PIONEER VALLEY PLANNING COMMISION

HILLTOWN REGIONAL FIRE SERVICES FEASIBILITY STUDY

MAY 2021

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NOTE: Appendices have been developed as a separate document

PIONEER VALLEY PLANNING COMMISSION

REGIONAL FIRE SERVICES FEASIBILITY STUDY

MAY 2021

I. PROJECT OVERVIEW, PURPOSE, SCOPE, AND METHODOLGY

PROJECT OVERVIEW

The Pioneer Valley Planning Commission (PVPC) contracted with Municipal Resources, Inc. (MRI) to provide an evaluation and review of the way fire and rescue services are provided within the communities of Chesterfield, Cummington, Goshen, Plainfield and Worthington. Using this as a basis, the project team has developed recommendations for improvement that take into consideration the current and future needs of the communities. These recommendations provide a path of appropriate modifications to the delivery systems to maintain the existing local fire departments, and to develop a regional footprint to augment service delivery and assist the communities to provide the desired level of fire services.

This document contains recommendations for improvements to organizational practices, recruitment and retention efforts, infrastructure, and on-call staffing. The project team has developed a narrative recommending appropriate modifications to the fire and rescue delivery systems, to provide optimum service to the entire community. They have 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 five towns are seeking to evaluate opportunities for regional cooperation for fire protection and prevention services. The current operations of each community have been reviewed to identify the present and future fire service needs of each participating community and to provide recommendations that will assist the community with decision making for resource allocation and operational planning.

The task of the project was to conduct a feasibility 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

This study required the extensive involvement of the leadership within each of the participating communities, to complete the nine tasks (tasks A-F) identified in MRI's proposal. Based upon the Covid-19 Pandemic, delay in obtaining Computer Aided Dispatch response data and the project time parameters, the project team was unable to host community meetings or accomplish Task E. In place of Task E, several virtual interviews were conducted with a variety of people selected by the committee members.

The high level of participation by municipal partners allowed MRI's team to obtain as much data and other information as possible. The information gathered served as a foundation for this document and allowed the project team to develop a clear and concise report that projects future service models, using current accurate data sets as an operational baseline.

The study focused on an assessment to determine whether the existing organizational model, staffing, facilities, apparatus, and equipment of the communities are in line with generally accepted standards and benchmarks, and commensurate with communities of like character. The project team reviewed the background information that impacts the study area and performed a comparative analysis. Items that were considered as part of this evaluation included:

A. Policies that determine staffing levels and types of staffing used
B. Community population and demographics
C. Target hazards that exist or are planned in each community (residential, industrial, educational, and municipal features of the community)
D. Property values
E. Services provided
F. Special hazards and risks (i.e., nursing homes, assisted living facilities, lakes, rivers and waterfronts, industrial facilities, hotels, road network, and multi-story buildings)
G. Budgets
H. Deployment strategy of manpower and apparatus by type of incident
I. Call volume
J. Time services were provided
K. Response times

The project team, evaluated the overall operations of the five participating fire departments to identify what works and what does not work:

- Analyzed resources and equipment
- Reviewed budget and expenditures
- Reviewed practices and policies of the department
- Analyzed call volume against the availability of resources
- Reviewed the hours of the Fire Chief
- Reviewed organizational structure for appropriateness
- Assessed the department's on-call staffing, and recruitment and retention efforts that exist within the community
- Identified major issues and concerns of the community regarding the operations of the Fire Department.
- Achieved an understanding and appreciation of the values and "personality" of the community and the local government
- Formed an understanding of the community's needs, wants, and desires regarding fire services in the future
- Discussed planning for a strong partnership between the community and the fire department into the future
- Identified potential areas of risk/liability and made recommendations to reduce those exposures

Much of the research for this report was completed through virtual meetings based upon the guidance provided by the Commonwealth of Massachusetts pertaining to travel and meetings during the Covid-19 pandemic. These virtual meetings were complemented by in person interviews and on-site field visits when possible. Considering the intensity of the Covid-19 Pandemic, a high percentage of the research and interviews were conducted remotely.

