

**ROSS VALLEY FIRE DEPARTMENT  
STAFF REPORT**

For the Meeting of October 11, 2023

To: Board Of Directors

From: Dan Mahoney, Interim Fire Chief

Subject: Receive Staff Report Presented to Labor Management Subcommittee and Consider Recommendation From Labor Management Subcommittee Relating to Increased Staffing per The "2022 Staffing/Deployment" Side Letter. Recommendation Includes a Funding Plan and a Position Start Date.

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**RECOMMENDATION:**

Staff recommends the Board receive the staff report (see below) presented to the “Labor Management Subcommittee” and consider the recommendation from the “Labor Management Subcommittee” relating to increased staffing per the "2022 Staffing/Deployment" side letter. The recommendation includes a funding plan and position start date.

At the October 5, 2023 “Labor Management Subcommittee” meeting, a motion was passed, by unanimous vote, to provide a recommendation to the Board.

The recommendation is as follows:

1. **Funding Plan:** Option 1 was chosen and states “Each Member agency will begin paying their respective “percentage share” from the position date of hire.”
2. **Position Start Date:** July 1, 2024

This recommendation was based on the following staff report presented at the October 5, 2023 Labor Management Subcommittee meeting.

**BACKGROUND:**

Since the creation of the Joint Powers Authority (JPA) in 1982, the Ross Valley Fire Department’s (Department) response model formerly relied on and was augmented by a large group of local volunteer firefighters who responded to incidents, such as structure or vegetation fires, to provide assistance to the Department’s two-person engine company deployment model. Additionally, many of our full-time personnel lived in the communities our department serves and they too would respond to incidents off-duty. The ability to use off-duty personnel and volunteer firefighters provided some operational

relief to the Department's two-person engine companies. This model was less than ideal, creating a delayed and inconsistent response force. The Department's Volunteer Program no longer exists due to lack of interest and most full-time personnel have moved away from the community we serve primarily due to high housing costs.

Community expectations of the Department have increased, and external factors have created challenges and demands that have put our Department at the forefront of mitigating complex and challenging emergency responses of all kinds. Examples include flooding; swift water rescue; violent encounters / active shooter response; a "new normal" of intensely destructive Wildland Urban Interface fires; and extension of wildland fire season from a few months (formerly) to potentially almost year round. These realities, particularly from the fire prevention and risk reduction standpoints, have led the Department to enhance our fire hazard and life safety inspections of businesses and residential apartment buildings. The Department, with the help of funding through Measure C, has also increased our neighborhood defensible space efforts, working with communities to reduce fuels, improve emergency access and egress, and plan for potential evacuations. Since the Department's JPA was formed 41 years ago, the Department has hired two Fire Inspectors (JPA Funds) to increase service demands relating to fire prevention, one Emergency Preparedness Coordinator (Measure C funds) and one Defensible Space Coordinator (Measure C funds). No additional firefighters have been hired to meet these increased operational demands of the Department's engine company, as the minimum fire engine company staffing still remains at two-personnel.

In 2001, the National Fire Protection Association (NFPA), a leader in the development of industry standards for the fire service, issued its first edition of the "Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments" known as NFPA 1710. The document identifies minimum staffing for fire engines along with identifying the number of personnel that shall be deployed to a structure fire.

In 2019, Citygate Associates conducted a comprehensive Standards of Coverage Assessment of the Department to provide a foundation for future fire service planning. The goal of this assessment was to identify both current services and desired service levels, and to assess the Department's ability to provide them. This data-driven report strongly suggests that the RVFD should staff three-person engine companies.

At the January 2020 Board meeting, a "Staffing/Deployment" side letter was approved to enhance the current "Labor Management Subcommittee" (subcommittee) with additional members. The subcommittee's goal was "how to increase staffing".

