Ripon Consolidated Fire District
Staffing Analysis
Presented to and adopted by the Board of Directors of the Ripon Fire District
May 2023

Executive Summary

As the Fire Chief of the Ripon Consolidated Fire District (RCFD), it is important for me to emphasize that the Ripon Consolidated Fire District must remain proactive in efforts to reduce, prevent, and mitigate the devastating impacts caused by fire and EMS incidents. It is my responsibility to ensure that we respond with the proper resources, training and attitude to each incident. In other words, fast, well-trained and nice! It is also my responsibility to provide the highest level of safety for my personnel, in order for them to remain effective in their jobs. I believe that a well-maintained fleet of fire and EMS vehicles can only account for so much when it comes to our fire suppression, medical treatment, and most importantly, the prevention of fire, injuries, and loss through community risk reduction efforts. RCFD command staff and the entire department must continue to shift from "just" responders to strategic problem-solvers that are committed to making efforts to identify, reduce, and mitigate risks.

It is my opinion that the argument about staffing one station or the other is short-sighted. While arguments may be made that on one call, the public would have been better served if the crew was in Station 1 – as true as that may be, there is a high probability that the public was better served on the next call by the crew being in Station 3. The same argument could be made if the crew was rotated daily, as some have suggested, because there is just as much likelihood that a call may be in Station 3 zone or Station 1 zone on a "Wednesday". Adequate staffing in emergency services is entirely about having enough staffing and where they are positioned for response coverage.

We must look beyond which "one" station is more appropriate than the other. We must look at long term plans, with the support of the community, so that we can strive to follow the best practice recommendations when responding to emergencies. Having depth in staffing to be able to ensure that there is a response to the "next" or closest emergency is paramount in being able to deliver effective responses and mitigations to all emergency incidents as they happen. In addition, I must be an advocate of organizational change so that other Ripon firefighters become champions of integrating our response capabilities with prevention and mitigation strategies. I must also be a champion of succession planning so that we are all assured that these efforts carry on into the future. In closing, I appreciate the opportunity to share where our department has been, where we are now, and how we hope to be able to perform in the future.

Across the nation, there are always debates about different ways to provide public safety protection to the community. The decisions usually come down to money, efficiency, and practicality. The question must be asked, "What level of service do you want the fire department to provide?" before a model can be chosen. For instance, does the community want only one fire station to be staffed forcing the board and/or the fire chief to pick one based on efficiency and doing the greater good for the greater number of people? Perhaps the community, as a whole, just wants someone "at the ready" who is able to drive a fire engine from the closest station? Does the community want a staffed Advanced Life Support available 24/7/365 at both fire stations to ensure that we answer the 911 call for service when needed?

RCFD has taken pride in the high level of emergency services provided to the community, including the time it takes to respond to calls that provides the best opportunity to preserve life and property during an emergency incident. Since 2018, average response times to emergency calls have increased from 5.4 to 7.6 minutes. These longer response times are largely the result of delays transferring a patient from the ambulance to a hospital emergency room. We will need to ensure adequate depth in our resources to address call volume as well as outside pressures put on our system. With the information provided in this report, my recommendation is for the RCFD to staff Station 3 and ensure that the level of staffing on each engine is maintained at 3 personnel.

Purpose

The purpose of this Staffing Analysis is to identify the factors that need to be considered in planning for the future of the RCFD, including opportunities to mitigate the recent increases in the time to respond to emergency calls. It serves as the building blocks by which directed efforts relative to structural fire protection and emergency medical services are constructed. The analysis is organized in the following sections:

- RCFD Background
- Basic Structural Fire Protection Planning Issues Affecting the District
- RCFD Current Apparatus/Crew Staffing
- Staffing Recommendations/Appendices
    - Definition of terms; and
    - Fire service personnel and rank.

RCFD Background

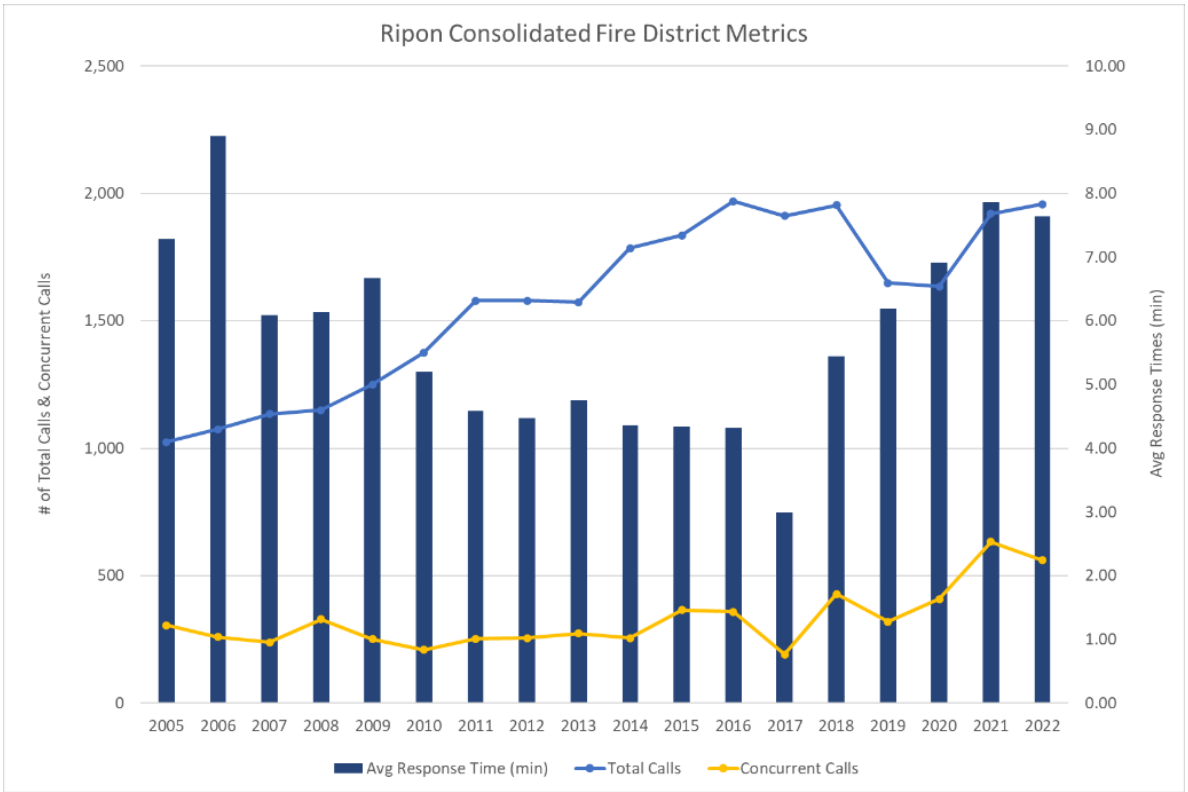
The RCFD is a special district established in 1921 as an independent local government entity. As a duly formed special district, the RCFD is governed by a Board of Directors that are elected at-large by those residing within the district boundary, similar to city council members and school board members.

