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FIRE SERVICES STUDY
MEREDITH, NH.

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August 2023

TABLE OF CONTENTS

Table of Contents

MEREDITH NEW HAMPSHIRE

FIRE AND EMERGENCY MEDICAL SERVICES STUDY

AUGUST 2023

I. PROJECT OVERVIEW, PURPOSE, SCOPE, AND METHODOLOGY

PROJECT OVERVIEW

The Town of Meredith contracted with Municipal Resources, Inc. (MRI) to provide an organizational assessment and review of the manner in which the fire department and Emergency Medical services are provided within the community. Using this as a basis, the MRI team reviewed the organization and delivery of fire and EMS services within the community including conducting a target hazard analysis, review of response metrics, and a review of the current facility and apparatus set. Our project team has developed recommendations for improvements that take into consideration the current and future needs of the Town of Meredith, and recommendations for appropriate modifications to the delivery systems to provide the desired level of services to the Town.

MRI has developed this document containing recommendations for improvements to organizational practices, recruitment and retention efforts, infrastructure, quick reaction and on-call staffing. The project team has developed this document which outlines appropriate modifications to the Fire Department, Emergency Dispatch Center and Emergency Medical Services systems to provide optimum service to the entire community. It has also evaluated the efficient use of resources, and whether the current organizational structure is appropriate or should be modified.

A key component of the basis of this report is that the Town of Meredith is seeking to evaluate the current operations of the current Fire and EMS delivery system, to identify the present and future service needs of the community and to provide recommendations that will assist the community with decision making for resource allocation and operational planning.

The goal of the project is to review and analyze the current resources and staffing, forecast future demands for service, and make recommendations regarding the future need of current resources, staffing, and rank structure to fulfill the mission. Part of the objective is to conduct an analysis of the operation of the current Fire and EMS with an emphasis on defining the expected service level of the community and identifying the impact of current response participation levels, demographics and projected growth within the response area. The results of this study will be to inform the Town of Meredith of realistic recommendations for providing an efficient and effective Fire and EMS system for today and the future.

The task of the project was to conduct a study to determine the potential to achieve the following benefits:

- Increased efficiency
- Improved effectiveness
- Preservation of a level of service
- Enhanced or expanded services
- Reduced costs
- Cost avoidance
- Coordination of Regional planning
- Elimination of artificial boundaries
- Standardization of services and program
- Potential reduced ISO ratings
- Fire service accreditation
- Impact on future state and federal grant funding

SCOPE OF WORK

The goal of this study is to review and analyze the current resources and staffing, forecast future demands for service, and make recommendations regarding the future need of current resources, staffing, and rank structure to fulfil the departments mission. MRI will conduct a comprehensive analysis of the operation of the Meredith Fire Department with emphasis on the impact of current on-call response participation levels, demographics and projected growth within the response area.

This study shall include a review of all services provided, resources allocated to each service area, organizational structure, communications, proper staffing level.

The comprehensive study will be utilized to inform the Town of Meredith of realistic recommendations for managing and operating the Meredith Fire Department efficiently and effectively. The following staffing and operational aspects will be addressed within this project:

1. *Review of Fire & Rescue service data and operations including but not limited to response times, on call participation levels and organizational capabilities.*

2. *Review of Lakes Region Dispatch metrics.*

3. *Review of Lakes Region Mutual Aid practices and compliance with NFPA 1720.*

4. *Identification of the current service level offered to the Town of Meredith.*

5. *Review of incident volumes & trends, community demographics & target hazards.*

6. *Review of Fire & Rescue best practices and how Meredith meets professional standards.*

7. *Review overall trends relative to on-call personnel availability in New Hampshire and the nation and the impact on the Meredith Fire Department.*

8. *Identification of recommended wage rates for on-call responders.*

9. *Develop a future staffing and transition plan necessary to augment on-call forces. Said plan shall include using a hybrid staffing pattern, improving on-call recruitment & retention efforts and suggesting strategies for successful integration of on-call & paid forces.*

10. *Recommend a future staffing plan with and without the Town providing first line emergency medical response based on a hybrid model as developed in #5 above versus solely full-time Fire & Rescue staffing from within the Meredith Fire Department*

It should be clearly communicated and understood within the Meredith Fire Department that the purpose of this study is to identify strategies to preserve a predominantly on-call organization and not to supplant the current role of on-call members.

Most importantly, the study shall be an objective, unbiased assessment that is driven by data, national industry standards (e.g. NFPA, ISO, NIST, etc.), and best practices of the organization as it is currently, coupled with a future vision.

METHODOLOGY

To provide an appropriate evaluation of these issues, we employed seventeen methods which are listed below:

- Conducted Industry based research on the issues presented;
- Review data and performance metrics provided by the Meredith Fire Department and the Town;
- Met with the Town Manager;
- Toured the Town of Meredith;
- Reviewed target hazards;
- Review the current staffing and organizational design;
- Toured each Fire Station;
- Evaluated information relative to service demand and response times;
- Reviewed current operational policies;

- Reviewed quality of service issues and interagency communication;
- Reviewed fire and EMS equipment;
- Interviewed Fire Chief;
- Interviewed Fire Department Officers.

In addition, the project team also considered how current and future service demand will impact the location and/or expansion of physical facilities and impact the need for equipment. This report also identifies whether the current fire and rescue staffing is appropriate or should be modified.

Specific items addressed, included but were not limited to, the following:

A. Identified service needs, based on the characteristics of the community, statutory and regulatory requirements for response and delivery, and comparison with current ability to fulfill the needs and expectations.

B. Identified the public safety risks and prioritized the level of risk that must be covered based on the data and operations of the fire and first response EMS operations. The type, frequency, distribution, response times, mutual aid and/or contractor provided services, staffing policies, reporting of emergency and routine responses to all services was included.

C. Assessed the current staffing plan for deploying the required number of staff, officers and supervisors, along with vehicles and apparatus used and recommended cost-effective alternatives based on the type of incident. Evaluated whether there were recommended changes to improve efficiency and delivery of service.

D. Evaluated the response of personnel, including appropriate operational staffing, supervisors, management, and support staff, starting with the initial call for routine calls or emergency services.

E. Identified the required staffing levels that meet the needs of the community in the most cost-effective and complete manner including operating costs, personnel impact, and impact on the delivery of service and workload.

During the development of this document, the focus was placed on enhancing current fire and EMS service operations by augmenting and supporting the existing department. The recommendations contained within this document should be utilized to promote local and regional discussion and collaboration. The proposed plan and timetable have been developed to allow for flexibility while still moving forward.

To accomplish the goals and objectives this document has been divided into the following sixteen sections:

I: Project Overview, Purpose, Scope
II: Town Data
III: Fire Department Overview
IV: Community Risk Assessment
V: Facilities and Equipment
VI: Incident Response and Times
VII: Staffing
VIII: Fire Dispatch
IX: EMS Services
X: Looking Forward
XI: Mapping out the Future
XII: Conclusions and Implementing Change
XIII: Consolidated Recommendations
XIV Appendix
XV: Project Team Profile

II: TOWN OF MEREDITH OVERVIEW

Meredith is located in Belknap County and borders the towns of Center Harbor, Sanbornton, New Hampton, Moultonborough, and the City of Laconia. The Town is made up of 54.6 square miles including 40.1 square miles of land and 14.5 square miles of water. The town has state highways, including Routes 93, 3, and 104 that traverse the town. Like many other Lakes Region Communities Meredith is dominated by several large bodies of water including, but not limited to Lake Winnipesaukee, Lake Waukewan, Lake Wicwas, and Lake Pemigewasset. There are miles of waterfront on Lake Winnipesaukee as well as approximately 53 islands, many of which have seasonal occupied structures on them. According to the 2020 US Census there are 6,662 people living in Meredith indicating an approximate 5% increase from the 2010 Census.

The population density is approximately 167.1 people per square mile (by its residents only). The population was spread out, with 30% under the age of 18, 5.8% from 18 to 24, 19.7% from 25 to 44, 34.9% 45-64 and 20.8% who are 65 of age or older. Without question, Meredith is a year-round vacation and event destination. It is a community that is the host to many events year-round that draws large crowds for days and weeks at a time. The Ice Fishing Tournament, Pond Hockey, and Motorcycle Week are just a few of the events that draw people to the area. There are three major hotels each with function facilities, several motels, restaurants, three large camping areas, multiple single family lakeside rental homes (short term rentals) that house a wide number of occupants. The town has three large, assisted nursing homes, each with its own unique challenges for emergency responders. Each of these structures adds to the population, risk factors, and challenges that Public Safety must be prepared to reasonably handle. These are significant numbers to be considered when looking at Public Safety Response projections, equipment, and staffing needs.

Meredith, like many other "Lakes Region "communities, has a wide range of public safety challenges that need to be mitigated. With the increasing volume, and changing types of incidents that occur, the Fire Department needs to be able to adapt and respond to these challenges properly and safely.

The population chart below indicates the increasing population of year-round residents and is not reflective of the seasonal influx the town sees every year with vacationers and people attending scheduled events in and around the Lakes Region area.

Year	Population	% increase
1960	2434	9.5%
1970	2904	19.3%
1980	4646	60%
1990	4837	4.1%
2000	5943	22.9%
2010	6241	5.0%
2020	6662	6.7 %

Figure 1
Population Chart

According to the US Census Bureau 55.7% of the residents are at or over the age of 45 with 20.8% over the age of 65.

2020 Snapshot of population by age
**** US 2020 Census**

Age		% of population
Under 18		18.6%
18 to 24		5.8%
25 to 44		19.7%
45 to 64		34.9%
65 and over		20.8%

Figure 2
Age - Population Chart

	2010	2015	2020	2021	2022
Municipal	$4.20	$4.81	$4.29	$3.85	$4.67
County	$1.33	$1.45	$1.15	$.98	$1.23
School	$4.95	$6.52	$6.7	$6.77	$6.77
State Ed.	$2.32	$2.42	$1.88	$1.83	$1.28
TOTAL	$12.80	$15.20	$14.02	$13.43	$13.97
Difference From Prior Yr.	0	$2.40	-$1.18	$.59	$.54

Figure 3
Tax Rate Chart

According to the Department of Revenue in 2022 the total taxable valuation is $2,342,764,034.00 and with utilities (Electric etc...) is $2,355,818,734.00. There is a lot of residential and commercial growth happening in the town and the taxable valuation will no doubt go up in the next year and when these projects have occupancy. The Town has not done an Assessment update since 2020 and with unprecedented growth since 2020 the valuation should increase significantly. This is important as the property values and the population are key factors in determining the proper equipment and staffing to assure a reasonable staffing level and risk to public safety.

III: FIRE DEPARTMENT OVERVIEW

The Meredith Fire Department is a vibrant volunteer/on-call fire service organization that is well respected within the Lakes region. The Department operates under the following mission statement which serves as a foundation for organizational culture and a guide to operations.

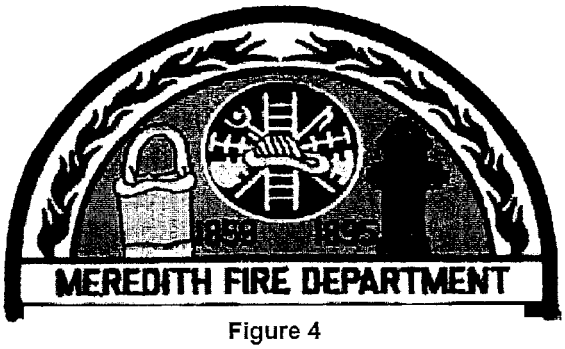


Figure 4
Fire Department Patch

Meredith Fire Department Mission Statement

To serve and protect the community of Meredith and wherever summoned with the greatest possible skill and professionalism. We endeavor to provide, through training and professional development, a superior level of response to all types of emergencies and calls for assistance. When doing so, we will hold ourselves to the highest possible code of conduct as both responders and citizens. We will strive to be ALWAYS READY.

The Meredith Fire Department operates two stations and an excellent fleet of fire apparatus. The Department is overseen by a Fulltime Fire Chief, who administers a Fire budget for FY 23 totaling $351,294.00, The department is made up of approximately 26 on the roster consisting of 14 active personnel, 4 interns (2 certified), 10 Per diems, a Chaplin and 1 Boat operator technician.

The Department operates predominantly as a call fire department and a call/duty department with a full-time Chief. The chief has attempted to have staffing during the daytime hours during the peak times of the year and during special events. As we have seen in many departments the MRI team has studied over the past two years (since COVID) there has been a tremendous drop in call volunteer firefighters. The staff respond to a variety of incident types and currently do not respond to or provide any Emergency Medical Services (EMS). Overall, the Town has provided tremendous support to the department with facilities and equipment and is lacking in staffing capabilities. This will be discussed in greater detail in the Staffing section of this document.

The Meredith Fire Department has had a call volume that is typical of other studies the team has conducted in the New England Area. The multi-year comparison below indicates an upward trend in call volume in the years to come. This increase in volume coupled with the decrease in

available volunteer/on-call staffing is cause for concern and is something the community cannot take lightly.

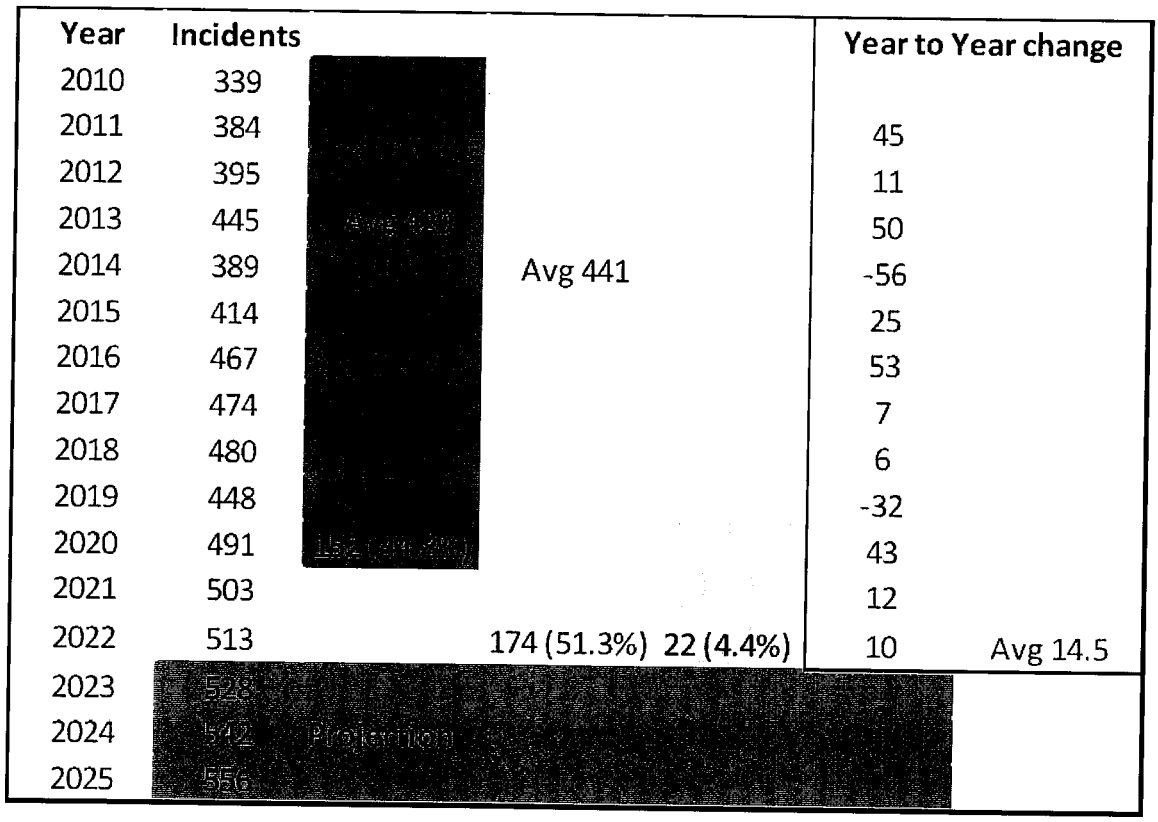


Figure 5
Total Call volume by year

NOTE: The incidents numbers above do not include any response to EMS calls other than those that are Motor Vehicle accidents or special called for due to manpower needs by the ambulance service.

RECOMMENDATIONS:

III-1 ***The Department should create a working group to review, update, add and publish all Standard Operating Procedures (SOPS) to its employees. A process for acknowledging these SOP's should be developed for each employee to sign or initial. This document should be considered a living document and reviewed and changed as needed on a regular basis.***

III-2 ***The Department should review and update Rules and Regulations and should publish these for the employees to have.***

III-3 ***The Department should develop a set of goals and objectives for the next year as well as long term goals looking 5 years out and review that annually.***

III-4 ***The MFD should review and or develop a mission, values and slogan that reflects the department and should use these as a basis to educate the Community.***

III-5 ***Create a work group to develop preplans for structures within the community. As part of this group's mission, they should be collecting information for structure files that are shared with the CAD and RMS systems.***

IV: COMMUNITY RISK ASSESMENT

Fire, Rescue and EMS services generally have a common overall mission; the protection of life and property, but different community profiles in which they operate. These dissimilarities create very different fire and rescue service operational needs based on a unique community risk profile, service demands, and stakeholder expectations.

A community risk assessment is a comprehensive process to identify the hazards, risks, fire, and life safety problems, and the demographic characteristics of those at risk in a community. In each community, there are numerous hazards and risks to be considered. For each hazard, there are many possible scenarios and potential incidents that could be encountered depending on the timing, magnitude, and location of the hazard or incident. A thorough risk analysis provides insight into the worst fire and life safety problems and the people who are affected. The analysis results create the foundation for developing risk-reduction and community education programs.

Conducting a community risk analysis is the first step toward deciding which fire or injury problem needs to be addressed. Risk analysis is a planned process that must be ongoing, as communities and people are constantly changing. Too often, an objective and systematic community risk analysis is a step that is overlooked in the community education process. Many emergency service organizations address risks based on a perceived need for service that isn't really there. This approach can be costly (i.e., misdirected resources, continued property loss, injuries, or deaths). In short, a good community risk assessment will produce a picture of what the hazards and potentials for incidents are, identify who is at risk, and attempt to quantify the expected impacts.