The subcommittee held its first meeting on April 20, 2022. Discussion was held regarding the need to identify future funding if the Department was awarded its grant application for the 2021 "Staffing for Adequate Fire and Emergency Response" (SAFER) Grant. It was explained that the grant would provide funding for the first 36 months of the proposed Firefighter position (three Firefighters in total), however, on month 37, the member agencies would need to begin funding the position. Staff was given direction to provide an ongoing cost estimate after the first 36 months and present it to the Board for discussion at the June 2022 Board meeting. Staff presented the cost estimate at the June

2022 Board meeting. No direction to Staff or action was taken other than for Staff to keep the Board informed on the SAFER grant application. Ultimately the SAFER Grant was not awarded to the Department. The Subcommittee has not met since, and there has been no further formal discussions at the Board level.

At the September 2023 Board Meeting, Staff recommended filling a vacancy in the Subcommittee and holding another Subcommittee meeting before the October 2023 Board meeting.

The Subcommittee met on October 5, 2023. A staff report was presented and a discussion was held regarding increased staffing to three-person engine companies. A motion was passed to bring a recommendation to the Board that included a funding plan and start date for the new firefighter position.

**DISCUSSION:**

When evaluating the need to increase staffing, this staff report will refer to the industry standard set forth by the National Fire Protection Association 1710. The Departments 2019 Standards Of Coverage Assessment will also be a guiding document as to how the Department compares to the standard. Below is a brief background of these documents and key points within them relating to the Department's current staffing.

**National Fire Protection Association 1710 (NFPA 1710)** - A U.S.-based international nonprofit organization devoted to eliminating death, injury, property, and economic loss due to fire. In 2001, the first edition of NFPA 1710 was issued. The development of that benchmark standard was the result of a considerable amount of hard work and tenacity by the technical committee members and the organizations they represented. This standard was the first organized approach to defining levels of service, deployment capabilities, and staffing levels for career fire departments. Research work and empirical studies in North America were used by the committee as a basis for developing response times and resource capabilities for those services, as identified by the fire department.

The following two NFPA 1710 industry standards will be referred to within this staff report:

<b>NFPA 1710 ENGINE COMPANY STANDARDS</b>
<b>5.2.3.1.1</b> These companies shall be staffed with a minimum of <u>four on-duty members</u> (NFPA 1710 p.11)
<b>NFPA 1710 INITIAL ALARM ASSIGNMENT STANDARDS</b>
<b>5.2.4.1.1</b> (9) Single family Dwelling Initial Alarm Assignment Capability - Total effective response force with a minimum of 16 firefighters. (NFPA 1710 p.12)
<i>*Initial Alarm Assignment = number of firefighters initially deployed to a structure fire</i>

**2019 Standards Of Coverage Assessment (2019 SOC)** - In 2019, Citygate Associates conducted a comprehensive Standards of Coverage Assessment of the Department to provide a foundation for future fire service planning. The goal of this assessment was to identify both current services and desired service levels, and to assess the Department's ability to provide them. Citygate utilized various NFPA and Insurance Services Office publications as best practice guidelines, along with the self-assessment criteria of the Commission on Fire Accreditation International.

The following are recommendations, opinions and excerpts from the 2019 SOC that correlate with how the Department meets the NFPA 1710 industry standards:

Recommendation #3: Consider providing a third firefighter per day on the three engines other than Engine 18. (2019 SOC p.7)

Citygates Overall Opinion: "Citygate is, however, concerned about the overall limited Department staffing per day and its ability to respond with more "weight of attack\*" to keep emerging serious emergencies controlled. Even Countywide mutual aid resources are not quickly available in this part of Marin County, as they would be in an urban area with flat terrain and interconnected roads." (2019 SOC p.4)