The Ripon Consolidated Fire District has over 100 years of experience in providing fire protection to the Ripon community and the outlying service areas. Within the 56 square miles, the number of people (US Census, 2020) and calls for services (Ripon Consolidated Fire District, 2022) continue to increase. The Ripon community, also named the Jewel of the Valley is a family city and well sought out destination for Bay Area commuters and multi-generational families. Additional considerations include that Ripon is home to a large sports complex where weekend warriors compete in soccer and baseball tournaments. Further, sixteen percent of Ripon is home to individuals 65 years and over (US Census, 2020).
RCFD provides a high level of emergency medicine as compared to other fire agencies of similar size. In 1973, the RCFD made the decision to train staff to provide Advanced Life Support (ALS), as opposed to only Basic Life Support (BLS) to its jurisdiction. This training allows RCFD paramedics to administer cardiac drugs and intubate patients during a critical emergency medical incident. Today, RCFD provides the longest running ALS ambulance transport service in San Joaquin County.

Response Times

There is a direct relationship between response times and a positive outcome of an emergency incident. For this reason, RCFD monitors response time data as a way of measuring performance of RCFD's service to the community.

The term, total response time, refers to the time it takes from the emergency call received until the first unit arrives on the scene of an emergency incident. The following figure summarizes the RCFD average total response times for the years of 2005 to 2022.



Generally, between the years of 2005 and 2017, RCFD experienced an overall reduction in the average response times, even while the total calls were increasing each year. During this period of time the concurrent calls remained relatively unchanged.

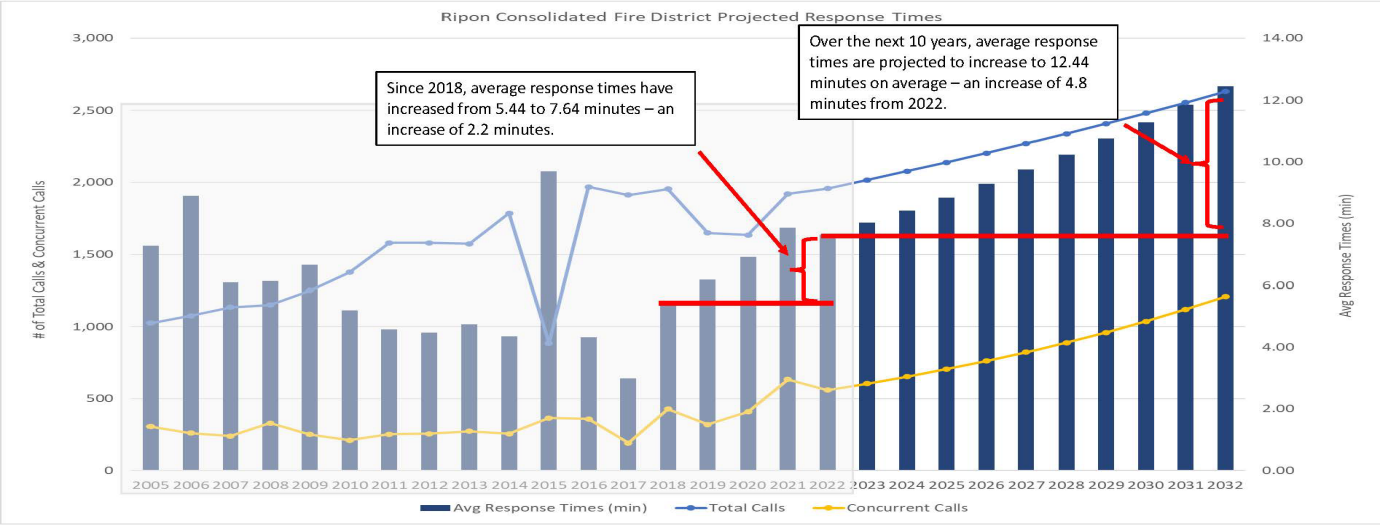
Between the years of 2018 and 2022, average response times increased a total of 2.2 minutes (15% each year), while total calls were relatively unchanged. Concurrent calls increased on average, 21% each year during this period.

Response times also calculate overlap times, or concurrent calls, meaning two (or more) calls for service occurring at the same time. In 2022, the RFD had 530 concurrent calls, which represents 22.43% of our total calls for service). Response time statistics do not factor in individual delays to a call either. For instance, if the Duty Crew transports a patient to Memorial Medical Center, in Modesto, they are going to be “out of service” for about an hour. This delay is caused by two principle factors; driving time and APOT (Ambulance Patient Offload Time). During that time a second call may come in forcing them to request a response from paid-on-call staff, request mutual aid, or respond to the call while returning to the Ripon area. Two of our daily staffing are committed to the Ambulance Unit for the provision of emergency transport ambulance service, it must be pointed out that this results in a significant number of our concurrent call volume, which results in longer response times during those times of overlap.

Concurrent calls are not a result in an increase in the total calls, as that has remained relatively unchanged over the last few years, but multiple calls for service occurring while units are already engaged and also result from delays transferring patients from the ambulance to hospital emergency room care. Hospitals have been experiencing financial challenges. The California Hospital Association has noted that for every dollar of care that California hospitals provide, they are receiving about 75 cents in payments. This is impacting hospital services as they try to bridge this financial short coming, which

has impacted RCFD response times and is projected to continue to do so. Additionally, It has been predicted that statewide, 1 in 10 hospitals will close within the next year.

Over the next 10 years, RCFD response times are projected to increase to 12.44 minutes, on average, which represents an increase of 4.8 minutes from 2022 – see figure below.



An explanation of NFPA 1710 – the Standard for Organization & Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations – is also given; this is an important section for the reader to understand.

Existing standards published by the National Fire Protection Association (NFPA), Insurance Services Office, and the United States Fire Administration point to additional variables that impact fire response. These include:

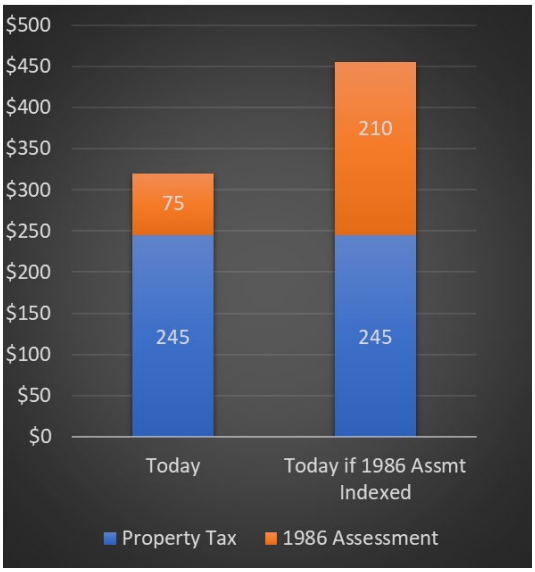
1. Size of population served.
2. Size of service area.
3. Environmental factors (topography, street system, weather, etc.)
4. The potential risks associated with a community's target hazards.
5. Number of fire companies deployed.
6. Number of fire stations servicing the area.
7. Staffing model utilized (paid, volunteer, or combination).

