



EAST FORK FIRE PROTECTION DISTRICT 2023



Executive Summary.....	2
Section I - Community Baselines.....	5
Section III - Services We Provide.....	20
Fire Growth.....	24
The Stages of Fire Growth.....	24
Section IV - Critical Task Capability of District.....	35
Section V - Setting Service Level Objectives	42
Section VI - Evaluation of Reliability of Companies.....	45
Section VII - Recommendations.....	57
Section VIII – Summary	61

EAST FORK FIRE PROTECTION DISTRICT STANDARDS OF COVER

EXECUTIVE SUMMARY

Prepared By
Tod F. Carlini, District Fire Chief



In 2006 the East Fork Fire Protection District saw the first ever, governing body approved, Ten Year Strategic Plan. One of the more aggressive and challenging objectives within this plan was the development of a Standards of Cover for the District.

In 2013, the District's first Standards of Cover was developed internally and adopted by the Douglas County Commissioners, then serving as the District's Board of Directors. Nearly ten years later and after a 2017 revision which was adopted by the first totally independently elected Board of Directors, the District is offering its third iteration of this strategic document in 2023.

This document describes our service area, the risks that must be protected and reduced within the jurisdiction, our capabilities, and our performance objectives and measures. Several key data sets are applied and guided recommendations are made with the single intent to support the actual standards. This information will allow the District to identify risks in the jurisdiction, analyze and establish levels of response service to respond to those risks, and most importantly, evaluate the performance through benchmarked response times and staffing objectives.

The response time goals, staffing objectives, and resource deployment will contribute to our commitment to continually improve how we deliver our services. In revising the deployment plan, the methodology used requires the assumption that it is reasonable, realistic, fiscally sound, based on factual data, contract compliant, and safe in the allocation and deployment of personnel, both career and volunteer, and the physical resources of the District.

The plan must also attempt to adhere to all related rules, regulations, and requirements. Also taken into consideration are nationally adopted standards, such as those promulgated by the National Fire Protection Association (NFPA), the American Heart Association (AHA), the International Association of County Managers (ICMA), and Insurance Services Offices (ISO), as examples. Using multiple standards to gauge performance can serve as an effective and well balanced "*checks and balances*" of the entire deployment model specific to the District.

While NFPA 1710's primary focus is on staffing, the American Heart Association tends to consider response time for emergency medical services. The International Association of County Manager's standards attempt to relate services level in the form of a ratio between the population of the area served and the number of responders available. Lastly, ISO, serves as an overall "*report card*" solely on fire protection services, but includes water supply and dispatching. While ISO has been the industry standard for many years, wildland fire in the urban interface and the devastation that has occurred, is now guiding the insurance industry in most western states.

Equally important to the preceding is recognizing that the safety of our personnel must be a priority. A priority which can't be ignored and one which should not be compromised for the sake of meeting response time objectives. Staffing must be a strong consideration. With annual call volume increasing at a rate of 5.7 percent per year and given the current reality and modifications to our volunteer program, the need for additional career personnel becomes an annual consideration. Volunteer personnel will continue to play a key role in the logistical needs of incidents with an emphasis on the transportation of water for fire suppression.

The East Fork Fire Protection District Standards of Cover has been developed to translate the general needs and objectives of the District as it relates to the allocation of resources to achieve the self-imposed standards which are drawn from several recognized sources.

This document is not intended to define in specific detail the finite changes that would support the standards; however, great effort has been applied to identify concepts and ideas which in most cases will lead to a successful compliance with our stated standards. Inherent to the successful implementation of this deployment and standards model is the recognition of the need for a bi-annual review of the plan and adjusting or "*flexing*" it to meet the needs of the District's constituency. A plan such as this must be dynamic in nature for it to be a successful plan. Lastly, data collection must be a priority. Having accurate data will become the major determinate in the future deployment of resources. It is recognized in this body of work that a broad spectrum of data sets has led to our inability to make more comprehensive recommendations. Over the course of the next year, consistency in data collection will be priority.

In conclusion, I would like to thank those involved in this review and update and who have worked hard to produce this third version to the original Standards of Cover. This Standards of Cover reflects the changing needs of the East Fork Fire Protection District and serves as a mechanism for constantly seeking opportunities for improvement. The East Fork Fire Protection District is committed to providing the most effective services in a fiscally responsible manner and to continually evaluate our performance in the constant pursuit of improvement and firefighter safety.

Section I - Community Baselines

The term Standards of Cover is somewhat confusing to those outside of the fire service. It refers to the standards that a fire district adopts to provide response coverage to their community. It can also be called an emergency services master plan or a deployment analysis. East Fork Fire Protection District uses it to provide a snapshot in time of our service delivery model today, and with proposed data driven changes for the future. There is much diversity when you research published Standards of Covers as no two are alike, since no two jurisdictions are alike. East Fork Fire's desire to prepare this document internally without the use of a consultant is based upon the fact that only the District understands the wants, desires, and needs of our jurisdiction. We value this internal ability greatly.

The Standards of Cover will present the performance goals the District uses in which to base our actual performance. These goals are used during the planning phase to determine which apparatus, personnel, and station(s) are most effective for the given task. The standards are used during the life of the document to evaluate if we are able to meet the standards we imposed upon ourselves. Not meeting a self-imposed standard is not necessarily a negative finding, rather it provides an avenue to discuss future needs and changes.

The Standards of Cover supports community and firefighter safety by identifying the number of personnel that should arrive at each risk type to accomplish the jurisdiction's objectives safely and effectively. As with response time objective, staffing deficiencies are identified and objectives to correct become opportunities.

Multiple factors contribute to the development of a Standards of Cover, including but not limited to:

- Call Data
- Call Location
- Response Times
- Public Expectations
- Dispatching based on the closest available unit or closest forces concept
- Geography
- Physical Assets (Apparatus)
- Policy and Procedures
- National Standards and Practices
- Mutual Assistance
- Specific adoption of fire prevention regulations

Recommendations from our Standards of Cover may include:

- Determining the closest resource to the right call and in the right amount of time.
- Establishment of standards for the appropriate number of resources needed to successfully mitigate an incident.
- Establish the metrics for which the organization can measure its effectiveness in achieving success with the standards it chooses to emulate.
- Establish capital needs for the future, including both apparatus and facilities.
- Serve as a guiding document for budget development.

East Fork Fire applies these metrics to analyze and evaluate our service delivery model. This information is used to modify the current utilization and adapt to the changing needs of our jurisdiction. The Standards of Cover will present our performance goals which are measured against actual performance to the best that our data will allow. These goals are used during the planning phase to determine the most effective response to any given emergency. The standards are used to determine and manage future expectations based on whether goals are met at below or above the standard set in this document. The results can provide an opportunity to discuss future needs, support changes, or consider additional alternatives.

The Standards of Cover supports jurisdictional and firefighter safety. This is accomplished in several ways, including:

- The identification of appropriate staffing levels and incident staffing
- Station and apparatus locations
- Additional service provisions, such as technical rescue

These combined factors impact the level of community safety that is provided by the District.

Changes Since our Last Standards of Cover

Several factors have changed since the 2017 Standards of Cover document was written and adopted. These changes include:

- Newly elected Board Members.
- Increase in the number, size, and threat of wildland fires within our District.
- Drought conditions.
- Flood and storm events.
- Call volume increase.
- Housing development and population growth impacting responses.
- Changes at the Executive Level Chief Officer/Divisional Manager Positions.
- Implementation of two Fire Inspector positions.
- Change in the population demographics.
- Staffing increases with SAFER and District approved positions.
- Adding additional staff or apparatus.
- Full implementation of a “re-tooled” volunteer program that supports the logistical and water supply delivery needs.
- Loss of community-based paramedicine programs through the Mobile Outreach Safety Team with Douglas County Sheriff’s Office and the Department of Public and Behavioral Health.
- Loss of Emergency Management responsibilities and funding.
- Implementation of the Genoa Peak Fuels Crew with funding provided by NV Energy.
- Purchase of 2 new Type 6 engines.
- Purchase of 3 new Type 1 engines.
- Purchase of 1 new Type 3 engine.
- Purchase of new ALS rescues and implementation of a refurbishment process.
- Purchased of new Chief Officer vehicles.
- Updated Auto Extrication Equipment.
- Purchase and implementation of new Ice Rescue Equipment.
- Upgraded Structural PPE.
- Updated Ice Rescue equipment.

- Updated Rope Rescue equipment.
- Updated RMS reporting.
- Provided funding for employees to attend Paramedic School.
- Implementation of COVID Protocols and precautions.
- Upgrade of all handheld and several mobile radio devices.
- Adoption of specific fire regulations and codes.
- Working through a global pandemic.
- Longer term labor contract.
- Increases in Volunteer personnel, both logistical and support.

Taken as a group, the above changes reflect the District's response to the needs of the jurisdiction and to our constituents.

Assumptions

The following list represents the assumptions that are made during the development of the 2023 Standards of Cover:

- An aging population will continue to increase (currently at 31.3% at or over the age of 65) with retirements and relocation of baby boomers to our community. This aging population will cause an increase in the number of cardiac arrests, myocardial infarction, strokes, ground level falls and other geriatric related calls. The age group of 60 + accounts for 72.86% of the EMS Call Volume Nationally (U.S. Census, 2022). Our community is currently at 73% of billed EMS Calls (3,752 of 5,118 incidents 2022).
- Currently, three new Senior Living Facilities are in the planning or construction phase within the District. On average, 49% of Assisted Living Residents will visit the emergency departments at least once yearly. According to The National Library of Medicine, a division of the NIH, Nevada's risk-adjusted rate for emergency department visits is 144.3-167.2 visits per year per 100 residents. This data was from 2016 Medicare Data (NCBI 2021).
- The National and regional shortage of healthcare providers, including paramedics, continues to challenge our Districts ability to recruit paramedic level personnel.
- A regional shortage of healthcare beds will continue to rise, creating an increase in Inter Facility Transfers to other area hospitals.
- Volunteer participation has increased due to a recruiting campaign by the Fire District. Volunteer recruitment and retention and will continue to challenge our volunteer program, even with recent successes.
- As population and call volume continues to increase, an adverse effect on response times will continue under the current deployment model. This may cause the Fire District to consider an increase in staffing, modify the deployment of resources, or adjust our response time criteria.
- The District's Fuels and Fire program has an opportunity to grow pending grant opportunities and other contract options. With the adoption of the District's Community Wildland Fire Protection Plan (CWPP), Federal fuels management grants and contract opportunities now exist.

- The District will continue to apply for Local, State and Federal Grants to provide funding for required services and capital purchase.
- The District will continue to adopt and apply fire regulations as necessary and as required under NRS 474, for public and firefighter safety within the jurisdiction.
- Financial sustainability will continue to be a critical and challenging element necessary to support the Standards of Cover in the future and any changes recommended.
- Continued application of short-term loans will be necessary to meet capital needs within the organization and under a consistent method of debt service.

It is important for policy makers today, and in the future, to consider these assumptions in their decision-making processes. Making assumptions, while uncertain, are necessary when considering future service delivery model modifications and planning, which is the heart of a Standards of Cover.

Significant Incidents

The workgroup felt it important to relate recent major incidents that have occurred within the East Fork Fire Protection District jurisdiction since the last edition of the Standards of Cover. It is important to remember that major incidents do not occur in a vacuum. Other calls can occur at the same time, which further stress the response system. Each of these incidents provided significant challenges to the organization, but with each challenge came an opportunity.

- Flood Events of 2018
- Covid 19 Pandemic
- Numbers Wildland Fire July 6, 2020
- Tamarack Wildland Fire July 4, 2021
- Caldor Wildland Fire August 14, 2021
- Flood and Weather Event of 2022
- Flood event of 2023



Governance

East Fork Fire Protection District is an NRS 474 Fire District. The District was created by ordinance by way of the Douglas County Commission in April of 1981. The Douglas County Board of County Commissioners served as the Board of Fire Commissioners for the first 35 years of existence. In 2016, the Board of County Commissioners passed an ordinance which recognized and reconstituted the District under the provisions of NRS 474.010 to 474.450, thus treating the District as if it were created by election and to allow for its own independent Board of Directors. The first Board was interviewed and appointed by the Douglas County Board of Commissioners. The Board, officially appointed January 4, 2017, is now an independently and fully publicly elected body. The current Board positions have now all been publicly elected and include the following Directors:

Board of Directors



John Bellona
Secretary District 1



Barbara Griffin
District 2



Bernard Curtis
District 3

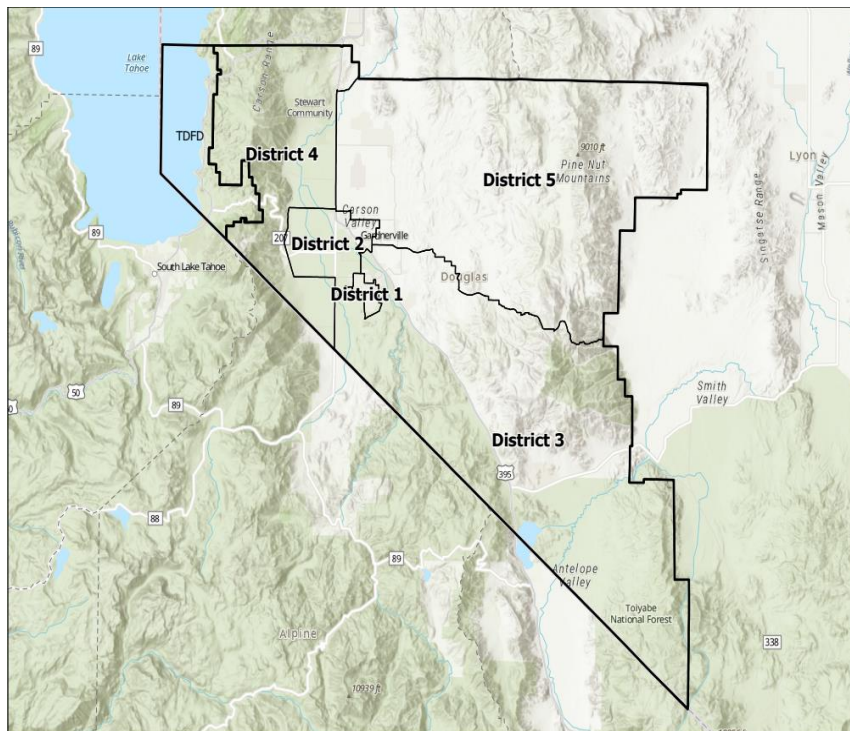


Jacques Etchegoyhen
President District 4

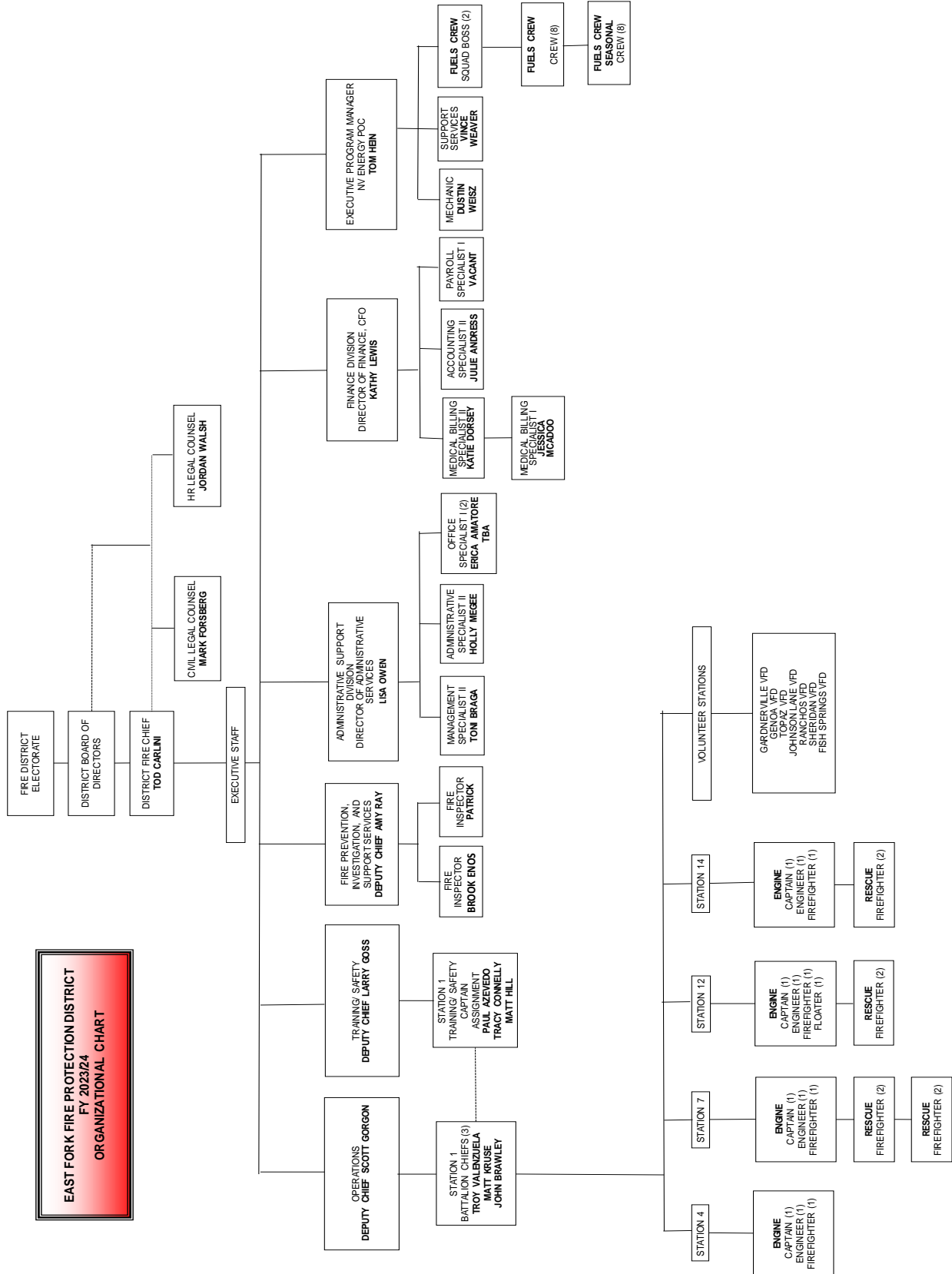


Mike Sommers
District 5

The Board provides policy and budget direction to the District Fire Chief. The District Fire Chief receives advice and counsel from the District's Executive Staff, the East Fork Professional Firefighters Association, the Volunteer Association and contracted legal counsel. The Executive Staff supports the District's mission, vision, and values. The Executive Staff includes the District Fire Chief, Deputy Fire Chief of Operations, Deputy Chief of Prevention, Deputy Chief of Training and Safety, Director of Financial Services, Director of Administrative Services, and Executive Program Manager.