2.5.1 Critical Firefighting Tasks: "Table 8 illustrates the critical tasks required to control a typical single-family dwelling fire with six response units (engines/chief), for a total Effective Response Force\* of 16 personnel, where the Ross Valley Fire Department initially sends 12. A confirmed serious fire additionally receives a second Battalion Chief and a fourth engine raising this to 15 personnel. However, in many locations these additional units come from much farther away. These tasks are taken from typical fire departments' operational procedures, which are consistent with the customary findings of other agencies using the Standards of Coverage process. No conditions exist to override the Occupational Safety and Health Administration two-in/two-out safety policy, which requires that firefighters enter Immediately Dangerous to Life and Health atmospheres, such as building fires, in teams of two, while two more firefighters are outside and immediately ready to rescue them should trouble arise." (2019 SOC p.26)

2.5.3 Critical Task Analysis and Effective Response Force Size - A question one might ask is, "If fewer firefighters arrive, such as does occur in the Ross Valley Department, what from the list of tasks mentioned would not be completed?" This is also critical given the two firefighter staffing. The initial force is a smaller count as it takes the third and fourth-due units much longer to arrive. Most likely, the search team would be delayed, as would ventilation. The attack lines would only consist of two firefighters, which does not allow for rapid movement of the hose line above the first floor in a multiple-story building. Rescue is conducted with at least two person teams. Thus, when rescue is

essential, other tasks are not completed in a simultaneous, timely manner. Effective deployment is about the **speed** (travel time) and the **weight\*** (number of firefighters) of the response. (2019 SOC p.30)

This staff report will also reference various field studies.

*\*Weight of attack - refers to multiple-unit responses (Effective Response Force, or ERF, commonly also called a First Alarm) for more serious emergencies such as building fires, multiple-patient medical emergencies, vehicle collisions with extrication required, or technical rescue incidents.*

The Department’s current response model relies on a two-person engine company consisting of a Captain and Engineer for emergency (including Emergency Medical Services EMS) and non-emergency response, for fire prevention efforts, to provide public education, and to perform every other task that is required for the Department to function at the highest level and meet the needs of the community. Unlike other Fire Departments, and the NFPA 1710 industry standard (5.2.3.1.1), the Department does not have a Firefighter position within our ranks. Rather, the roles and assignments that typically fall on a person in this position at the scene of an incident instead fall to the Engineer or Captain. Below are the typical duties of a Captain, Engineer and Firefighter at a structure fire incident:

TYPICAL DUTIES AT A STRUCTURE FIRE		
CAPTAIN	ENGINEER	FIREFIGHTER
<i>Engine Company Supervisor</i> <i>Crew Safety Officer</i> <i>In charge of crew accountability</i> <i>Makes decisions quickly/accurately to limit loss of life</i> <i>Command's emergency situations until relieved</i> <u>COORDINATES</u> fire control/search and rescue/ventilation/salvage/overhaul/ventilation operations, <i>Provides EMS care</i>	<i>Operates and pumps fire engine at fire</i>  <i>Responsible for maintaining and driving apparatus to emergency incidents</i>  <i>Functions as a Firefighter when assigned to other functions on the fire when not the pumping Engine</i>  <u>CONDUCTS</u> fire control/search and rescue/ventilation/salvage/overhaul/ventilation operations  <i>Provides EMS care</i>	<i>Responsible for stretching hose lines</i>  <i>Operating all tools and equipment on the Engine used for various types of emergency fire and rescue operations</i>  <u>CONDUCTS</u> fire control/search and rescue/ventilation/salvage/overhaul/ventilation operations  <i>Provides EMS care</i>

All of the above are critical life saving tasks that need to be accomplished on the fire ground. You will notice the compaction of responsibilities that our Engineers and Captains experience at every incident due to no Firefighter position. Functioning with a two-person engine company negatively impacts our safety, capacity, and operational effectiveness as noted in the 2019 SOC “Critical Task Analysis” mentioned above.