<u>Financial Summary</u>

Being an independent special district, RCFD receives dedicated tax revenue along with locally approved fees to fund the emergency services provided, as summarized below:

> ***Property Tax:*** *The California property tax is based on the value of the property and allocated to local taxing agencies – city, county, special districts, and school district, pursuant to a statutory allocation formula. RCFD typically receives nearly 5% of a parcel's property tax payment.*

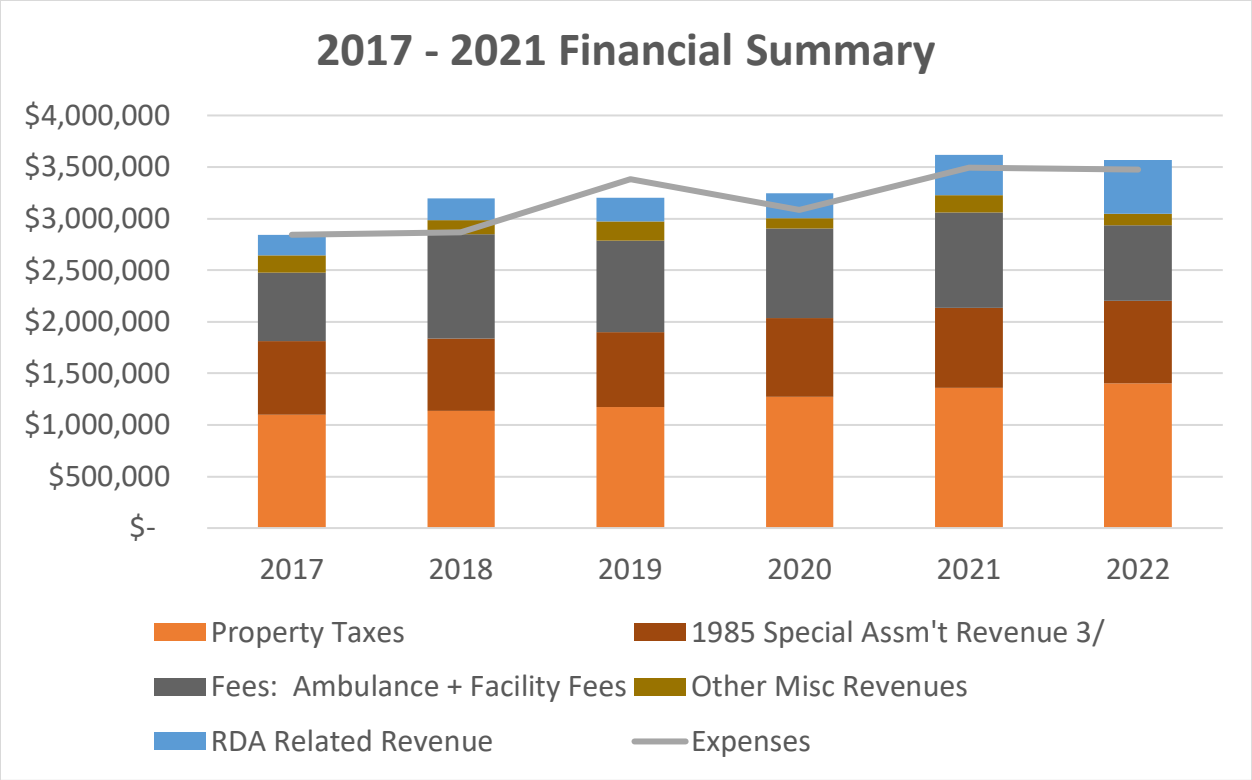
1986 Special Assessment: *As assessment was imposed on property within the RCFD service boundary for the benefit of providing emergency services. This assessment was established in 1985 and not has been indexed while inflation has significantly increased over the last 35+ years, reducing the community service benefits of this assessment. If this assessment was indexed to match the inflation that has taken place between 1986 and today, the assessment would be $210 per year for a single-family residence, rather than the current $75, as shown in the figure below.*



Redevelopment Pass-Thru: *The former Ripon Redevelopment Agency utilized tax increment financing to advance certain redevelopment projects in the City of Ripon. In order to ensure that the RCFD was not financially disadvantaged by this effort, pass-thru payments are made to cover the short-fall in property tax revenue taken from the District from the tax increment financing. This effort resulted in one-time funding of capital projects such as remodel of Station 1 and the construction of Station 3.*

Service Fees: *The RCFD Board of Directors have the legal authority to impose fees to cover the cost of providing a service, such as ambulance services, although these fees must be approved through the San Joaquin County Board of Supervisors. Medicare and Medicaid (California) are not insurance companies, they are Federal law, meaning ALS reimbursement rates are set by the Federal Government. RCFD reimbursement ALS rates currently are 15.7% for Medicare and only 2.7%for Medicaid (Medi-Cal), substantially different from hospital reimbursement.*

RCFD has always been fiscally conservative and directs the limited revenue received to provide a high level of emergency services for the community. The following figure summarizes the various revenue sources and annual expenses between 2017 and 2021:



A survey was conducted to compare the operating cost of similar size fire districts within San Joaquin County. RCFD was found to have an operating cost of $108 per capita, which is 53 percent lower than the average of the agencies surveyed. This is a significant benefit to the taxpayers within the district boundaries considering the high level of emergency services provided, including Advanced Life Support.

As the RCFD continues to operate with a balanced budget, the additional revenue to increase staffing levels are not available.

BASIC STRUCTURAL FIRE PROTECTION PLANNING ISSUES AFFECTING THE DISTRICT

Structural Fire Protection Planning-Tactical Responsibilities of the Duty Crew

Under normal circumstances when a structure fire is dispatched in the District the on-duty crew, comprised of two personnel, will respond to the call in a fire engine. Additional Engines from neighboring departments may be automatically dispatched depending on the location and type of structure, as well as the report received when the fire is discovered. Our off-duty firefighters, if they are available to respond, have the duty to respond to the scene in other RCFD fire apparatus.

Currently, Ripon has only one staffed Station (Station 2-1) with 5 personnel on each shift, consisting of 1 Battalion Chief (Command), 1 firefighter and 1 engineer assigned to an engine, and 2 firefighters assigned to the ambulance.

RCFD ambulances are equipped with basic firefighting tools and complete sets of turnout gear for the Paramedic and EMT personnel assigned, as they are fully qualified firefighters in addition to their Emergency Medical Services (EMS) training. If the ambulance is already on a call for service or transporting to the hospital, the entire jurisdiction is covered by the Battalion Chief and two firefighters. For this reason, Automatic-Aid agreements with neighboring agencies: City of Manteca; Lathrop-Manteca Fire District; Collegeville Fire District; and Escalon Fire District, are relied upon for additional apparatus and personnel. The downside to mobilizing neighboring community resources is that it takes additional

time for these agencies to receive notification, turnout and travel to the location of the call and it removes resources from our neighboring communities.

Typically fire engines carry a limited supply of water, various amounts and sizes of hose, and are designed with a large capacity fire pump on board. Engine 2-1, for example, carries 750 gallons of water along with a pump capable of an output of 1,500 gallons per minute. On average, a residential fire requires 5,000 to 15,000 gallons of water. As a result, depending on the structure size, location, extent of the fire, the duty crew must rely on help to bring additional water in the rural areas and hydrant connections in the city to assist with firefighting efforts. Within the District, single family homes can range up to over 10,000 square feet. In a rural setting, the first-assigned fire apparatus carries 3,700 gallons of water; far short of what is needed. This is lessened in the incorporated area of the City of Ripon, due to the hydrant system in place, however, the same shortage of personnel still exists.