Understanding the definition of hazards and risks is critical to the risk assessment process. Hazards are physical sources of danger that can create emergency events. Hazards can be items such as buildings, roadways, weather events, fires, etc. Risk relates to the probability of a loss due to exposure to a hazard. People and property can be at risk. Consequences for the community are also factors to consider. Each of these factors is assessed during the community risk process (Figure 6).

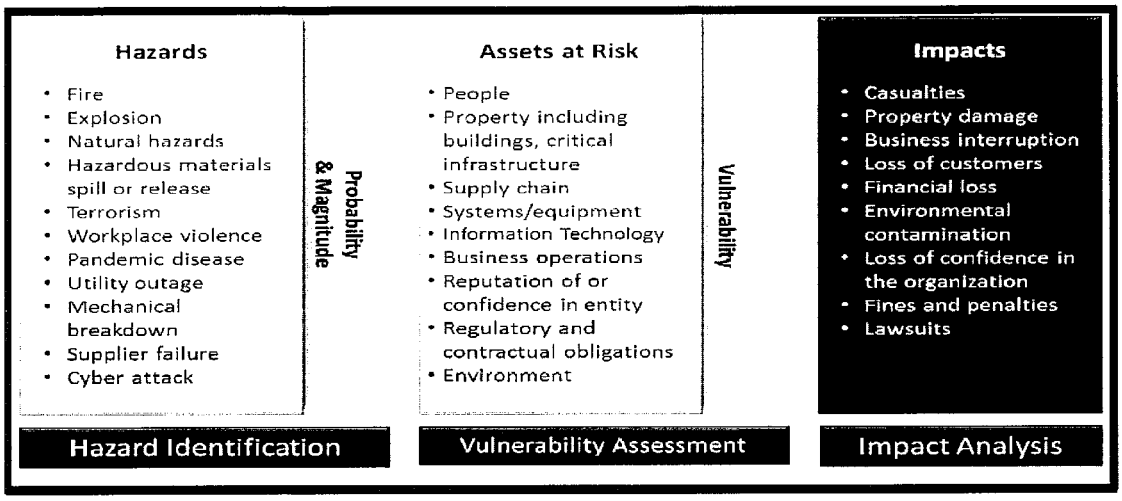
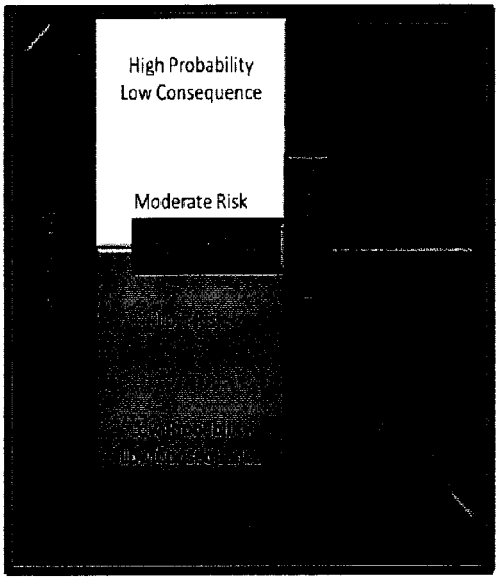


Figure 6
Risk Assessment Process
Image Credit: www.ready.gov/risk-assessment

A more focused fire risk assessment is performed by assessing such factors as the needed fire flow, probability of an incident, consequences of an incident, and occupancy risk. The "score" established is then utilized to categorize the area, or even individual properties, as one of low, moderate, or high/maximum risk. This categorization can assist the fire department in establishing fire risk/demand areas or zones.



Having this information readily available provides the community and the fire department with a better understanding of how fire stations, response run cards, and staffing patterns can be used to provide a higher concentration of resources for higher risk scenarios or, conversely, fewer resources for lower levels of risk.[1]

The community fire risk assessment may also include determining and defining the differences in fire risk between a detached single-family dwelling, multi-family dwelling, an industrial building, and a high-rise building by placing each in a separate category.

Figure 7
Fire Probability and Consequences Matrix
Credit: Commission on Fire Accreditation

[1] Fire and Emergency Service Self-Assessment Manual, Eighth Edition, (Commission on Fire Accreditation International, 2009), p. 49.

According to the NFPA *Fire Protection Handbook*, these hazards are defined as:

High-hazard occupancies: Schools, hospitals, nursing homes, high-rise buildings, and other high life-hazard or large fire-potential occupancies.

Medium-hazard occupancies: Apartments, offices, mercantile, and industrial occupancies not normally requiring extensive rescue by firefighting forces.

Low-hazard occupancies: One, two, or three-family dwellings and scattered small business and industrial occupancies[2].

The NFPA also identifies a key element of assessing community vulnerability as fire department operational performance which is comprised of three elements: resource availability/ reliability, department capability, and operational effectiveness[3].

Resource availability/reliability: The degree to which the resources are ready and available to respond.

Department capability: The ability of the resources deployed to manage an incident.

Operational effectiveness: The product of availability and capability. It is the outcome achieved by the deployed resources or a measure of the ability to match resources deployed to the risk level to which they are responding.[4]

The implementation of successful community risk reduction strategies after completion of a community risk assessment are linked directly to the prevention of civilian and firefighter line of duty deaths and injuries. In fact, they directly address goals found in firefighter Life Safety Initiatives 14 and 15. Virtually every risk reduction program in the fire and emergency services will have elements of what is called **"The 5 Es of Prevention".** These include:

Education ▪ Enforcement ▪ Engineering
Economic Incentives ▪ Emergency Response

[2] Cote, Grant, Hall & Solomon, eds., Fire Protection Handbook (Quincy, MA: National Fire Protection Association, 2008), p. 12.
[3] http://www.nfpa.org/assets/files/pdf/urbanfirevulnerability.pdf.
[4] National Fire Service Data Summit Proceedings, U.S. Department of Commerce, NIST Tech Note 1698, May 2011.

Understanding and addressing only one element will not lead to a successful program. All five "Es" must be integrated into every program for it to be effective[5] (Figure 6). Strong fire prevention codes have been shown to be an extremely effective means to reduce risk in a community. Fire alarm and sprinkler systems mandates, for not only commercial buildings but all occupancies, including single family dwellings, dramatically reduces fire risk and increases life safety. Code implementation that doesn't require these creates an increased risk. A weak code enforcement causes an increase in fires and emergency response. Strong code provisions and enforcement have demonstrated a greater ability to decrease fire problems than continuing to acquire more traditional fire department resources.

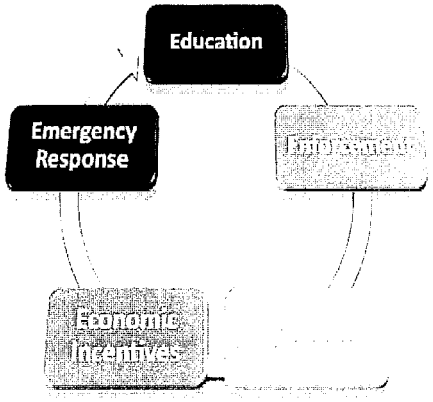


Figure 8
Five Es of prevention in a community risk reduction program.
Image credit: www.beaherosaveahero.org

INSURANCE SERVICES ORGANIZATION (ISO) RATING

ISO is an independent risk company that services insurance companies, communities, fire departments, insurance regulators, and others by providing information about risk. ISO's expert staff collects information about municipal fire suppression efforts in communities throughout the United States. In each of those communities, ISO analyzes the relevant data and assigns a Public Protection Classification – a number from 1 to 10. This Class rating places the community in the middle of having a commendable fire suppression program for its size.
A Class 1 community represents an exemplary fire suppression program, and Class 10 indicates that the area's fire suppression program does not meet ISO's minimum criteria.

[5] http://www.beaherosaveahero.org/2013/10/community-risk-reduction-crr-overview/ February 5, 2016

The Public Protection Classification (PPC) program provides objective countrywide criteria that may prove helpful in connection with fire departments and communities planning and budgeting for facilities, equipment and training. When companies have fewer or lower claims to pay, the premiums they collect can be lower. Therefore, by recognizing the potential effect of improved fire suppression on fire insurance losses, in that respect, the PPC program can often serve as an objective mechanism that can help recognize communities that choose to maintain and improve their firefighting services.

PPC can also be an important factor in overall community resilience and provides a consistent measurement tool that can help in these efforts, from the structural fire response perspective. Given the potential effect on fire insurance rates, the PPC could also be a factor considered by some businesses and developers to determine where to make investments.

While ISO's primary focus is to measure the effectiveness of a community's ability to respond to structure fires for insurance purposes, there are many derivative benefits. These include providing a statistically proven method of measuring performance; a methodology that can help as part of planning, budgeting for and making improvements; a tool that can be used to further the concept of community resilience; and a metric that can help encourage investment in a community. The ISO rating for Meredith currently is downgraded to a **4/4** from a previous 3/3Y, which is a good rating for a department with the current makeup, response capabilities, and local water supply. However, some minimal changes could result in returning to the favorable 3/3Y rating. In reviewing the ISO evaluation there are some very notable deficits that can be corrected and allow the community to obtain a better rating. Most notable are the Credit for Deployment Analysis, Credit for Company Personnel, Credit for Training and Credit for Inspection and Flow testing of Hydrants. The areas of Deployment Analysis and Company Personnel all deal with the number of trained staff you have available 24/7. With the number of call staff, the training component can be more challenging to obtain but can be done. One of the key factors is proper training in various disciplines as outlined in the full report as well as proper documentation to demonstrate the components and attendance at the training conducted.

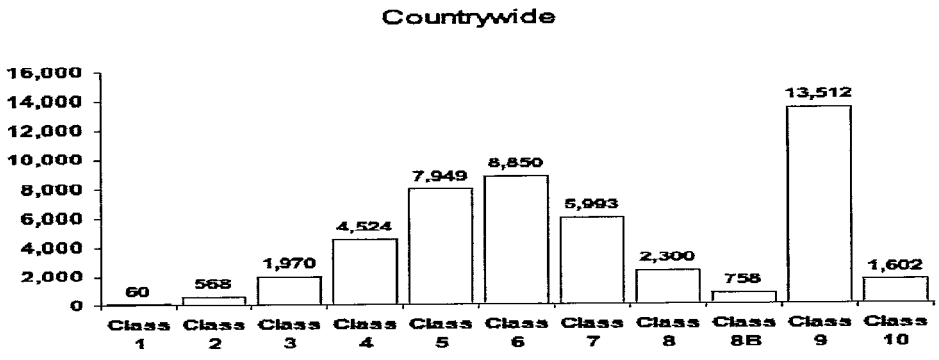


Figure 9
ISO Grading Chart USA
2019

One of the action items developed through the adoption of this study should be to move the Departments from the current class to a lower class over five years. Our team believes that this grade reduction could be accomplished through at least focusing on staffing, training, and water supply inspection and flow testing. The greatest fire safety concern throughout the area is the potential life loss in fires that occur in non-sprinklered, single and multi-family residential dwellings during sleeping hours, which is consistent with national trends. These fires are fueled by new "lightweight" construction and more flammable home contents. The time to escape a house fire has dwindled from about 17 minutes, 20 years ago, to three to five minutes today. This poses a severe risk not only to occupants but also to firefighters as they now have less time to do their job and save residents' lives and property.

Although currently not prominent in most of the area, buildings more than three stories in height pose a special risk in an emergency. Fire on higher floors may require the use of ladder trucks to provide an exterior standpipe to be able to deliver water into a building that does not have a system in place. This requires additional personnel to transport equipment up to higher floors. Meredith does have large area buildings sometimes referred to as horizontal high-rises, such as warehouses, malls, and large "big box" stores which often require greater volumes of water for firefighting and require more firefighters to advance hose lines long distances into the building. They also present challenges for ventilation and smoke removal.

Although it is not clear how many commercial and residential sprinkler systems there are in Meredith, it is known that automatic sprinklers are highly effective elements of total system designs for fire protection in buildings. They save lives and property, producing large reductions in the number of deaths per thousand fires, and average direct property damage per fire, especially in the likelihood of a fire with a large loss of life or large property loss. They do so, much quicker, and often more effectively and with less damage than firefighting operations. No fire safety improvement strategy has as much documented life safety effectiveness as fire

sprinklers because they extinguish the fire, or, at a minimum holds it in check and prevents flashover, until the arrival of the Fire Department.

Studies from 2007 to 2011 of fires in all types of structures show when sprinklers were present in the fire area of a fire that was large enough to activate the sprinklers in a building not under construction, sprinklers operated 91% of the time[6]. When they operated, they were effective 96% of the time, resulting in a combined performance of operating effectively in 87% of reported fires where sprinklers were present in the fire area and the fire was large enough to activate sprinklers[7]. **In homes (including apartments), wet-pipe sprinklers operated effectively 92% of the time. When wet-pipe sprinklers were present in the fire area in homes that were not under construction, the fire death rate of 1,000 reported structure fires was lower by 83%, and the rate of property damage per reported home structure fire was lower by 68%.**

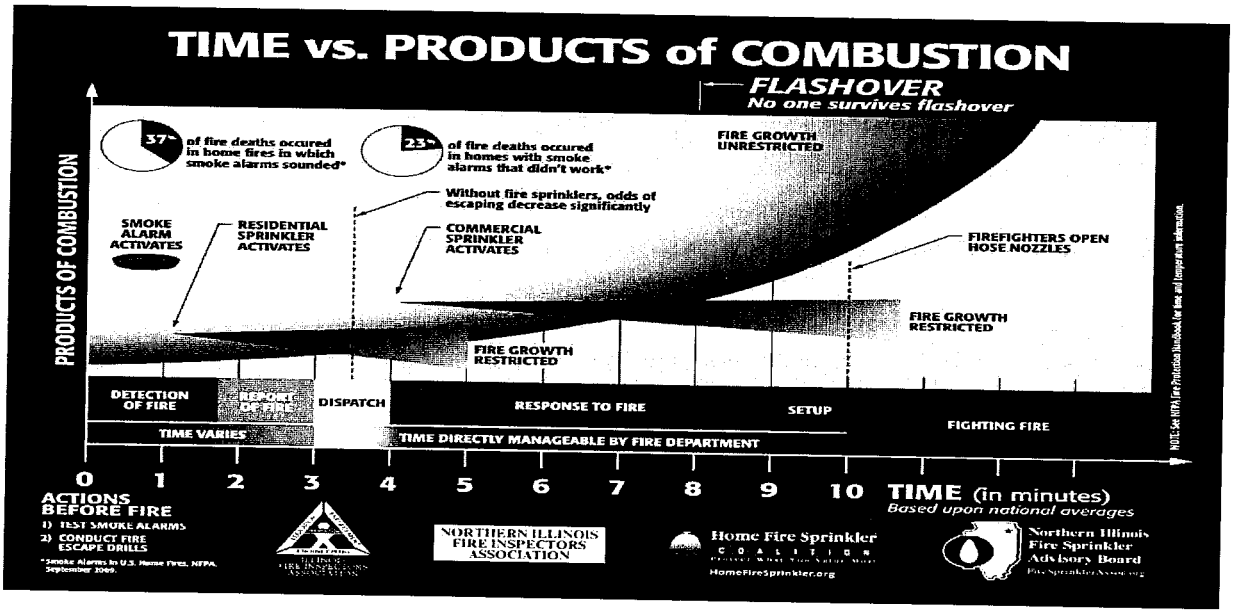


Figure 10

Time versus products of combustion curve showing activation times and effectiveness of residential sprinklers (approximately 1 minute), commercial sprinklers (4 minutes), flashover (8 to 10 minutes) and firefighters applying first water to the fire after notification, dispatch, response and set up (10 minutes)
http://firesprinklerassoc.org/images/newflashoverchart.jpg

Like most communities, Meredith has various types of housing that is older, although still well maintained. Most of these older residential occupancies are wood frame houses. The fire service further assesses the relative risk of properties based on several factors. Properties with high fire and life risk often require greater numbers of personnel and apparatus to effectively mitigate a

[6] U. S. Experience with Sprinklers. John R. Hall, Jr. National Fire Protection Association, June 2013.
[7] U. S. Experience with Sprinklers. John R. Hall, Jr. National Fire Protection Association, June 2013.

fire emergency. Staffing and deployment decisions should be made with consideration of the level of risk within each area of a community.

Low Risk: Minor incidents involving small fires (fire flow less than 250 gallons per minute), single patient non-life-threatening medical incidents, minor rescues, small fuel spills, and small brush or outside fires.

Moderate Risk: Moderate risk incidents involving fires in single-family dwellings and equivalently sized commercial office properties (needed fire flow generally between 250 gallons per minute to 1,000 gallons per minute), life threatening medical emergencies, hazardous materials emergencies requiring specialized skills and equipment, technical rescues involving specialized skills and equipment, and larger brush and outside fires particularly if structures are exposed.

High Risk: High risk incidents involving fires in larger commercial properties with sustained attack (fire flows more than 1,000 gallons per minute), multiple patient medical incidents, major releases of hazardous materials, and high-risk technical rescues.

The potential emergency risks present in the towns are not limited to just residential or commercial structural fire incidents. Weather, Transportation, Hazardous Materials, and man-made disasters all add to the overall risk in the community.

It is the project team's assessment that the level of risk differs based on the specific infrastructure and demographics of each community. The level of risk faced by each community and the region overall can be established based on the information presented within Figure 11.

OCCUPANCY DESCRIPTION	*RISK*
Single Family Residential (unsprinkled)	***Moderate***
Multi-Family Residential (sprinkled)	***Moderate***
Institutional-Educational	***Low***
Commercial (Retail and Office) (sprinkled)	***Moderate***
Open Space	***Low***

Figure 11
Community Risk Assessment Hazard Index

The weather a community experiences can impact the Fire and EMS ability to respond. Snow, ice, and other conditions can slow response. Major storms can create emergency situations that can

overwhelm local emergency response forces. The regional area enjoys a moderate climate typical of the New England region. Thunderstorms, strong windstorms, and significant rain events happen several times on average a year. Tropical storms and hurricanes also occasionally impact the area. Snowfall is experienced annually, and occasionally in amounts that paralyze the region.