ORGANIZATIONAL CHART



Legal Authority

As an NRS 474 Fire District, specific powers are provided to the Board and the District Fire Chief under state law. These activities include:

- Manage and conduct the business and affairs of the County Fire Protection District.
- Adopt and enforce all rules and regulations necessary for the administration and government of the District and for the furnishing of fire protection thereto, which may include regulations relating to fire prevention. Organize, regulate, establish, and disband fire companies, departments, or volunteer fire departments for the District.
- Make and execute, in the name of the District, all necessary contracts.
- Adopt a seal for the District to be used in the attestation of proper documents.
- Provide for the payment from the proper fund of the salaries of employees of the District, and all the debts and just claims against the District.
- Employ agents and employees for the District sufficient to maintain and operate the property acquired for the purposes of the District.
- Acquire real or personal property necessary for the purposes of the District and dispose of that property when no longer needed.
- Construct any necessary structures.
- Acquire, hold, and possess, either by donation or purchase, in the name and on behalf of the District any land or other property necessary for the purpose of the District.
- Eliminate and remove fire hazards within the District if practicable and possible, whether on private or public premises, and to that end the board may clear the public highways and private lands of dry grass, stubble, brush, rubbish, or other inflammable material in its judgment constituting a fire hazard.
- Perform all other acts necessary, proper and convenient to accomplish the purposes of NRS 474.010 to 474.450, inclusive.
- Provide emergency medical services within the Fire Protection District.
- Purchase, acquire by donation or otherwise, lease, operate and maintain ambulances whenever necessary, and may take out liability and other insurance therefor. The Board of Directors may employ trained personnel to operate those vehicles.
- Additionally, Douglas County Code 18.15.020 designates an ambulance service District within the East Fork Fire Protection District boundaries. East Fork Fire is the sole provider of any required transport for either EMS or inter-facility transfer for calls originating within the District boundaries, be they emergency or non-emergency. The code also allows East Fork Fire District Board of Directors the ability to set any and all rates necessary for the services.

Daily Staffing Levels

6 Career Fire Stations: 23 per day including a floating position (All Risk). 10 full time Fuels/Fire Management positions.

Station 4:	3 personnel
Station 7:	7 personnel
Station 14:	5 personnel
Station 12:	5 personnel plus 1 <i>“floating”</i> position if available
Station 1:	2 personnel
Station 15:	10 personnel per day year-round and an additional 8 seasonal positions May through October

Volunteer Membership Levels

The current Volunteer level is at 64 personnel, most of whom operate at the Logistical Level.

Station 2:	6 personnel
Station 3:	11 personnel
Station 5:	4 personnel
Station 6:	13 personnel
Station 7:	3 personnel
Station 8:	13 personnel
Station 9:	13 personnel
Station 10:	1 personnel

Volunteer Program

For years the Volunteer Division of East Fork Fire provided all-risk service to the community. When the Paramedic District was formed by ordinance, through Douglas County at the time, the mission of the volunteer system in the valley started to change. Over the last twenty years the increasing demands of daily life and a changing volunteer demographic have altered the volunteer service to a support and logistical role in many areas. With the constraints and cost associated with ongoing training and an older generation assuming roles in the volunteer structure, the organization continues to evaluate the everchanging role of volunteers in the District.

Today the volunteers' function is to support the logistical needs at incidents. They provide vital assistance by bringing water tenders to incidents, support structure fire response with SCBA air bottle filling and onsite firefighter rehabilitation. Volunteers respond to wildland fires on Type 3 Brush apparatus mostly as second alarm resources, given the high priority placed on water supply and the establishment of helicopter dip sites in remote locations. Volunteer personnel also receive specific assignments on wildland fire response, such as secondary structure protection, mop up, and patrol responsibilities. These functions are critical to the overall success of the incident. Under the current volunteer model, the volunteers are filling a critical need within the District and do it very well.



A recent retirement of East Fork Volunteers: 109 years of combined experience

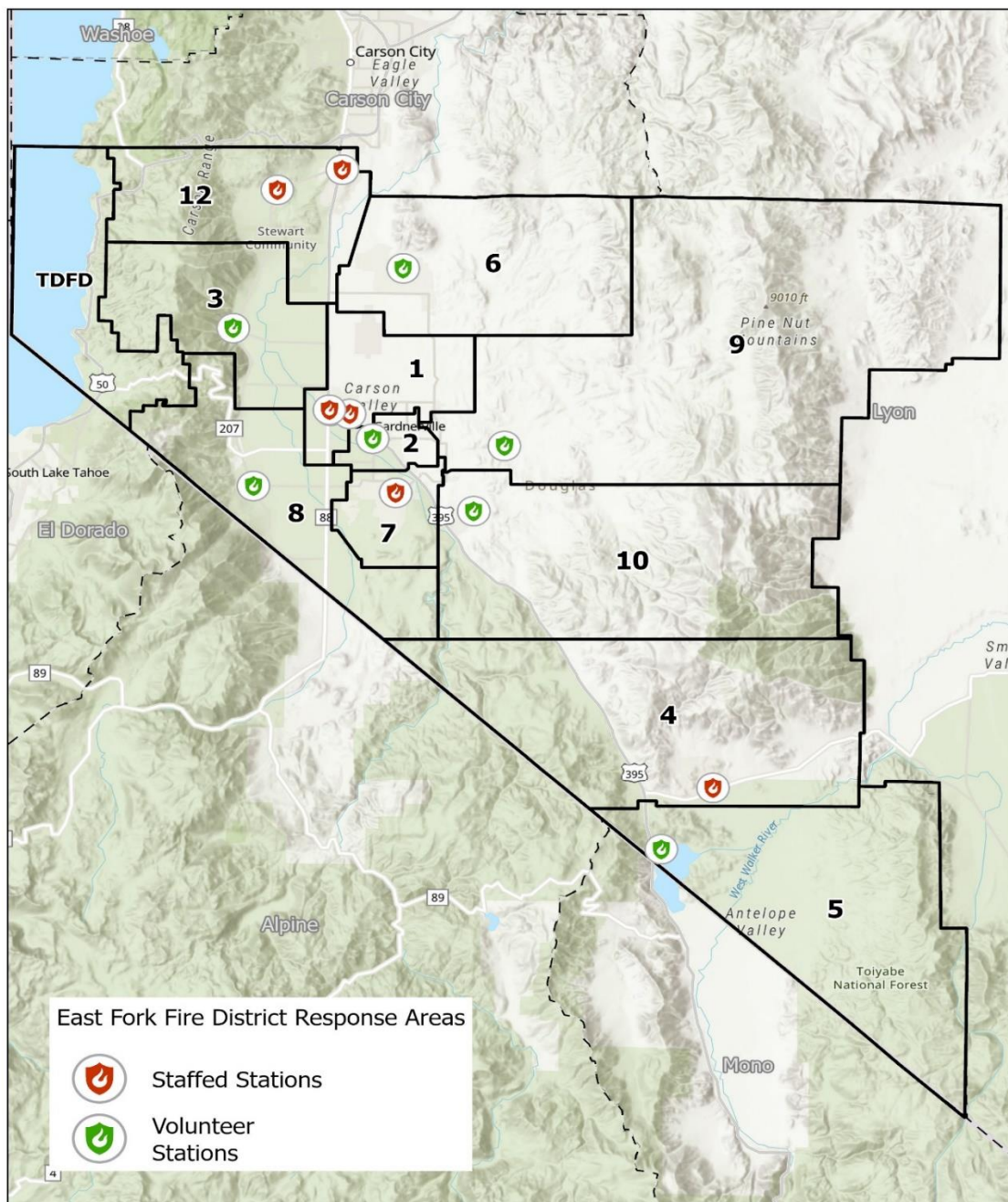
Station Locations

Staffed Stations

East Fork Fire Protection District staffs six (6) stations with full time crews. Below you will find a location map of each station and the response District it is located in. It is important to keep in mind that every station covers multiple response Districts due to the geographical challenges we face in our jurisdiction.

Volunteer Stations

East Fork Fire Protection District has eight (8) volunteer stations. Due to changes in the population and retirements of volunteer members, volunteer personnel may respond from several stations depending on their location, place of work, or the location of their residence when the call is received.



Section II - Risk Assessment

A significant component of the overall risk assessment is vested in the demographic profile of the jurisdiction. The East Fork Fire Protection District provides service to 95% of Douglas County.

Douglas County Demographics

Demographics:

- Douglas County Population 2022: 49,870
- Increase in population since 2010: 5.93%
- Persons under 5 years: 3.4%
- Persons under 18 years: 15.5%
- Persons 65 years and over: 31.3%

Source: 2020 U.S. Census

County Area:

- Population per square mile: 69.7
- Douglas County Square Miles: 751
- East Fork Fire Protection District Jurisdiction: 694

Source: 2020 U.S. Census

Douglas County Housing:

- Housing Units: 25,367
 - 75% are single family detached units
 - 12% are single family attached units
 - 6% are multi-family residential units
 - 7% are manufactured housing
- Households: 20,911
- Owner-occupied housing rate: 76.2%
- Persons per household: 2.34

Building Permit History

- Building Permits 2018:
 - Single Family: 235
 - Manufactured Homes: 0
 - Duplex: 2
 - Multi-Family: 13
- Building Permits 2019:
 - Single Family: 154
 - Manufactured Homes: 2
 - Duplex: 6
 - Multi-Family: 27

Source: 2020 Douglas County Master Plan

- Building Permits 2020:
 - Single Family: 154
 - Manufactured Homes: 2
 - Duplex: 6
 - Multi-Family: 27

Source: Douglas County Community Development
- Building Permits 2021:
 - Single Family: 154
 - Manufactured Homes: 2
 - Duplex: 6
 - Multi-Family: 27

Source: Douglas County Community Development
- Building Permits 2022:
 - Single Family: 154
 - Manufactured Homes: 2
 - Duplex: 6
 - Multi-Family: 27

Source: Douglas County Community Development


Douglas County Businesses

- Total Employer Establishments: 1,652
 - Total Employment: 17,322
- Source: 2020 U.S. Census*

Potential Projects/Development Based on the following Table, Douglas County estimates the possible construction of 1,714 single family structures could be built in future years.

Table G5 - Douglas County PROJECTS List (2020)

Date: 10/31/2020	Total Remaining Lots / Units Approved =		4336	7482
Valley Total VESTED Units Approved =			5552	
Valley Total PROJECT (Sub/PD/SP) Units Approved =			1930	
Vested Lots Remaining=			2542	Tahoe Approved Units = 195
Projects Lots Remaining =			1794	Tahoe Units Remaining = 145



DOUGLAS COUNTY
EAST TOWNSHIP • EAST TOWNSHIP

PROJECT - Subdivision/PUD/SP (approved after 2007 Growth Ordinance)						
Community Area	Project Name	Year Approved	Number of units approved	Lots recorded thru 9-2020	Permits Allocated thru 10-2020	Lots Remaining 10-2020
East Valley	Pinion Ridge (LDA 01-083) Rec 2003	2001	43	43	2	41
Fish Springs	Hunters Point (LDA 17-027)	2018	11	11	2	9
Gardnerville	Hathoot/Peri (55 older)	2019	158		0	158
	Residence 1861 (MFR)	2018	81		0	81
	Thoroughbred Crossing (MFR-LDA 18-005) Ex9/20	2018	20		0	20
	Stahl MUC (Design Rev 15-22 units) (ex 11/20)	2017	15		0	15
	Chapel Crest (DP 19-0260) EXP 9-11-23	2019	8		0	8
Gardnerville Ranchos	Holstein Farms LLC (LDA 18-007) (exp 9/6/22)	2018	10		0	10
	Rain Shadow #2 (PD 04-002-2) Rec 2017	2016	11	11	9	2
	Rain Shadow #3 (PD 04-002-2) Rec 2018	2016	16	16	13	3
	Rancho Sierra DP 19-054	2020	239		0	239
	Suncrest (DP18-0167)	2018	8	8	7	1
Genoa	Genoa Lakes North (LDA 17-0008/PD 17-001)	2017	54	11	8	46
	Mountain Meadows (patio style) EXP 11-20-22	2018	75		6	69
Indian Hill/Jacks Valley	Big George (NDC-SP) SF	2020	179		0	179
	Riverwood (NDC-SP) SF	2020	119		0	119
	Sunridge #3 (PD 16-001/LDA 16-007 ex 7-7-2020)	2016	21		0	21
	Valley Knolls (PD 17-002 & LDA 17-028) SFR	2018	178		0	178
	Willow Hills (DP 18-0391)	2019	16		0	16
	JC Valley Knolls (DP 18-0244) 32 Triplex Bldgs	2018	96		0	96
Johnson Lane	Schneider Ranch Sub (Freedom) (LDA 17-022)	2017	16		8	8
	Cormorant Holdings LLC (DP18-0296)(ex 1/23)	2019	7		0	7
	Parkhaven (Armill) EXP 10-9-22	2018	25		0	25
Minden	CTH Minden Senior Living (DA 17-001) 90/60	2017	150		0	150
	La Costa at MV #3 (PD 02-004-2/LDA 16-001)	2002	30	30	29	1
	La Costa at MV #4 (PD 02-004-2) (exp 4-7-24)	2002	20		0	20
	Muckland #4 (LDA 17-033)	2010	14	14	6	8
	And Away They Go (This is the excess from Vested above due to amendments to Splan)	2018 -Amd	26		0	26
Ruhenstroth	Townhomes at Monterra (PH3) (DP18-0200)	2002 Mod2018	46	46	46	0
	Corley Ranches (55 older) SPlan (20yr) MUC: 12 units; Active living 42 units; Cottage Homes 136 units; Ranch homes 60 units	2015	238		0	238
Total - Valley PROJECT Units Allocated / Remaining					136	1794
Total -Valley PROJECT (Sub/PD/SP) - Units Approved / Recorded			1930	190		
Tahoe	Tahoe Beach Club (LDA 15-026 & 17-020)	2015	143	46	44	99
	Huntinaer (BF 10-0853)	2010	0	0	0	0
	Sierra Colina LLC (PD 15-002) (PD 15-002-1)(44 res units)	2015	44	44	6	38
Totals - Lake Tahoe Permits Issued / Remaining					50	145
Total Lake Tahoe Units Approved / Recorded			195	90		



Source: Douglas County Community Development (2020)

Method Chosen to Describe Values at Risk

Measuring community risks can be a multifaceted process, but it helps to understand by applying a simple three-part structure:

- Probability (likelihood) of an incident occurring
- Consequence (magnitude) of an incident to the community
- Impact of an incident on the District's response system, including mutual assistance

Probability

Probability is associated with the frequency of an incident type. Using our Computer-Aided Dispatch (CAD) data and the demographic, social and physical characteristics of the census tracts, data from Douglas County Community Development, and where those incidents occurred, we can conduct a statistical regression to help forecast the future number of incidents.

Consequence

Consequence is the measure of the implication of an incident type occurrence. To assess consequence, the Fire District must first identify, categorize, and prioritize community hazards. The consequences of an emergency incident result from a combination of the risk level of the hazard, the duration and nature of the event, and the response interventions.

Consequences are divided into four categories:

- Civilian and firefighter injury or loss of life
- Property damage or loss
- Critical infrastructure damage or loss
- Environmental damage or loss

Impact

Impact is a measure that describes the effects of multiple simultaneous incidents on the Fire District. Impact defines a fire district's ability to provide ongoing services to the remaining areas of a community considering frequent activity in known high-volume demand areas. Fire districts must have a plan in place to relocate response resources to ensure the best coverage possible considering temporary reduction in resource availability and the application of mutual assistance as necessary. In part, this is managed under a formal Resource Management Plan, which the District has established.

Community Risk Assessment

Usually, the effort of a fire district community risk assessment was the classification of fire hazards and planning an appropriate suppression response force to mitigate emergencies. Currently, hazard or risk assessment goes well beyond the fire problem to emergency medical and other emergencies. The COVID 19 Pandemic influenced a much broader perspective beyond fire related emergencies. This all-hazard method offers the opportunity to have a much bigger impact on life safety and property loss. Altogether, it makes the process of conducting a community risk assessment fundamentally more complex. This was especially true when the Fire District was also serving as the Emergency Management agency for Douglas County under contract. On June 20, 2023, the District's contract for that service ended.