National Fire Protection Association (NFPA) Standard 1710 requires that there is a minimum of four personnel on the scene before entering the interior of a burning structure. This is commonly referred to as the "two-in two-out" rule. While two firefighters enter the structure for fire attack/rescue, two firefighters must remain outside the structure in position that will allow them to attempt a rescue of the firefighters during a catastrophic incident. For this reason, the "2 out" firefighters must be dedicated to this role only, and not tied to any other tasks.

In the event of a structure fire, first-arriving duty crew members, and other subsequent help, must spring into action in order to save lives, property, and begin addressing critical firefighting duties:

- Ascertain if there are possible victims inside the structure and perform rescue is necessary
- Perform a scene size-up to identify what is on fire and where it is coming from.
- Secure electrical and gas supplies as safely as possible.
- Determine the closest water point (i.e. dry hydrant or pond /reservoir) to help supplement fire suppression capabilities.
- Lay a large diameter hose line to a position of greatest advantage.
- Extend a hose line from the engine to protect exposed homes from heat and flames from the involved structure.
- Advance a hose line from the engine into the fire building to extinguish the fire and prevent it from spreading any further. In compliance with OSHA and NFPA standards, we can only enter a structure that is on fire when there is a potential for life safety or if at least four firefighters are on scene (two-in/two-out).
- Extinguish the fire with minimal structural and contents damage from fire, smoke, and water.
- Search and remove fire victims from the areas of risk.
- Force entry into the structure and open up concealed spaces.
- Raise portable ground ladders to affect rescue of fire victims on upper floors and gain access to the roof for ventilation.
- Control the flow path and move super-heated smoke from the interior of the structure to the outside by creating openings in the roof and utilizing existing openings.

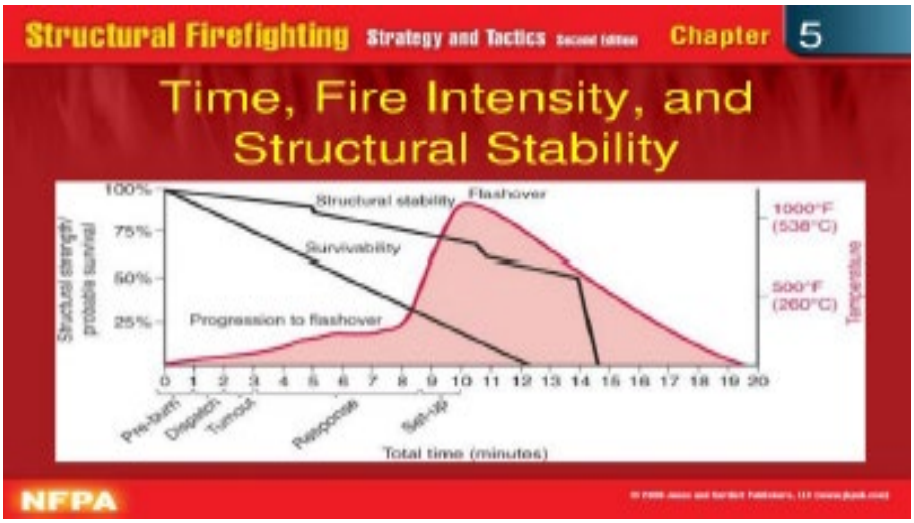
All of the above tasks must be completed within the first minutes of arrival, with limited personnel.

Fire Behavior in Structures

The services of the fire department are requested when conditions at the scene of an emergency are degrading very quickly. Whether the emergency is a fire, cardiac arrest, vehicle entrapment or a similar "emergency in progress," conditions at the scene are rapidly deteriorating. In the case of fire control efforts, it is important to develop an understanding of fire behavior within structures to gain an appreciation of the explosive growth of uncontrolled fire within a structure.

According to the NFPA and the United States Fire Administration (USFA), as well as actual assessment of fire ground conditions, it has been determined that the first five to eight minute "window period" in the early phases of a structure fire correlates directly with factors that influence the chances of survival of building occupants and the extent of fire damage to the structure.

In a routine fire in a home where actual flame exists, the combustion process produces heated gases that, in turn, heat adjacent combustible surfaces. As a result of the rapidly developing fire, the temperature within the room rises very quickly from the fires incipiency, to a point when all the combustible contents within a confined area will ignite in a flashover condition. This process normally takes place at about 400 to 1000 degrees Fahrenheit. As the room contents and wall/ceiling surfaces become heated, simultaneous ignition of all combustible material occurs resulting in a condition where high levels of superheated gases and fire rapidly spreads. Anyone who has not escaped from the room at the point of flashover is unlikely to survive; including firefighters, despite wearing a full ensemble of protective gear and breathing apparatus.



The mitigation plan is considered easy – fire is extinguished by taking away heat, fuel, or an oxidizer. Putting water on a fire quickly improves your chances for saving lives and minimizing property loss – while simultaneously reducing the potential for a flashover. In addition, attacking the fire prior to flashover significantly increases the chance of survivability of the occupants, increases the chance of saving the structure, and reduces the risk to firefighters. The slower your response or inability to get the essential tasks completed the more likely the fire is going to grow in size, enter void spaces, and then weaken the integrity of the structure. Simply put, the tactical objective of any fire department is to provide sufficient firefighting resources on the scene to attack the fire prior to flashover.

Fire behavior can also be altered by educating the public about things to do or things not to do when it comes to fire safety. This is why the fire service puts a huge emphasis on promoting fire safety and education.

Sometimes a fire department's "approval" rating in the community is based on the numbers of houses saved as compared to the number of houses that are completely burned down. Yet simple things like

early detection (smoke alarms or smoke detectors that report directly to a central alarm, residential sprinklers, regular cleaning of a fire place, eliminating fire causes, and closing the door, as mentioned above, will have a dramatic impact on a fire's behavior, a department's response, and an incident's positive outcome.

Response Time Model

Providing fire protection and response as well as emergency medical services includes complex organizational systems whose efforts entail saving lives and the preservation of property and structures. **Individual safety and life saving measures are the highest priority of the department**. As such, it is important to consider that:

- Emergencies do not only occur as single events. In 2022, Ripon Consolidated Fire District experienced 530 overlapping (concurrent) calls. 530 times in 2022. This means that during 22.43% of our total calls for service, our current first alarm resources were already committed to another call. In neighboring communities, additional staffed stations would normally respond to these incoming incidents.
- The fire station is close by and, therefore, firefighters and/or paramedics may not be on scene very quickly. Due to the situation described above, the station may not have any personnel available to respond to the dispatch.
- More than one fire engine or ambulance will be required. The system of dispatch utilized is an extremely sophisticated system operated by trained and accredited dispatchers and call-takers, with oversight by the San Joaquin County Emergency Medical Services Agency and the County Medical Director. The system is designed to take information from callers into the 911 system and ensure that the appropriate and adequate resources are sent from the closest agency to the emergency. The fact that the fire service spreads it resources (personnel) out on separate response units only means that on many calls, it will take more than one unit to answer that call safely.
- It takes more than one person handle the emergency. Sometimes the information received will prompt for additional personnel to respond from the fire agency for special circumstances such as heavy patients, patients entrapped in difficult to reach areas, or the standard of care required (Cardiac Arrest patients, etc.) requires more than 2 personnel on an ambulance to respond.