The above information is intended to provide a "snapshot" of the area. It is not intended to be all-inclusive or comprehensive. For the fire department and first responders, it serves to put the town, and its associated hazards and risks into some context as the fire department works to carry out the recommendations of this study. A moderate to high-risk designation should not infer that the risks are eminent safety concerns. The risk designations present themselves based on several factors including what is the potential risk to people, based on the factors specific to the target hazard in question.

Ultimately, a comprehensive risk assessment should:

- Clearly identify and classify the town's current risks;
- Place the risks in context with the Fire Department's current operational capabilities and procedures;
- Reflect what the Budget Committee and Board of Selectmen feel is an acceptable level of risk for the town.

Looking ahead, the region will continue to experience a slow to moderate growth increase in development and population, although probably not high levels. While this development will have a definitive impact on the town's emergency services, the exact amount is difficult to predict quantitatively and accurately. Increased commercial development of any type will mean an increase in the number of people living, working, and traveling within the area. Each of these will reasonably be expected to result in an increased number of requests for services from the fire services in the region. They can also impact response times through increased traffic and congestion.

It is likely the most significant increase in requests for emergency services will be EMS related. More people simply increase the number of medical emergencies that occur. It would not be unreasonable to expect that the increase in EMS incidents would be proportional to the increase in population; however, that is not always the case. Although a number of factors can ultimately impact the requests for service, such as ages or socio-economic status of new residents, or an aging population, it could reasonably be anticipated that an increase in population, along with potential increases in employment from any significant commercial development, would translate into an increase in emergency medical incidents.
The fire service further assesses the relative risk of properties based on a number of factors. Properties with high fire and life risk often require greater numbers of personnel and apparatus to effectively mitigate a fire emergency. Staffing and deployment decisions should be made with

consideration of the level of risk within each area of the community. The assessment of each factor and hazard as listed below took into consideration the likelihood of the event, the impact on the Community itself, and the impact on the Community's fire and first response EMS providers ability to deliver emergency services, which includes automatic aid capabilities as well. The list is not all inclusive but includes categories most common or that may be present in the Community as a whole.

Low Risk:

- ***Automatic Fire/False Alarms***
- ***Single patient/non-life threatening BLS EMS Incidents***
- ***Minor Flooding with thunderstorms***
- ***Good Intent/Hazard/Public Service***
- ***Minor fire incidents (fire flow less than 250 gallons per minute) with no life safety exposure***
- ***Minor rescues***
- ***Outside fires such as grass, rubbish, dumpster, vehicle with no structural/life safety exposure***
- ***Small fuel spill***

Moderate Risk:

- ***Fires in single-family dwellings and equivalently sized commercial office properties (needed fire flow generally between 250 gallons per minute to 1,000 gallons per minute) where fire and/or smoke is visible indicating a working fire.***
- ***Life threatening ALS medical emergencies***
- ***Motor Vehicle Accident (MVA)***
- ***MVA with entrapment of passengers***
- ***Hazardous materials emergencies requiring specialized skills and equipment but not involving a life hazard***
- ***Technical rescues involving specialized skills and equipment (such as low angle rescue involving ropes and rope rescue equipment and resources***
- ***Larger brush and outside fires, particularly if structures are exposed***
- ***Suspicious Substance Investigation involving multiple fire companies and law enforcement agencies***
- ***Surface Water Rescue***
- ***Good Intent/Hazard/Public Service fire incidents with life safety exposure***

High Risk:

- ***Fires in larger commercial properties and target hazards with a sustained attack (fire flows more than 1,000 gallons per minute)***
- ***Cardiac/respiratory arrest***
- ***Multiple patient medical/mass casualty incidents with more than 10 but less than 25 patients***
- ***Major releases of hazardous materials that causes exposure to persons or threatens life safety***
    - ***Confined Space Rescue***
    - ***Structural Collapse involving life safety exposure***
    - ***High Angle Rescue involving ropes and rope rescue equipment***
    - ***Trench Rescue***
    - ***Explosion in a building that causes exposure to persons or threatens life safety or outside of a building***
- ***Suspicious Substance incident with injuries***
- ***Weather event that creates widespread flooding, building damage, and/or life safety exposure***

Special Risk:

- ***Working Fire in a structure greater than three (3) floors***
- ***Fire at an industrial building or complex with hazardous materials***
- ***Mass Casualty Incident over 25 patients***
- ***Rail or transportation incident that causes life safety exposure or threatens life safety through the release of hazardous smoke or material***

Aggressive enforcement of fire and building codes in both new and existing facilities will continue to be a critical factor in managing risk throughout the area. Communications regarding major projects need to be kept open and frequent. Any new development projects that are proposed should be sent to the fire department for review and input on fire protection needs and concerns. Unfortunately, some municipalities do not welcome fire department input nearly as readily as others do. Many departments require new projects be evaluated by a "Technical Review Committee (TRC)" or Technical Review Group (TRG)" The purpose of the TRC/TRG is to review projects that are submitted for review to the Planning Board, including site plans and subdivisions. The applicant/agent presents plans to the TRG which comments on the plans and suggests changes in accordance with various City regulations, laws, and policies. The TRC/TRG members typically include: - Chief Planner or designee, - Town Engineer - Director of Code Enforcement – Fire Department Representative - Police Department Representative - Economic Development Manager, and - Representative of the Conservation Commission. TRC/TRG meetings are often not considered public meetings. In addition, ensuring that existing buildings

continue to maintain code compliance is an important component of an overall community's fire protection system.

RECOMMENDATIONS:

IV-1 ***The MFD should conduct a thorough Community Risk Assessment and use the assessment as a tool to move the department into the future. Over the next year, a plan should be developed to utilize strengths to pursue opportunities and address weaknesses while mitigating threats. This should be an ongoing process that has member involvement and is moved forward by the officer core.***

IV-2 ***The MFD should review the latest ISO evaluation and strive to improve on staffing (as outlined in this document), Training and proper documentation (following ISO minimum hours and subjects), as well as work with water division to conduct and document water supply inspection and flow testing. All of these combined should move the community back to a better classification which in turn will affect fire insurance rates.***

V: FACILITIES AND EQUIPMENT

FACILITIES

Fire stations are a critical component of effective fire and EMS service delivery. In addition to housing apparatus, a modern fire station will provide for the safe housing of staff, proper storage and maintenance of equipment including personal protective equipment. Modern fire stations should also add safety and efficiency to the fire department's operations.

The Meredith Fire Department operates two stations although not all of them are utilized for response on all calls.

- **Downtown Station, 286 Daniel Webster Highway:** The Downtown Fire Station is the main station for the Meredith Fire Department. The station was renovated and added on to in 2008-2009. It houses the administrative offices as well as training/meeting room and dormitories currently used by interns attending fire science programs at the Technical College in Laconia.

Figure 12
Downtown Station

The MRI Team found this station to be well laid out and well maintained and sees no major improvements needed.

- ***Meredith Center Station, 101 Meredith Center Road.*** The Center station is located in the geographic center of the community and is used primarily as a call firefighter station in that the station is not generally staffed except during an emergency. The station was built in 1985-1986 and currently houses fire apparatus.

Figure 13
Meredith Center Station

For the current use of this station, it is well maintained and flows functionally. There are some recommendations to help improve the living and working conditions in the future included below.

EQUIPMENT

The Meredith Fire Department maintains a modern and appropriate apparatus set consisting of one aerial ladder, four structural engines, one rescue truck, three forestry trucks, three ambulances and miscellaneous operational support equipment. A replacement plan for the apparatus fleet is in place and has been successful.

Car 1	2022	Command Unit
Boat 1	1986	Fire Suppression, EMS transport, water rescue (Seasonal use)
Boat 2	2019	14' Inflatable on a trailer water Rescue (Downtown station)
Engine 1	2000	First Due fire attack (Downtown station)
Engine 2	2007	Water Supply and Forestry (Center Station)
Engine 3	1993	First Due Attack (Center Station)
Engine 4	2016	Water Supply (2500-gallon tank) and fire attack (Downtown station)
Forestry 1	2018	Forest/Brush fire suppression (Downtown station)
Rescue 1	2015	Vehicle Extrication – Rescue – Tactical Support Unit
Tower 1	2009	Aerial Support for firefighting operations (Downtown station)
Utility 1	2016	Pickup truck – multi use (Downtown station)
Utility 2	2004	8 wheel amphibious tactical support (Downtown station)

Figure 14
Apparatus Inventory

Note: A new engine three has been ordered to replace the current engine and is anticipated to be delivered in 2025.

One of the key factors in the fleet maintenance of apparatus and equipment is a strong repair and maintenance program. Meredith is very fortunate to have an in house "Chief Engineer" that works diligently at keeping the equipment in top shape and always in a state of readiness. This work is currently being done at a tremendous cost savings to the community and saves thousands of dollars in typical shop rate hours that would typically be paid out. Along with these identified savings is the amount of "downtime" on the apparatus that is saved by not waiting to schedule repairs by a vendor. Once the current Chief Engineer retires, the line item in the budget for maintenance and repairs will need to be increased as it is likely this work will need to be outsourced to a vendor to complete.

Figure 15 - Tower 1

Figure 16 - Rescue 1

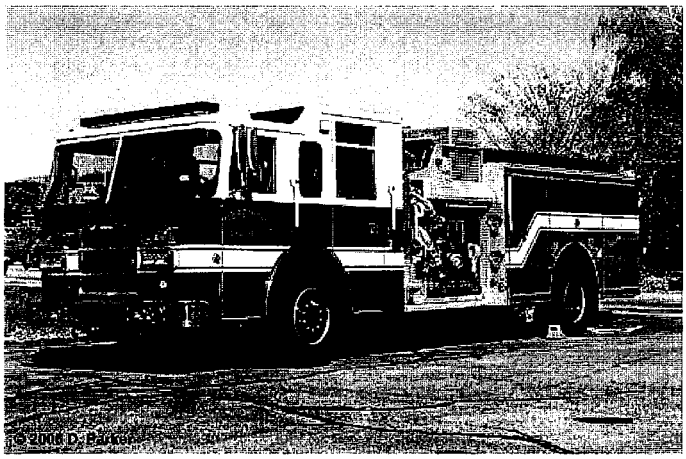


Figure 17 - Engine 1

Figure 18 - Engine 2

Figure 19 - Engine 3

Figure 20 - Engine 4

Figure 21 - Forestry 1

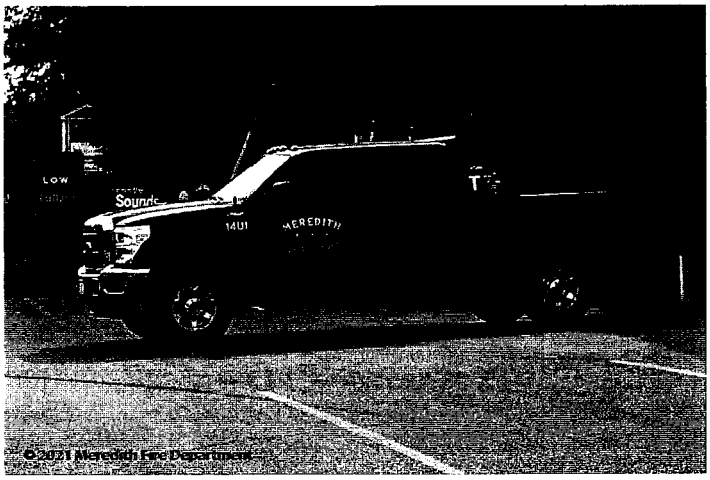


Figure 22 - Utility 1

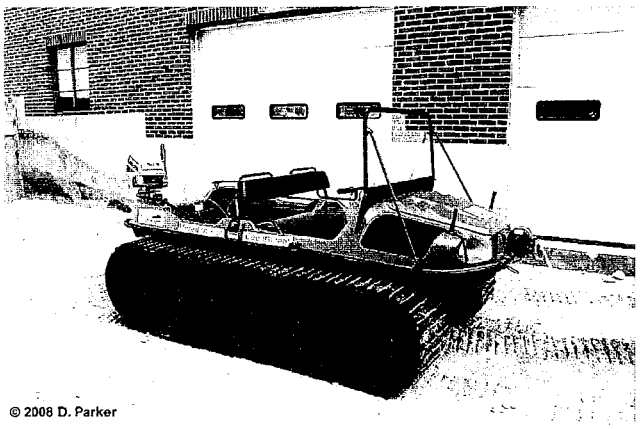


Figure 23 - Utility 2

RECOMMENDATIONS:

Stations:

V-1 *Downtown station - older three bay (small equipment) apparatus floor drainage needs attention. The sloping of the floor to the drains appears to be off.*

V-2 *Center Station- Floor drains are a tripping hazard and need to be addressed.*

V-3 *Center Station- A backup emergency generator should be installed and wired for automatic power switch over during a power failure.*

V-4 *The town should consider making accommodation at this station for future use and needs. Items such as dormitories, kitchen, office and dayroom areas that could be used during long term emergencies and or for housing the student interns in the future should be made.*

Apparatus:

V-4 *Replace Forestry 2 that was placed out of service last year due to safety concerns. This vehicle was run out of the Center Station and was used not only for outside fires but also as a tow vehicle for the trailers for the boat and trailers for equipment. The size of the community and the makeup of the land in and around Meredith should have two small 4-wheel drive vehicles that can go off road and carry the needed equipment for fires.*

V-5 *A 20-year capital plan should be developed and updated on an annual basis.*

V-6 *Boat 1 is a critical piece of equipment to be able to respond to medicals and fire on Lake Winnipesaukee and the islands. This boat should be replaced in the next few years and be maintained as the primary boat for the "Big Lake". An evaluation of the current boat should be made at the time a new boat is put into service and if possible be maintained at a separate marina as a second line boat.*

V-7 *Engine 1 is beginning to show signs of rust and will need to be closely monitored and removed from service if and when it becomes a safety issue.*

V-8 *Based on the current cost of large capital items for the fire department the town should consider increasing the annual reserve fund to $250,000.00. The increased cost of apparatus will eventually outrun the reserve fund.*

VI: INCIDENT RESPONSE TYPES AND TIMES

From the perspective of effective emergency response, there are three main factors that are used to help determine the deployment of resources: response time, travel distance, and call volume. For most evaluations, response time is the most critical factor; an important measuring instrument to determine how well a fire department or first response EMS provider is currently performing, to help identify response trends, and to predict future operational needs. Getting emergency assistance to the scene of a 9-1-1 caller in the quickest time possible may be critical to the survival of the patient and/or successful mitigation of the incident. Achieving the quickest and safest response times possible should be a fundamental goal of every fire department and first response EMS provider. It is not just a cliché that during critical life-threatening situations, minutes and even seconds truly do count.

An analysis of the type of incidents Meredith responded to in 2020, 2021, and 2022 was completed with data provided. The table below shows a broad classification of the types of incidents as reported to the National Fire Incident Reporting System (NFIRS) and an average of the three years indicating the number of responses to each type. Regardless of the actual incident address (in town or mutual aid) all responses were calculated as it was a service that was provided by the Fire department.

NFIRS Reporting System	2020		2021		2022		3 Year Average	
	# Calls	% of Calls	# Calls	% of Calls	# Calls	% of Calls	# Calls	% of Calls
100 Series- Fires	60	12%	48	10%	45	9%	51	10%
200 Series - Ruptures / Explosions	0	0%	1	0%	2	0%	1	0%
300 Series - Rescue / EMS	39	8%	45	9%	54	11%	46	9%
400 Series - Hazardous Condition	147	30%	145	29%	140	27%	144	29%
500 Series - Service Call	47	10%	49	10%	48	9%	48	10%
600 Series - Good Intent	53	11%	52	10%	69	13%	58	12%
700 Series - False Alarm	145	30%	162	32%	155	30%	154	31%
800 Series - Severe Weather	0	0%	1	0%	0	0%	0	0%
900 Series - Special Incident	0	0%	0	0%	0	0%	0	0%
TOTAL	491	100%	503	100%	513	100%	502	

Figure 24
2021 Fire Department by Incident type

The highest demand for service is for False Alarms, with an average of 31%, followed secondly by Hazardous conditions at 29%. Hazardous conditions reflect calls like power lines and or trees down, flooding or any other condition that does not necessarily fit into any of the other types. Fires themselves consistently reflect 10% on average of the response volume during the three years of the study.

Incidents by day of the week and time of day were also analyzed. The outcome of the data looked at is very comparable to other departments that have been looked at over the past few years.

	2020		2021		2022		3 Year Average	
	# Calls	% of Calls	# Calls	% of Calls	# Calls	% of Calls	# Calls	% of Calls
Monday	71	14%	71	14%	63	12%	68	14%
Tuesday	83	17%	63	13%	61	12%	69	14%
Wednesday	68	14%	67	13%	89	17%	75	15%
Thursday	53	11%	88	17%	66	13%	69	14%
Friday	83	17%	72	14%	77	15%	77	15%
Saturday	78	16%	67	13%	86	17%	77	15%
Sunday	55	11%	75	15%	71	14%	67	13%
	491	**100%**	**503**	**100%**	**513**	**100%**	**502**	100%

Figure 25
Analysis by Day of the Week

		2020		2021		2022		3 Year Average	
		# Calls	% of Calls	# Calls	% of Calls	# Calls	% of Calls	# Calls	% of Calls
Monday	D	50	70%	44	62%	39	65%	44	66%
	N	21	30%	27	38%	24	40%	24	36%
TOTAL		**71**		**71**		**63**		**68**	
Tuesday	D	48	58%	36	57%	35	50%	40	55%
	N	35	42%	27	43%	26	37%	29	41%
TOTAL		**83**		**63**		**61**		**69**	
Wednesday	D	40	59%	38	57%	54	66%	44	61%
	N	28	41%	29	43%	35	43%	31	43%
TOTAL		**68**		**67**		**89**		**75**	
Thursday	D	30	57%	52	59%	37	62%	40	59%
	N	23	43%	36	41%	29	48%	29	44%
TOTAL		**53**		**88**		**66**		**69**	
Friday	D	43	52%	41	57%	46	53%	43	54%
	N	40	48%	31	43%	31	36%	34	43%
TOTAL		**83**		**72**		**77**		**77**	
Saturday	D	46	59%	32	48%	42	58%	40	55%
	N	32	41%	35	52%	44	60%	37	51%
TOTAL		**78**		**67**		**86**		**77**	
Sunday	D	27	49%	42	56%	40	59%	36	55%
	N	28	51%	33	44%	31	46%	31	46%
TOTAL		**55**		**75**		**71**		**67**	
Year Total		**491**		**503**		**513**			

Figure 26
Analysis by Time of Day

With Meredith truly a seasonal community it was felt that a closer look at the month of the year was prudent to do. Not surprising that the months of June, July and August equally share 11% of the incidents with the balance of the year remaining flat.

