	290,691	234,501	194,518	191,012	195,484	211,802	217,508	218,344	220,113	220,550	221,943
Other revenue	6,633	12,575	32,400	17,203	20,726	23,443	20,457	21,542	21,814	21,271	21,542	21,542	21,452
TOTAL REVENUE	1,556,329	1,282,529	1,496,490	1,588,762	2,924,072	3,004,171	3,964,172	4,093,624	4,153,555	4,270,853	4,330,109	4,452,757	4,514,735
% change			16.7%	6.2%	84.0%	2.7%	32.0%	3.3%	1.5%	2.8%	1.4%	2.8%	1.4%
Payroll and benefits	840,868	1,047,749	1,194,165	1,291,713	1,324,006	1,357,106	1,391,034	1,425,810	1,461,455	1,497,991	1,535,441	1,573,827	1,613,173
Cost of new FTE's				-	506,550	647,009	1,138,624	1,297,298	1,431,915	1,467,713	1,504,406	1,542,016	1,580,566
Other operating	461,307	534,547	513,160	527,118	541,456	556,183	571,311	586,851	602,813	619,210	636,052	653,353	671,124
Pension	100,000	75,000	50,000	51,360	52,757	54,192	55,666	57,180	58,735	60,333	61,974	63,660	65,391
Capital-small equipment	22,395	26,508	65,000	66,768	68,584	70,450	72,366	74,334	76,356	78,433	80,566	82,758	85,009
Capital-large					200,000	200,000	300,000	500,000	500,000	500,000	500,000	500,000	500,000
TOTAL EXPENDITURES	1,424,570	1,683,804	1,822,325	1,936,959	2,693,353	2,884,939	3,529,001	3,941,472	4,131,275	4,223,680	4,318,439	4,415,613	4,515,263
Net change	131,759	(401,275)	(325,835)	(348,197)	230,720	119,231	435,172	152,152	22,280	47,174	11,670	37,143	(528)
Beg FB	5,806,490	5,938,249	5,536,974	5,211,139	4,862,943	5,093,663	5,212,894	5,648,066	5,800,217	5,822,498	5,869,671	5,881,341	5,918,485
End FB	5,938,249	5,536,974	5,211,139	4,862,943	5,093,663	5,212,894	5,648,066	5,800,217	5,822,498	5,869,671	5,881,341	5,918,485	5,917,957
VARIABLES													
Mill Levy-County	4.5690	4.5690	4.5690	4.5690	7.5000	7.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000	10.5000
Mill Levy-Towns					14.5000	14.5000	18.5000	18.5000	18.5000	18.5000	18.5000	18.5000	18.5000
CC ESD Property tax appreciation			0.4%	13.6%	0.0%	3.0%	0.0%	3.0%	0.0%	3.0%	0.0%	3.0%	0.0%
Town Prop tax appreciation				20%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Investment Earnings			5.25%	4.50%	4.00%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
COLA				2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
New FTE's					6.00	1.00	6.00	1.00	1.00	-	-	-	-
Proj salary + benefits					84,425	127,795	79,240	130,208	102,185	-	-	-	-
Inflation				2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%



Clear Creek Fire Authority – Organizational Assessment

FIRE AUTHORITY - Option 3													
Description	2021	2022	23 Proj	2024 Budget	2025 Proj	2026 Proj	2027 Proj	2028 Proj	2029 Proj	2030 Proj	2031 Proj	2032 Proj	2033 Proj
Clear Creek ESD	1,157,000	736,700	739,574	840,094	1,746,749	1,799,151	1,799,151	1,853,126	1,853,126	1,908,720	1,908,720	1,965,981	1,965,981
Town contributions	265,775	312,500	305,860	365,519	782,797	806,281	830,470	855,384	881,045	907,476	934,701	962,742	991,624
Charges for services	31,818	26,736	31,500	32,357	33,237	34,141	35,070	36,023	37,003	38,010	39,044	40,106	41,197
Grants	92,254	96,465	96,465	99,089	101,784	104,553	107,396	110,318	113,318	116,400	119,567	122,819	126,159
Investment Earnings	2,849	97,553	290,691	234,501	194,518	189,353	192,052	171,637	138,133	97,376	54,835	8,334	-
Other revenue	6,633	12,575	32,400	17,203	20,726	23,443	20,457	21,542	21,814	21,271	21,542	21,542	21,452
TOTAL REVENUE	1,556,329	1,282,529	1,496,490	1,588,762	2,879,811	2,956,921	2,984,596	3,048,029	3,044,439	3,089,254	3,078,408	3,121,524	3,146,413
% change			16.7%	6.2%	81.3%	2.7%	0.9%	2.1%	-0.1%	1.5%	-0.4%	1.4%	0.8%
Payroll and benefits	840,868	1,047,749	1,194,165	1,291,713	1,324,006	1,357,106	1,391,034	1,425,810	1,461,455	1,497,991	1,535,441	1,573,827	1,613,173
Cost of new FTE's				-	506,550	647,009	1,138,624	1,297,298	1,431,915	1,467,713	1,504,406	1,542,016	1,580,566
Other operating	461,307	534,547	513,160	527,118	541,456	556,183	571,311	586,851	602,813	619,210	636,052	653,353	671,124
Pension	100,000	75,000	50,000	51,360	52,757	54,192	55,666	57,180	58,735	60,333	61,974	63,660	65,391
Capital Outlay	22,395	26,508	65,000	66,768	68,584	70,450	72,366	74,334	76,356	78,433	80,566	82,758	85,009
Capital Reserve					200,000	200,000	300,000	500,000	500,000	500,000	500,000	500,000	500,000
TOTAL EXPENDITURES	1,424,570	1,683,804	1,822,325	1,936,959	2,693,353	2,884,939	3,529,001	3,941,472	4,131,275	4,223,680	4,318,439	4,415,613	4,515,263
Net change	131,759	(401,275)	(325,835)	(348,197)	186,458	71,982	(544,405)	(893,443)	(1,086,836)	(1,134,426)	(1,240,031)	(1,294,089)	(1,368,850)
Beg FB	5,806,490	5,938,249	5,536,974	5,211,139	4,862,943	5,049,401	5,121,382	4,576,977	3,683,534	2,596,699	1,462,272	222,241	(1,071,848)
End FB	5,938,249	5,536,974	5,211,139	4,862,943	5,049,401	5,121,382	4,576,977	3,683,534	2,596,699	1,462,272	222,241	(1,071,848)	(2,440,698)
VARIABLES													
Mill Levy	4.5690	4.5690	4.5690	4.5690	9.5000	9.5000	9.5000	9.5000	9.5000	9.5000	9.5000	9.5000	9.5000
CC ESD Property Tax			0.4%	13.6%	0.0%	3.0%	0.0%	3.0%	0.0%	3.0%	0.0%	3.0%	0.0%
Town Contributions				20%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Investment Earnings			5.25%	4.50%	4.00%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
COLA				2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%
New FTE's					6.00	1.00	6.00	1.00	1.00	-	-	-	-
Proj salary + benefits					84,425	127,795	79,240	130,208	102,185	-	-	-	-
Inflation				2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%	2.72%
Initiate 1 cent County fire sales tax in FY2025. Would generate approximately \$1,650,000 in first and subsequent years													