According to the NFPA Standard 1710, there are five critical time periods that must be considered in establishing the ability to attack structure fires in their incipiency prior to flash-over. The five time span periods are:

A. DISCOVERY OF FIRE: The time span that elapses between the inception of the fire, detection of the fire, and time to make initial contact with the Public Safety Answering Point (PSAP).

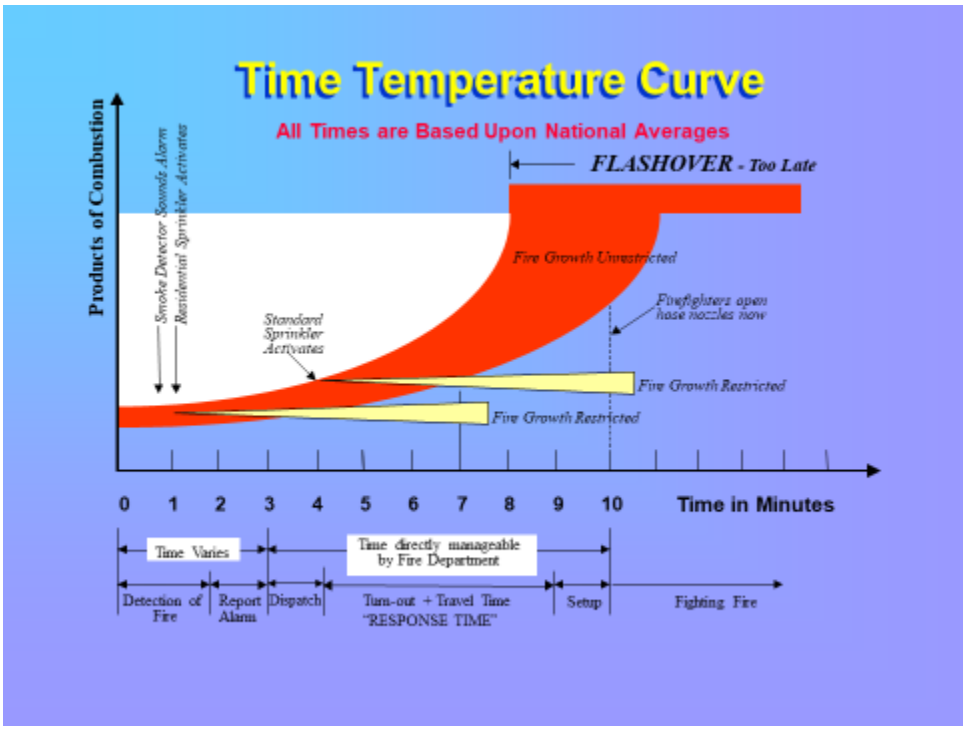
B. ALARM HANDLING TIME: The amount of time required to receive the call at the PSAP, verify the address of the incident, determine the appropriate fire company assignments, and to initiate the dispatch of those companies to the scene of the emergency.

C. TURNOUT TIME: The amount of time required for the fire company to receive the dispatch from the PSAP, don the appropriate personal protective clothing, get on the engine, and start in the direction of the incident.

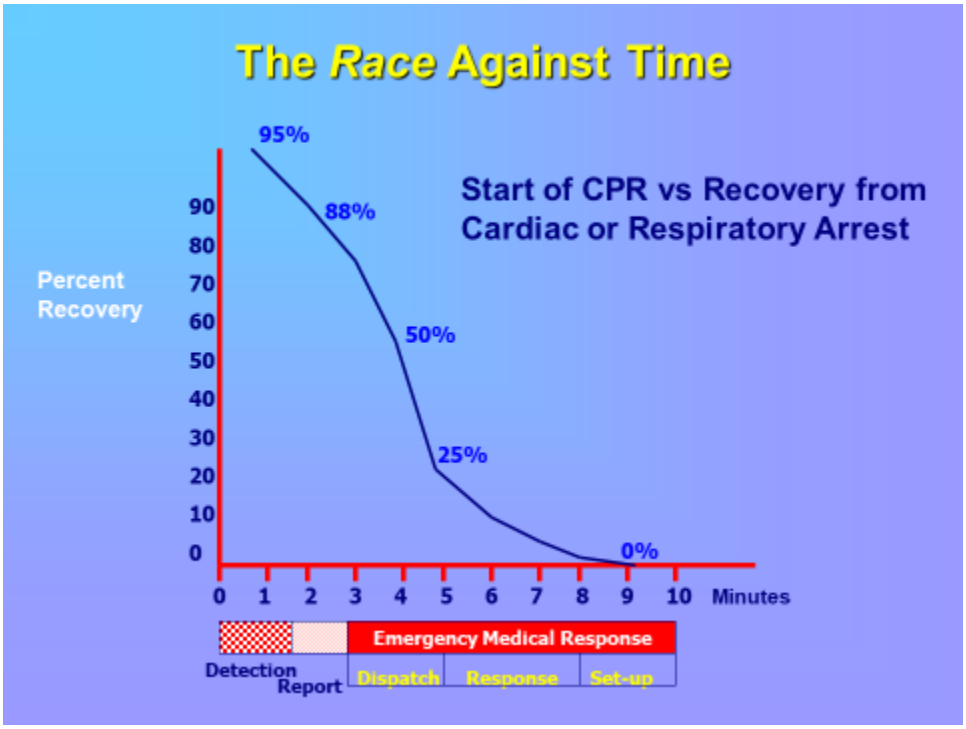
D. TRAVEL TIME: The elapsed time span from the moment the fire truck or ambulance starts moving towards the incident and the arrival time of that truck or ambulance on the scene.

E. SET-UP TIME: The time span required to actually "set-up" operations where a full-scale fire attack has been initiated.

In the Ripon, the Fire District can only control the turn-out time (C) and the set-up time (E). Staff can practice how quickly gear can be put on and how fast we get out the door (C) as well as how long it takes for the initial task set up completion (E) once arrived on scene. In order to maintain or improve either “D” or “E,” consideration must made about staffing an additional station. For Ripon Consolidated Fire District, it would be staffing Station 3, which will help reduce the travel time to certain parts of the District as well as add personnel that can tackle some of the set-up operations quicker. Additionally, another staffed station provides for the extra firefighters and equipment needed for calls in other areas of the District as well as in the case of concurrent or overlapping calls for service.



The same is true for medical emergencies as time is of the essence! During a cardiac or respiratory crisis, the earlier the intervention the greater the patient outcomes. According to the American Heart Association (2022), irreversible brain damage occurs after about four to six minutes after the incident and biological death begins to take place. If emergency medical personnel can be placed on the scene prior to biological death, mortality rates decline, lives are saved, and intervention effectiveness increases. The time for effective EMS intervention closely correlates to the window allotted for effective firefighting intervention prior to flash-over in a structure fire. Whether a fire department is responding to EMS services or fire suppression services, the first 4 to 6 minutes are very relevant to an incident's successful outcome.