Incidents by Month	2020		2021		2022		3 Year Average	
	# Calls	% of Calls	# Calls	% of Calls	# Calls	% of Calls	# Calls	% of Calls
January	36	7%	32	6%	43	8%	37	7%
February	43	9%	32	6%	28	5%	34	7%
March	22	4%	33	7%	29	6%	28	6%
April	29	6%	40	8%	28	5%	32	6%
May	45	9%	39	8%	33	6%	39	8%
June	38	8%	56	11%	65	13%	53	11%
July	39	8%	64	13%	63	12%	55	11%
August	62	13%	49	10%	55	11%	55	11%
September	50	10%	38	8%	42	8%	43	9%
October	39	8%	40	8%	33	6%	37	7%
November	49	10%	38	8%	41	8%	43	8%
December	39	8%	42	8%	53	10%	45	9%
TOTAL	491	100%	503	100%	513	100%	502	100%

Figure 27
Analysis by Month

What is truly clear is that the public has twenty-four-hour needs all year long. It is important to be able to respond efficiently and effectively to incidents all day every day.

Structural firefighting has become far more challenging and dangerous in the last thirty years. A fire can easily at least double in size and intensity every 30 seconds. If firefighters cannot arrive in a timely manner and attack the fire quickly, a strong possibility exists that a dangerous flashover (simultaneous ignition of all combustible materials in a room) will occur. Flashover can occur within five to seven minutes of fire ignition and is one of the most dangerous events that a firefighter, or trapped civilians, can face. When a flashover occurs, initial firefighting forces are generally overwhelmed and will require significantly more resources to affect fire control and extinguishment.

Heart attack and stroke victims require rapid intervention and care, and transport to a medical facility. The longer the time duration without care, the less likely the patient is to fully recover. Numerous studies have shown that irreversible brain damage can occur if the brain is deprived of oxygen for more than four minutes. In addition, the potential for successful resuscitation during cardiac arrest decreases exponentially with each passing minute that cardio-pulmonary resuscitation (CPR) or cardiac defibrillation is delayed. The true key to success in the chain of survival is the education and early access to the 911 system by civilians. The early notification coupled with the added skills of properly trained EMS staff that arrive quickly and transport at the appropriate level of care are all key factors in a positive outcome for patients.

For EMS incidents, nationally, the standard of care based on stroke and cardiac arrest protocols is to have a unit on scene at a medical emergency within six minutes from receipt of the 9-1-1 call. Considering the future potential of this regional approach, Paragraph 4.1.2.1(4) of NFPA 1710[8], which would be applicable to departments that provide first response EMS operations since they are primarily provided by in station, per diem staff, recommends that for EMS incidents, a unit with first responder or higher level trained personnel and equipped with an AED, should arrive within four minutes of response (five minutes of dispatch of the call), and an Advanced Life Support (ALS) unit should arrive on scene within eight minutes (ten minutes of call receipt. Paragraph 4.1.2.2 recommends the establishment of a 90% performance objective for these response times. CAAS[9] recommends that an ambulance arrive on scene within eight minutes, fifty-nine seconds (00:08:59) of dispatch.

Although NFPA 1720 provides essential benchmarks, fire departments often measure baseline performance in terms of *total response time*, which is the time it takes from the call to be received at the Public Safety Answering Point (PSAP) until the first unit arrives on the scene of the emergency incident. Total response time should be measured and reported for all first-due units *and* the effective response force (ERF) assembly. Total response time is composed of call-processing time, turnout time and travel time:

- *Call processing time* – the elapsed time from the call being received at the PSAP to the dispatching of the first unit.
- *Turnout time* – the elapsed time from when a unit is dispatched until that unit changes their status to "responding."
- *Travel time* – the elapsed time from when a unit begins to respond until its arrival on the scene.

The response travel time is calculated from the time of dispatch to the time of arrival of the first piece of fire/EMS apparatus. It is also important to keep in mind that there are many possible variables to actual response travel times such as weather, physical location of the incident compared to the location of the station (travel distance) especially during mutual aid responses as well as other simultaneous calls that may be happening. It is also important to note that the response time for fire staff for non-EMS incidents is typically higher. Before staff leave the station, they should be wearing all of their personal protective equipment (boots, pants, hoods, and coats).

[8] 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, 2001 edition (National Fire Protection Association, Quincy, MA), outlines organization and deployment of operations by career and primarily career fire departments.

[9] *The Commission on Accreditation of Ambulance Services (CAAS) is an independent commission that established a comprehensive series of standards for the ambulance service industry.*

Response time	2020	2021	2022	3 Year Average
Response Time(tone to scene)				
All inclusive	9:11	8:59	8:57	9:02

Figure 28
Call Analysis – Response Times

NOTE: It is important to note that all too often the first and other vehicles respond with a driver only and hopefully a certified firefighter riding with him. Due to the low turnout of staffing the past few years the MRI team is seeing a very dangerous trend with the low turnout of qualified staff to be effective in fighting fires and or any incident in ILDH (Immediately dangerous to life and health) environment. This trend is a Nation-Wide issue especially with predominant call departments.

Often a department is asked about the last time they had a fire. It is not about the last time; it is more about what damage was caused and how many people were affected that you cannot put a dollar figure on. Meredith has a three-year average of $699,820.67 dollar loss that can be calculated. The goal should be NO dollar or life loss every year. Fire Prevention and early notification is key to keeping both numbers down. An insurance company will replace the structure and some of the contents, but it cannot replace the family photos, heirlooms, kids artwork and other items that were precious to the occupants.

Property Loss	Dollar Loss	2020	2021	2022	3 Year Average
Property Loss		$ 371,312.00	$ 968,500.00	$ 639,650.00	$ 659,820.67
	Total Loss	**$ 371,312.00**	**$ 968,500.00**	**$ 639,650.00**	**$ 659,820.67**

Figure 29
Property Loss

VII: STAFFING

The key to any successful organization is the appropriately trained staff that are available to respond when needed. In today's fire service the numbers of call volunteer firefighters are dropping, and a marked drop has been noticed since the COVID 19 pandemic.

In Meredith there are several groups of firefighters. The first is the Chief who is available and responds 24/7 as well as has "Office hours" Monday through Friday. The second is a group of firefighters that are fully trained and certified to work shifts, generally during peak times during the summer months. The third group are call firefighters that are trained and certified who respond when called. This group generally have full-time jobs out of town and are not available during normal business hours and are not able to leave their jobs to respond. The fourth and final group are the live in or interns that the department houses. These interns are in school Monday through Friday and are for the most part not certified firefighters until late in the training program. These students are required to respond on apparatus to assist to the level of their certification while living in the station as well as cover shifts a minimum of 32 hours a week. Often, once they graduate with all the pertinent certifications, they move to full time firefighter positions in other communities.

The chart below indicates comparable data by year showing the number of people on the roster, the number of active people on the roster, the average number of responders on a call, the average response time and finally the average length of the incident or call. The key factors from the chart indicate that the total number of people on the roster from 2002 to 2022 has dropped by 16. The average number of active people has dropped by 12, reflecting an average of staff on a call down by 5.75 from 2002 to 2022. With the call volume increasing and the available qualified staff dropping a real concern is certainly rising as the sustainability of the current call model is very much going to be in question.

Staffing level - Response # - Response times 2002 to 2020									
	2002	2005	2010	2015	2020	2021	2022	2002 to 2022	
# of Incidents	300	389	334	414	491	503	513	213	Total Increase in Incidents
Roster Size	48	49	40	53	38	38	32	-16	Decrease in # of people on the roster
Active on Roster	40	41	38	44	29	29	28	-12	Decrease in # of Active people
Average # Responders on a call	12.03	11.41	11.37	7.8	6.92	6.49	6.28	-5.75	Decrease in # of people actually going to calls.
Repsonse Time	7.04	7.9	9	11.45	10.4	10.3	9.58	2.54	Increase in response time
Average total Call Time	51.5	50	N/A	46.58	39.5	46.58	40.3	-11.2	Decrease in overall on scene time.

Figure 30
Staffing levels

It has often been said that the fire service can have all the best equipment, but that equipment is useless without a good and efficient crew to operate it. In today's world, call and volunteer firefighters are getting harder and harder to not only recruit but also to retain. This is a nationwide issue that in many communities is now becoming a crisis.

Having several people listed on a roster may give a false sense of security and be misleading. Their participation in training, working shifts and actual response to incidents shows the real numbers and the level of service the department can deliver. The Chief has tried to have 4 part-time or per -diem staff on duty during the day 7 days a week and has only been able to successfully staff this approximately 10% of the time.

The age of the current staff at Meredith Fire shows a typical trend in what the MRI team is seeing throughout New England. There are very few younger people wanting to work in the fire service and a large portion of the current people will be looking at retiring from the service in the next 5 to 7 years.

AGE BREAKDOWN		
Under 20	0	0%
20-29	1	5%
30-39	4	18%
40-49	3	14%
50-59	7	32%
Over 60	7	32%
Total	22	
65 and older	2	
70 and Older	0	

Figure 31
Meredith Staff - Years of Service

Most firefighters and EMTs are not providing the service to the community for money. As an example, MRI has studied a department where 14% of emergency calls received no response from the local community. To address the situation the Board of Selectmen doubled wages but received no associated increase in participation and response. Although this is an extreme case, other retention strategies may be more effective. It is the hope of most departments to get people interested in performing the services and to keep them as long as they can.

The amount of time that is required to complete training programs should be rewarded. Meredith Fire should consider a one-time stipend for making certain benchmarks as a way of

compensating staff. The department should consider giving one-time stipends for completing firefighter 1, firefighter 2, different fire officer levels, and EMS certifications as a way of rewarding people for taking the time and completing programs. Currently there is no hourly wage or stipends and therefore no real incentive for taking the number of hours required to reach any level of training or certification. Most communities are now offering an hourly wage for training and bumping the wage up as training and certification levels are completed.

There has been much research done by several fire departments on the effects of various staffing levels. One constant that has emerged is that company efficiency and effectiveness decrease substantially, while injuries increase when company/unit staffing falls below four personnel. A recent comprehensive yet scientifically conducted, verified, and validated study titled *Multi-Phase Study on Firefighter Safety and the Deployment of Resources* was performed by the National Institute of Standards and Technology (NIST) and Worcester Polytechnic Institute (WPI), in conjunction with the International Association of Fire Chiefs, the International Association of Fire Fighters, and the Center for Public Safety Excellence. This landmark study researched residential fires, where most of the fire, injuries, and fatalities occur. ***The study concluded that the size of firefighter crews has a substantial effect on the fire department's ability to protect lives and property in residential fires and occupancies.*** Several key findings of the study include:

- *Four-person firefighting crews were able to complete 22 essential firefighting and rescue tasks in a typical residential structure 30% faster than two-person crews and 25% faster than three-person crews.*

- *The four-person crews were able to deliver water to a similarly sized fire 15% faster than the two-person crews and 6% faster than three-person crews, steps that help to reduce property damage and reduce danger/risks to firefighters.*

- *Four-person crews were able to complete critical search and rescue operations 30% faster than two-person crews and 5% faster than three-person crews.*

The United States Fire Administration, part of the Federal Emergency Management Agency in the Department of Homeland Security, recommends that a minimum of four firefighters respond on or with each apparatus. In its respected textbook *Managing Fire Services,* the International City/County Management Association (ICMA) states, *"that at least 4 and often 8 or more firefighters under the supervision of an officer should respond to fire suppression operations".* They further state, *"If about 16 firefighters are not operating at the scene of a working fire within the critical time period then dollar loss and injuries are significantly increased, as is fire spread".*

Beyond the NFPA standard(s), which as standards do not carry the weight of regulation or law, is the Occupational Safety and Health Administration (OSHA) Respiratory Protection Standard, CFR 1910.134, which carries the weight and force of regulation, thus making compliance mandatory. One key provision of the Respiratory Protection Standard that is directly applicable to fire

department staffing is known as the "Two-In/Two-Out" rule. In brief, this regulation specifies that anytime firefighters operate in an environment/atmosphere that is "immediately dangerous to life and health" (IDLH), whenever two members enter the IDLH area together/as a team, they must maintain visual or voice communication with two additional firefighters who must remain outside of the IDLH atmosphere, prepared to render immediate emergency assistance to those inside (Figure 25). The OSHA rule does provide an exception, however, which states that the rule does not apply in emergency rescue situations where a person is visible and in need of immediate rescue, or there is credible and reasonable information that potentially viable victims are still in need of rescue.

To comply with the "Two-In/Two-Out" rule, a team of four firefighters must be assembled before an interior fire attack can be made when the fire has progressed beyond the incipient stage, except in an imminent life-threatening situation when immediate action could prevent the loss of life or serious injury before the team of four firefighters are assembled. The serious concern of the MRI project team is that the OSHA "Two-In/Two-Out" rule permits an exception for life hazard or rescue situations. The reality is that in one of the most serious life hazard fire situations that can be encountered, trapped civilians, a firefighter may need to place himself/herself in extreme danger by entering the structure alone.

The OSHA:" Two-In/Two-Out" rule is an essential component of operational safety and should be the basis of fire service operations within the study communities. Despite the rural nature of the area, and the reality of some elongated response times, interior operations beyond a visible rescue should not be initiated until four personnel arrive on the incident scene.

Paragraph 4.1, ***Fire Suppression Organization*** in NFPA 1720[10] states, fire suppression operations shall be organized to ensure that the Fire Department's fire suppression capability includes sufficient personnel, equipment, and other resources to deploy fire suppression resources effectively, efficiently, and safely. Paragraph 4.2.2, *Community Risk Management,* states the number and types of units assigned to respond to a reported incident shall be determined by risk analysis and/or pre-fire planning.

The operations necessary to successfully extinguish a structure fire, and do so effectively, efficiently, and safely, requires a carefully coordinated, and controlled, plan of action, where certain operations, such as venting ahead of the advancing interior hose line(s), must be carried out with a high degree of precision and timing. Multiple operations, frequently where seconds count, such as search and rescue operations and trying to cut off a rapidly advancing fire, must also be conducted simultaneously. If there are not enough personnel on the incident initially to perform all the critical tasks, some will, out of necessity, be delayed. This can result in an

[10] 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, 2014 edition (National Fire Protection Association, Quincy, MA) outlines organization and deployment of operations by volunteer/call, and primarily volunteer/call fire departments.

increased risk of serious injury, or death, to building occupants and firefighters, and increased property damage. It is important that all communities give and receive mutual aid to fires with appropriate staffing of at least 4 personnel, one of which should be an officer.
To address this concern the community will need to make a conscious choice relative to service level through budgetary appropriation.

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,* 2014 edition outlines organization and deployment of operations by volunteer, and primarily volunteer fire departments.

Some of the key *provisions of NFPA 1720 are as follows:*

1. *Paragraph 4.3.1 on Staffing and Deployment states that the Fire Department shall identify minimum staffing requirements to ensure that enough members are available to operate safely and effectively.*

2. *Paragraph 4.3.2 on Staffing and Deployment states that Table 4.3.2* (Figure 19) shall be used by the authority having jurisdiction (AHJ) to determine staffing and response time objectives for structural firefighting, based on a low-hazard occupancy such as a 2,000 square foot, two-story, single-family, without basement or exposures.

Demand Zone	Demographics[1]	Minimum Staff to Respond	Response Time[2] (minutes)	Meets Objective (% of the time)
Special risks	AHJ	AHJ	AHJ	90 %
Urban	>1000 people/mi.^{2}	15	9	90 %
Suburban	500 - 1000 people/mi.^{2}	10	10	80 %
Rural	< 500 people/mi.^{2}	6	14	80 %
Remote	Travel distance > 8 mi.	4	Dependent upon travel distance	90 %

1 – A jurisdiction can have more than one demand zone.

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

Figure 32
Staffing and Response times from NFPA 1720

3. *Paragraph 4.3.3 on Staffing and Deployment states that upon assembling the necessary resources at the emergency scene, the Fire Department should have the capability to safely commence an initial attack within two minutes, 90% of the time.*

4. *Paragraph 4.6.1 Initial Firefighting Operations states that initial firefighting operations shall be organized to ensure that at least four members are assembled before interior fire suppression operations are initiated in a hazardous area.*

5. *Paragraph 4.7.1 Sustained Firefighting Operations states that the Fire Department shall have the capability for sustained operations, including fire suppression; engagement in search and rescue, forcible entry, ventilation, and preservation of property; accountability of personnel; the deployment of a dedicated rapid intervention crew (RIC); and the provision of support activities for those situations which are beyond the capabilities of the initial attack.*

6. *Paragraph 4.7.2 Sustained Firefighting Operations also states that the capability to sustain operations shall include sufficient personnel, equipment, and resources to effectively, efficiently, and safely conduct the appropriate operations.*

Note: While the NFPA standards are nationally recognized consensus standards, it is still the responsibility of the local jurisdiction to determine the acceptable level of risk and corresponding fire protection/EMS services.

Figure 33
Example of a significant incident requiring the response of several communities - Bar Harbor 2022.