Section III - Services We Provide

Emergency Medical Services (EMS)

East Fork Fire Protection District provides Advanced Life Support (ALS) care to the residents and visitors of the District with four (4) ALS staffed Engines and four (4) ALS staffed Ambulances (Rescues). Apparatus is considered “ALS” when there is at least one Paramedic on board and the apparatus is licensed as ALS through the State of Nevada. Paramedics are the highest level of EMS care available from the District. Paramedics can respond to and treat any EMS call that is received, including, but not limited to: cardiac arrest, respiratory arrest, major hemorrhage, major trauma, choking, strokes and heart attacks.

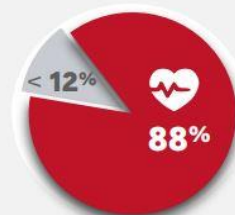
The District also provides lower levels of care via EMT-Basic and EMT-Intermediate/Firefighters. EMTs provide care to patients who do not require advanced care. Some examples of this include low blood sugar, wound bandaging, and non-emergent illnesses. Additionally, East Fork Fire provides Inter Facility Transports (IFT) for patients who require transport from one hospital or care facility to another when a higher level of care is needed. Included in these transports from hospitals are the transports of patients back home if there is a medical or physical requirement that does not allow for conventional transportation.

Below, the reader can find information to better understand the leading cause of death in the United States. Keep in mind that quick response times by trained personnel provide the best outcome to these situations.

- **Sudden cardiac arrest is a leading cause of death.**
- Some **350,000 cases** happen each year outside of a hospital, and the survival rate is less than 12 percent.
- **CPR can double or triple the chances of survival.**
- About **70% of cardiac arrests happen in homes**, and many are not prepared for a cardiac emergency.

CPR yields 2x to 3x better odds for survival which are currently at < 12%.

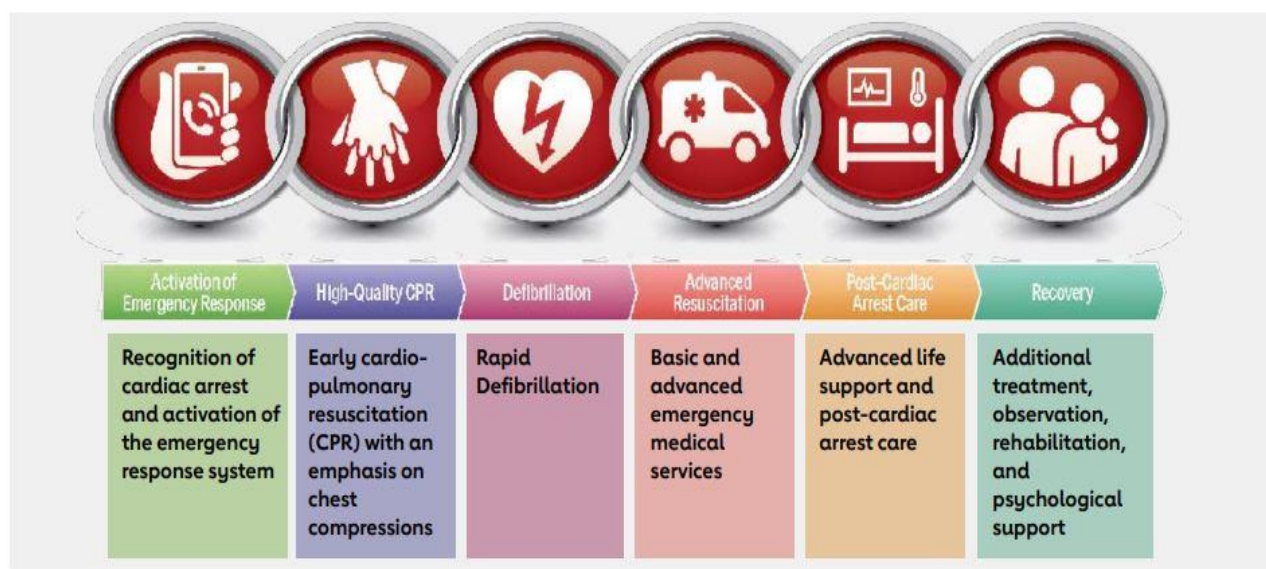
70% happen in homes, and many people are unprepared.



2021 MAR OHSCA Disparities Toolkit – AHA

Secondary to the Cardiac event, several steps must be taken to ensure an appropriate and rapid response. Below, the AHA has laid out their 6-step chain of survival. Of these steps are the Fire District is responsible for providing BLS and ALS care during the cardiac event and ALS care in the post-cardiac arrest setting. Each of the District's Type 1 Fire Engines and Ambulances are staffed with at least one Paramedic and all the equipment necessary to provide care in the event of a cardiac arrest. Additionally, secondary to successful treatment, transport is provided to the closest Emergency Room.

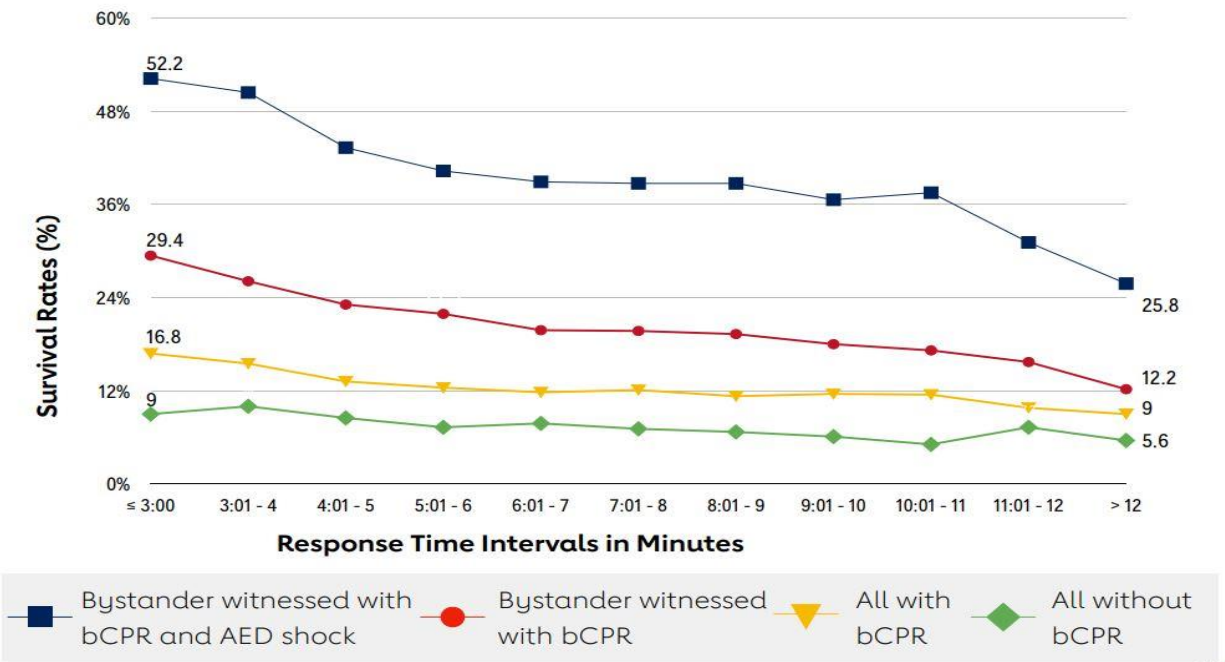
The 6 Links in the Out-of-Hospital Chain of Survival are:



2021 MAR OHSCA Disparities Toolkit – AHA

One of the most emphasized topics from the AHA is that successful outcomes in treatment of cardiac arrests is directly linked to early CPR, defibrillation, and ALS care. As such, all known cardiac arrests are dispatched as a “Cardiac Echo” which notifies the crews that a subject does not have either a detectable pulse or respirations per the reporting party on scene. This allows crews to prepare for the event while enroute. Additionally, it ensures that all apparatus responding to the call respond Code 3 (lights and sirens) to the call. This allows for the most rapid response available. Below, the AHA has created a graph that demonstrates the importance of rapid recognition, CPR, defibrillation, and ALS care.

Acting Quickly Saves Lives



2021 MAR OHSCA Disparities Toolkit – AHA

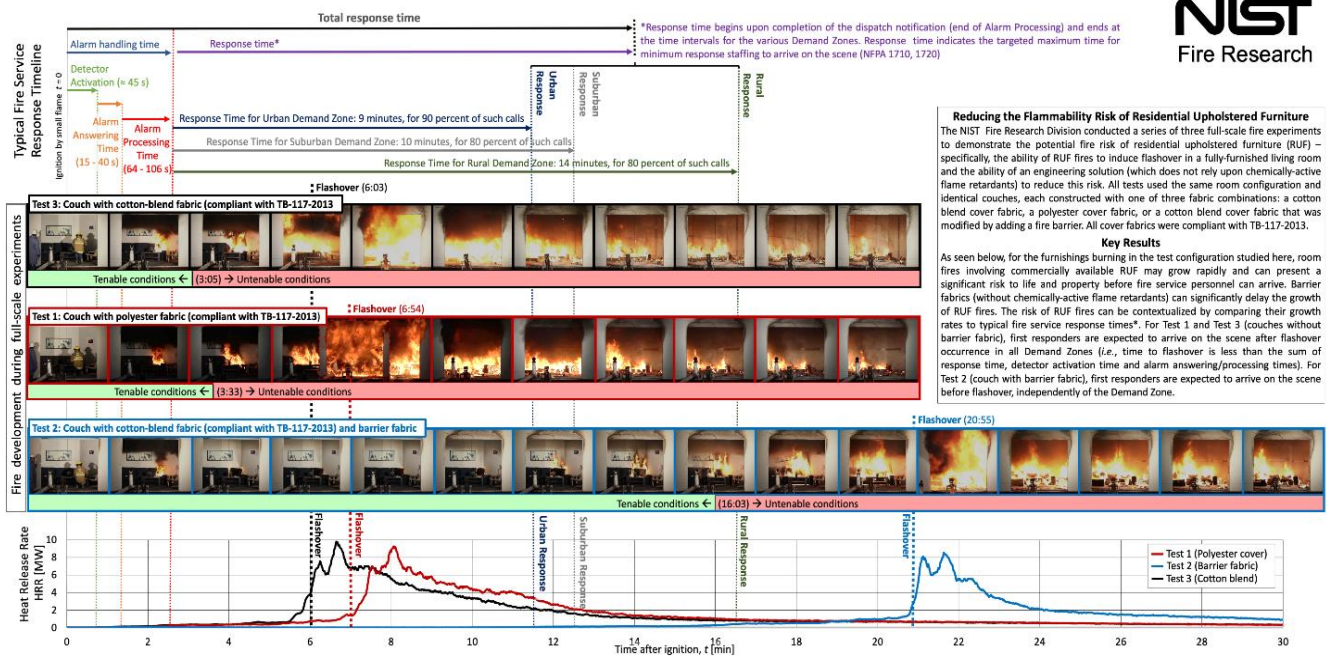
In addition to cardiac events, East Fork Fire provides ALS care via Paramedics to all EMS calls. Apparatus within the District are equipped with supplies to effectively treat a wide array of calls. In Section V - Setting Service Level Objectives, the reader can find information on how East Fork Fire sets time standards in an effort to improve the outcome of all emergency calls.

Structural Firefighting

Structural Fire Fighting is a broad discipline that demands adaptive insights, management, and training. Although apparatus, equipment, and tactics have evolved at a rapid rate, so has the types of structure fires that firefighters face today. To keep building costs lower, many manufacturers have sourced materials that are synthetic or of cheaper quality. Many of these materials give off highly toxic smoke at very low temperatures and combust more readily than older buildings and materials.

In a study performed by Underwriter Laboratories, a modern room with modern products was fully engulfed in flames within three minutes. The same room furnished with products 50 years of age took 30 minutes to become fully engulfed in flames. This change in time from the incipient stage to fully developed is of concern to the District as many of the homes within the District are positioned far from a fire station.

Below the reader can find information to better understand the different stages in which responders may find a fire.



Fire Growth

The Stages of Fire Growth

Incipient – This first stage begins when heat, oxygen and a fuel source combine and have a chemical reaction resulting in fire. This is also known as “ignition” and is usually represented by a very small fire which often (and hopefully) goes out on its own, before the following stages are reached. Recognizing a fire in this stage provides your best chance at suppression or escape. Heat and smoke production are very light at this stage.

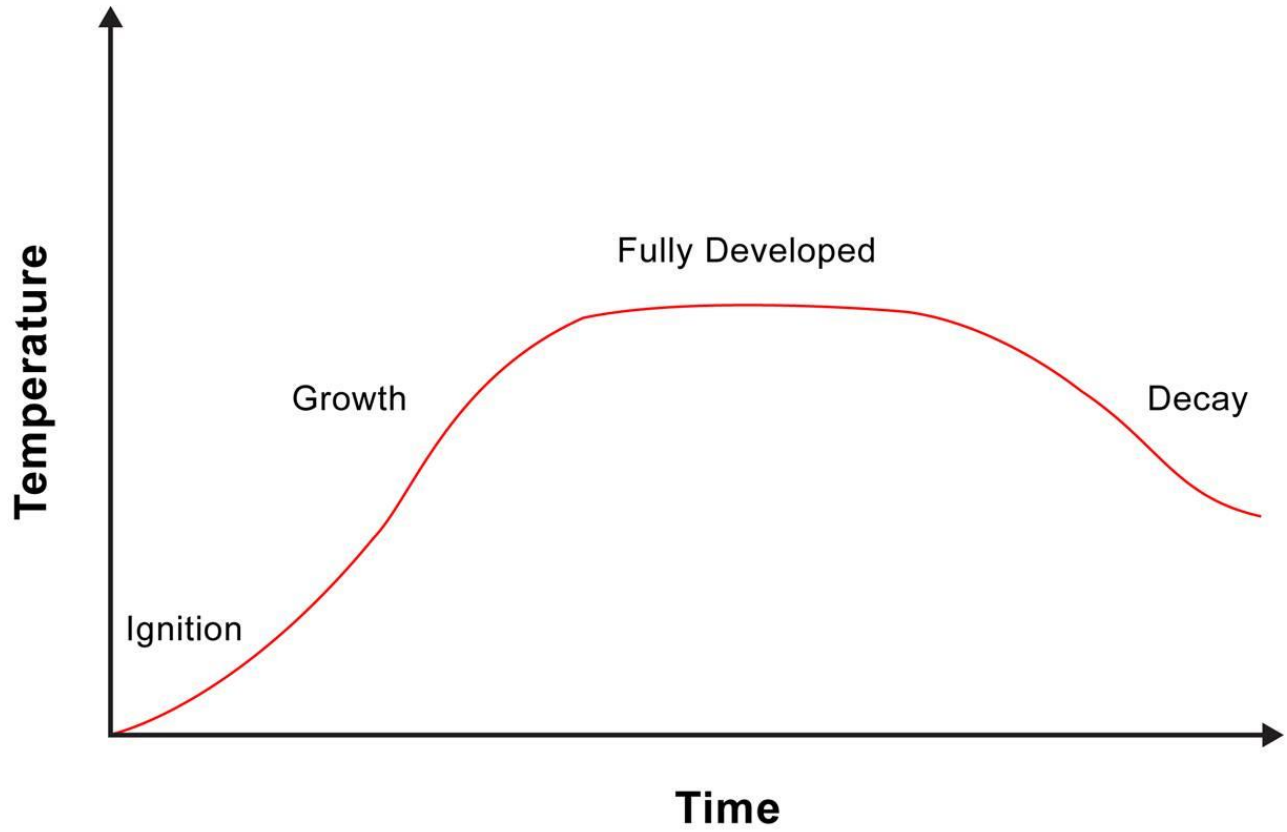
Growth – The growth stage is where the structure’s fire load and oxygen are used as fuel for the fire. There are numerous factors affecting the growth stage, including where the fire started, what combustibles are near it, ceiling height and the potential for “thermal layering”. It is during this shortest of the four stages when a deadly “flashover” can occur potentially trapping, injuring, or killing firefighters. Prior to a flashover occurring, the fire gives a warning of “roll-over,” when the super-heated gases at ceiling level ignite. Firefighters can reduce the chance of flashover by cooling these overhead gases when a rollover is visible. Flashover occurs when all the contents of the room reach their ignition point and ignite simultaneously. Firefighters have the best chance of surviving if within 10-feet of a door as this is the distance they can crawl to escape if a flashover is recognized late.

Fully Developed – When the growth stage has reached its maximum level and all combustible materials have been ignited, a fire is considered fully developed. This is the hottest phase of a fire and the most dangerous for anybody trapped within.

Decay – Usually the longest stage of a fire, the decay stage is characterized by a significant decrease in oxygen or fuel, putting an end to the fire. Increased levels of carbon monoxide occur during this phase. Two common dangers during this stage are: the existence of non-flaming combustibles, which can potentially start a new fire if not fully extinguished; and the occurrence of a back-draft situation when oxygen is reintroduced to a volatile, confined space.