Strategically Locating Fire Stations and Fighters

The proper efficient and effective way to determine the most appropriate fire station location for the community, several factors must be considered in such an essential strategic planning effort (Dey, 2021). These factors are:

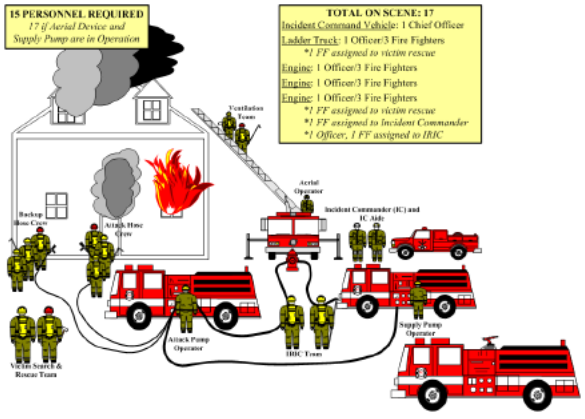
- Level of demand for service, which is usually based upon population density. In some cases, unusual hazards and risks will come into play.
- Travel time to reach different locations in the district.
- Future growth and development patterns of clustered calls.
- Topographical as well as traffic features.
- Acceptable elapsed time for an appropriate number of firefighters to arrive on scene and begin fire attack or EMS response.

The National Fire Protection Association (NFPA) is a global nonprofit organization committed to eliminating death and injury, as well as property and economic loss, due to fire, electrical, and related hazards. The NFPA's mission is to reduce loss through information, knowledge, and passion. Globally, the NFPA is well-respected by professional fire leaders. The NFPA has published standards for staffing, equipment and safety gear, operations, design requirements and performance standards.

In 2001, the NFPA, adopted *Standard 1710 - the Standard for Organization & Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations*, which guides fire departments toward adequate staffing, apparatus response, and incident matrix.

Part of NFPA Standard 1710 identifies target "numbers" to strive for as an organization. Those target numbers are:

Type of Measurement	Target numbers
First unit travel Time	4 minutes (90% of the time)
Initial full-assignment travel time	8 minutes (90% of the time)
First unit staffing	4 minimum
Full-assignment staffing	15-17
First BLS unit travel time	4 minutes*
First ALS unit travel time	8 Minutes*



It is important to understand that while NFPA is a recognized standard, it may not always be practical or attainable, for every jurisdiction. Factors such as population, property values and tax revenue, and expectations of the public as it pertains to response times and staffing levels come into play. While NFPA calls for a full alarm assignment if 15-17 personnel within 8 minutes travel time, it may not be attainable without the commitment from the voters to increase their property tax to fund that level. Since the nearest mutual aid company from outside the Ripon Fire District (Manteca Engine 245) is on average within 8

minutes to most areas of the City of Ripon, depending on location of incident, the most we can expect from mutual aid on initial assignment is Engine 245 from Manteca with staffing of 3 firefighters; providing they are not dispatched for service.

RCFD Current Apparatus/Crew Staffing

The Ripon Fire District provides daily apparatus staffing in the manner that follows:

The District staffs 1 fire engine with 2 personnel, 1 ambulance with 2 personnel, and 1 chief officer vehicle staffed with 1 person.

The Ripon Consolidated Fire District is unique in that the District is one of the few fire departments in the area that provide an ALS transporting ambulance, and the only one in San Joaquin and Stanislaus Counties. That ambulance provides lifesaving intervention, injury treatment and transport to individuals within the District. The ambulance and its crew are also unique in that they are also part of the fire and rescue component that the District provides. This adds an additional two personnel not only to EMS incidents, but also to fire and rescue calls.

When the ambulance transports to the hospital, they are in essence, unavailable to respond to another call for service within the District until they turn their patient over to hospital staff, make the ambulance response ready, and return to the District. The average turn-around time for the ambulance when taking a patient to the hospital and its return to service within the District is generally about an hour, leaving the engine with its crew of 2 personnel and a Chief Officer in the District to cover calls for service. There have been numerous times, seemingly increasing as time goes on, that a second, third, and fourth call for service occurs while the ambulance is completing its “run” to the hospital. Other instances of an overlapping incidents have occurred while the engine and ambulance have been committed to an emergent call, when a second, third and fourth call for service occurs.

Apparatus Availability on a Call by Call Basis

The District has been tracking apparatus availability on a call by call basis. Based on the normal apparatus staffing of 1 engine, 1 ambulance, and 1 chief officer. In 2022, the number of calls for service and apparatus/staffing available are as follows:

- 1,640 requests for service with 3 staffed units available (5 personnel available).
- 164 requests for service with 2 staffed units available. 1 unit was committed to another incident at the time of call (3-4 personnel available).
- 49 requests for service with 1 staffed unit available. 2 units were committed to another incident at the time of call (1-2 personnel available).
- 34 requests for service with 0 staffed units available (0 personnel available). All routinely staffed Ripon units were committed to one or more incidents*

*It should be noted that when one or more of the district’s units are unavailable, it creates a situation in which the district must rely on Auto or Mutual Aid. Auto or mutual aid is where a request is made to a neighboring agency to assist with an incident. This in turn can create a response delay depending on the responding neighboring agency, as well as creating a response deficiency within the neighboring agency.

*Numbers reflected on the Overlapping Call and Apparatus Availability Reports only reflect incidents within District boundaries. The District does provide auto and mutual aid to neighboring agencies.

Staffing and Apparatus Deployment

Currently, the Ripon Consolidated Fire District Station 1 is staffed 24 hours a day, 365 days a year with five fire personnel per shift. These five firefighters provide the initial fire response and advanced life

support (ALS) ambulance services. Station 1 houses most of our equipment because of the staffing of the duty crew and the proximity to the area with the highest call volume.

Station 2 is unstaffed and will soon house the Valley Regional Communication Center (VRECC), which provides dispatching services for Ripon and 13 other Fire Districts, as well as two community ambulance services in Manteca and Escalon.

Station 3 is currently unstaffed. It was built using development funds in 2014 designated for capital costs along with redevelopment funds in anticipation of the growth that has occurred in the northern part of the City of Ripon.

Insurance Services Office (ISO) Review of Structural Fire Suppression Delivery System

The Insurance Service Office (ISO) Public Protection Classification (PPC) program plays an important role in the underwriting process for insurance companies especially when it comes to making a decision about what businesses to write and what coverage to provide for personal and commercial businesses. The ISO assessment conducted is standardized as not to create bias among agencies.

In 2022, the Ripon Consolidated Fire District had the ISO evaluate fire department capabilities and capacity. In a broad sense the jurisdiction was evaluated in three key areas: emergency communications, the fire department itself, and water supply. Each category was then broken down into key parts and they were scored accordingly. For instance the fire department, the biggest factor of the three, is evaluated for its engine companies, reserve pumpers, pump capacity, aerial ladder companies, reserve ladder/service trucks, deployment analysis, company personnel, training, operational considerations, and community risk reduction.

Of the ten categories listed above the five key “point getters” are company personnel (15 points possible), deployment analysis (10 points), training (9 points), engine companies (6 points), and community risk reduction (5.5 points). Obviously the fire administration should continue to evaluate these areas and make marked improvement when they can.

The ISO determined during their review that the emergency communications, handled by the American Medical Response’s Valley Regional Emergency Communications Center (VRECC) located in Salida, CA., fared fairly well and awarded Ripon Fire District 8.2 points out of 10. VRECC is one of only 36 Communications Centers worldwide that carry a dual accreditation for both Fire and EMS Dispatch, awarded by the National Academy of Emergency Dispatch.