Some jurisdictions add additional response resources and, in some cases, exceed the specifics of national benchmarking for personnel and other resources particularly when the incident is in a larger structure where the life hazard may be higher and/or the potential fire situation much more complex. Personnel needs for fires involving large, more complex structures, such as large senior citizen, assisted living (Figure 20), and commercial occupancies will require a significantly greater commitment of initial personnel, minimally 27/28, according to the 2016 edition of NFPA 1720's companion standard NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Career Fire Departments*. This should include reported fire incidents in buildings that are fully sprinklered. While sprinklers are highly effective, they are not 100% so. Until such time as the extent and seriousness of the incident can be determined, a full complement of personnel and apparatus should be dispatched.

Figure 34 identifies, and Figure 35 illustrates, the critical tasks and resource deployment required for low to moderate-hazard incidents such as one and two family residential and small commercial structure fires. Although some people advocate that these types of incidents can be handled with less personnel, unless it is a small fire, there is the possibility there will not be enough personnel available to perform all the critical tasks necessitating that some be delayed.

Incident Command	**1**
Continuous Water Supply/Pump Operator	**1**
Fire Attack via Two Handlines	**4**
Hydrant Hook-Up, Forcible Entry, Utilities	**2**
Primary Search and Rescue	**2**
Ground Ladders and Ventilation	**2**
Aerial Operator (if Aerial is Used)	**1**
Establishment of an IRIT (Initial Rapid Intervention Team)	**2**

Figure 34
Critical Tasking: Low and Moderate Risk Structure Fire

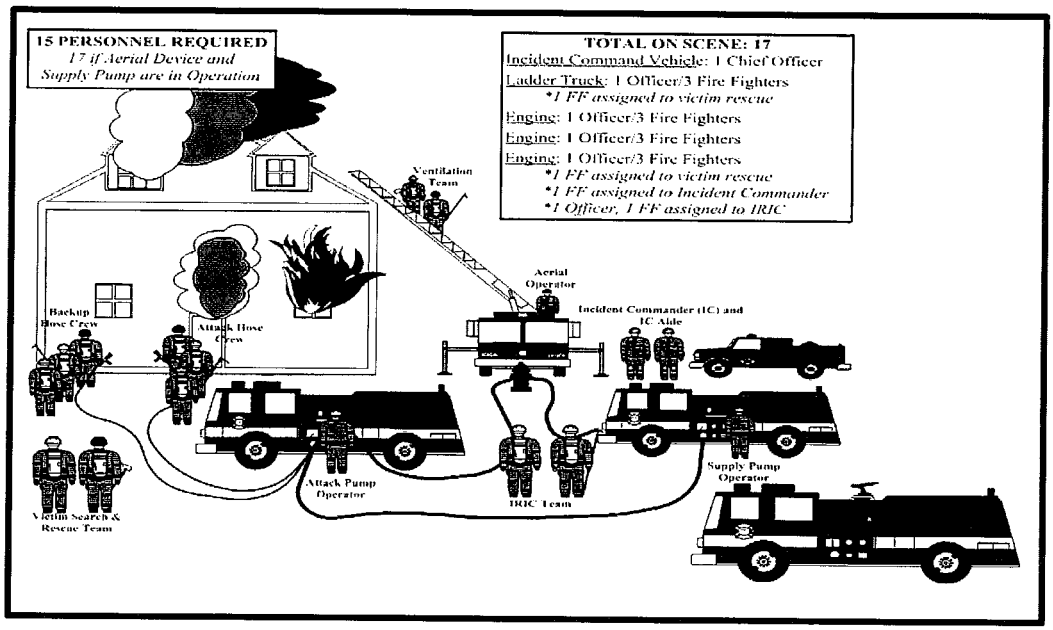


Figure 35
Typical Basic Staffing Needs For A Single-Family Dwelling Fire.
Image credit: IAFF 266

These tasks meet the minimum requirements of NFPA 1720 for the initial full-alarm assignment to a typical low-risk, 2000 square foot, 2 story residential structure. These are the proverbial "bread and butter" structural fire incidents that fire departments respond to, and which are, by far, the most common type of structure fire. Personnel requirements for fires involving large, more complex structures such as commercial or industrial facilities or multifamily residential occupancies will require a significantly greater commitment of personnel.

Respondents to the fire and EMS questionnaire reported that they achieved NFPA 1720 compliance for structure fire response and average of 60.52% of the time. This ranged from a low of six percent to a reported high of 100%.

The 2016 edition of NFPA 1710 recommends a minimum of 27/28 personnel on the initial response for fires involving moderate hazard garden-style apartments and strip shopping centers (Figure 36).

Incident Command	2
2 – Independent Water Supply Lines/Pump Operators	2
Fire Attack via Three Handlines	6
Support Firefighter for each Handline	3
2 - Search and Rescue Teams	4
2 - Ground Ladders and Ventilation Teams	4
Aerial Operator (if Aerial is Used)	1
Rapid Intervention Team (1 Officer/3 Firefighters)	4
EMS/Medical	2

Figure 36
Critical Tasking: Moderate Risk Structure Fire

Figure 37 identifies critical tasking for fires involving high risk structures such as hospitals, nursing homes, and assisted living facilities.

Incident Command	2
2 – Independent Water Supply Lines/Pump Operators	2
Investigation/Initial Fire Attack Line	3
Backup Line	3
Secondary Attack Line	3
3 - Search/Rescue Teams	6
2 – Ground Ladder and Ventilation teams	4
Water Supply/Fire Department Connection	2
Aerial Operators (if Aerials are Used)	2
Safety/Accountability	2
Rapid Intervention Team (1 Officer/3 Firefighters)	4
EMS/Medical	4

Figure 37
Critical Tasking: High Risk Structure Fire

There has been much research done by several fire departments on the effects of various staffing levels. One constant that has emerged is that company efficiency and effectiveness decrease substantially, while injuries increase when company/unit staffing falls below four personnel

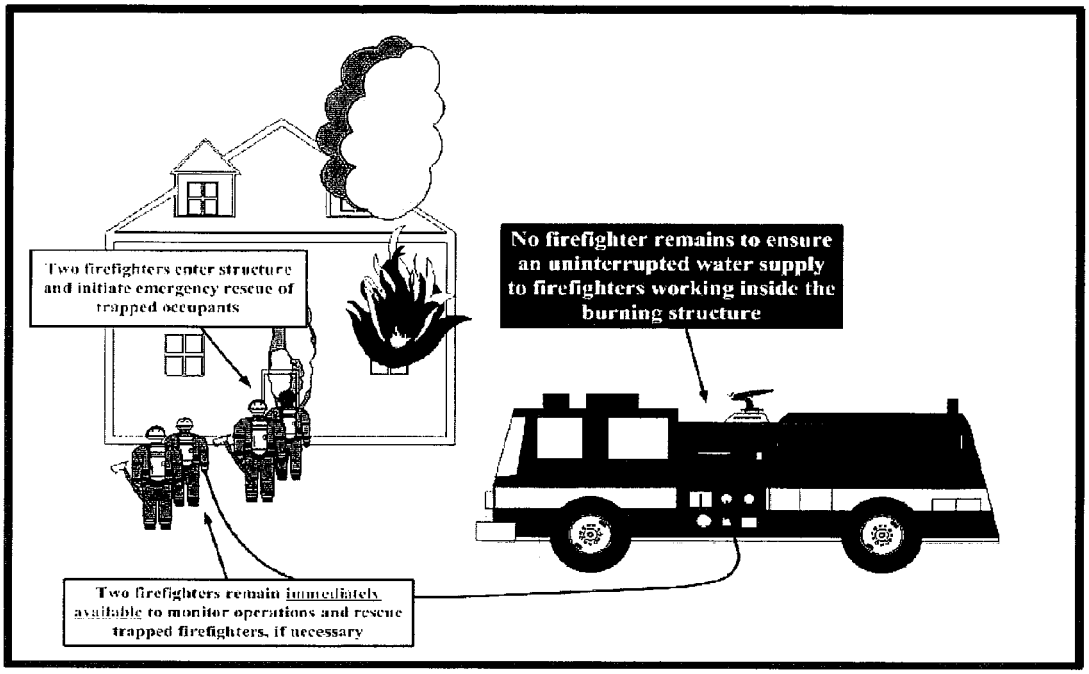


Figure 38
OSHA TWO-IN/TWO-OUT
Image Credit: IAFF 266

Administrative Concerns

The number of administrative duties of a modern-day fire department is tremendous. Currently the Fire Chief is trying to juggle all of the administrative duties along with responding to calls, attending meetings, conducting a tremendous amount of plan review and inspections. That does not consider the number of residents and transient residents coming to get a permit to have a campfire. All of this is overwhelming to a single person, and as a result they are inefficient in the tasks they try to carry out.

With the building projects going on within the community coupled with the required assembly inspections that need to be done on an annual basis there is a need for a full-time code compliance person who should also be a certified firefighter-EMS provider to help when needed. Along with the inspector a full-time administrative assistant should be brought on board. All permitting and scheduling should be moved to the fire department from the building department to allow for efficient and effective use of the fire staff's time. In looking at the volume of work compared to similar communities in the Lakes Region both positions are certainly warranted. A full permitting fee schedule should be developed to help offset some of the cost of these positions.

Future Staffing Model

Taking into consideration all the work required on the administration side of the fire service, coupled with the need to have a staff responding to calls daily, it is the recommendation of the MRI team that the Town of Meredith increase the full-time staffing levels as outlined below while continuing to support a predominant call department. The town of Moultonborough has taken similar steps over the past year and has added a fulltime administrator and 6 fulltime firefighters to the 3-person fulltime staff it previously had.

Breakdown of positions:

1 Fulltime Fire administration person (24 to 28 Hours a week Monday through Friday)

1 Fulltime Firefighter Inspector (40 Hours a week Monday through Friday)

2 Fulltime Fire Officers – One for each shift as outlined below

4 Fulltime firefighters – Two for each shift outlined below

Firefighter Shifts:

Two platoons each with one officer and four firefighters working 12-hour shifts.

- *Each platoon works 4 days on and 4 days off on a rotating schedule.*
- *Over an eight-week cycle this will produce a 42-hour work week with any off-duty hours compensated at overtime rates.*
- *The Fire Chief and Fire Inspector will respond to calls as needed.*
- *Schedule over an eight-week cycle*

A-A-A-A-B-B-B-B-A-A-A-A-B-B-B-B- A-A-A-A-B-B-B-B-A-A-A-A-B-B-B-B- A-A-A-A-B-B-B-B-A-A-A-A-B-B-B-B- A-A-A-A-B-B-B-B

The Math:

A Shift works 28 days X 12hours a day = 336 / 8 weeks = 42 hours a week

B Shift works 28 days X 12 hours a day = 336 / 8 weeks = 42 hours a week

Proposed Staffing Budget Cost

If this plan is adopted and put in place, the shift schedule should run for a full year and then be evaluated to determine if the full-time coverage needs to be adjusted or to go to 24 hours a day.

Below is the total cost for all the positions based on figures available in August of 2023. Hourly rates are projected for FY 25. A complete breakdown is included in **Appendix A.**

Budget Lines	Salary FT	$	464,056.00
	Overtime	$	62,743.20
	Retirement system	$	154,005.98
	FICA	$	2,166.53
	Medicare	$	7,638.59
	Benefits	$	75,475.40
	TOTAL	**$**	**690,610.29**

Figure 39
Proposed Fulltime additional budget

With all new positions added, each will need to run for a full year and then evaluated and if needed, the number of staffing and hours each adjusted to meet the needs of the department and the community.

For planning and budgeting purposes, it would be prudent for the Town to look ahead to budget the Full time Firefighters to a 24-hour schedule in year two or three as the trend in call firefighter participation appears to be dwindling down each year necessitating the change.

In an effort to put this into tax dollars the MRI team has taken the assessed tax property values without utilities and determined the cost per thousand of valuation to be .30 that would be added to the tax rate

Town Taxable value	$	2,342,764,034.00
	$	2,342,764.03
Total Project Budget	$	690,610.29
Annual Cost per 1000	**$**	**0.29**
Cost on $250,000. Taxable value	$	73.70
BI annual Tax bill	$	36.85
Cost on $500,000. Taxable value	$	147.39
BI annual Tax bill	$	73.70
Cost on $850,000 Taxable value	$	250.57
BI annual Tax bill	$	125.28
Cost per million Taxable value	$	2,947.84
BI annual Tax bill	$	1,473.92

Figure 40
Tax Rate Effect

Call Department Pay Scale:

In order to keep a vibrant call department one of the key factors is hourly pay rates. Over the past several months the MRI team has seen departments competing for call and full-time staff by increasing the hourly rates. Although pay rates are currently a moving target, the MRI team feels that the Town of Meredith should use an hourly rate survey in making decisions for the next fiscal year. Currently firefighters are making an average low of 20.97 to an average high of $28.77 per hour.

When a detail is required by Code or by the Authority having Jurisdiction, there should be an established detail rate that is comparable to the Police Officers and paid at a predetermined number of minimum hours. Towns may adopt a processing fee that is added to the detail cost that is passed along to the requesting person or company.

	Firefighter		Lieutenant		Captain			
	Low	High	Low	High	Low	High	Low	High
Meredith	$ 11.41	$ 17.14	$ 17.14	$ 19.66	$ 19.66	$ 22.18	$ 21.54	$ 24.10
Area Average	$ 14.50	$ 16.50	$ 16.50	$ 17.0	$ 17.50	$ 18.00	$ 18.50	$ 19.00

Average Figures are from a study done in 2019.

Figure 41
Hourly Pay Rates – Area Averages

In order to be competitive, a pay scale needs to consider living in or around the community. The MRI team has seen many departments needing to extend the living requirements to allow staff to live within a reasonable range to be employed. This often leads to a lack of responders coming back for incidents due to travel time.

Firefighters		Call Firefighter hourly wages as of September 1, 2023						
New Hampton	Start	Fire Fighter 1 - 1.50						
		No EMS	EMR	EMT-B	AEMT	Medic	CDL add	
			$ 1.50	$ 3.75	$ 4.50	$ 5.00		
	$ 14.70	$ 16.20	$ 17.70	$ 19.95	$ 20.70	$ 21.20	$ 1.75	
Meredith		Firefighter -1						
*** Does not do EMS***		No EMS	EMR	EMT-B	AEMT	Medic	Driver Operator	
	$ 11.41	$ 14.56	$ -	$ -	$ -	$ -	$ 0.65	
Moultonborough		Firefighter -1						
		No EMS	EMR	EMT-B	AEMT	Medic	Driver Operator	
1 Hour minimum	$ 12.00	$ 14.50	$ 14.50	$ 15.00	$ 15.50	$ 16.00	$ -	
Center Harbor		Firefighter -1						
		No EMS	EMR	EMT-B	AEMT	Medic	CDL add	
2 hour minimum	$ 15.00	$ 16.00	$ -	$ 17.00	$ 18.00	$ 19.00	$ 1.00	
		Add $1.00 for any 3 certs, Add 1.00 Boat Certification, add $1.00 Ice or water rescue						
Holderness		Firefighter 1 - 1.00						
		No EMS	EMR	EMT-B	AEMT	Medic	Driver Operator	
2 hour minimum	$ 16.00	$ 18.00	$ -	$ 19.00	$ -	$ -	$ -	
Average - High - Low								
		No EMS	EMR	EMT-B	AEMT	Medic	CDL / Driver Operator	
Average		$ 15.85	$ 16.10	$ 17.74	$ 18.07	$ 17.11	$ 1.13	
High		$ 18.00	$ 17.50	$ 19.95	$ 20.70	$ 21.20	$ 1.75	
Low		$ 14.50	$ 14.50	$ 15.00	$ 15.50	$ 16.00	$ 0.65	

Figure 42
Hourly pay rates Call Firefighter Certified at Level 1

Call Firefighter hourly wages as of September 1, 2023

New Hampton	Firefighter 2 - 2.50					
	No EMS	EMR	EMT-B	AEMT	Medic	CDL Add
	$ 17.20	$ 18.70	$ 20.95	$ 21.70	$ 22.20	$ 1.75
Meredith	**Firefighter 2**					
*** Does not do EMS***	No EMS	EMR	EMT-B	AEMT	Medic	Driver Operator
	$ 15.86	$ -	$ -	$ -	$ -	$ 0.64
Moultonborough	**Firefighter 2**					
	No EMS	EMR	EMT-B	AEMT	Medic	Driver Operator
1 Hour minimum	$ 15.50	$ 15.50	$ 16.00	$ 16.50	$ 16.50	$ -
Center Harbor	**Firefighter 2**					
	No EMS	EMR	EMT-B	AEMT	Medic	CDL add
2 hour minimum	$ 18.00	$ -	$ 19.00	$ 20.00	$ 21.00	$ 1.00
	Add $1.00 for any 3 certs, Add 1.00 Boat Certification, add $1.00 Ice or water rescue					
Holderness	**Firefighter 2 - 2.00**					
	No EMS	EMR	EMT-B	AEMT	Medic	Driver Operator
2 hour minimum	$ 19.00	$ -	$ 20.00	$ -	$ -	$ -
Average - High - Low						
	No EMS	EMR	EMT-B	AEMT	Medic	Driver Operator
Average	$ 17.11	$ 17.10	$ 18.99	$ 19.40	$ 19.90	$ 0.68
High	$ 19.00	$ 18.70	$ 20.95	$ 21.70	$ 22.20	
Low	$ 15.50	$ 15.50	$ 16.00	$ 16.50	$ 16.50	

Figure 43
Hourly pay rates Call Firefighter Certified at Level 2

The MRI team has not been able to locate and verify a Call Officer hourly wage study. The rates have no doubt increased in an effort to recruit and retain staffing. There have been more recent studies done on full-time staff but not call staff.

The Town and the department should require physical examinations be conducted following NFPA standards on an annual basis. These exams are crucial to catch and sometimes prevent long term or fatal events that are all too prevalent in the modern-day fire service. It is important these are done by a physician that has the knowledge and equipment to follow the NFPA standard. Following a physical, proper documentation indicating a person can work as a firefighter without restrictions should be provided to the Chief. Any restrictions must be reviewed and accepted for people to continue to function in any department.