Graph of heat release and fire growth

NFPA 1710



Occupant Survival Expectations

Residential Structure Fire Casualties (Per 1000 Fires)-5.7 deaths and 26.8 injuries

According to the most recent data obtained from the United States Fire Administration, the fire death rate trend for adults over 65 years of age has increased by 3% from 2011 to 2020. This makes them the highest death rate for individuals in fires. As referenced in Section I of this document, it is noted that 31.3% of the citizens the Fire District services are in this age range.

The concept of an occupant survival profile rests on several different factors and not limited to the following:

- Adoption with enforcement of latest fire and building codes, including residential fire sprinklers
- Type of construction
- Age of construction
- Engineered safety systems (sprinklers, fire alarms, etc.)
- Age of occupant
- Functional and access needs of the occupant (wheelchair bound, dementia, etc.)
- Distance from a fire station
- Water supply (hydrants or water tenders)
- Access concerns: road conditions, road access, weather conditions

The West Coast generally fairs better than the East Coast in terms of occupant survivability due to newer age of construction, smaller population density in the structure, and better compliance with the fire/building codes due to a lack for “*grandfathering*” need by age. The East Coast, therefore, normally has a higher number of firefighters assigned to respond to fires.

The East Fork Fire Protection District is challenged by the water supply issues and geographical distances challenging our ability to quickly traverse our District. We lack an addressing and street naming convention. There are a limited number of alternate roadways, and the quality of the roads affect apparatus speed. Our water supply issues have decreased from our last Standards of Cover but still exist in areas where large structures are built. These areas require the use of water tenders to provide the water, once again a main service provided by our volunteer forces.

Wildland Fire

East Fork Fire looks at two types of wildland fires: The non-interface wildland fires and wildland urban interface incidents.

Non-Interface Wildland Fire

While 67.9% of our District encompasses federal lands, these lands are interspersed with privately owned land. Unlike some other Nevada fire districts, our enabling legislation did not carve out the federal land. These two items make East Fork Fire a responder to wildland fires until ownership is determined and the responsible agency assumes control and responsibility for the incident. Due to intermix of ownership, most incidents are managed under unified command. East Fork Fire has a significant history of wildland fires throughout the District with the highest concentration being in the east and southern most locations of the District. The threat of wildland fires within the District is great due to response distance, fuel conditions, the presence of summer thunderstorms, and the human factor.

Wildland Urban Interface Fire

The wildland urban interface (WUI) fire threat for many informal communities within East Fork is extremely high. These areas are where wildland fires burn in or towards residential neighborhoods that then involve the structures, as well as the vegetation as fuel. The vast majority of wildfire incidents that East Fork Fire responds to are wildland urban interface fires.

Airport Fire and Rescue

Minden Tahoe Airport, an uncontrolled airport, is operated by a private contractor, representing Douglas County. Uncontrolled means our airport does not have a tower to control air traffic. The airport serves gliders, recreational pilots, and commercial companies. The aircraft run the range from hot air balloons, high altitude gliders, prop planes and limited commercial jet aircraft. The airfield is used by Federal contractors for wildland firefighting for both rotary and fixed wing aircraft. The airfield can be used as an air tanker base where Small Engine Air Tanker (SEAT's) mobile base support is provided as needed. At one time the airport served as a regional large air tanker base.





East Fork Fire must be prepared for each of these aircraft for an on the field emergency and off the field emergency. Minden Tahoe Airport is also the secondary landing facility for the Reno Tahoe Airport should an aircraft not be able to make it to Reno, including large commercial passenger jets.

Hazardous Materials Response

Hazardous materials are chemicals and materials that pose a danger to the public, property, or the environment once they improperly exit their containers. While East Fork Fire does not traditionally respond to many “hazmat” calls, we do have great potential given some of the occupancies and the interstate highway that runs through the heart of our jurisdiction.

East Fork Fire is a member of the Quad County Hazmat Response Team (Carson City, Central Lyon County, Storey County). This enables us to field a team to make entry into life threatening incidents involving hazardous materials without the cost of staffing and maintaining a stand-alone team. The regionalization of this response need has served very well for over 30 years now. East Fork Fire was a founding member of this team.



Technical Rescue

The District provides several types of emergency response which are identified by NFPA 1670 as Technical Rescue. Some technical rescue disciplines have been delegated to the Douglas County Sheriff's Search and Rescue Division. In other cases, some are a shared level of service.

Auto Extrication

The most predominant place we enter the technical rescue field is on motor vehicle collisions. Our community has many high-speed routes and intersections. Many of these are known to be areas that have frequent high velocity motor vehicle collisions that require the use of tools and expertise to extricate patients from their vehicles thus creating a case for "technical rescue."



Water Rescue

Static Water Rescue

East Fork Fire has a rescue boat at Topaz Lake, in coordination with the Douglas County Sheriff's Office, for several years. Our personnel are trained and equipped for its use and application on the lake. The extent of our static water rescues exists year-round due to a fishing season that runs from January to October and ice conditions that exist on smaller lakes and ponds in the winter months.

Swift Water Rescue

Seasonally our rivers fill due to winter snow melt in the spring through early summer. East Fork Fire, per the Nevada Revised Statute (NRS), relies on the Douglas County Search and Rescue (SAR) to respond to swift water incidents.



Ice Rescue



In planning for the worst-case scenario when exercising an ice rescue, a fire department team will have the most successful outcome when the team properly plans and practices for an ice rescue given their known target hazards within their community.

Working through the extremely dynamic environment that is ice rescue, rescuers (and commanders) must overcome complacency, misunderstandings of equipment/techniques and the environment. The responding agency must adjust on the fly, as we always do in the fire service, which gives the person who fell through the ice the greatest chance of a successful rescue while keeping the first responders safe.

Rope Rescue

East Fork Fire has bolstered its rope rescue capabilities in the past few years with the addition of new equipment. Efforts have been made to increase training and competency of all personnel to low angle rope rescue scenarios that we are likely to encounter on Kingsbury Grade, Highway 395, and mutual aid into Alpine County. East Fork Fire can provide operational response to most rope rescue incidents within our response areas.

Rope Rescue: 15-29 degrees is considered low angle. 30-50 degrees is steep angle. Anything above 50 degrees is high angle.

Low angle

Terrain will determine the need and the amount of rope support that is required for low angle rescues. Is it muddy? Are there loose rocks or other debris that would cause poor or slippery footing? How many rescuers are needed to transport the victim and stretcher to safety?

Steep Angle

The condition of the terrain will determine the level of technical expertise required to perform steep angle rescues safely. Steep angle operations are the highest risk category, given rock fall and the fact that the systems are often overloaded by having too many rescuers on the system. Rescuers are also fully dependent on the system for upward travel in steep angle situations.

High Angle Rescue

High Angle Rescue is considered to be terrain that has a slope angle of 50 degrees and higher. Rescuers are totally dependent upon the ropes used to keep them and the victims from falling and to gain access to an egress from the rescue location.



Trench Rescue

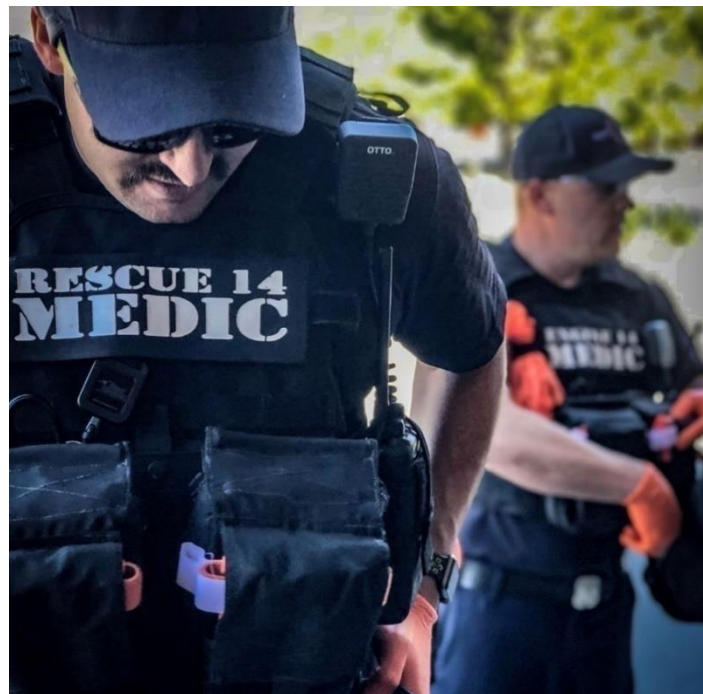
Trench rescue is a specialized form of rescue, a subset of confined space rescue. Trench rescue involves shoring up the sides of a trench and digging a trapped worker out of a collapsed ditch. Trench rescue is one of the most dangerous rescue operations to complete. We rely on the Carson City Fire Department for technical assistance and support in this regard. East Fork Fire personnel are trained to the awareness level only.

Confined Space Rescue

East Fork Fire provides confined space rescue at the awareness level only. Should we experience a confined space rescue, mutual aid from Carson City Fire Department and Yerington/Mason Valley Fire would be necessary.

Active Shooter/Hostile Event Response

We are fortunate to have a good working relationship with our local sheriff's office and firefighters with significant military background in the active shooter arena. East Fork Fire has partnered with the Douglas County Sheriff's Office to provide for rescue teams of firefighters to accompany Deputy Sheriffs into hazardous situations to provide emergency medical services. East Fork Fire has a procedure in place along with the necessary equipment for these activities and training is provided so every employee has the same base knowledge.



Section IV - Critical Task Capability of District

East Fork Fire is considered an “all risk” or “all hazard” agency which currently includes our response to:

- Structure fires
- Wildland fires
- Advanced Life Support EMS incidents
- Aircraft fire and rescue incidents
- Hazardous Materials Incidents
- Limited Technical Rescue incidents

When establishing standards for staffing and emergency response, a few national standards are used to establish a baseline to make comparisons to. As noted in our previous Standards of Cover, the national standards we have considered are:

- Insurance Service Office/Commercial Risk Services, Inc. (ISO)
- 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.
- 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.

Insurance Service Office/Commercial Risk Services Inc. (ISO) provides, through their Fire Suppression Rating Schedule, a tool for the insurance industry to measure quantitatively the major elements of a community's fire suppression system. Measurements for these elements are then developed into a Public Protection Classification number on a relative scale of 1 to 10. A Public Protection Class is an important number used by the insurance industry to determine fire insurance premiums for both commercial and residential property. Generally, citizens can expect to pay lower property insurance premiums when their community achieves an improved Public Protection Classification. The East Fork Fire Protection District experienced this within the last ten years with a reduction in its Public Protection Classification to a Class 3 for the almost 85% of the District from a Class 6/10.

The ISO Fire Suppression Rating Schedule states that in addition to numerous other factors taken into consideration, *"The built-upon area of the community should have a first-due engine company within 1.5 miles and a ladder-service company within 2.5 miles."* Travel distance is measured along travel routes as the fire apparatus responds to a fire site. Many conditions exist that can lead to conflicting objectives in locating fire stations, apparatus, and personnel such as: construction and occupancy hazards, population density, disparities between the number and severity of incidents in different areas, and characteristic differences between commercial and residential properties, among others. For these reasons, many fire service leaders feel that response time to a fire incident is more important than mileage from a fire station to a fire site.

With respect to personnel staffing measures, the ISO Fire Suppression Rating Schedule provides a complex rating format based on the average number of firefighters available on duty for career fire departments, and the average number of firefighters responding to building fires for volunteer fire departments. Actual average manning for volunteer fire departments is divided by 3 to account for a delayed response time from the fire station or for assembling at the fire scene. In other words, ISO considers that it requires three (3) volunteers to equal one (1) career employee. The 3 to 1 ratio has been included in the ISO grading for years.

ISO gives credit for the staffing levels and is open ended, meaning there is no maximum number. For career personnel, the total number of members on duty with companies is taken as the yearly average. ISO defines the need for 12 personnel for each engine and truck and 6 for each service company.

East Fork Fire can count the volunteer engines for pumping credits and for locations, but since we don't have 36 volunteers (3 to 1) at each station, we do not get credit for the staffing of the apparatus, however, credit is provided for apparatus and stations.

The calculation becomes complicated in as much as ISO not only considers staffing but also water supplies, fire flow, and building height to determine the number and type of apparatus. If an organization is unable to meet the requirements, ISO applies a "divergent" value to the capability, meaning a loss of points for a failure to meet their minimum standard.

For each occupancy or group of occupancies, you can calculate the needed manpower, but that is not feasible.

The District has had no changes in its ISO rating since the last Standards of Cover. In fact, we are past due for a new evaluation.

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 provides for a different method of determining staffing and response times.

NFPA 1720 is tied to population density:

Demand Zone	Demographics	Minimum Staff	Response Time	Meets Objective
Urban area	>1,000 People/mi ²	15	9	90%
Suburban area	500-1,000 people/mi ²	10	10	80%
Rural area	<500 people/mi ²	6	14	80%
Remote area	Travel Distance >8 m	4	Directly dependent on travel distance	90%
Special Risks	Determined by AHJ	Determined by AHD based on risk	Determined by AHJ	90%

Retooling of the Volunteer Program has allowed the District to field more volunteers who can respond water tenders and assisting in support services on scene. Retaining and maintaining many volunteers who are certified as all-risk providers would prove difficult given the current demographic of the District and the time commitments that would be required of volunteer personnel. NFPA 1720 does not meet the needs of the current service delivery model.

NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments. NFPA 1710 is the most applicable standard relative to our current and future service delivery model.

Some of the key changes that were revised in NFPA 1710, 2020 edition, that are relevant to the District's staffing levels, geographical nature, and staffing include:

- 3.3.13 Career Fire Department—A fire department that utilizes full-time or full-time-equivalent (FTE) station-based personnel immediately available to comprise at least 50% of an initial full-alarm assignment.
 - This is significant because the District's First Alarm response consists of nearly all the on-duty staff.
- 3.3.28 First-Due Response Zone—The geographic area surrounding a fire station in which a company from that station is projected to be the first to arrive on the scene of an incident.
 - This is new language. Earlier versions of the standard didn't address the issue by response District, only by travel time to incidents.
 - This is also relevant to the District as the removal of a travel time greatly increases the "*First-Due Response Zone*" of each available company.
 - Considering this standard, available companies may be responsible for first alarm response to multiple response Districts.
- 3.3.32 Geographical Isolation—A first-due response zone or jurisdiction with staffed resources where over 80% of the response area is outside of a 10-minute travel time from the next closest staffed suppression apparatus.
 - Much of the District falls under this new definition.
- 3.3.33 Geographical Restriction—A defined condition, measure, or infrastructure design that limits response and/or results in predictable response delays to certain portions of the jurisdiction.
 - The District is challenged in many response areas by predictable geographical delays.

NFPA 1710 continues to evolve and provide a standard for the District to continually reevaluate its performance standards and operations. Although not every aspect of the standard is feasible, it gives the District a goal to continue striving towards.



KEY REQUIREMENTS FOR EMERGENCY SERVICES IN NFPA 1710

The minimum requirements for provision of emergency services by career fire departments can be found in NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*.

NFPA 1710 addresses the structure and operation of organizations providing such services, which include fire suppression and other assigned emergency response responsibilities such as EMS and special operations.

The requirements intend to provide effective, efficient, and safe protective services to help prevent fires, reduce risk to lives and property, deal with incidents that occur, and help prepare for anticipated incidents.

The requirements are listed in NFPA 1710 for fire department service deployment based on the type of occupancy, along with the appropriate response staffing levels for each. The minimum staffing level for each occupancy is listed below. For the full breakdown of staffing requirements by position, refer to the subsections specific to each occupancy in 5.2.4.

KEY REQUIREMENTS



Occupancy Type: Single-Family Dwelling
Deployment: Minimum of 16 members or 17 if aerial device is used

The initial full alarm assignment to a structure fire in a typical 2000 ft² (186 m²), two-story, single-family dwelling without a basement and with no exposures must provide for a minimum of 16 members (17 if an aerial device is used).



Occupancy Type: Open-Air Strip Mall
Deployment: Minimum of 27 members or 28 if aerial device is used

The initial full alarm assignment to a structure fire in a typical open-air strip shopping center ranging from 13,000 ft² to 196,000 ft² (1203 m² to 18,209 m²) in size must provide for a minimum of 27 members (28 if an aerial device is used).



Occupancy Type: Garden-Style Apartment
Deployment: Minimum of 27 members or 28 if aerial device is used

The initial full alarm assignment to a structure fire in a typical 1200 ft² (111 m²) apartment within a three-story, garden-style apartment building must provide for a minimum of 27 members (28 if an aerial device is used).



Occupancy Type: High-Rise
Deployment: Minimum of 42 members or 43 if building is equipped with fire pump

The initial full alarm assignment to a fire in a building with the highest floor greater than 75 ft (23 m) above the lowest level of fire department vehicle access must provide for a minimum of 42 members (43 if the building is equipped with a fire pump).



FACT SHEET

KEY REQUIREMENTS FOR EMERGENCY SERVICES IN NFPA 1710 *CONTINUED*

ADDITIONAL REQUIREMENTS

Fire departments that respond to fires in occupancies that present hazards greater than those found in 5.2.4 must deploy additional resources on the initial alarm as described in 5.2.4.6.

Even though fireground staffing levels have changed, NFPA 1710 continues to require that engine companies be staffed with a minimum of four on-duty members, as stated in 5.2.3. In addition, 5.2.2.2.1 requires that the fire department identify minimum company staffing levels as necessary to meet the deployment criteria required in 5.2.4 to ensure that a sufficient number of members are assigned, on duty, and available to safely and effectively respond with each company.