The project team spent several hours of time collecting and analyzing data; making observations, inspecting facilities, equipment and records, conducting interviews and when possible, touring the departments and the communities. Much of the data received required in depth analysis to allow for proper comparison and calculations to be conducted.

METHODOLOGY

MRI's project team conducted an analysis of the five communities followed by the development of this report. Upon completion of its review, the project team developed recommendations for improvement that take into consideration the following:

- Identification of the service level currently being provided in each community,
- The sustainability of fire services utilizing current delivery systems,

- The projected needs of the communities,
- The projected needs of the region as a whole,
- Required modifications to the delivery systems,
- Identification of optimal response time goals.

In addition, the project team also considered how current and future needs 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 prioritize 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 fire 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 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.

F. An evaluation of departmental policies and procedures that impact the efficient operations of fire services in the area. Included possible recommendations that may improve the current policies, procedures, training, and delivery of services in the most cost-effective manner.

G. Reviewed and commented on on-call recruitment and retention efforts within the community.

To accomplish these tasks, MRI used twelve work elements involved in this study. The following methodologies were employed:

1. Met to discuss project goals and objectives
2. Evaluated existing inter municipal cooperation and regional services
3. Reviewed pertinent service demand data
4. Conducted a review of response activity
5. Toured some of the communities and reviewed some of the target hazards
6. Evaluated fire service facilities and equipment
7. Met with and or Interviewed Fire Chiefs and some staff members
8. Hosted forums to promote communication, obtain input and generate project participation
9. Reviewed various fire department documents and budgets
10. Developed pertinent cost estimates
11. Provided monthly project updates
12. Developed a project report.

During the development of this document, the focus was placed on enhancing current fire service operations by augmenting and supporting existing fire departments. The recommendations contained within this document should be utilized to promote 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 study has been divided into the following seventeen sections:

I: Project Overview, Purpose, Scope and Methodology
II: Makeup of the Study Communities
III: Community Risk Assessment
IV: Incident Response and Times
V: Staffing
VI: Automatic Mutual Aid Practices
VII: On Call Recruitment and Retention
VIII: Budgets
IX: Apparatus and Equipment
X: Stations
XI: Grants
XII: Department Needs
XIII: Mapping out the Future
XIV: Conclusions and Implementing Change
XV: Consolidated Recommendations
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II: MAKE UP OF THE STUDY COMMUNITIES

The Study communities consist of Chesterfield, Cummington, Goshen, Plainfield and Worthington all located in Hampshire County in Western Massachusetts.

Figure 1
Project Area Map

The latest population data was taken from the 2010 Census and from the Commonwealth of Massachusetts Department of Revenue 2020 data.

		2010 Population / Average	Equalization Valuation Report / Average
Chesterfield		1222	$165,075,500
Cummington		872	$136,764,000
Goshen		1054	$173,818,900
Plainfield		648	$98,187,300
Worthington		1156	$182,949,300
Total/Average		4952/990.4	$756,795,000 / $151,359,000

Figure 2
Population and Valuation

	Total Area	Land	Water	Pop. Density
Chesterfield	31.2	30.8	0.4	38.6
Cummington	23.1	22.9	0.1	42.4
Goshen	17.7	17.4	0.4	53
Plainfield	21.3	21.1	0.2	28
Worthington	32.1	31.9	0.2	36

	Under 18	18-24	25-44	45-64	Median Age	Change 2000 to 2010
Chesterfield	25.7%	6.1%	29.8%	28.6%	54	1.70%
Cummington	27.9%	5.7%	30.3%	24.8%	38	-10.8%
Goshen	21.9%	4.3%	32.0%	31.1%	41	14.40%
Plainfield	24.8%	4.2%	26.1%	31.9%	42	10%
Worthington	24.5%	6.3%	26.8%	31.4%	42	-9.00%

Figure 3
Area and Population breakdown

The population charts reviewed indicates a somewhat consistent and level population for each community, however each community also has a population fluctuation that is dependent on the time of the year, and the events that are happening that draw in what is often an attendance, that is larger than the community's own population. Public Safety must be able to adapt to these fluctuations and plan for the possibilities for response that are inherent with larger crowds. These events can range from a motor vehicle accident to a large scale Multi Casualty Incident (MCI).