The fire department needs to make improvements in the areas of reserve pumpers, ladder service, our deployment analysis, company personnel, and training. Here is a synopsis of what the ISO reviews:

- Reserve Pumpers: This item reviews the number and adequacy of each reserve pumper (i.e. fire engine) and its equipment. The Ripon Fire Department has three front line fire engines, and no reserve/back-up units. Therefore, we were awarded .08 out of a possible .50 points..
- Ladder Service: The ISO considers aerial trucks to be dependent upon the number of buildings three stories in height (or 35 feet), buildings where a fire flow of 3,500 gallons per minute, and the method of operation. The Ripon Fire Department does have an aerial truck complete with a full complement of ground ladders. That, in conjunction with some automatic mutual aid agreements for Manteca, gained us 3.97 out of a possible 4.0 points.
- Deployment Analysis: In addition to the credit for distributing our equipment across the District along with how they are staffed through a road-mile analysis ISO analyzes information from our Computer Aided Dispatch (CAD) system to determine how compliant (or non-compliant) we are with the thresholds of NFPA 1710 – Standard for the Organization and Deployment of Fire

Suppression Operations, Emergency Medical Operations, and Special Operations to the Public as outlined above. We received 5.24 points out of 10.

- Company Personnel: This is dependent on the average number of existing firefighters and company officers (i.e. sergeant, lieutenant, captain, and chiefs) available to respond to reported first alarm structure fires in the township. We earned credit for on-duty staffing but only earned partial credit for on-call responders because of the response time factors. Paid-on-call/off-duty firefighters are divided by 3. For example, 8 on-duty personnel may earn a municipality 8 points, but 2 on-duty firefighters and 6 average on-call responders would earn a municipality 4 points. Automatic Aid responders earn credit as well depending on their response distances and capabilities. We earned 6.52 points out of 15.
- Training: The training aspect of the PPC review consists of our facilities and use, annual training in structure fire related subjects (per NFPA 1001), company officer continuing education in accordance with NFPA 1021, new driver and operator training (per NFPA 1002 and NFPA 1451), existing driver and operator training (also per NFPA 1002 and NFPA 1451), hazardous materials (NFPA 472), recruit/probationary training (NFPA 1001), and pre-fire plan inspections of each commercial, industrial, institutional, and other similar building types. For maximum credit these inspections should be made annually and built into training. We have made major strides towards compliance with the requirements for training, including the amount of training, medium of those trainings, and the way we document our training. In 2015 we received 6.47 points out of 9.
- Community Risk Reduction: How much of a role does a fire department play in the reduction of fire-related risks? That is the focus of this area. Credit is given for Fire Prevention and Code Enforcement, Public Fire Safety Education, and Fire Investigation Programs. RCFD received 4.17 points out of a possible 5.50 points.

At the conclusion of ISO's Public Protection Classification assessment, Ripon Fire Department scored 72.76 points out of a possible 105.5 points, earning a classification of 3. There are several areas upon which we have improved and there are plans to improve on others. However, boots on the ground is what really helps a community's PPC. An overall PPC summary is located on below.

FSRS Feature	Total Possible Points	Ripon Consolidated Fire District's Score
Emergency Reporting	3.0	2.56
Telecommunicators	4.0	4.0
Dispatch Circuits	3.0	1.65
Total for Emergency Communications	10.0	8.20
Engine Companies	6.0	5.24
Reserve Pumpers	.50	.08
Pump Capacity	3.0	3.0
Ladder Service	4.0	3.97
Reserve Ladder and Service Trucks	.50	.17
Deployment Analysis	10	5.24
Company Personnel	15	6.52
Training	9.0	6.47
Operational Considerations	2.0	2.0
Total for Fire Department	50	33.17
Water Supply System	30	22.55
Hydrants	3.0	3.0
Inspection and Flow Testing	7.0	2.35
Total for Water Supply	40.0	27.90

STAFFING RECOMMENDATION

The number one priority of the Ripon Consolidated Fire District is emergency response to ensure the preservation of life, high quality care for patient safety and the protection of property. Given the state of the Ripon Consolidated Fire District, the district is unable to keep up with the amount of calls as presently staffed. Nearly one third of all our calls experience a delay in response. This is a sobering statistic given the district had nearly 2,000 last year. Further, with increased calls, there is an increase in response time. In 2018, the district could respond to a call within 6 minutes. It is projected that in 2032, it will take over 12 minutes for the district to respond to a call. The expanded response time will negatively impact human life outcomes, compromise safety and result loss of property.

The average full-time Ripon firefighter/paramedic makes about $88,227, annually. Coupled with benefits and required insurance coverage the amount is $144,000. In considering higher ranking personnel, an engineer is calculated at $163,401 and captain at $175,834.

To address the concurrent call volume and increased response times occurring in the District, it would be prudent to Staff Station 3. It is recommended the staffing levels be at a 3-person Engine Company at each station, which would increase the staffing on the Engine at Station 1 from 2 to 3 persons.

Full-time Advanced Life Support/Fire Suppression staffing at both stations 24/7 including the following:

Station 2-1

1 ALS Ambulance staffed with 2 personnel (current)
1 ALS Engine Staffed with 3 personnel (currently 2)
1 Battalion Chief (current)

Station 2-3
1 ALS Engine staffed with 3 personnel (currently unstaffed)

Staffing at this level provides for the arrival of 10 personnel, including 2 from the ambulance if the ambulance is not assigned to a medical incident at the time. The number of individuals increase to 12 if Automatic Aid (Engine 245 from Manteca) is placed on the initial assignment. The NFPA recommends 15-17 personnel on the initial attack as the standard for structure fires. The Ripon Consolidated Fire District total full-time firefighter count would increase from 15 to 27. Additionally, having another staffed Station means that when an additional incident occurs while the first is still in progress, we can assure that there are resources to respond to the new incident.

The annual costs are estimated at $1,842,739 for personnel costs and an estimated $129,800.00 for operational costs to open Station 3.

Advantages: Under normal circumstances the response times to all areas North of Hwy 99 would improve. This in turn improves life saving measures and the provision of quality care. Availability of emergency response resources during concurrent calls would improve substantially, thereby decreasing response times. Additional full-time staffing would play a significant role in being compliant with the Occupational Safety and Health Administration (OSHA) policy 29 CFR 1910.134(g)(4)(i). OSHA two-in/two-out rule and initial fire ground operations. Coupled with OSHA compliance, the Ripon Consolidated Fire District's Insurance Services Office (ISO) public protection classification for our commercial districts may increase thereby saving our businesses money. By increasing the staffing level on Engine 1 to 3 personnel, Water Tender cross training may take place and therefore the Engine may be kept in-service when the ambulance crew is in route to the hospital. One of the biggest benefits is increasing the level of firefighter safety, which is outlined in the District's Strategic Plan.

Disadvantages: Simply stated costs to the district and taxpayers will increase. These are personnel and operational costs. Personnel costs include salary, overtime, health/dental insurance, retirement (non-PERS) 401k, worker's compensation, educational stipends, social security, uniforms, disability insurance, training, and certificate renewals. Operational costs include fuel, maintenance, insurance, utilities, etc.