Additional changes to the 2020 edition of the standard include an update to the definition for *career fire department* and a clarification of how to determine if the department would fall under either NFPA 1710 or 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*.

Several new definitions relating to geographic areas based on population density have been added and the number of responders needed based on the type of incident and tasks to accomplish has been included. New requirements have been added for mobile water supply tankers/tenders and deployment and training of incident safety officers. Also, material on wildland fire suppression has been expanded.

RESPONSE OBJECTIVES

Documenting the benchmarks and response objectives that make up NFPA 1710 is crucial to capturing and tracking data that would be helpful in ensuring the necessary allocation of resources.

Benchmarks	Response Objectives
Alarm answer	15 sec 95% of the time or 40 sec 99% of the time
Alarm processing	64 sec 95% of the time or 106 sec 99% of the time
Turnout - Fire	80 sec
Turnout - EMS	60 sec
First-due engine	240 sec (4 min) 90% of the time
Second-due engine	360 sec (6 min) 90% of the time
Initial full alarm - Low/ medium hazard	480 sec (8 min) 90% of the time
Initial full alarm - High hazard	610 sec (10 min 10 sec) 90% of the time

Learn More

- ▶ Visit nfpa.org/1710 for free digital access to the standard.
- ▶ Sign up on nfpa.org/NFPA-Membership to:
 - Get one-on-one help with your technical questions at nfpa.org/tqs
 - Access exclusive content
 - Search content and connect with your peers to share information and answer questions on NFPA's online community at nfpa.org/xchange



IT'S A BIG WORLD.
LET'S PROTECT IT TOGETHER.®

This material contains some basic information about 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*. It identifies some of the requirements in these documents as of the date of publication. This material is not the official position of any NFPA Technical Committee on any referenced topic which is represented solely by the NFPA documents on such topic in their entirety. For free access to the complete and most current version of all NFPA documents, please go to nfpa.org/docinfo. While every effort has been made to achieve a work of high quality, neither the NFPA nor the contributors to this material guarantee the accuracy or completeness of or assume any liability in connection with this information. Neither the NFPA nor the contributors shall be liable for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, or reliance upon this material. Neither the NFPA nor the contributors are attempting to render engineering or other professional services. If such services are required, the assistance of a professional should be sought.

© 2020 National Fire Protection Association / June 2020

Our current response model:

- Number of personnel per apparatus (excluding volunteer apparatus):
- Type 1 Engine: 3 personnel
- Type 3 Engine: 3 personnel
- Type 5 Engine: 4 personnel
- Truck: 4 personnel (cross staffed)
- Water Tender: 1 personnel
- Rescue: 2 personnel

The number of volunteer personnel responding on each apparatus can vary depending on the available volunteers for each apparatus, however, we do attempt to staff our volunteer apparatus as follows:

- Water Tender: 2 personnel
- Squad: 2 personnel
- Type 3 Engine: 3 personnel
- Patrols: 2 personnel

In the event the amount of apparatus dispatched exceeds the number of available resources within the District (4 Engine Companies, 4 Rescues, 1 Training and Safety Officer, 1 Battalion Chief, and 1 Duty Chief) a request for Mutual Aid is made.

Structure Fire

- **First Alarm**
4 Type 1 engines, 2 Rescues, 1 Training and Safety Officer, 1 Battalion Chief
- **Second Alarm Structure Fire ADD**
4 Type 1 engines (Mutual Aid) 1 Rescue, 1 Squad, 2 utilities, 1 Duty Chief, East Fork Fire All Call

Wildland Fire

- **First Alarm**
2 Brush Engines, 2 Volunteer Brush Engines, 2 Rescues, 2 Water Tenders, 1 Training and Safety Officer, 1 Battalion Chief, 1 Duty Chief
- **Second Alarm Wildland Fire ADD:**
2 brush engines, 2 water tenders

Motor Vehicle Crash

- **First Alarm MVC**
2 Type 1 engines, 2 Rescues, 1 Training and Safety Officer, 1 Battalion Chief
- **Second Alarm MVC**
1 Type 1 Engine, 1 Rescue

HazMat incident

- **First Alarm**
4 Engines, 3 Rescues, 1 Training and Safety Officer, 1 Battalion Chief, 1 Deputy Chief
- **Second Alarm**
1 Engine, 1 Rescue, 1 HazMat Unit

Aircraft

- **First Alarm**
2 Engines, 2 Rescues, 2 Water Tenders, 1 Training and Safety Officer, 1 Battalion Chief, 1 Deputy Chief
- **Second Alarm**
3 Engines, 2 Rescues, 1 HazMat Unit, East Fork Fire All Call

Tech rescue

- **First Alarm**
2 Engines, 2 Rescues, 1 Training and Safety Officer, 1 Battalion Chief, DCSO SAR Team
- **Second Alarm**
1 Engine, 1 Rescue



Structure Fire Pine View Estates

Section V - Setting Service Level Objectives

The most important aspect of a Standards of Cover is the standards that an organization establishes. Response times become the fundamental feature of those standards. Equal to the response time is the capacity of that response, most notably represented by the number of personnel who respond and what types of appropriate apparatus are part of that response. Response times are not solely vested with the Fire District, but also with a contracted emergency dispatch center under the authority of Douglas County. Below are the recommended and desired response dynamics of our standard.

Response Time Objectives

1. Career station turnout time should be 60 seconds or less for EMS incidents and 80 seconds or less for fire and special operations 90% of the time.
2. All calls requiring an emergency response will be dispatched on a Priority Based Dispatching basis, as follows:

Response Mode Types

PRIORITY 1 (Including ECHO calls)

All units are responding priority (lights and siren). Examples: Structure Fire; Cardiac Arrest; Motor Vehicle Accident with injury or extrication required.

- Alarm Processing: **Fire:** 60 seconds, 90% of the time.
EMS: 60 seconds, 90% of the time.
- Response: **Fire:** Arrival of first pumping/water carrying apparatus within 8 minutes, 90% of the time, with the arrival of an effective firefighting force within 20 minutes, 90% of the time.
EMS: 8 minutes for Advanced Life Support at the patient's side
TRANSPORT EMS :12 minutes for a transport ambulance on scene, 90% of the time.

PRIORITY 2

The closest, most appropriate units responding priority; all others respond non-priority (no lights or sirens).

Examples: Activated Fire Alarm; Ground Level Fall; Vehicle Fire; Motor Vehicle Accident, unknown injury.

- Alarm Processing: **Fire:** 60 seconds, 90% of the time.
EMS: 60 seconds, 90% of the time.
- Response: **Fire:** Arrival of first pumping/ water carrying apparatus within 8 minutes, 90% of the time, with the arrival of an effective firefighting force within 20 minutes, 90% of the time.
EMS: 8 minutes for Advanced Life Support at the patient's side.
TRANSPORT EMS :12 minutes for a transport ambulance on scene, 90% of the time.

PRIORITY 3

All units are responding non-priority. Example: Illegal Burn, non-emergency Public Assist.

- Alarm Processing: **Fire:** 60 seconds, 90% of the time.
 EMS: 120 seconds, 90% of the time.
- Response: **Fire:** 12 minutes, 90% of the time.
 EMS: 12 minutes for Advanced Life Support at the patient's side
 TRANSPORT EMS: 20 minutes for a transport ambulance on scene, 90% of the time.

PRIORITY 4

- "Non-emergency" Inter-Facility Transfers, patient home returns, and facility returns:
 Ambulance at the requesting facility: for a "non-emergency" inter-facility transfer within 20 minutes. If the transfer is a return home transfer, we will provide the best effort for these to be completed if they occur after midnight and 0600.

If transfer requests are expected to exceed our established time limits, the Battalion Chief will contact the facility to discuss. Facility contact will be made if a return home transfer is forecasted over a 30-minute delay. A review of nationally available inter-facility times indicates that many systems require a request to be made 3-hours before the service. Other jurisdictions limit themselves to one transfer at a time. Our time standards allow the Battalion Chiefs to manage transfers based on a patient presentation from the physician's report.

Exemptions to Time Requirements

We are self-imposing limits upon ourselves to design an effective Fire and EMS system. Most agencies have time requirements as part of a franchise agreement or other such contractual arrangements. Since we strive to provide the highest-level of service possible and compete in a public/private area, we also select the most common time requirement exemptions. These are not used as excuses for performance, but as a realistic understanding of our service environment. Many are based on employee and volunteer safety concerns using our risk management process.

- Off-road incidents that require travel on dirt roads
- Inclement Weather
- Multi-casualty incidents
- Automatic or mutual aid requests to other jurisdictions, including Alpine County, under contractual agreement
- Inability to locate patient due to poor caller information
- Material changes in the dispatch location
- Delays caused by traffic secondary to the incident
- Extended delays at our receiving facilities
- Patient destination diversions enroute
- Facilities at maximum capacity
- Practical need for staff to change out and transfer gear from a structure fire report to a wildland fire report

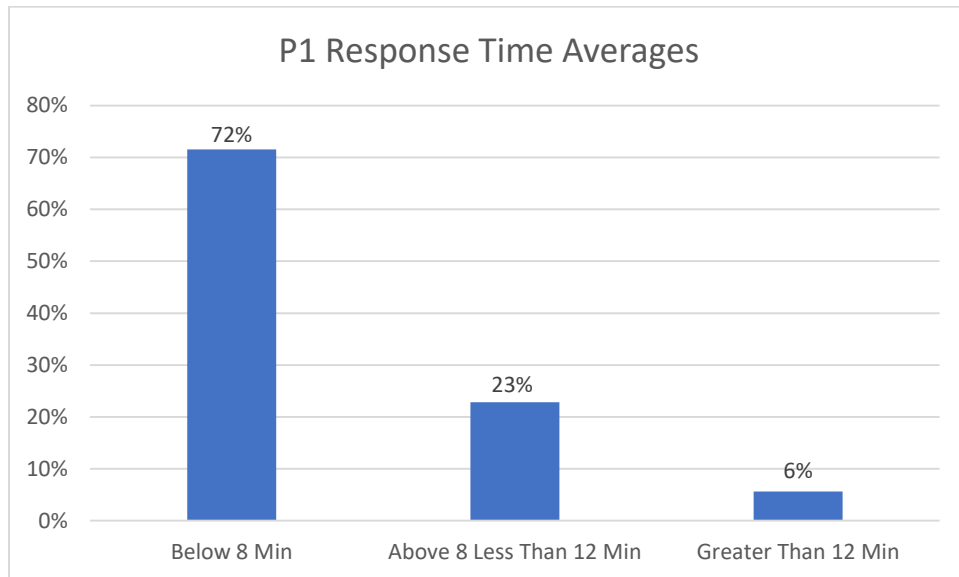
East Fork Fire Protection District acknowledges the fact that the geographical nature of the Douglas County does not allow us to meet our 8- and 12-minute response time goal in all Districts.

Given the coverage area versus the population density in most of the county, it is difficult to place a station or a staffed piece of equipment in all areas to meet our response time objectives. However, the Fire District is in the process of evaluating data that tracks where 911 calls originate and how many of these calls can be serviced within the 8- and 12-minute response windows 90% of the time. Any calls that cannot be serviced within these time frames are then plotted on a map and tracked to give a clearer picture of the areas that may require additional staffing in the future. Additionally, the District takes into consideration the planned building growth for all areas when planning for the movement or addition of apparatus.

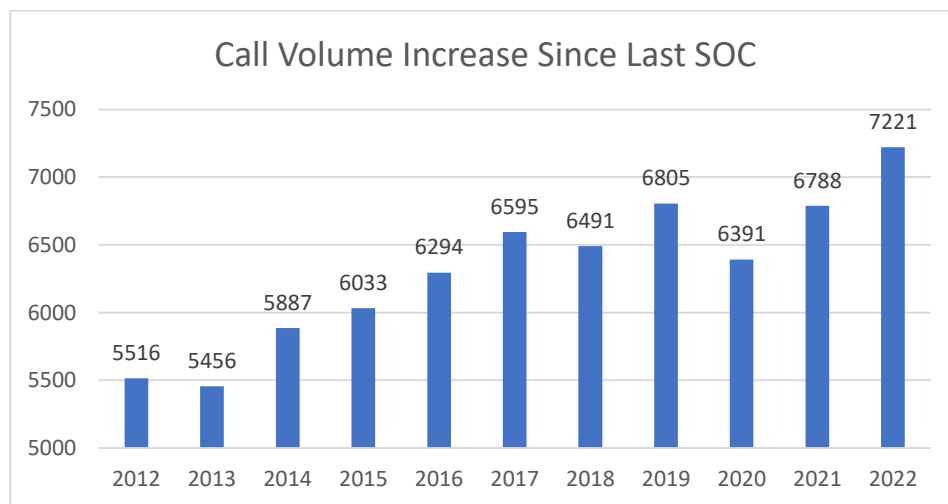


Section VI - Evaluation of Reliability of Companies

Historical 8 / 12 Minute Response Data



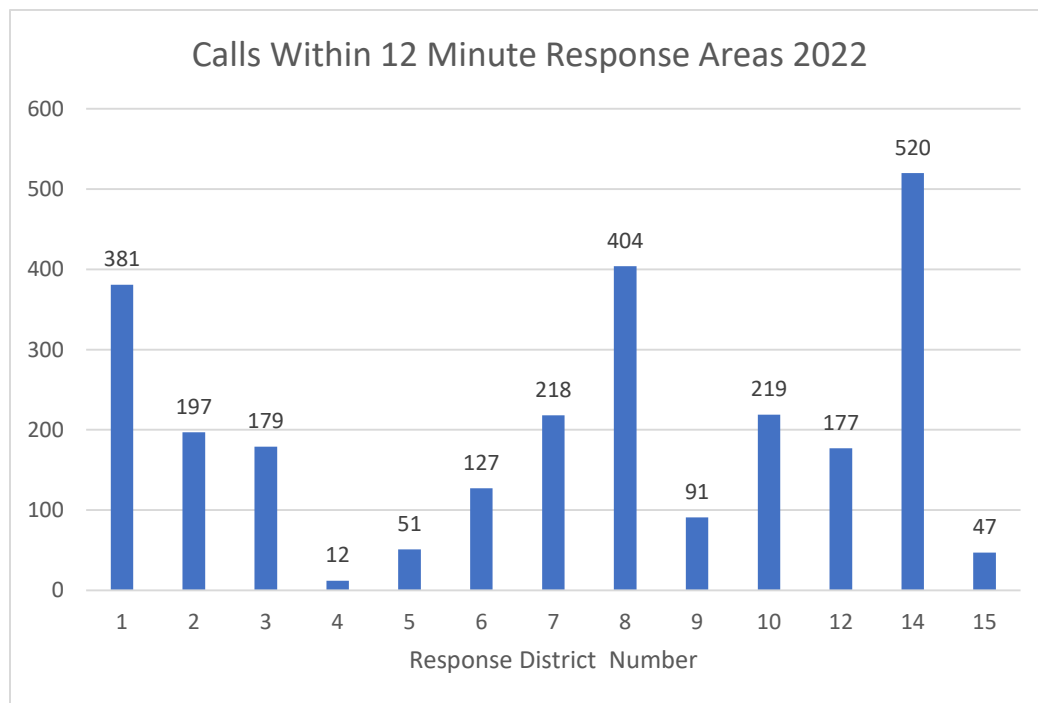
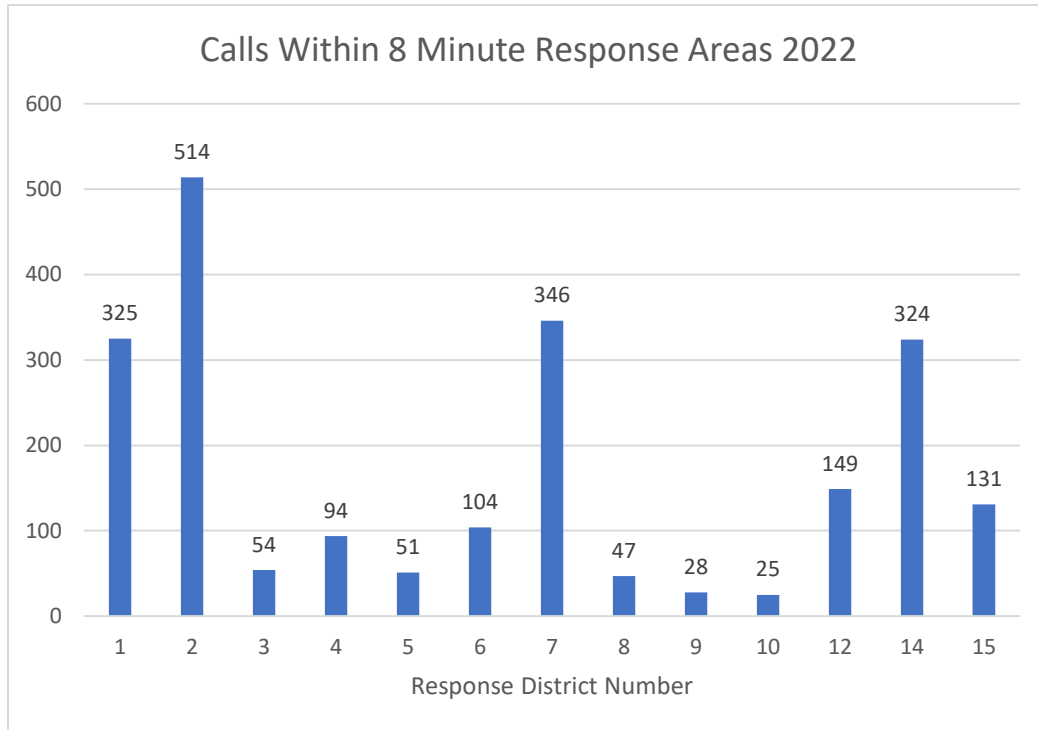
A review of P1 call data over the past three years was evaluated and graphed as noted above. In our previous version of Standards of Cover, we met response time objectives for P1 ALS 89% of the time. Data collected for this Standards of Cover shows a significant decrease in our ability to reach this objective. However, we have been able to service 95% of our P1 ALS calls under the 12-minute mark. Due to a significant increase in call volume and no major addition to ALS staffing, our ability to meet our standard 90% of the time has been decreased.