The following section identifies common engine company workloads and quantifies the difference between a two-person and three-person engine company through National Institute of Standards and Technology (NIST) field experiments. Even an increase in staffing on one of our four fire engines will have an immediate impact as seen below:

**Structure Fire Fighting Impacts** - As mentioned in the Departments 2019 SOC, one of the two contributing factors to an effective deployment model is *weight* (number of firefighters) of the response. The Department currently has 15 firefighters on its Initial Alarm Response, one less Firefighter than the industry standard. Increasing staffing on one fire engine per the “Staffing/Deployment” agreement will allow the Department to comply with the following NFPA 1710 standard:

NFPA 1710 5.2.4.1.1: (9) Single family Dwelling Initial Alarm Assignment Capability  
Total effective response force with a minimum of 16 firefighters. (NFPA 1710 p.12)

Fire extinguishment and search/rescue operations are time critical and can be a matter of life or death. The following “National Institute of Standards and Technology Fireground Field Experiments” (NIST Fire) quantifies the time differences between two and three person engine companies. You will notice a faster “Hose Stretch” that equates to a more rapid fire extinguishment and a faster “Search/Rescue Start Time.” All that equates to an increased survivability rate for fire victims.

NIST FIREGROUND FIELD EXPERIMENTS	
<b>Hose Stretch</b>	A two-person crew took 57 seconds longer than a three-person crew to stretch a line. (NIST Fire p.38)
<b>Search/Rescue Start Time</b>	The three-person crew started a primary search/rescue more than 25 % faster than the two-person crew. (NIST Fire p.41)

**Emergency Medical Care Impacts** - Engine companies are usually the first on scene during Emergency Medical Service (EMS) calls. The following “National Institute of Standards and Technology EMS Field Experiments” (NIST EMS) quantifies the time differences between two and three person engine companies. Notice a three-person engine company provides faster “Patient Access” and a “Patient Removal “ start time. All that equates to improved medical care on routine EMS incidents.

PATIENT ACCESS
Two-person crews finished the patient access tasks approximately half a minute later than larger first responder crews.(NIST EMS p.33)
<i>*(Note: Our two-person engine companies are sometimes tasked with carrying 94.6 lbs of medical equipment while gaining “patient access”.)</i>
PATIENT REMOVAL
Two-person first responder crews completed patient removal between (1.2 – 1.5) minutes slower than larger crews, depending on crew size. This is largely the result of work load in carrying equipment, supplies and the patient with fewer crew members. (NIST EMS p.33)

One of the most challenging EMS calls a firefighter responds too is a cardiac arrest (not breathing/no pulse). Providing efficient CPR is vital to reversing the effects of cardiac arrest and saving a life. Providing chest compressions, rescue breathing and operating a defibrillator are three core tasks that must take place simultaneously. A two-person engine company cannot perform these three tasks simultaneously. Additional fire engines from further away subsidize our two-person engine company, thus delaying efficient CPR by minutes, when seconds count.

The “Chain Of Survival” identifies four factors that will increase the survivability rate of someone in cardiac arrest. Increasing to a three-person engine company will improve speed of patient access/patient removal, and allow the first engine company on scene to provide immediate CPR (chest compressions/rescue breathing) and defibrillation, resulting in an improved survivability rate within the community.

CHAIN OF SURVIVAL		
1.	Early Access	Patient Access
2.	Early CPR	Chest Compressions and rescue breathing are core CPR tasks
3.	Early Defibrillation	Core CPR task
4.	Early Advanced Medical Care	Part of Patient Removal

**Physiological Effects** - Reports on firefighter fatalities consistently document overexertion/overstrain as the leading cause of line-of-duty fatalities. There is strong epidemiological evidence that heavy physical exertion can trigger sudden cardiac events. Therefore, information about the effect of crew size on physiological strain is very valuable.

Danger is increased for small crews because the stress of fire fighting keeps heart rates elevated beyond the maximum heart rate for the duration of a fire response. (NIST Fire pg 50)

#### Average Heart Rates

- Higher for members of small crews.
  - Particularly two-person crews.
- Higher heart rates were maintained for sustained time intervals.