RECOMMENDATIONS:

VII-1 The Town of Meredith should consider the addition of full-time staffing that will allow daytime coverage on a regular basis year-round and rely on the call department for night coverage.

VII-2 The MFD should require its personnel, and strongly encourage its officers, to obtain a certain level of fire officer certification as a job requirement, such as Fire Officer 2 for Captain, Fire Officer 3 for deputy fire chief, and Fire Officer Level IV for fire chief.

VII-3 The MFD should require that all officers be certified as Incident Safety Officers (ISO). Additional personnel who may be interested should be encouraged to take this training and obtain this important firefighter safety certification.

VII-4 As part of the succession planning process, the Fire Chief should work to implement a professional development program to ensure that all officers can perform their superior's duties, as well as identify the core future leaders of the department.

VII-5 Working with a training officer, more training should be planned, delivered, and documented. In an effort to keep members interested in training, the department should be creative and offer training that is outside the normal programs. Making programs fresh, fun and to some degree competitive may increase the participation of members. If it's the same old training, people will lose interest. Make it so they want to participate and at the same time meet training goals. Training should be conducted as a department and not as companies.

VII-6 The MFD should set a minimum criterion for call members to remain in active status. This criterion should include both minimum training and response to incidents for a determined time period (one year). This criterion should also allow for people to go into an inactive status for a period of time due to approved circumstances. It would be important for inactive-status people to make up any important training prior to being put back on active status.

VII-7 The Fire Chief should expand the MFD social media presence and involve other members of the department in this endeavor. The use of social media, like Facebook and Twitter, are what the younger generation use, and a very active social media account has the opportunity to reach out to this group of people for hiring.

VII-8 Set and publish minimum criteria for active participation and ramifications for not meeting the minimums. A large roster is a false sense of security, and only people with proper training and skills that are dedicated (attend training and incidents) should be active.

VII-9 MFD should develop a series of team-based activities that build involvement in the organization, including both Fire and EMS staff as well as other town departments and mutual aid partners.

VII-10 All officer positions, from Lieutenant to fire chief, should be filled based upon the person's firefighting/emergency services training, certifications, and experience, commensurate with the position being sought, along with successful completion of a formal, rank appropriate assessment process, and a basic practical skills evaluation.

VII-11 The MFD should ensure that all department members are trained/ certified to the minimal NIMS level required for their duties/responsibilities and ranks. In addition to the basic I-100/I-700 training mandated; it is MRI's recommendation that all officers should be trained to the ICS-300 level. All chief level officers should be trained to the ICS-400 level.

VII-12 Assign a Training Officer to develop a training schedule and to assure all members are being trained with consistency. Training Schedules with subject should be published on a quarterly basis.

VII-13 Assign a Department Safety Officer that oversees all safety and safety issues within the department. This person should have the training and experience to conduct this type of evaluation for both Fire and EMS and concentrate on the stations and training as a primary focus and be the lead on incidents if available.

VII-14 A guide or probationary manual needs to be developed and given to new staff so there are clear expectations for them to understand. Along with the expectations a mentoring program should be set up assigning new members to a seasoned person to shadow and train with. A training program for new hires should also be developed so that all people are trained to the same department standard.

VII-15 The amount of time that is required to complete training programs should be rewarded. Staff should be paid for training. Stipends for making certain benchmarks are another way of compensating staff. Consideration should be given to one-time stipends for completing firefighter 1, firefighter 2, different fire officer levels, and EMS certifications as a way of rewarding people for taking the time and completing programs.

VII-16 Update all Job descriptions as needed including requirements to hold a ranking position.

VII-17 Establish a detailed rate of pay and a minimum number of hours the detail is paid for.

VII-18 Update and develop a Mission Statement, Vision Statement and a set of Strategy and Goals.

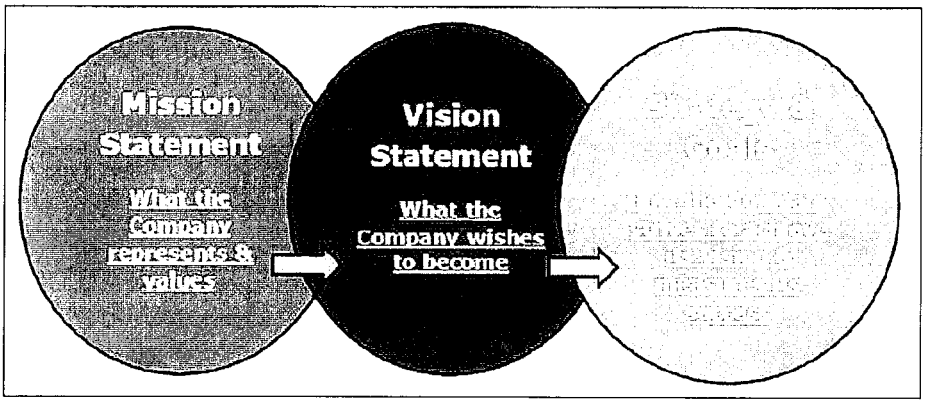


Figure 44
Mission, Vision, and Goals

VII-19 The Town should mandate and therefore budget for an NFPA physical to be completed by all staff. Currently physicals are only done on initial employment and never again. Some communities have allowed people to have their physicians (when capable and properly equipped) conduct these exams. At the conclusion of the exam the Fire Chief should be given a letter stating the person has been examined and is duly physically and mentally fit to be able to conduct firefighting duties with no restrictions. If chosen the Chief may accept some conditions that allow for people to drive only and not conduct any operations requiring the use of self-contained breathing apparatus.

VIII: AUTOMATIC AND MUTUAL AID PRACTICES

Meredith Fire gives and receives mutual aid from surrounding towns on an as needed basis. Looking back over a three-year period the department has given mutual aid on an average of 32.3 times a year and has received mutual aid an average of 16 times. In general, automatic, and mutual aid allow for proper staffing on scene for any one of the multi hazards the department may respond to. The chart below is a break- down of each year.

Mutual Aid	2020	2021	2022		Average
Given	34	31	32		32.3
Received	14	18	16		16

Figure 45
Mutual Aid (Give and Take)

It is important to note that Automatic and Mutual Aid is not always guaranteed for several reasons. First is the actual availability of the resource(s) that is requested. For example, during a wind/electric storm, surrounding communities may be dealing with the same type and the same number of calls at the same time. Second is the staffing levels both in the actual numbers as well as qualifications of the staff are lower today than ten years ago. Many departments are having the same staffing issues and concerns as outlined in the document. The bottom line is that automatic aid and mutual aid are needed in every community and the ability to provide a needed resource is not always guaranteed to respond to every request. It is becoming more and more incumbent for communities to properly staff at a safe level to meet the basic needs for an average response to an incident.

Paragraph 4.1, *Fire Suppression Organization* in NFPA 1720[11] states, fire suppression operations shall be organized to ensure that the fire department's fire suppression capability includes sufficient personnel, equipment, and other resources to deploy fire suppression resources effectively, efficiently, and safely. Paragraph 4.2.2, *Community Risk Management,* states the number and types of units assigned to respond to a reported incident shall be determined by risk analysis and/or pre-fire planning.

The overall study has seen an increase in providing and receiving mutual aid from other area departments. This is a trend that has been increasing throughout the fire service in the country over the past few years. Most departments are requesting mutual aid sooner due in large part to the low level of staffing levels to allow for safe operations at incident scenes and also due to the larger fire volume and exposure threats that are being found.

[11] 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,* 2014 edition (National Fire Protection Association, Quincy, MA) outlines organization and deployment of operations by volunteer/call, and primarily volunteer/call fire departments.

The operations necessary to successfully extinguish a structure fire, and do so effectively, efficiently, and safely, requires a carefully coordinated, and controlled, plan of action. Every operation, such as venting ahead of the advancing interior hose line(s), must be carried out with a high degree of precision and timing. Multiple operations, frequently where seconds count, such as search and rescue operations and trying to cut off a rapidly advancing fire, must also be conducted simultaneously. If there are not enough personnel on the incident initially to perform all the critical tasks, some will, out of necessity, be delayed. This can result in an increased risk of serious injury, or death, to building occupants and firefighters, and increased property damage.

At the time of this assessment, it appears that most departments do not have any minimum staffing requirements for their apparatus so vehicles can respond with just one or two personnel rather than a much more desirable minimum of three or the recommended four. It is MRI's opinion that most departments, with their current personnel resources, will rarely be able to get either sufficient apparatus or firefighters to the scene of a significant incident without turning to their neighboring departments for assistance. Paragraph 4.7.3 of NFPA 1720 states, the fire department shall be allowed to use established automatic aid or mutual aid agreements to comply with the requirements of Section 4.7, *Sustained Firefighting Operations*. Paragraph 4.3.5, *Staffing and Deployment* states, standard response assignments and procedures, including mutual aid response and mutual aid agreements predetermined by the location and nature of the reported incident, shall regulate the dispatch of companies, response groups, and command officers to fires and other emergency incidents.
It is important that all communities give and receive mutual aid to fires with appropriate staffing of at least 4 qualified personnel, one of which should be an officer.

RECOMMENDATIONS:

VIII-1 The Department should be receiving and giving automatic mutual aid to all surrounding towns in a coordinated effort to provide at a minimum a dedicated Rapid Intervention Team (RIT).

VIII-2 The Department should train at a minimum of 12 members to provide the rapid intervention function as three to four person teams.

VIII-3: Although more stringent than the requirements found in Table 4.3.2 of NFPA 1720 for rural communities, through the utilization of automatic aid agreements with neighboring communities, Fire Departments should consider the adoption of an *Standards of Cover (SOC) with the goal of attempting to have at least 16 personnel on the scene of any reported structure fire within 14 minutes. This should involve at least one mutual aid town for RIT.

VIII-4: The Department should make it a priority to improve its first unit on scene response times, including the adoption of a SOC, for the town. The SOC should be based upon a hybrid of the NFPA 1720/1720 and Commission on the Accreditation of Ambulance Services (CAAS) recommendations.

VIII-5: The MFD should review standards of cover benchmarks, to have the first unit responding to emergency incidents within one minute of dispatch (staffed station) and have the first unit on scene within eight minutes after responding to all types of calls, 90% of the time.

* "Standards of Cover" is defined as "those adopted written policies and procedures that determine the distribution, concentration, and reliability of fixed and mobile response forces for fire, emergency medical services, hazardous materials, and other technical responses.

IX: FIRE DISPATCH

Lakes Region Mutual Fire Aid Association

Serving 35 communities throughout the Lakes Region of New Hampshire

Meredith Fire is one of many fire and EMS organizations that belong to the Lakes Region Mutual Aid Association. The staff at the dispatch center are truly one of the first responders to any emergency call. One of the major functions of the Association is to dispatch all calls to its member departments. The Association web site introduces the agency as follows:

"Lakes Region Mutual Fire Aid Association provides uninterrupted emergency dispatch communications for the fire and EMS departments of the Lakes Region in Central New Hampshire. The association has proudly provided these services 24 hours a day, 7 days per week, to the ever-growing population in our 1,500 square mile service area since 1950.

We are a premier organization consisting of 35 communities, the Central NH Hazardous Materials Response Team, and 2 Water Extrication Teams.

The Communications Center is staffed by motivated, highly trained, and skilled Communications Specialists. They have been trained to operate at emergency scenes as Incident Dispatchers as well as cross-trained with Concord Fire Alarm as part of our Operations Continuity Plan. They provide the vital first link between citizens and the towns' resources. Their performance contributes directly to the safety and well-being of the Departments' members and towns residents.

As we move into the 21st century with a state-of-the-art communications center, our vision is to expand our capabilities while still providing quality service to the ever-growing population in the Lakes Region, utilizing the latest technologies in radio communications and interoperability, computer-aided dispatching, and GIS information systems.

The Communications Center is equipped with Orbicom touch-screen dispatching consoles that control 10 transmit-and-receive radio sites. We provide fire and EMS alerting for 35 agencies and our system can easily be expanded to accommodate more agencies. The Center currently operates with Cross Current dispatching CAD software, which provides dispatching information, incident reporting, preplans, water supply sources, run cards, inventory information, and other fire and EMS modules."

The Association has the following Mission Statement:

"Lakes Region Mutual Fire Aid Association recognizes that its primary mission is to serve as the vital link between the citizens and the Fire and Emergency Medical Service agencies within our member communities. We strive to deliver the highest quality telecommunications, training and education, and emergency services coordination for our community partners and the public we serve.

The goal of Lakes Region Mutual Fire Aid Association is to efficiently and effectively dispatch emergency apparatus for the fire and EMS departments of our communities, so they in turn can provide the highest level of service to the residents of the Lakes Region. Additionally, the association also offers a wide variety of extensive training and education to our fire and EMS departments through its Training and Education Division."

The Town of Meredith budget for the services provided by the Lakes Region Mutual Aid Association for the fiscal year 2023 is $91.034.40. The cost for services provided by the Association is calculated utilizing an assessment system that consists of the following factors:

Fixed Cost = 10% Assessment of the total budget. Each community pays the same amount.

Valuation Factor = 40% of the budget is calculated using community property valuation.

Population Factor = 50% of the budget is calculated using a community's population.

The intent of the system used to calculate each community's cost is based on all the factors listed above and each community pays according to these factors and therefore each pays a different amount.

There are many advantages to being part of the Lakes Region fire dispatch. The biggest advantage is the seamless link between Meredith Fire and all the Mutual Aid resources that the town uses daily as well as a well-built plan that goes above and beyond any normal incident the community has and provides apparatus, staffing, and resources as required.

Figure 46
911 Logo

NOTE: This chapter was informational only as such, there are no recommendations for this section.

X: EMS SERVICES

Figure 47
Stewarts Patch

Emergency Medical Services in the Town of Meredith is solely provided by Stewarts Ambulance Service Inc, also referred to in the Lakes Region as Meredith EMS. Stewarts is based at 20 Foundry Avenue in Meredith and is part of the Lakes Region Mutual Aid Dispatch center. EMS services are provided under a contract that is shared with the towns of Moultonborough, Center Harbor, and Sandwich.

The chart below is divided into three categories of incidents that show the volume of incidents within the Town of Meredith has increased each year for the past three years.

	Total number of incidents		
	All Inclusive	**Less Fire**	**Mutual Aid**
	See note 1	See note 2	See note 3
2020	1117	1023	55
2021	1238	1146	77
2022	1365	1257	40

Note 1	All inclusive reflects all resposnes within the Town of Meredith.
Note 2	Call that were not EMS primary but dispatched as a precaution.
Note 3	Mutual aid to towns that are **not** part of EMS contract with Stewarts.
	(Moultonborough, Center Harbor, Sandwich)

Figure 48
EMS Call volume

Stewarts Ambulance has provided a well-run EMS system for the communities it contracts with for many years. Like many other professions, EMS is also finding it harder to find good quality staff at the basic and Paramedic level of providers. With the increase in medical emergencies and the ability to handle the calls within the response area often communities are using fire-based EMS units to cover the back-to-back simultaneous calls. Having to rely on mutual aid that is responding from a distance in the current response model to Meredith is causing a delay in assessment and on-scene treatment of people who are sick or injured. Currently Meredith Fire provides no first response to any medical call even if you drive to the fire station.

In addition, the firefighters responding to a motor vehicle accident are not able to provide EMS as the department does not have a license from the state to do so. In many of the communities in the Lakes Region the fire departments are responding to evaluate and treat people while the ambulance that will transport is responding. The MRI team feels that with the addition of full-time staff the fire department should respond to a higher level of calls or, for when there will be a long delay in getting an ambulance to the scene. It is in the best interest of the patient to provide a given level of evaluation and treatment as quickly as reasonably possible. It is important to note that with the addition of full-time staff as proposed in this document it does not provide enough staffing to provide a transport ambulance service, it is strictly for first response triage and treatment only. The MRI team suggests that calls that 911 has determined to be a "Charlie, Delta or Echo" level call should have a fire response. Any calls where Stewarts Ambulance requires additional help in lifting or treating will continue to be answered by the fire department as it is today.

Code	Level of Response
Alpha	Low priority
Bravo	Mid Priority
Charlie	**Possible Life Threatening**
Echo	Full Cardiac Arrest or Imminent Death
Omega	Lowes Priority

Figure 49
Dispatch Priority Codes

A further breakdown of the thirty-six call types that are used in the EMD (Emergency Medical Dispatch) protocols is attached in **Appendix B** of this document.

RECOMMENDATIONS:

X-1 ***The current use of certified EMT's in the department should be explored and potentially expanded, to not only use the skills they have, but to help provide a quick response to EMS calls with higher acuity levels in harmony with Stewarts (Meredith EMS). For certain high level calls the department EMS providers can often be on scene quicker and begin to evaluate and treat a patient sooner. This will require the department to purchase some EMS diagnostic and treatment equipment in order to provide this level of service. The department will also be required to be licensed as a non- transport EMS provider to ensure proper quality control and most important treatment protocols and proper documentation. This will be a valuable asset to the residents as the trend for EMS calls is rising and the double call (simultaneous or back-to-back) are becoming more common.***

X-2 ***The Department should obtain a NON transport EMS license from the State to assure compliance for all medical treatment and documentation done by its staff. Without the NON transport EMS license, the MFD staff cannot provide any assistance to walk-in or drive-up medical care requests at the fire station. There is a public perception that the fire station is a place to stop at and receive medical care. The Meredith fire station is in a prime location and the staff stated there have been many times they have had to stand there and do nothing while waiting for Stewarts Ambulance to arrive. This needs to be addressed.***

X-3 ***Working with the staff at Stewarts Ambulance, the department should have its members trained and certified in CPR and AED use as well as becoming familiar with the Ambulance equipment and the operations of that equipment.***

X-4 ***Working with mutual aid towns, explore the options of a fire-based transport system in FY28 for the possibility of going online in FY29.***

XI: GRANTS

There are several federal and private grants available for fire departments and communities to consider for supplementing their budgets. If successful in receiving a grant award, most departments can acquire equipment, training, and programs that they would not be able to achieve through the normal budget process. Though the process can be difficult, and time consuming, the outcomes can be very beneficial to the Fire Department.