Call volume growth as a percentage since 2012 has increased 26.77%. Call volume since our last Standards of Cover has grown 13.78%. Additionally, we have seen a call volume increase of 6.02% from 2020 to 2021 and an increase of 6.18% from 2021 to 2022. This compounding increase in call volume has challenged the District in many aspects. One of the significant points of interest is where and how the District can improve our response time objectives. At this time, data collection and evaluation are a top priority, allowing us to make informed decisions on future staffing and response models for the District.

Data Collection

When reviewing call data, it is important for us to consider P1 response saturation. This provides us insight into where the majority of our P1 incidents occur and where resources may be depleted due to multiple calls occurring simultaneously and overlapping the primary response District.

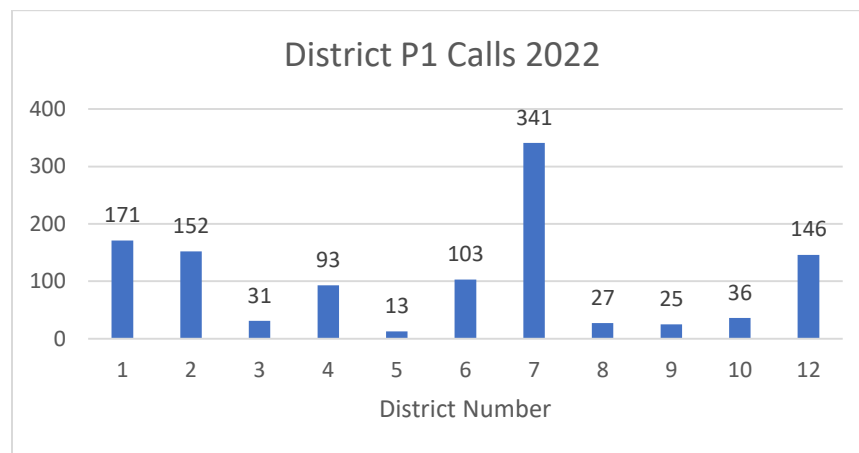


Mutual Aid

In addition to responding to our own calls, East Fork is responsible for providing contracted EMS services to Alpine County. We are responsible for servicing calls up to Pickett's Junction. Additionally, we respond to requests for mutual aid for EMS to Carson City, Mono County, and Smith Valley. Automatic fire response aid is provided through Chief-to-Chief agreements that are evaluated yearly. Although mutual aid benefits the District when call volume surpasses our ability to respond to incidents, it also hinders us when our resources are busy assisting neighboring Districts.

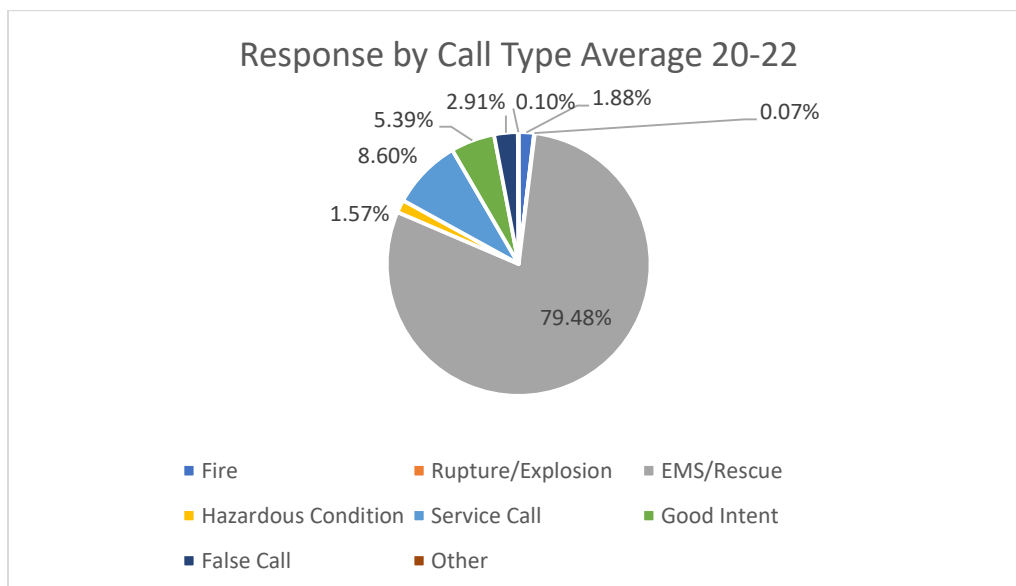
Call Load Data

Data evaluation is an ongoing priority for the District. Evaluation of call origination points allows for placement of apparatus. As shown in the graph below, District 7 produces the vast majority of Priority 1 calls. In 2016 a trial period was completed and demonstrated that an additional Paramedic Rescue Ambulance was beneficial to meeting response time objectives.



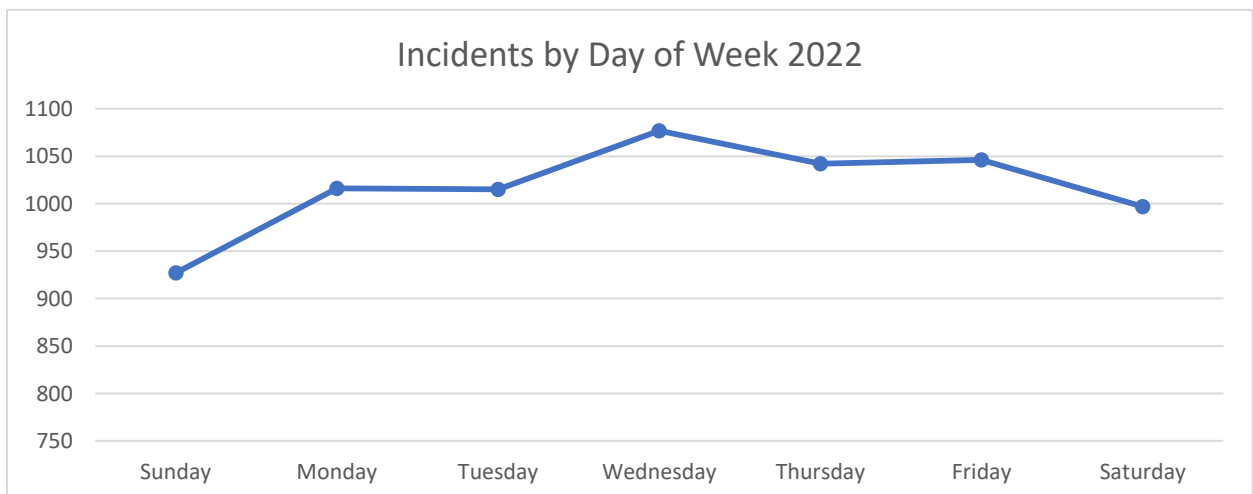
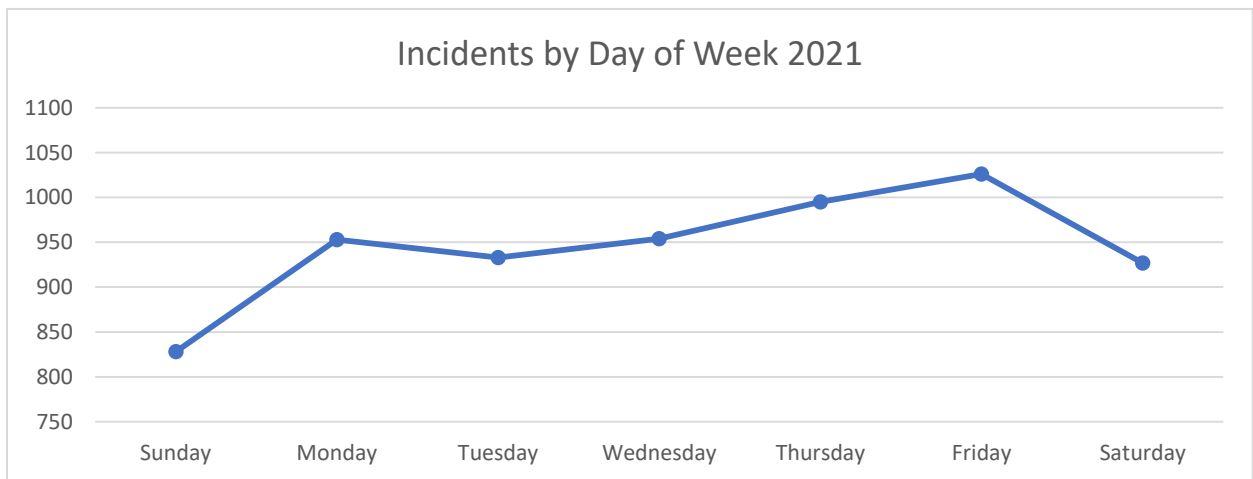
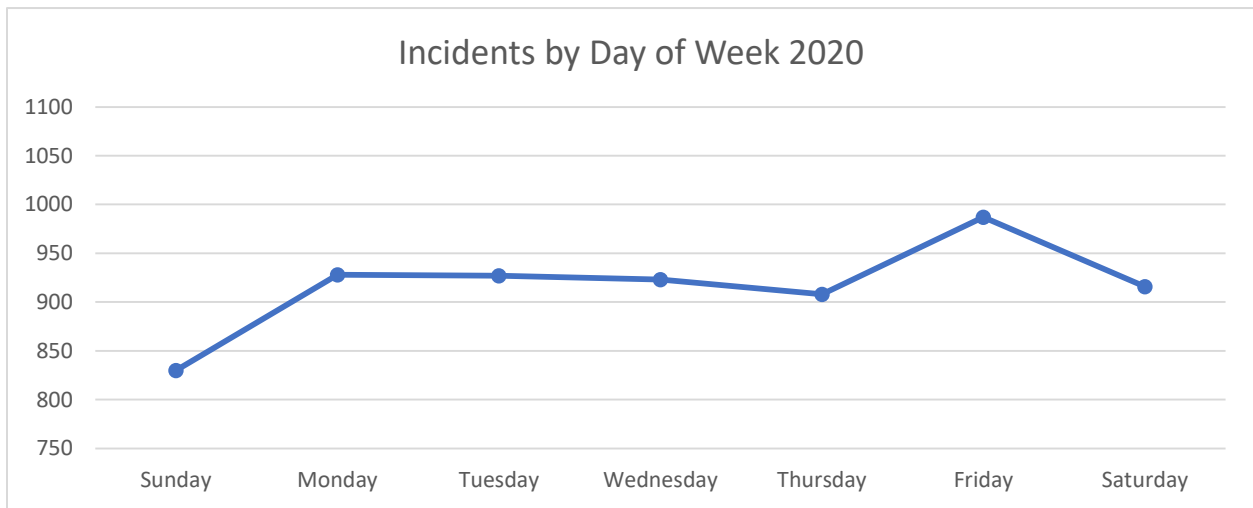
Types of Calls

On average, the District responded predominantly to EMS calls for service. The graph below shows a breakdown by the types of calls that were dispatched by type and averaged over a 2-year period.



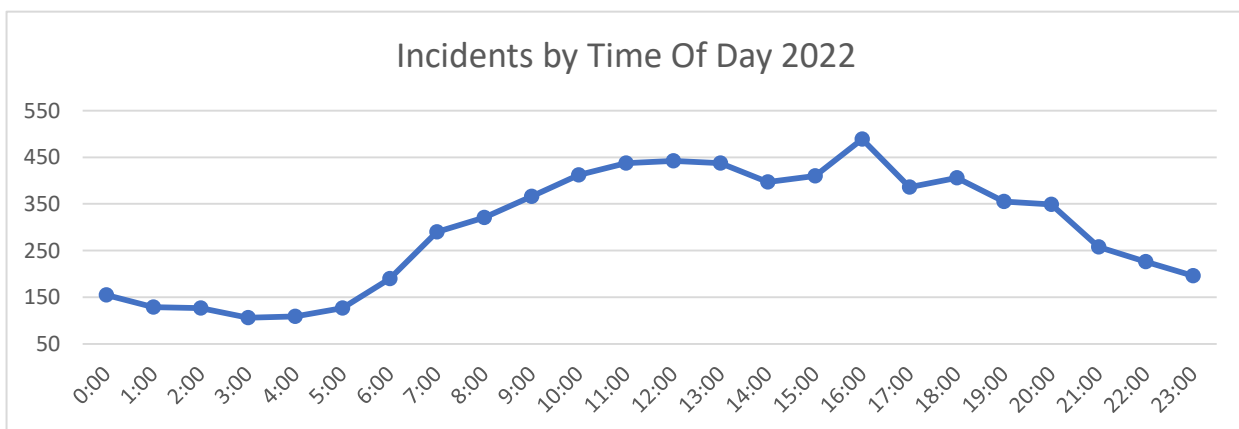
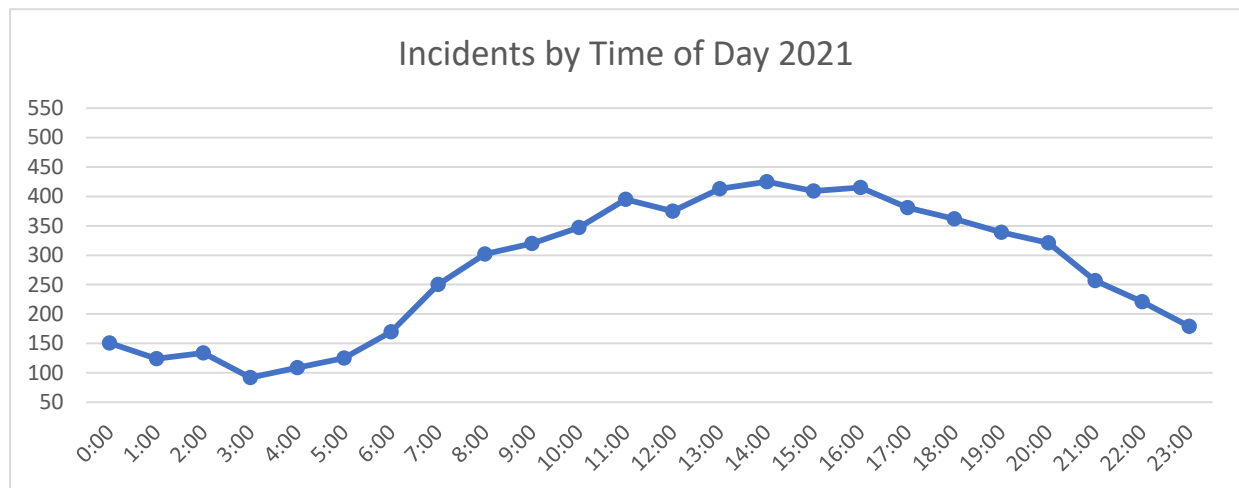
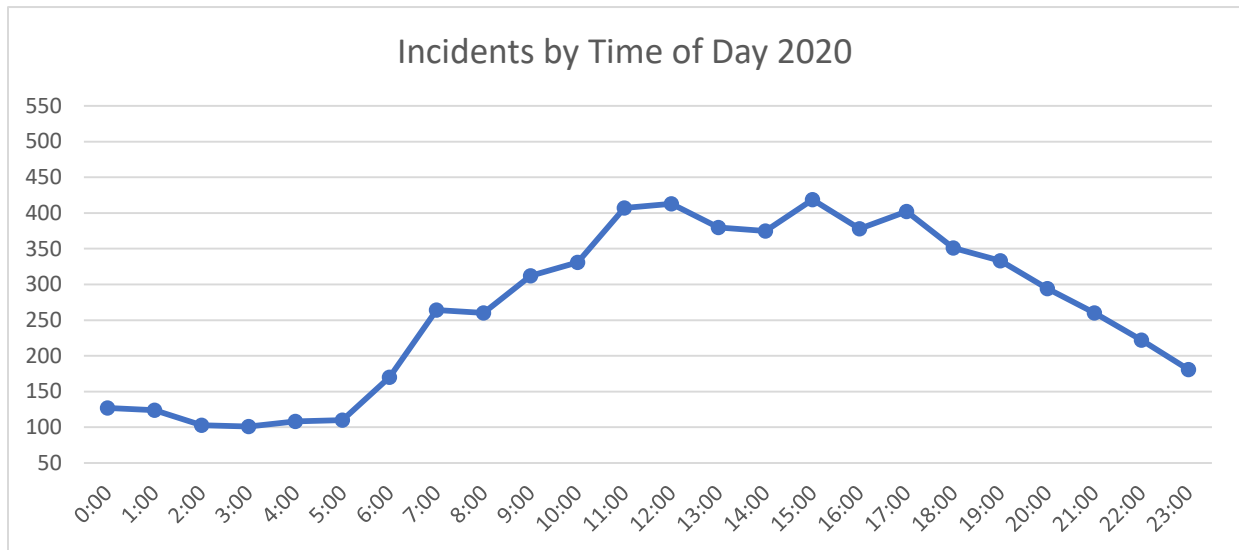
Day of the Week Distribution

Evaluation of calls based on the day of the week has shown that, on average, Wednesday through Friday were the busiest days for the District.