Concluding Remarks From the Chief

As the Fire Chief of the Ripon Consolidated Fire District, it is important for me to emphasize that the Ripon Consolidated Fire District must remain proactive in efforts to reduce, prevent, and mitigate the devastating impacts caused by fire and EMS incidents. It is my responsibility to ensure that we respond with the proper resources, training and attitude to each incident. In other words, FAST, WELL-TRAINED and NICE! It is also my responsibility to provide the highest level of safety for our personnel, in order for them to remain effective in their jobs. I believe that a well-maintained fleet of fire and EMS vehicles can only account for so much when it comes to our fire suppression, medical treatment, and most importantly, the prevention of fire, injuries, and loss through community risk reduction efforts.

It is important to emphasize to my command staff and the entire department that we must begin to shift from "just" responders to strategic problem-solvers that are committed to making efforts to identify, reduce, and mitigate risks.

It is my opinion that the argument about staffing one station or the other is really short-sighted. While arguments may be made that on one call, the public would have been better served if the crew was in Station 1 – as true as that may be, there is a high probability that the public was better served on the next call by the crew being in Station 3. The same argument could be made if the crew was rotated daily, as some have suggested, because there is just as much likelihood that a call may be in Station 3 zone or Station 1 zone on a "Wednesday".

We must look beyond which "one" station is more appropriate than the other. We must look at long term plans, with the support of the community, so that we can strive to follow the best practice recommendations when responding to emergencies. Having depth in staffing to be able to ensure that there is a response to the "next" or closest emergency is paramount in being able to deliver effective responses and mitigations to all emergency incidents as they happen. In addition, I must be an advocate of organizational change so that other Ripon firefighters become champions of integrating our response capabilities with prevention and mitigation strategies. I must also be a champion of succession planning so that we are all assured that these efforts carry on into the future. In closing, I appreciate the opportunity to share where our department has been, where we are now, and how we hope to be able to perform in the future.

Across the nation, there are always debates about different ways to provide public safety protection to the community. The decisions usually come down to money, efficiency, and practicality. The question must be asked, "What level of service do you want the fire department to provide?" before a model can be chosen. For instance, does the community want only one fire station to be staffed forcing the board and/or the fire chief to pick one based on efficiency and doing the greater good for the greater number of people? Perhaps the community, as a whole, just wants someone "at the ready" who is able to drive a fire truck from the closest station? Does the community want a staffed Advanced Life Support available 24/7/365 at both fire stations? These are all questions that the community must consider, and determine the level of services desired of its fire department in the future.

Appendices

Definitions

Advanced Life Support (ALS)– also referred to as Advanced Cardiac Life Support (ACLS), is a set of life-saving protocols and skills that extend beyond Basic Life Support (BLS). It is used to provide urgent treatment to cardiac emergencies such as cardiac arrest, stroke, myocardial infarction, and other conditions.

Ambulance – A unit capable of transporting a patient to the Emergency Department at a hospital. Usually staffed by one EMT and one Paramedic.

Ambulance Patient Offload Time (APOT)- This is the time that an ambulance crew spends waiting at a hospital for the Emergency Department to formally take over the care of a patient brought in by the crew. Extended ambulance patient offload times (APOT), or "wall times," at hospitals are causing long waits for 911 and inter-facility patients and exacerbating the EMS workforce shortage. Ambulance services across the country are continually trying to meet demand with fewer resources; when EMS providers are kept out of service for extended periods of time because they are unable to transfer patient care at the hospital, wait times for both 911 and inter-facility patients increase and both emergency and non-emergency calls pile up. (National Association of Emergency Medical Technicians, January 28, 2022).

Basic Life Support (BLS)- A level of medical skill used to treat victims experiencing life-threatening illnesses or injuries until they can be given full medical care at a hospital. BLS requires knowledge and skills related to CPR, use of AEDs, and relieving airway obstructions.

Captain- An individual in charge of specific fire apparatus and crew. Their rank carries certain authorities in the Chain of Command, and they report directly to the Battalion Chief, and other Chief Officers.

Emergency Medical Technician- A certification of training level for Basic Life Support (BLS).

Engine - An Engine is a piece of fire apparatus that is equipped with a tank and pump, along with basic ground ladders. An engine also carries extrication equipment, emergency medical equipment and many other emergency response equipment items.Engine Company -A crew of personnel that respond to a call on the fire engine. May consist of a captain, engineer, and firefighters.

Engineer- Typically performs the function of driving and operating fire apparatus

Firefighter- Entry level position in the Fire Service. Firefighters can also be certified as EMT's or Paramedics.

Fire Truck - A Fire Truck is a piece of fire apparatus that is equipped with a hydraulic ladder and master stream device, in addition to a full complement of ground ladders. Not all Trucks have a tank to carry water on board, or a pump. A Truck that is designated as a "Quint" has everything, Tank, Pump, Ground ladders and an elevating device. Ripon Fire District employs a Quint in its operations.

Fire Truck Company –A truck company it a crew that responds to calls for service on the fire truck, usually structure fires. It may consist of a fire captain, engineer, firefighters.

Immediately Dangerous to Life and Health (IDLH)- An environment where the atmosphere is deemed to be immediately dangerous to life and health, due to toxicity levels and/or temperature levels, or due to lack of oxygen.

Paramedic (EMT-P) – A certification of training level for Advanced Life Support (ALS).

Two-in, Two-out- The Professional Firefighting Standard of **two-in, two-out** refers to United States Occupational Safety and Health Administration (OSHA) policy 29 CFR 1910.134(g)(4)(i).The respiratory protection standard requires that workers engaged in fighting interior structural fires work in a buddy system; at least two workers must enter the building together, so that they can monitor each other's whereabouts as well as the work environment. There must also be at least two standby personnel outside the fire area prepared to rescue the inside firefighters should the need arise.

Fire Service Positions and Ranks

The title “fire fighter” is used loosely and needs to be better understood. First of all, firefighter is a rank, the lowest (or entry level) rank in the professional service. Each rank is comprised of 5 steps, dictated by experience and training at each step. Each rank ascends from and though the prior ranks. The ranks are:

Fire fighter – Step 1 (probation) through Step 5. Probation length is 18 months. The Captain evaluates fire fighter.

Engineer – Step 1 through Step 5. This person has all the qualifications of a fire fighter, but also is trained and certified to operate the apparatus and pumping and aerial equipment. Probation length is 12 months. The X evaluates the Engineer.

Captain – Step 1 through Step 5. This position has all of the qualifications of the first two ranks, plus is in command of a piece of apparatus. They are responsible for operations and safety of the personnel assigned to his/her apparatus, and usually will establish command of an incident until a higher ranking officer arrives. They are trained and authorized to make command decisions and direct their personnel on the fire ground as well as administratively. Probation length is 12 months. The Battalion Chief evaluates the Captain.

Battalion Chief – Step 1 through Step 5. This person is in command of the response and the entire on duty shift. They are fully qualified fire fighters as they have ascended up through the ranks, and are responsible to the Assistant Chief and/or Fire Chief. The probation length is 12 months.

Assistant Chief/Fire Marshal – This person has also ascended through the rank system, and answers to the Fire Chief. The Fire Marshal is responsible for all fire prevention tasks such as plan check, permits, inspections, new construction, and enforcement of the Fire Code under the Fire Chief.

Fire Chief - is the Senior ranking officer in charge of the entire department and is appointed by the governing body of the District/Board of Directors or in a city department, by the city administrator. A typical Fire Chief will have spent years advancing through the ranks and demonstrates leadership qualities and skills in addition to gaining education from multiple sources.