While the economic challenges of the last decade have had an impact on grants from private entities and foundations, fortunately, the federal grant programs targeted to the fire service, the Assistance to Fire Firefighters Grants for equipment (AFG), the Staffing for Adequate Fire and Emergency Response Grants (SAFER) for personnel, and the Fire Prevention and Safety Grants (FP&S) for fire prevention and public fire education programs, continue to be funded, although not anywhere near their authorized levels.

The AFG program provides financial assistance directly to fire departments to enhance their capabilities with respect to fire and fire-related hazards. The AFG supports fire departments that lack the tools and resources necessary to more effectively protect the life and safety of the public, and their emergency response personnel with respect to fire and all other hazards. Since 2001, AFG has helped firefighters and other first responders to obtain critically needed equipment, protective gear, emergency vehicles, training, and other resources, needed to protect the public, and emergency personnel, from fire and related hazards.

Figure 50
AFG Logo

Figure 51
SAFER

The goal of the SAFER grants is to enhance the Fire Departments' ability to comply with staffing, response, and operational standards, established by NFPA and OSHA (NFPA 1720 and OSHA 1910.134). Specifically, SAFER funds assist the Fire Department to increase their staffing and deployment capabilities in order to respond to emergencies whenever they may occur. SAFER grants are awarded to departments for both hiring of career personnel, and recruitment and retention of volunteer/call personnel. However, a department cannot apply for both categories of grant in the same year.

Fire Prevention and Safety Grants support projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to target high-risk populations and mitigate high incidences of death and injury.

There are several other grants available to fire departments for various purposes. Some grants that may be available to departments are the Fireman's Fund Heritage Grants, Factory Mutual grants for fire investigation, and Wal-Mart community grants. Other large chains, such as Home Depot and Lowes, are frequently willing to provide funding, and/or enter into partnerships for specific projects. The key to success at this level is finding grants for which the department may be eligible, and, ensuring that the application is tailored to the grant program's priorities.

Like most fire departments, the experience within the study area indicates that departments have had a limited record of success regarding grants they have applied for. One of the shortcomings in the AFG program is that departments which submit grant applications that are ultimately not successful are notified of that fact, however, they are not informed as to why. Typically, only about 8% of all grant applications submitted are approved and funded. Nearly 50% of the applications fail to make it past the initial computer review where statistical aspects of the application are reviewed to determine their compatibility with the established grant criterion/ priorities.

RECOMMENDATIONS

XI-I: ***The Town should apply for a SAFER grant to begin to build out the full-time staff to support all fire and EMS operations.***

XI-2: ***Although time-consuming to accomplish, the department should apply for funds for eligible items on the AFG grants. Grant awards will help free up town dollars that can be used for other fire department items that are not grant eligible.***

XI-3: ***Once the Department has appropriate staffing, the Town and the department should be looking to the State, Insurance companies, and other private organizations that have grant opportunities.***

XII: LOOKING FORWARD

Looking ahead, the Town of Meredith will continue to experience an increase in growth and development, as seen with the number of building permits issued and new construction beginning. While this development will have a definitive impact on the Town's emergency services, the exact amount is difficult to predict quantitatively and accurately. Increased development of any type will mean an increase in the number of people living, working, and traveling within the area. Each of these will reasonably be expected to result in an increased number of requests for services from the Fire Department. They can also impact response times through increased traffic and congestion.

It is likely, the most significant increase in requests for emergency services will be emergency medical service (EMS) related. More people simply increase the number of medical emergencies that occur. It would not be unreasonable to expect that the increase in EMS incidents would be proportional to the increase in population. Although several demographic factors ultimately impact the volume of requests for EMS service, it could reasonably be anticipated that an increase in population, along with potential increases in employment from any significant commercial development, would translate into an increase in EMS incidents. While Meredith Fire does not currently provide emergency medical services it is limiting the skills of the department members in providing the care when needed which translates to a disservice to the residents and visitors to the Town of Meredith.

As part of the review of the current and future operations of the department, the idea of the department providing an ambulance service on its own was investigated. It was determined that even with adding the staff as recommended by this study, Meredith Fire is currently not able to provide a full ambulance service along with the current fire and EMS response that it provides today. If the Community decides to increase the full-time response level as recommended, the idea of providing a fire-based EMS transport service should be investigated in 3 to 5 years with the expectation that the staffing levels may need to increase again at that time. Should the town, in the future, decide to provide EMS transport services it will be important to increase staffing to maintain a reasonable in-town response crew. The average turnaround time for an ambulance to respond to a call, transport to the hospital, transfer the patient, and assure the ambulance is clean and decontaminated, is 60 to 90 minutes for destinations like Laconia and even longer times for patients needing transport direct to Concord Hospital in Concord.

Meredith Fire, like many smaller Town Fire Departments, is at a crossroads. For decades the Meredith Fire Department has used the dedication and service of volunteers and call

firefighters. Many of the day-to-day activities (emergency responses, fire inspections, permits, reports, checking apparatus, cleaning the station and equipment) required of the Department would be completed when personnel had time to complete them. Volunteer personnel often worked in town and could leave their place of employment to complete fire service tasks or respond to emergencies.

Today, the expanded role that Meredith Fire plays in the community, coupled with decreasing member availability, often results in a shortage of available responders. Consequently, it is not unusual to have a limited number of first responders in the Town of Meredith during the weekday, daytime hours. This shortage of human resources is the most prominent issue that will face the town in the coming years. A theme revealed through interviews found that member's ability to allocate time to the Fire Department was becoming more difficult. The Covid-19 pandemic has further complicated this issue as personnel navigate through this unique public health crisis and some of the effects are still being seen today.

Another important point related to having sufficient personnel to respond to emergencies is that the public assumes when they see a fire apparatus responding to an emergency, that there is a full crew of four firefighters on an engine or ladder. The reality is that the greater majority of time, it is a driver only or a driver and another firefighter that staff this apparatus. Often times, there is a significant delay in getting enough manpower to fight a fire and to meet the minimum number of firefighters on scene to comply with both the OSHA "Two In and Two Out" Standard, and NFPA 1720, which is the standard for the organization and deployment of fire suppression operations by on-call and volunteer fire departments.

Meredith Fire has expressed a goal to retain a strong and viable on-call firefighting force. **Meredith Fire should now become a combination department, where career staff are the primary responders during the day and the Call firefighters at night.** However, to meet service expectations, it is necessary to introduce a different staffing model that will provide consistency in service delivered to the public. This will take a commitment from the community, and strong leadership in the Fire Department.

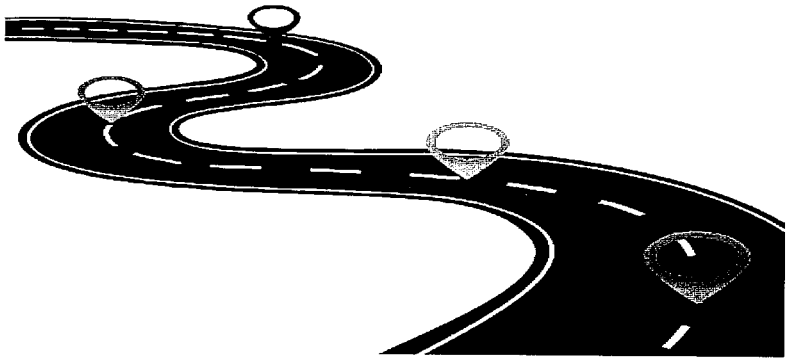
The National Volunteer Fire Council (NVFC) www.nvfc.org issued a fact sheet https://www.nvfc.org/wp-content/uploads/2019/04/NVFC-Fact-Sheet-2019.pdf that provides the current status of today's Volunteer Firefighter statistics.

Among other things, the fact sheet highlights that the ranks of volunteer/call firefighters nationwide are declining, due at least in part, to an increasing demand for services. Various other factors are also prevalent in the reduction in the number of volunteer and on-call firefighters in

communities such as Meredith. Among them is that the demographics of many communities today do not support a sufficient number of the type of people who are attracted to the fire service in the 21st century; someone with time to dedicate to public service or a young person who wants to make a career of it. It has been stated that on average, for every five on-call firefighters recruited, two will remain active after a period of 48 months has elapsed.

A number of fire departments throughout New England are adapting to this growing problem by adding full-time firefighters to fill the gaps that develop when the majority of on-call personnel are not available. This staffing transition supports the delivery of a timely response, during the day and night, when call members are least available.

XIII: MAPPING OUT THE FUTURE



"A Road Map to Success with proper timing and funding"

Figure 52
Mapping out the future

The MRI project team found that there was a common thread to many of the department's needs, concerns, and desires. Based on all the information analysis, and discussion MRI proposed over 45 recommendations for consideration for today and the future.

It is important to keep in mind that the recommendations made are in no particular order and are not based on the success of the ones before it. The project team has tried to allow the community to be able to implement the ideas that work best for them and then to take incremental steps to move toward success. Ultimately, it is up to the community and the area as a whole to decide what works best for them and what level of service/fire protection they wish to have.

Regionalization of the fire service is a term that many people are afraid to consider, as there is a thought that the local resources (fire apparatus, fire station and firefighters) will go away, and that the local authority will be diminished. There have been several regionalization discussions that have gone nowhere, and some that have been highly successful. There is also a strong thought that regionalization will cost a community less than they are currently paying and they will get more. Although regionalizing will indeed no doubt create an economy of scale, that can be the foundation of efficient services, it still will come with a cost. In the long term, 10-plus years, there may be an indicator of cost savings or in some areas the development of a revenue stream to offset the overall costs.

To begin the process, all stakeholders in the town, including the Fire Chief, Town Manager, and the Board of Selectmen should take the time to thoroughly read and understand the information provided within this report. This group should then sit down as an informal group and discuss the

many options they have moving forward. It is MRI's hope that this discussion will lead to a basic plan where the community can decide the future of both fire and EMS within the Community.

It is suggested that each of the recommendations be considered individually; then put into a priority that the group decides will work best. To build the collaboration, it is further recommended that the no cost items be pursued initially, and then after establishing a track record of success, move forward with items that will require cost.

Any and all changes to current operations should be properly evaluated after being made and if necessary adjusted. It is generally an accepted practice to do an evaluation in a minimum of 30 day increments and a final in one year. Who does the evaluation and what the benchmarks are should be outlined from the onset.

Looking ahead, the Community and the Fire Department should use this report to further define the most critical issues and service gaps facing the fire and EMS services. These service gaps and critical issues will then be utilized as the framework for establishing the priority for implementation of goals and recommendations in this strategic planning document. Based on the report, the project team believes Meredith has a strong potential to continue to create a robust level of service that has come to be expected by its residents. However, to be effective, the community will need to commit to this collaboration and agree to work together to meet future service expectations and provide a high level of operational safety.

SEVEN MOST SIGNIFICANT CHALLENGES FACING FIRE and EMS SERVICES IN MEREDITH

Based upon the findings and analysis of the team, the most significant challenges facing the participating fire services are:

1. Rapidly diminishing staffing pool for fire and EMS operations, part of a nationwide trend. The cost associated with addressing this issue will be the biggest challenge ahead for all the internal and external stakeholders.
2. Emerging generational differences often produce a lack of understanding on both sides.
3. The time commitment required for certifications and continued training.
4. Tapping into the high school aged students and the ability to market the fire service.
5. Elongated response times based on a lack of available personnel, requiring mutual aid for even basic operations.
6. The skill set required in today's high-tech environment will need to be adapted to.
7. The need to train in a new work force prior to the active members aging out.

IMPLICATIONS OF NOT TAKING ACTION

The challenges that are facing the fire and EMS services in all of the departments in and around the study has sometimes been referred to as, ***"a crisis without evidence".*** The MRI project team heard this multiple times. But make no mistake, there is a crisis that is slowly building, and has been for a considerable period of time. The reason that many stakeholders – municipal leaders and the public – do not see "evidence" is the long tradition in both the fire and EMS services of "getting the job done". It has long been known that when people have a problem they don't know how to deal with, they call the fire department because two things are certain when they do: 1) the fire department will come, and 2) they will figure out how to deal with the problem or find someone that can/will. Despite robust rosters, decreasing participation translates to longer response times and having fewer appropriately trained personnel on the incident scene.

Looking ahead, the implications of not acting will be quite simple: service levels will begin to diminish, some companies and EMS agencies may fold under financial pressures, and fewer and fewer (most likely) aging members will be trying to respond to an ever-increasing number of requests for service.

In the end, **ALL** the various stakeholders need to engage in open, frank, and honest dialogues regarding the fire and first response EMS delivery systems. There will need to be increased funding allocated or funding can be re-appropriated. Priority should be given to innovative solutions to the recruitment and retention of on-call personnel which will have costs associated with it but will be money wisely invested. Even with success, the reality is that the fire and first response EMS services in the area are going to evolve into more of a combination system with the need for an increasing number of career personnel to supplement on-call personnel. This too will come with an increased cost. However, this cost will be reasonable, and be money well invested, to help support what remains, a quality fire and first response EMS delivery system.

It has been said that a Fire Department can have all the best equipment and facilities, but they are useless without a well-trained workforce to use them. Meredith has a very dedicated group of staff in the fire department who are proud to serve. The Community has had the great fortune of having Chief Jones as the leader in Fire - EMS and Emergency Management for many years. Chief Jones's ability to maintain a vibrant call firefighter force has been admired by many people in New England and beyond. Times are changing and with some encouragement and support, the Chief will be able to continue to lead emergency services into the future. The Chief has, and always will have the life and safety of the residents of Meredith be his number one priority.

XIV: CONCLUSIONS AND IMPLEMENTING CHANGE

Based upon the analysis of the current day operations of the fire department and EMS, the MRI project team has found the fire department to be operating well, but the organization is struggling to provide a consistent proper level of response. The Department is well respected in the area and has been and is continuing to be a leader in retaining a call department model that is working. During their time speaking with people for this project, the project team heard how much the department does for the Communities and how much they are appreciated.

Having a sense of common vision is important in any organization to ensure that the organization and its personnel are moving in unison toward a common goal(s). Having a common vision is not only about making sure that all parties are aware that they are in the same boat and rowing, but even more importantly, that they are rowing in the same direction. The impact of not sharing a common vision between the fire and EMS services will be very noticeable in the quality and quantity of work performed, but also in the spirit and passion that the work of the organization has accomplished. A common vision shared with the membership will create passion and results. A vision without strategy is an illusion.

The Fire Department lacks any type of long-range or strategic plan that charts its projected path to the future. A mission statement, if carefully developed and truly accurate, should provide the very foundation for the departments and why it exists. The mission statement should provide a broad direction that everything else that the department does is going to be built upon. The fire department also does not currently have any formal vision statement, nor has it developed any core values that will help to drive the organization forward. It would be important that there is a single set of statements that is inclusive all of fire and EMS functions as a single department.

Looking ahead, the fire department possesses some definitive positive attributes, most notably the dedication of its core membership and the community leadership within each group. This shows there is a strong foundation upon which to build.

However, the departments are also facing serious challenges both today and looking toward the future. There are senior staff people who will be retiring and there is a lack of good solid experienced people coming in to fill the voids as they are created. Nationwide the workforce since COVID-19 began is dropping and fewer people are taking the challenges of becoming a firefighter and/or emergency medical responders and we are seeing more and more people leaving their jobs after just a couple of years. The sense of pride and commitment to these professions is also decreasing. Newer people tend to come in the door, they work their assigned shifts and do not wish to go above and beyond.

The culture of the fire and EMS services is very resistant to change. This is not something new and certainly not just within the Town of Meredith. Whatever changes are made to the

departments they need to be implemented at a reasonable pace and most importantly communicated to all members ahead of time.

In conclusion, the missions performed by the public safety departments are some of the most basic and fundamental functions of government; to ensure the safety and protection of its residents and visitors. The real issue facing the town, as it is for every community, is to determine an acceptable level of risk and then define an appropriate level of service for the community. There is no "right" amount of fire protection or first response EMS delivery in any community. It is a constantly changing level based upon the expressed needs of the community. Determining the appropriate level of service also involves deciding upon the municipalities' fiscal ability, and willingness, to pay for the desired level of service. These are decisions that the citizens of the town and the board of selectmen will ultimately need to make.

It is important that the town continue to support the department and help meet the needs in staffing and equipment so they may continue to protect and serve when they are called to do so. The town is very fortunate to have a great core of dedicated members in its Fire and EMS Department. With some strong work, the Chief and the officer core can lead the department members forward toward a common set of goals, while navigating through the cultural parameters of the past.