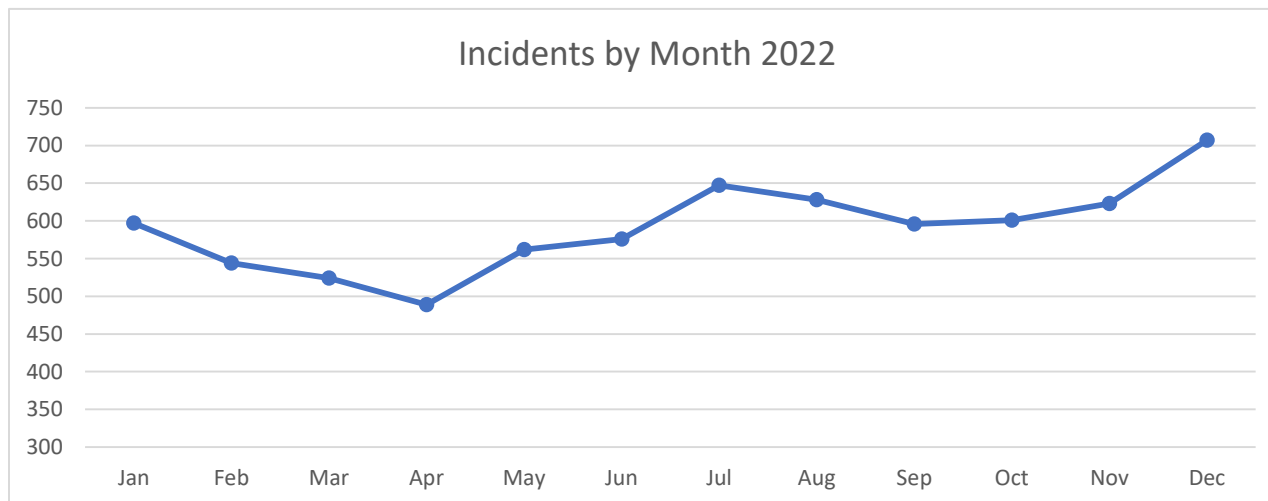
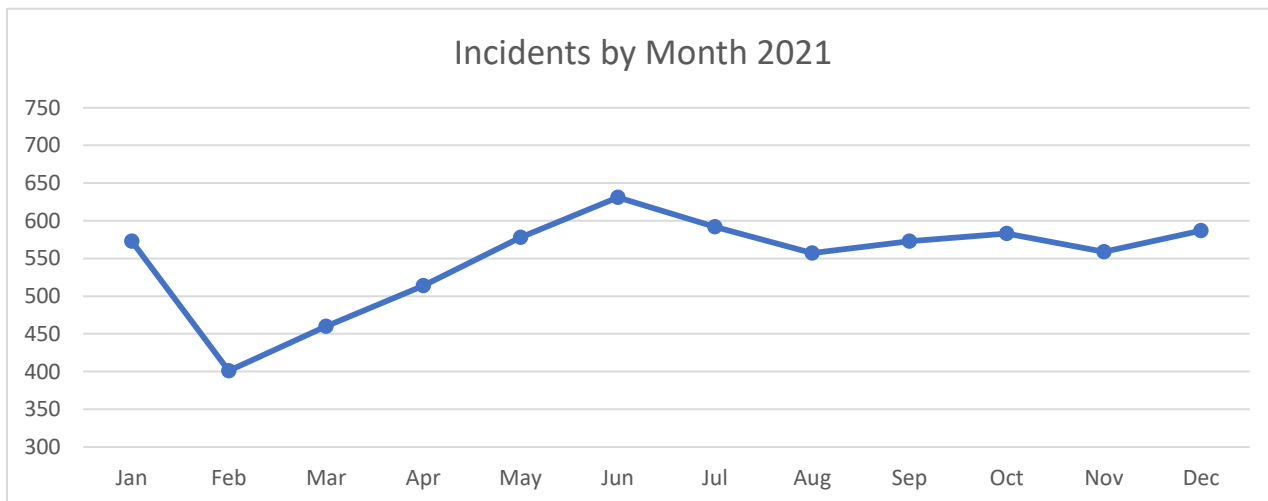
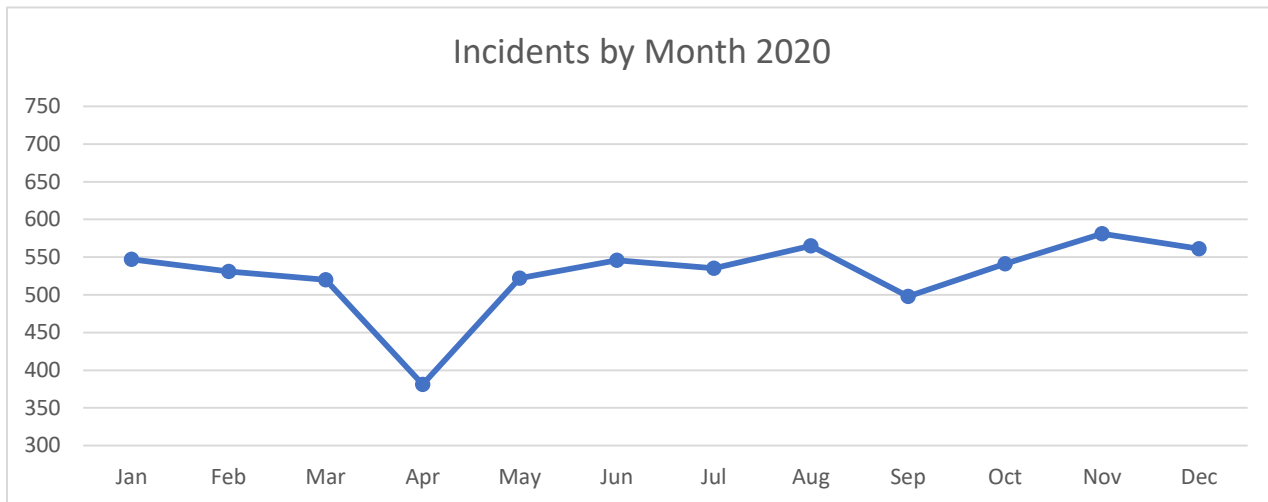
Time of Day Distribution

Evaluation of calls based on the time of day has shown that, on average, 10:00 AM to 6:00 PM were the busiest hours for the District.

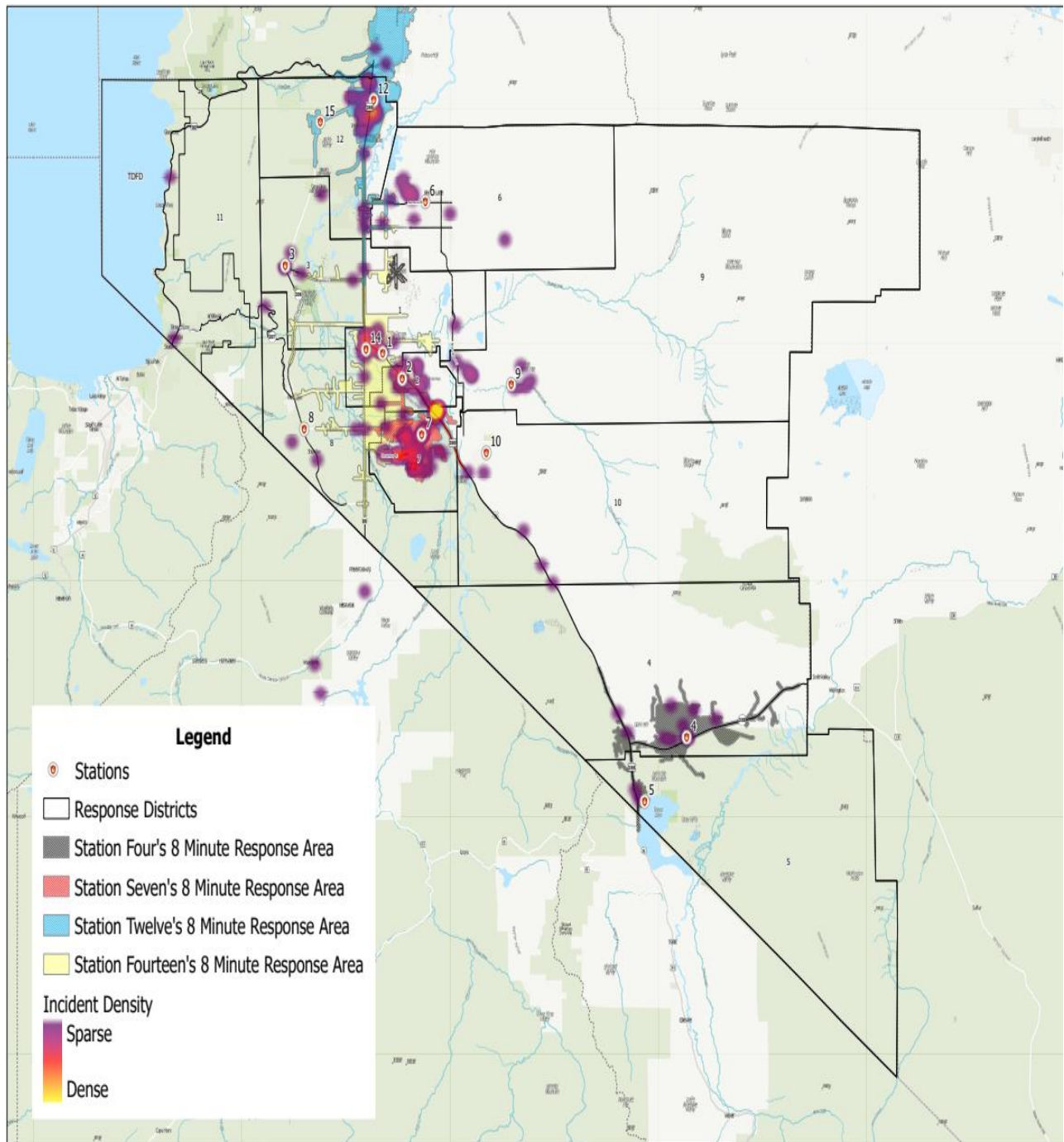


Month of the Year Distribution

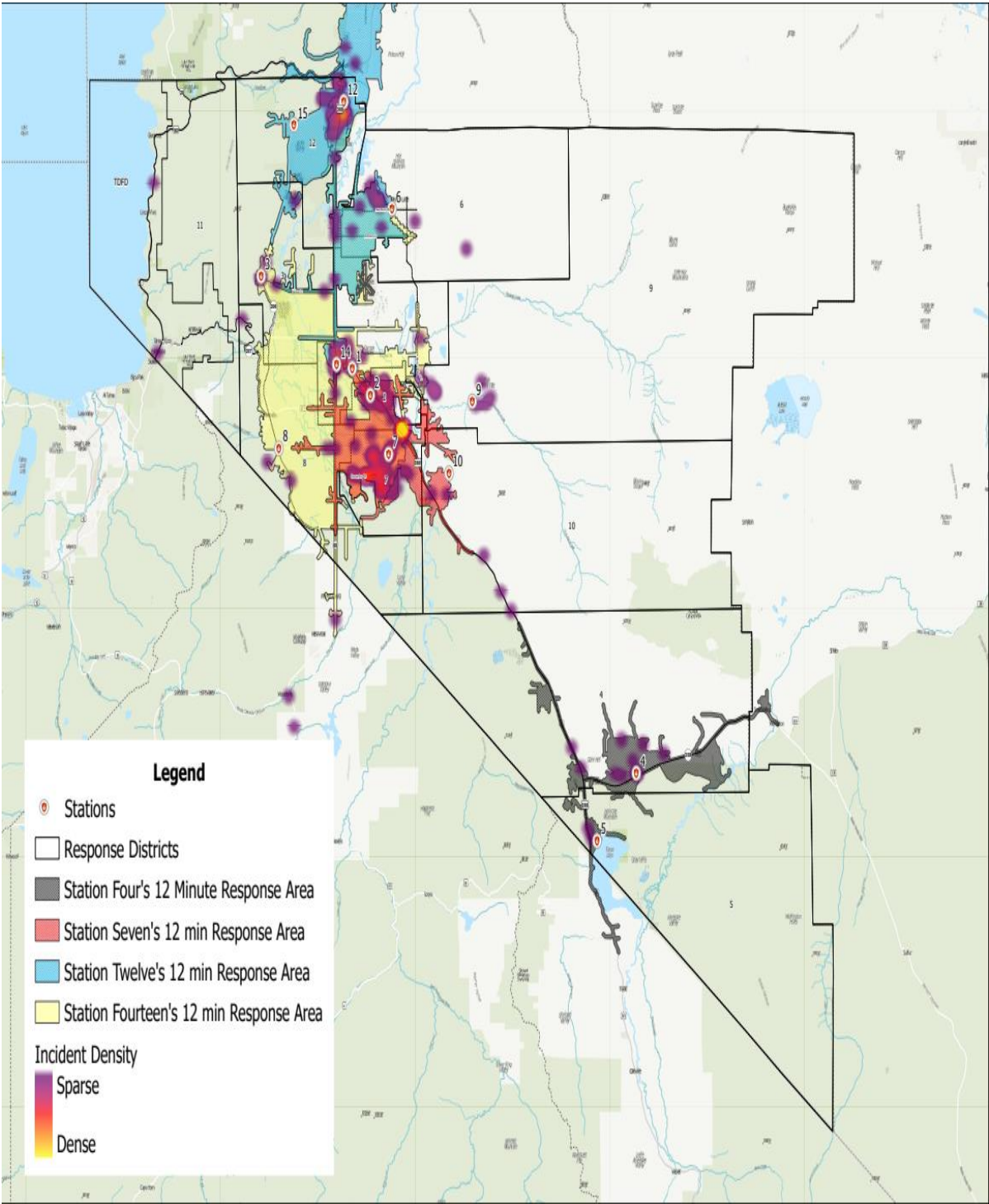
An evaluation of calls based on the month of the year has shown that June through December were the busiest months for the District on average.



8 Minute Response Zone Heat Map

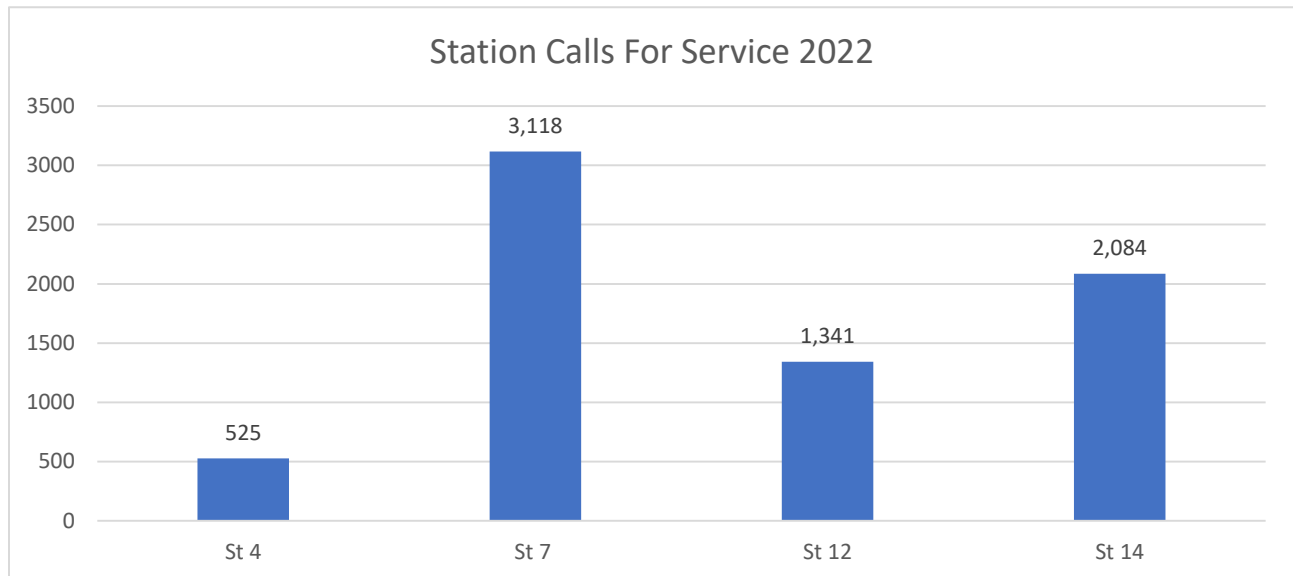


12 Minute Response Zone Heat Map

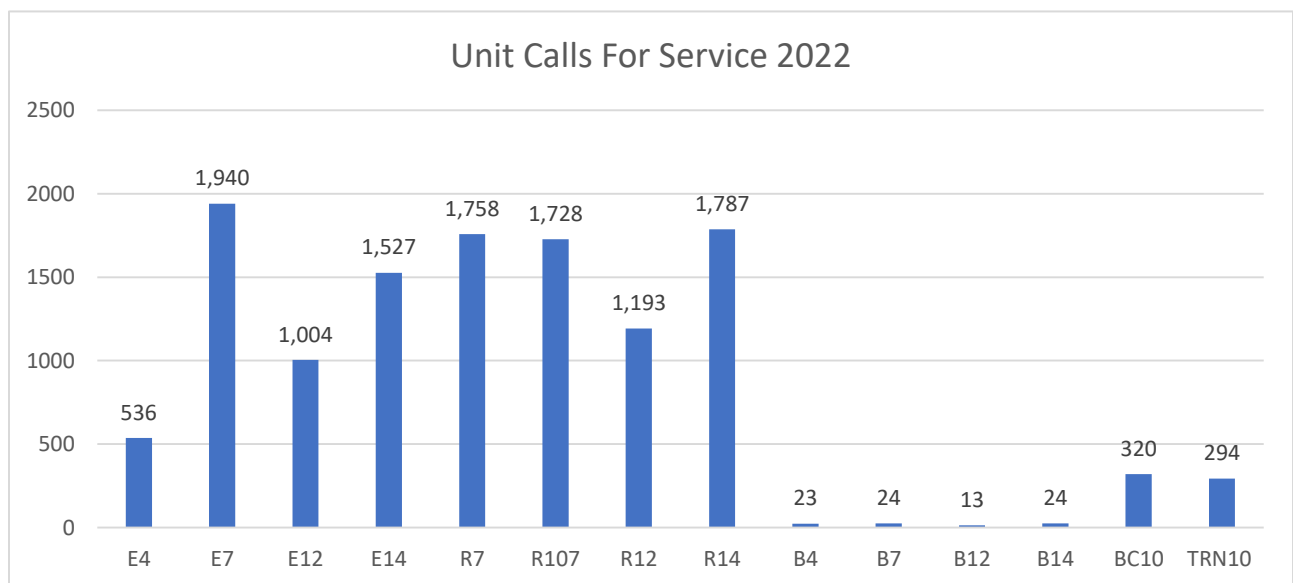


Calls by Station

Station 7, which houses E7, R7 and R107 was the busiest station in 2022. Historically, this has been the busiest station in the District.