### CONCLUSION

The Department needs a paradigm shift to maintain effective operational readiness in this modern world. In order to meet all of these new demands, we need to increase our engine company staffing as soon as possible. The Department is currently the only department in Marin County that has two-person engine companies. Marin County fire agencies have a combined 31 staffed fire engines, 26 of which are staffed with three personnel. Of the remaining five engines not staffed with three personnel, four of those engines are the Departments.

It has been a long term goal of the Fire Board to make the transition to a three-person engine company. The “2022 Staffing/Deployment” Side Letter provides an opportunity for the Department to begin staffing its engines with one three-person engine company prior to July 1, 2025 if the Board so chooses. The remaining two engine companies will be staffed with three personnel after the closure of Station 18 on July 1, 2025.

### MEMBER AGENCY COSTS

The chart below represents a fully-burdened cost of three Firefighter Paramedic positions, taking into consideration the following: monthly salary/benefits were calculated using the Boards agreed (on 1/8/22) amounts from the Firefighter Paramedic “Side Letter Of Agreement” and salary schedule/benefits were adjusted to match the negotiated increase/benefit changes since 2020, overtime costs are based on the negotiated leave days (sick/vacation), and one time equipment costs are based on outfitting a Firefighter with protective clothing (one time equipment costs only included in 24/25 and 25/26).

COST BY MEMBER AGENCY				
FY	Fairfax	Ross	San Anselmo	Sleepy Hollow FPD
Percent Share	23.30%	23.37%	40.53%	12.80%
24/25	\$147,262	\$147,705	\$256,161	\$80,900
25/26	\$156,034	\$156,503	\$271,420	\$85,719
26/27	\$164,114	\$164,607	\$285,473	\$90,157

**FUNDING OPTIONS**

**Option 1:** Each Member agency will begin paying their respective “percentage share” from the position date of hire. (\*This is the funding option chosen by the subcommittee)

**Option 2:** Authorize one-time use from undesignated reserves to fund the first year from the position date of hire. Each Member agency will begin paying their respective “percentage share” after year one.

**Option 3:** Authorize one-time use from undesignated reserves to fund a phased approach using a combination of undesignated reserves and member agency respective “percentage share” for the first two years of the position. The Department would use undesignated reserves to pay the difference of the actual cost and the amount being billed to the member agencies. Member agencies would be charged 50% in year one, 75% in year 2, and 100% in year 3.(See chart below).

OPTION 3: COST BY MEMBER AGENCY (PHASED APPROACH)					
FY	Fairfax	Ross	San Anselmo	Sleepy Hollow FPD	Reserve Funds
Percent Share	23.30%	23.37%	40.53%	12.80%	
24/25 (50%)	\$73,631	\$73,852	\$128,080	\$40,450	\$316,014
25/26 (75%)	\$117,026	\$117,377	\$203,565	\$64,289	\$167,419
26/27 (100%)	\$164,114	\$164,607	\$285,473	\$90,157	\$0

**FISCAL IMPACT:**

If the Board supports the subcommittees recommendation of a funding plan that entails “Option 1: Each Member agency will begin paying their respective “percentage share” from the position date of hire” and a start date of July 1, 2024 the fiscal impact would include a \$632,028 increase to the FY 24/25 Budget.

**ENCLOSED REFERENCES/ATTACHMENTS:**

Ross Valley Fire Department 2022 Side Letter Staffing/Deployment Between Ross Valley Fire Department And Ross Valley Firefighters’ Association Local 1775.

Ross Valley Fire Department 2020 Side Letter of Agreement between the Ross Valley Fire Department and the Ross Valley Professional Firefighters’ IAFF Local 1775.

(2019 SOC): Citygate Associates, LLC. 2019. Ross Valley Fire Department Standards of Coverage Assessment Volume 1 of 2: Technical Report.

(NIST Fireground): National Institute of Standards and Technology. 2010. Report Residential Fireground Field Experiments. 56.

(NIST EMS): National Institute of Standards and Technology. 2010. Report on EMS Field Experiments. 60.

(NFPA1710): National Fire Protection Association. 2020. 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.