XV: COMBINED RECCOMENDATIONS

III-1 *The Department should create a working group to review, update, add and publish all Standard Operating Procedures (SOPS) to its employees. A process for acknowledging these SOP's should be developed for each employee to sign or initial. This document should be considered a living document and reviewed and changed as needed on a regular basis.*

III-2 *The Department should review and update Rules and Regulations and should publish these for the employees to have.*

III-3 *The Department should develop a set of goals and objectives for the next year as well as long term goals looking 5 years out and review that annually.*

III-4 *The MFD should review and or develop a mission, values and slogan that reflects the department and should use these as a basis to educate the Community.*

III-5 *Create a work group to develop preplans for structures within the community. As part of this group's mission they should be collecting information for structure files that are shared with the CAD and RMS systems.*

IV-1 *The MFD should conduct a thorough Community Risk Assessment and use the assessment as a tool to move the department into the future. Over the next year, a plan should be developed to utilize strengths to pursue opportunities and address weaknesses while mitigating threats. This should be an ongoing process that has member involvement and is moved forward by the officer core.*

IV-2 *The MFD should review the latest ISO evaluation and strive to improve on staffing (as outlined in this document), Training and proper documentation (following ISO minimum hours and subjects), as well as work with water division to conduct and document water supply inspection and flow testing. All of these combined should move the community back to a better classification which in turn will affect fire insurance rates.*

Stations:

V-1 *Downtown station - older three bay (small equipment) apparatus floor drainage needs attention. The slopping of the floor to the drains appears to be off.*

V-2 *Center Station- Floor drains are a tripping hazard and need to be addressed.*

V-3 *Center Station- A backup emergency generator should be installed and wired for automatic power switchover during a power failure.*

V-4 *The town should consider making accommodations at this station for future use and needs. Items such as dormitories, kitchen, office, and dayroom areas that could be used during long-term emergencies and or for housing the student interns in the future should be made.*

Apparatus:

V-4 *Replace Forestry 2, which was placed out of service last year due to safety concerns. This vehicle was run out of the Center Station and was used not only for outside fires but also as a tow vehicle for the trailers for the boat and trailers for equipment. The size of the community and the makeup of the land in and around Meredith should have two small 4-wheel drive vehicles that can go off-road and carry the needed equipment for fires.*

V-5 *A 20-year capital plan should be developed and updated on an annual basis.*

V-6 *Boat 1 is a critical piece of equipment to be able to respond to medicals and fire on Lake Winnipesaukee and the islands. This boat should be replaced in the next few years and be maintained as the primary boat for the "Big Lake". An evaluation of the current boat should be made at the time a new boat is put into service and if possible be maintained at a separate marina as a second line boat.*

V-7 *Engine 1 is beginning to show signs of rust and will need to be closely monitored and removed from service if and when it becomes a safety issue.*

V-8 *Based on the current cost of large capital items for the fire department the town should consider increasing the annual reserve fund to $250,000.00. The increased cost of apparatus will eventually outrun the reserve fund.*

VII-1 *The Town of Meredith should consider the addition of full-time staffing that will allow daytime coverage on a regular basis year-round and rely on the call department for night coverage.*

VII-2 *The MFD should require its personnel, and strongly encourage its officers, to obtain a certain level of fire officer certification as a job requirement, such as Fire Officer 2 for Captain, Fire Officer 3 for deputy fire chief, and Fire Officer Level IV for fire chief.*

VII-3 The MFD should require that all officers be certified as Incident Safety Officers (ISO). Additional personnel who may be interested should be encouraged to take this training and obtain this important firefighter safety certification.

VII-4 As part of the succession planning process, the Fire Chief should work to implement a professional development program to ensure that all officers can perform their superior's duties, as well as identify the core future leaders of the department.

VII-5 Working with a training officer, more training should be planned, delivered, and documented. In an effort to keep members interested in training, the department should be creative and offer training that is outside the normal programs. Making programs fresh, fun, and to some degree competitive may increase the participation of members. If it's the same old training, people will lose interest. Make it so they want to participate and at the same time meet training goals. Training should be conducted as a department and not as companies.

VII-6 The MFD should set a minimum criterion for call members to remain in active status. This criterion should include both minimum training and response to incidents for a determined time period (one year). This criterion should also allow for people to go into an inactive status for a period of time due to approved circumstances. It would be important for inactive-status people to make up any important training prior to being put back on active status.

VII-7 The Fire Chief should expand the MFD social media presence and involve other members of the department in this endeavor. The use of social media, like Facebook and Twitter, are what the younger generation use, and a very active social media account has the opportunity to reach out to this group of people for hiring.

VII-8 Set and publish minimum criteria for active participation and ramifications for not meeting the minimums. A large roster is a false sense of security, and only people with proper training and skills that are dedicated (attend training and incidents) should be active.

VII-9 MFD should develop a series of team-based activities that build involvement in the organization, including both Fire and EMS staff as well as other town departments and mutual aid partners.

VII-10 All officer positions, from Lieutenant to fire chief, should be filled based upon the person's firefighting/emergency services training, certifications, and experience, commensurate with the position being sought, along with successful completion of a formal, rank appropriate assessment process, and a basic practical skills evaluation.

VII-11 The MFD should ensure that all department members are trained/ certified to the minimal NIMS level required for their duties/responsibilities and ranks. In addition to the basic I-100/I-700 training mandated; it is MRI's recommendation that all officers should be trained to the ICS-300 level. All chief level officers should be trained to the ICS-400 level.

VII-12 Assign a Training Officer to develop a training schedule and to assure all members are being trained with consistency. Training Schedule with subject should be published on a quarterly basis.

VII-13 Assign a Department Safety Officer that oversees all safety and safety issues within the department. This person should have the training and experience to conduct this type of evaluation for both Fire and EMS and concentrate on the stations and training as a primary focus and be the lead on incidents if available.

VII-14 A guide or probationary manual needs to be developed and given to new staff so there is clear expectations for them to understand. Along with the expectations a mentoring program should be set up assigning new members to a seasoned person to shadow and train with. A training program for new hires should also be developed so that all people are trained to the same department standard.

VII-15 The amount of time that is required to complete training programs should be rewarded. Staff should be paid for training. Stipends for making certain benchmarks are another way of compensating staff. Consideration should be given to giving one-time stipends for completing firefighter 1, firefighter 2, different fire officer levels, and EMS certifications are a way of rewarding people for taking the time and completing programs.

VII-16 Update all Job descriptions as needed including requirements to hold a ranking position.

VII-17 Establish a detail rate of pay and a minimum number of hours the detail is paid for.

VII-18 Update and develop a Mission Statement, Vision Statement and a set of Strategy and Goals.

VII-19 The Town should mandate and therefore budget for an NFPA physical to be completed by all staff. Currently physicals are only done on initial employment and never again. Some communities have allowed people to have their physicians (when capable and

properly equipped) conduct these exams. At the conclusion of the exam the Fire Chief should be given a letter stating the person has been examined and is duly physically and mentally fit to be able to conduct firefighting duties with no restrictions. If chosen the Chief may except some conditions that allow for people to drive only and not do conduct any operations requiring the use of self-contained breathing apparatus.

VIII-1 The Department should be receiving and giving automatic mutual aid to all surrounding towns in a coordinated effort to provide at a minimum a dedicated Rapid Intervention Team (RIT).

VIII-2 The Department should train at a minimum of 12 members to provide the rapid intervention function as a three to four person teams.

*VIII-3: Although more stringent than the requirements found in Table 4.3.2 of NFPA 1720 for rural communities, through the utilization of automatic aid agreements with neighboring communities, Fire Departments should consider the adoption of an *Standards of Cover (SOC) with the goal of attempting to have at least 16 personnel on the scene of any reported structure fire within 14 minutes. This should involve at least one mutual aid town for RIT.*

VIII-4: The Department should make it a priority to improve its first unit on scene response times, including the adoption of a SOC for the town. The SOC should be based upon a hybrid of the NFPA 1720/1720 and Commission on the Accreditation of Ambulance Services (CAAS) recommendations.

VIII-5: The MFD should review standards of cover benchmarks, to have the first unit responding to emergency incidents within one minute of dispatch (staffed station) and have the first unit on scene within eight minutes after responding to all types of calls, 90% of the time.

X-1 The current use of certified EMT's on the department should be explored and potentially expanded, to not only use the skills they have, but to help provide a quick response to EMS calls with higher acuity levels in harmony with Stewarts (Meredith EMS). For certain high level calls the department EMS providers can often be on scene quicker and begin to evaluate and treat a patient sooner. This will require the department to purchase some EMS diagnostic and treatment equipment in order to provide this level of service. The department will also be required to be licensed as a non- transport EMS provider to ensure proper quality control and most important treatment protocols and proper documentation. This will be a valuable asset to the

residents as the trend for EMS calls is rising and the double call (simultaneous or back-to-back) are becoming more common.

X-2 *The Department should obtain a NON transport EMS license from the State to assure compliance for all medical treatment and documentation done by its staff. Without the NON transport EMS license, the MFD staff cannot provide any assistance to walk-in or drive-up medical care requests at the fire station. There is a public perception that the fire station is a place to stop at and receive medical care. The Meredith fire station is in a prime location and the staff stated there have been many times they have had to stand there and do nothing while waiting for Stewarts Ambulance to arrive. This needs to be addressed.*

X-3 *Working with the staff at Stewarts Ambulance the department should have its members trained and certified in CPR and AED use as well as becoming familiar with the Ambulance equipment and the operations of that equipment.*

X-4 *Working with mutual aid towns, explore the options of a fire-based transport system in FY28 for the possibility of going online in FY29.*

XI-I: *The Town should apply for a SAFER grant to begin to build out the full-time staff to support all fire and EMS operations.*

XI-2: *Although time consuming to accomplish, the department should apply for funds for Eligible items on the AFG grants. Grant awards will help free up town dollars that can be used for other fire department items that are not grant eligible.*

XI-3: *Once the Department has appropriate staffing, the Town and the department should be looking to the State, Insurance companies and other private organizations that have grant opportunities.*

XVI: APPENDIX

A – Proposed Staffing Budget Breakdown

Fire Department Regular Wages and Holiday		Hourly Rate	Bi-Weekly	Weeks 26	NHRS - GRP I 0.1353 NHRS-Grp II 0.3035	FICA 0.062	Medicare 0.0145
New Officers (2) - Work a 42 hour week	$	28.00	$ 4,704.00	$122,304.00	$ 37,119.26	0	$ 1,773.41
New FT (4) - Work a 42 hour week	$	26.50	$ 8,904.00	$231,504.00	$ 70,261.46	0	$ 3,356.81
FF - Fire Prevention - Work a 40 hour week	$	31.00	$ 2,480.00	$ 64,480.00	$ 19,569.68	0	$ 934.96
Office Clerk - Work a 28 hour week	$	24.00	$ 1,344.00	$ 34,944.00	$ 6,754.18	$ 2,166.53	$ 506.69
Holiday Pay (11 per year)	$	82.00	$ 10,824.00	$ 10,824.00	$ 3,285.08		$ 156.95
		Total Wages		**$464,056.00**			
		NHRS Grp 1			$ 4,727.92		
		NHRS Grp II			$ 130,235.49		
		FICA				$ 2,166.53	
		Medicare					$ 6,728.81

OVERTIME- Request @ 15% of Base					
$ 418,288.00	**Total Overtime**	**$ 62,743.20**			
	NHRS Grp II		$ 19,042.56		
	FICA			$ -	
	Medicare				$ 909.78

Total NHRS GRP 1	**$ 4,727.92**		
Total NHRS Grp II	**$ 149,278.05**		
Total FICA		**$ 2,166.53**	
Total Medicare			**$ 7,638.59**

Benefits			
	Health Insurance	Town Cost $180.78/WK	$ 65,803.92
	Dental Insurance	Town Cost $ 26.57/WK	$ 9,671.48
	Life Insurance	Town Cost N/A	0
		Total Benefits	**$ 75,475.40**

B- EMD Codes

Code - Type Call

1 Abdominal Pain / Problem

2 Allergies (Reactions) / Envenomation's (Stings, Bites)

3 Animal Bites / Attacks

4 Assault / Sexual Assault / Stun Gun

5 Back Pain (Non-Traumatic or Non-Recent Trauma)

6 Breathing Problems

7 Burns (Scalds) / Explosion (Blast)

8 Carbon Monoxide / Inhalation / Haz Mat / CBRN

9 Cardiac or Respiratory Arrest / Death

10 Chest Pain / Chest Discomfort (Non-Traumatic)

11 Choking

12 Convulsions / Seizures

13 Diabetic Problems

14 Drowning / Near Drowning / Diving / SCUBA Accident

15 Electrocution / Lightning

16 Eye Problems / Injuries

17 Falls

18 Headache

19 Heart Problems / AICD

20 Heat / Cold Exposure

21 Hemorrhage / Lacerations

22 Inaccessible Incident / Other Entrapments (Non-traffic)

23 Overdose / Poisoning (Ingestion)

24 Pregnancy / Childbirth / Miscarriage

25 Psychiatric / Abnormal Behavior / Suicide Attempt

26 Sick Person (Specific Diagnosis)

27 Stab / Gunshot / Penetrating Trauma

28 Stroke (CVA) / Transient Ischemic Attack (TIA)

29 Traffic / Transportation Incidents

30 Traumatic Injuries (Specific)

31 Unconscious / Fainting (Near)

32 Unknown Problems (Person Down)

33 Transfer / Interfacility / Palliative Care

34 Automatic Crash Notification

36 Pandemic/Epidemic/Outbreak

Response level

Alpha Response=Code 1--Low Priority

Charlie Response=Code 3--Possibly Life Threatening

Delta Response=Code 3--Life Threatening

Echo Response=Code 3--Full Arrest or Imminent Death

Omega Response=Code 1--Lowest Priority

XIV: TEAM PROFILES

Director of Fire Services

Brian P. Duggan, Director Fire Services Group, retired from the Fire Department in Northampton, Massachusetts, where he instituted substantial changes to modernize and restructure the entire department including equipment, facilities, personnel, and training. In conjunction with his staff, Brian integrated Emergency Medical Services (EMS) into the organization and created a regional Advanced Life Support (ALS) Program that currently serves 18 communities within the Northampton Area. He formerly commanded the Northborough, Massachusetts, Fire Department, and has significant experience with the Massachusetts Department of Fire Services where over three decades, he held several key positions. Following his retirement, Brian has continued his active fire service involvement by serving as both a volunteer chief fire officer and through continuing to develop training and certification programs as a program Coordinator for the Massachusetts Department of Fire Services.

Mr. Duggan developed and directed the Graduate and Undergraduate Fire Science Programs at Anna Maria College in Paxton Massachusetts from 1995 - 2003. Mr. Duggan has a Business Management/Fire Science degree from Providence College and a Master's Degree of Business Administration (MBA) from Nichols College in Dudley, Massachusetts. He is also a graduate of the National Fire Academy Executive Fire Officer Program and the Senior Executive Program for State and Local Leaders at Harvard University. In December 2012, Mr. Duggan received a Master's Degree in Homeland Security through the Naval Post Graduate School based in Monterey, California, where his thesis entitled *"Enhancing Decision-making during the First Operational Period of Surge Events"* was selected as an outstanding thesis. He was one of the first fire service professionals to be designated as a Chief Fire Officer by the Commission on Fire Accreditation International.

Brian led the Massachusetts fire service through his affiliation as Chairman of the Fire Chief Association of Massachusetts Technology Committee and as a Regional Director on the Massachusetts State Fire Mobilization Committee. Mr. Duggan has authored several publications, inclusive of writing Section 7, Chapter 3, Fire Department Information Systems, in the Nineteenth and Twentieth Editions of the National Fire Protection Association's Fire Protection Handbook. Chief Duggan has been affiliated with MRI as a subject matter advisor since 2002 and he has served as Director of Fire Services since 2015. Currently, Mr. Duggan is regarded as an expert specific to fire service response to photovoltaic and battery energy storage system (BESS) emergencies. He has developed several nationwide training programs providing first responders with new insight on these emerging challenges.

Project Manager

David Houghton is a devoted fire and emergency management professional who has recently retired from the Wayland Massachusetts Fire Department after a distinctive 38-year career from being a call firefighter and rising through the ranks to Fire Chief. Along with dedicating his service to the Town of Wayland, he continues to work for the Massachusetts Department of Fire Services as both an instructor and in the Special Operations Division doing special projects. In 1999 he was given the challenge by the State Fire Marshal to develop and implement what today is known as Special Operations. This development included designing, building and implementing specialized equipment and staffing to respond to Emergency and planned incidents throughout the Commonwealth. This program was a shared vision between David and the Fire Marshal and today has been shared in whole or in part in other areas of the country. David has a B.S. degree in Fire Science, an A.S. Degree in Fire Science and Technology, and has completed a Local Government and Management program with Suffolk University and the Massachusetts Municipal Association. David has a diverse background Firefighting, EMS (ALS and BLS), Dispatch, Fire Prevention, Emergency Management and operations. He is a nationally certified Firefighter, Fire instructor, Fire Inspector, Fire Officer. He is a certified Emergency Medical Technician both at the National Level and in the Commonwealth of Massachusetts. David has most recently continued his fire service career by being appointed as a call firefighter with the Town of Moultonborough Fire Rescue and is a certified New Hampshire Emergency Medical Technician. He continues to be active with the Commonwealth of Massachusetts Fire and Ambulance Mobilization team in the continuous updating and redevelopment of the program. Prior to his retirement as Fire Chief, David was an active member in the Massachusetts Fire District 14 where he was a driving force behind the creation of the District Operational budget, an operation manual and the formalizing of the various specialized teams within the district. David was also selected as the Chief overseeing the Fire District communications team and equipment as well as serving on several other progressive programs within the district. He is a member of the Fire Chiefs Association of Massachusetts, and the International Association of Fire Chiefs.

Team Members

Michael McQuillen currently serves as the Chief of the Berlin Fire Rescue Department in Berlin Massachusetts. Michael started his fire service career in 1993 with the Londonderry Fire Department, rising through the ranks in his 27-year career to Operations Chief. He was one of the first paramedics in Londonderry participating in the inception of Advanced Life Support and integration of Emergency Medical Services into the fire department.

During his tenure in Londonderry, Michael developed a complete fleet replacement plan utilizing a lease purchase program providing a fleet division that is one of the most modern, up to date

apparatus programs in New England. Michael identified the need to improve the communication operations infrastructure system, developed a plan to upgrade the system and make it interoperable with law enforcement, highway, fire rescue service and the Manchester-Boston Regional Airport. He was instrumental in obtaining the financing to fund the project. Upon completion, the communications center is P25 capable and brought the use of state-of-the-art equipment to the region for the towns that are dispatched. As a result of the upgrade, Londonderry Communications Center expanded to two additional communities under Michael's leadership.

Michael honed his communication, negotiation and his relationship building skills during many years working on labor/management issues from both perspectives. For over ten years Michael was union president for two different labor unions and then transitioned to a member of the administrative team.

Michael worked as the Fire Chief in Littleton, New Hampshire for a few years before moving to Massachusetts.

Michael completed his associate degree in Fire Science from the New Hampshire Technical College -Laconia in 1992, his Paramedic Certification from Elliot Hospital - Manchester in 1995. In 2017 Michael received his bachelor's degree in public service management and is currently working on his master's degree through Southern New Hampshire University in Emergency Management with completion anticipated in 2022.