Calls for Service by Unit



Engine 7 was the busiest apparatus in the District with 1,940 calls for service in 2022. R14 was the busiest Rescue by call volume with 1,787 calls for service.



Maintenance of Response Time Effort

Additional Staffing:

Since the completion of the last Standards of Cover, the District has increased staffing levels. The District has implemented one “Floater Position” across all three shifts (3 personnel total). This position is used to fill vacations, sick leave, long term injuries, and long-term vacancies. The District was successful in acquiring a SAFER grant that

allowed for 2 additional firefighters to be on shift per day. As the SAFER grant expired, additional revenue sources and budgetary growth allowed these positions to remain in place and as planned. These two positions allowed for additional staffing on the fire ground. The District was also able to open a fourth ALS Rescue. The direct result of this was a decrease in overall Unit Hour’s Utilization and an increase in the number of ambulances available to respond to the increasing call volume within the District. Below you will find comparative Unit Hour Utilization from three rescue ambulances in 2017 to our current number of four rescue ambulances today.

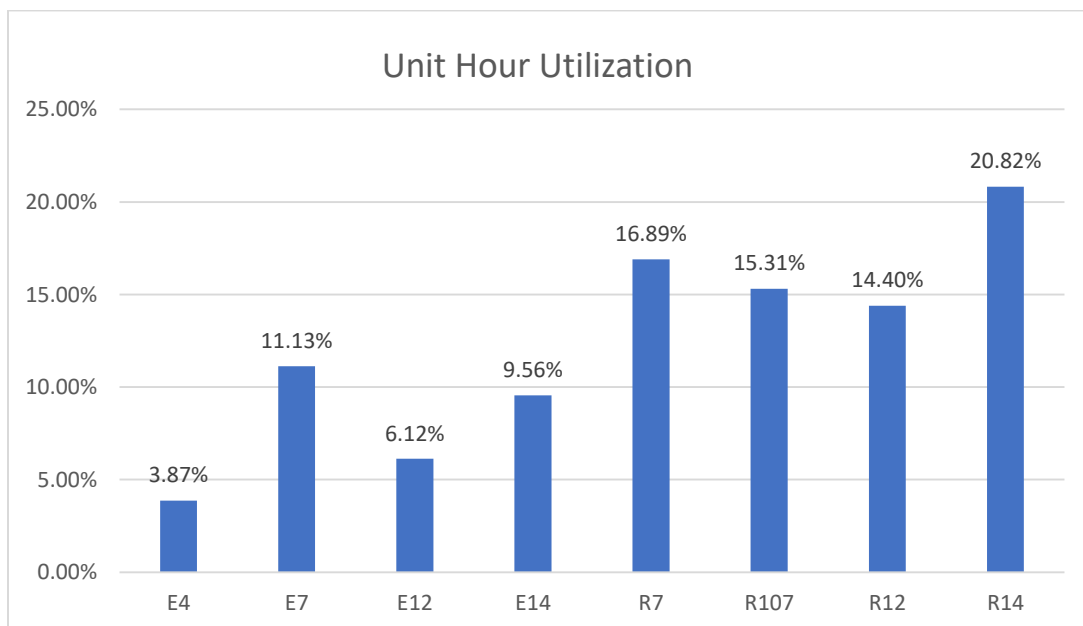
2017 UHU

Apparatus	Unit Hour Utilization
Rescue 7	24
Rescue 107	23
Rescue 14	29
Engine 4	3
Engine 7	12
Engine 12	5
Engine 14	9

2022 UHU:

Apparatus	Unit Hour Utilization
Rescue 7	17
Rescue 107	15
Rescue 12	14
Rescue 14	21
Engine 4	4
Engine 7	11
Engine 12	6
Engine 14	10

Additional staffing has allowed UHU’s to decrease despite a growth in call volume each year. This includes all responses.



Fuels Management Program:

In January 2021, the District signed a three-year contract with NV Energy to provide a fuels reduction crew, now known as The Genoa Peak Fire and Fuels Crew. This contract provided funding and initial equipment costs for a 10-person fuels crew. Following Senate Bill 329 in 2019, NV Energy was required to develop a Natural Disaster Protection Plan. Part of this plan required NV Energy to provide a fuels management and fire response program. Thus, fuels management programs were offered to local fire agencies. Each agency is responsible for staffing, training, and equipping the crews for their work with funding provided by NV Energy. The Genoa Peak crew has been hard at work providing defensible space and fuels reduction in and around NV Energy infrastructure. NV Energy has roughly 1,000 acres of easements within the District and more than 12,000 power poles. In addition to fuels reduction, Genoa Peak is equipped and trained to respond to wildland fire incidents both within and to neighboring Fire Districts. Response is managed by discretion and need on a case-by-case basis by the on-duty Battalion Chief. Under this procedure, crews are only called upon when needed, thus in many cases allowing them to continue with their primary task of fuels management for NV Energy.



Data Collection

Data helps to assist the District with making decisions for the future. Some of the data the District relies on comes from county and state entities. However, the District does have its own forms of fire records management data collection (FireRMS). Past usage of Fire-RMS has been grossly under-utilized and available data is very limited due to placing a lower priority on achieving “clean” data. Much of the data collected would be categorized as unstructured, meaning analyzing the numbers and information provided would not paint a clear picture. The goal is to create structured data, which includes building databases of incident information that are easily searchable and formatted. Data by itself is only useful once it can be turned into information. The information then allows the District to enhance resources for an emergency response to improve response time metrics.

One of the recent steps to improve the availability of data and information was to review policies and procedures regarding the District's Fire Records Management System (FireRMS). Proper entry into the system of all incidents and responses is critical to obtaining valuable information. Once data entry into the system has been completed, reports with information can be created with the click of a button utilizing software designed by BLD Consulting.

In addition, the District has implemented a policy which allows crew members to use Mobile Data Computers (MDC) to place themselves enroute, staged, on scene, enroute to the hospital, at the hospital, enroute to quarters and available in quarters. The benefit to performing these tasks via MDC instead of traditional radio traffic is that it allows for a more accurate recording of time. In addition, it decreases the amount of radio traffic that dispatch is required to respond too. This is especially beneficial as call volume continues to increase or radio traffic is high, which would traditionally cause delays in actual response time data.

These reports, such as information from the Douglas County Building Department, Geographic Information Systems (GIS) and state projections, will allow the District to make educated modifications in staffing, policies, procedures, and resource allocations to better serve the Douglas County residents and meet response time objectives as set forth. This is increasingly important as each year has provided an increase in calls for service, and we continue to increase our population.

Section VII - Recommendations

Evaluation of overall performance standards, time standards, staffing, and services will always be a work in progress. As with any organization that strives to provide the best service possible, continual growth and improvement remains a top priority. To that end, the following recommendations are presented:

A. Continue working towards meeting the staffing and response time objectives set forth in NFPA 1710.

Over time, the District has fully transitioned initial attack to structure fires with career personnel. NFPA 1710 defines the number of personnel needed to conduct initial operations on a first alarm, as well as establishing response time goals. The District has expanded its staffing and has achieved the minimum staffing on the fire ground under certain situations, due, in part to, a SAFER grant.

Since our last update of this Standards of Cover, the District has been challenged to meet its response time objectives of 8 minutes, 90% of the time, with the balance of the first alarm reaching the incident within 12 minutes.

Data available indicates that the District is meeting this objective 72% of the time. The geographic challenges we face, and more central to the issues, is the increase in call volume, which is a contributing factor for falling short of this objective. Our objective in this area must remain focused on the recommended criteria as outlined in NFPA 1710.

NFPA 1710 recommendations also accommodate, in general, the Insurance Services Office (ISO) criteria on incident staffing, which is used in concert with other water supplies and communication/dispatch capabilities to determine the Fire Protection Class Grading. East Fork Fire Protection District is currently graded at a mixed rating of 3/10, with 85% of the District receiving the Protection Class 3.

B. Continue to support the recruitment and retention of volunteers to perform the necessary logistical needs of incidents and wildland fire response.

While there has been a decline in overall volunteer membership over the years, positive results with recruitment are emerging under the defined logistical mission of our volunteers. The critical need for water tender response will continue to be a need that can be addressed by volunteers. The same holds true for structure fire incident support and squad response. Wildland response is still a viable response consideration with appropriate supervision and with defined tasks, such as secondary structure protection, fire line control and maintenance, and patrol.

C. Re-evaluation of response times after one full year of newly instituted data acquisition procedures.

Our strategy is to create procedures and training classes that, over the next year, teach our employees and volunteers the importance of accurate data entry and why it is important to the District. By capturing the correct data, the District will get a clear picture of the needs of our growing community. Providing volunteer computer access to the Records Management System (RMS) should be a consideration to better capture all responses and volunteer training.

Re-evaluation of UHU's as call volume increases.

Unit-Hour Utilization (UHU) is a measure of availability and readiness. We have used UHU's in the District to better view how available our resources are for the next incident. The last Standards of Cover (SOC) review recommended the addition of a rescue to our response model to help with increased UHU's.

Over the last three years, we have seen an annual increase in run volume at six percent (6%) per year. This increase has, and will, continue to have a direct impact on UHU's and our available apparatus in the District. The District will need to watch and react to these increases between this SOC and the next reevaluation of the SOC in three years. (While there is no national standard when it comes to UHU's and what those trigger points/thresholds may be, a general rule of thumb for a fire-based EMS system considered 35% as a maximum number. In a private ambulance service, which limits its response to EMS only, 50% is a maximum number, as a point of reference).

D. Prepare to evaluate the effects of new Assisted Living Facilities within the District.

After researching this topic and what has occurred in other jurisdictions around the country, the District will need to follow the data for each primary first-in station that has an assisted living facility. A year's worth of data will need to be analyzed and consideration of the potential increase in run volume that has occurred during that time.

E. Prepare to evaluate the effects of Carson Valley Medical Center's (CVMC) facility and service level expansion.

CVMC broke ground in October of 2021 with an expansion to include an acute care and ICU, emergency room, surgery department, cardiac catheterization lab, and radiology services. The emergency room capacity will increase from 5 to 12 beds and is due for completion at the end of 2023. The addition of a catheterization lab may reduce our interfacility transfers. Interfacility transfers from CVMC account for 707 transports in 2022. The District may see a decrease in some transfers, as catheterization patients are currently being sent to other area hospitals for care.

The District will need to look at the data in 2023 to analyze if there is a decrease or increase in service to CVMC with both patient destinations and interfacility transfers.

F. Continue to evaluate and update the Capital Improvement Plan (CIP).

The East Fork Fire Protection District adopted its fourth comprehensive Capital Improvement Plan (CIP) specific to its apparatus, facilities, and equipment needs last year. The Capital Improvement Plan (CIP) is one of the most significant planning processes for the East Fork Fire Protection District at this time. This plan serves as an update to last year's plan and identifies the anticipated capital needs of the organization over a five-year period. This plan not only identifies immediate needs, but also seeks to capture longer-term capital needs and funding options. The plan provides a working blueprint for sustaining and improving the organization's infrastructure and equipment. It coordinates strategic planning, financial capacity, and physical development.

G. Evaluate and coordinate with Douglas County Geographic information System (GIS) to ensure all new construction and road design projects work to improve response times in the District.

GIS technology can help organizations respond more quickly and effectively to natural and manmade disasters and other emergencies by providing real time data on affected areas, resources, and potential hazards. This can lead us to make decisions based on data for proper placement of new stations and movement of apparatus to better serve our community.

H. Work to expand the Fuels Management program to include accessing the Community Wildfire Protection Plan (CWPP) and seeking possible grant and contract funding to sustain a program during and beyond the NV Energy contract.

A Community Wildfire Protection Plan (CWPP) identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment on federal and non-federal land that will protect one or more at-risk communities and essential infrastructure. It also recommends measures to reduce structural ignitability throughout the at-risk community. A CWPP may address issues, such as wildfire response, hazard mitigation, community preparedness, structure protection, or all of the above.

The assessment portion of this document estimates the hazards and risks associated with wildland fire in proximity to Wildland-Urban Interface (WUI) areas. This information, in conjunction with identification of the values at risk, defines areas of special interest and allows for prioritization of mitigation efforts. From the analysis of this data, solutions and mitigation recommendations are offered that will aid homeowners, land managers, and other interested parties in developing short-term and long-term planning efforts.

Securing long-term sustainable funding for fuels management must become a priority for the District. This may be accomplished with direct contracts with the USFS and BLM or through fuels management grants, when available.

I. Include Squad response with the first alarm structure fires.

Squad or service companies with the East Fork Fire Protection District are operated and staffed by volunteer personnel. With volunteer response, there is an inherent delay due to travel time to the respective stations. Including the response in the first alarm, rather than the second alarm, would mobilize the volunteer response sooner and in the same way volunteers are included in the first alarm for areas without fire hydrants. Units can always be canceled if not needed.

J. Purchase of Motorola Minitor VI VHF 1 Channel Pagers.

The MINITOR VI is a reliable, rugged, and feature-rich device used to alert and notify emergency personnel about critical incidents. Two-tone and P25 digital alerting capabilities: It can receive alerts using traditional two-tone paging formats, as well as modern digital P25 protocols, ensuring compatibility with various dispatch systems. These pagers will be utilized by our volunteer corps and will replace worn out and dated technology.

K. Continue the use of our accepted response time standards.

Maintain the current response time standards of 8 minutes for ALS Care 90% of the time and 12 minutes for a transport ambulance 90% of the time. While increased call volume has an impact on our ability to meet these time standards, they do serve as benchmark objectives when considering future station staffing using these standards to create response polygons. The same consideration is true for structure fire response. It is recommended that the same 8-minute response time be applied to the first arriving

pumping apparatus and 20 minutes for the balance of the first alarm to arrive. As is the case with EMS response, these response time objectives serve to determine future engine placement(s) with justified feasibility based on the developed response polygons.

L. Purchase Cradlepoint access points for our MDC equipped apparatus.

Cradlepoint is a company that offers various networking solutions, including wireless access points and routers. Cradlepoint enables organizations to build and manage efficient and secure networks across multiple locations, including remote sites and mobile deployments.

Enter into a 1-year fee agreement with Douglas County 911 Communication to provide dispatch services provide the 911 Center supports and recognizes NFPA 1225 and its implications in the Insurance services Office (ISO) Fire Protection Class Grading.

Section VIII – Summary

The Standards of Cover is designed to be a dynamic document, and at the same time set reasonable standards for response, staffing, call processing expectations, station location recommendations, and other elements that define how we will serve our constituents.

Part and parcel to this effort is data documentation, collection, and retrieval. Being able to make decisions that are data driven heightens the validity of standards that are set. Accurate data also reinforces budget development. Nowhere is this more important than when considering staffing and resource deployment. This also includes making decisions regarding the viability, recruitment, and more importantly, the role(s) of our volunteers.

The recommendations in this third revision of the Standards of Cover attempts to enhance and sustain the services being provided. Some recommendations continue to support the most appropriate NFPA response and staffing standards, namely NFPA 1710. While lofty in nature, NFPA 1710 sets a point of reference and comparison related to the quest to reach the objective.

Over the past several years, and most notably under an independent governing body, the District has made significant progress in staffing and equipping its forces. We have seen positive increases in volunteer membership and participation under the new logistical program model.

We continue to apply as much technology as we can to make the field of operation safer and more efficient. This, coupled with an increase in training and regional academy participation, allows us to start to fill the experience voids left by retirements. Operational efficiency continues to increase, and employee and member engagement continues along a positive course.