III: COMMUNITY RISK ASSESMENT

Fire and rescue services protecting all communities 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 services 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 consider. For each hazard, there are many possible scenarios and potential incidents that could be encountered depending on 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 to the community are also factors to consider. Each of these factors is assessed during the community risk process (Figure 4).

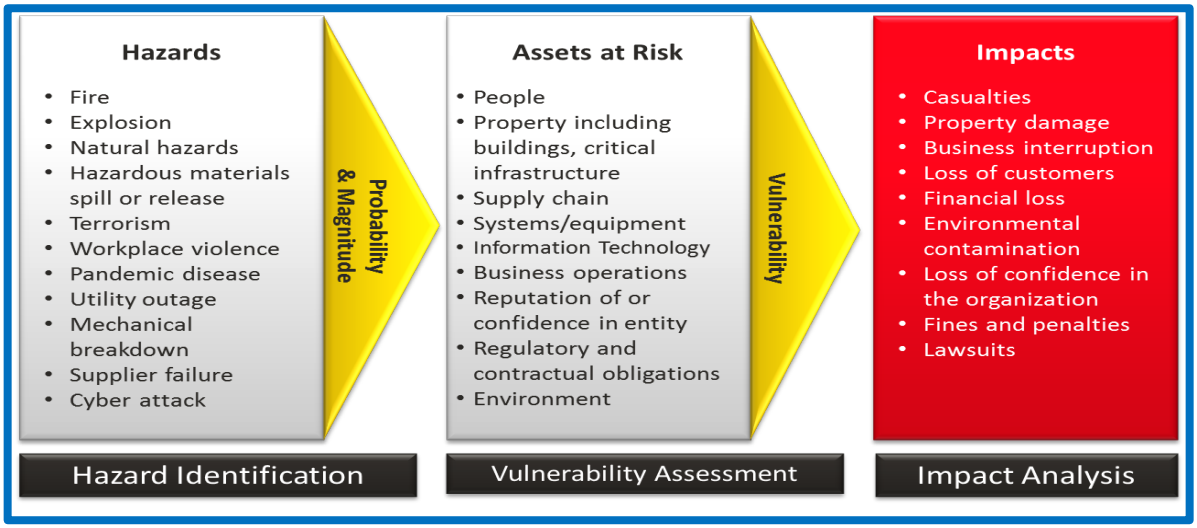


Figure 4
Risk Assessment Process
Image Credit: www.ready.gov/risk-assessment

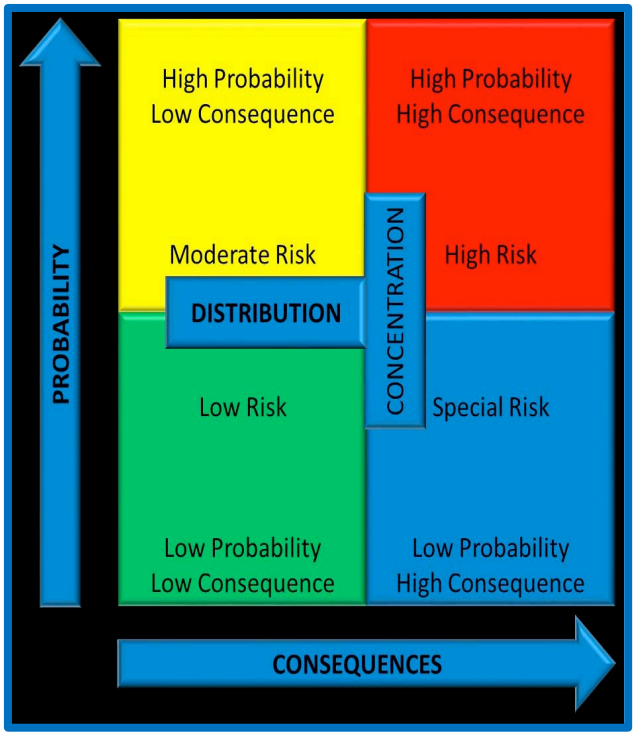


Figure 5
Fire Probability and Consequences Matrix
Credit: Commission on Fire Accreditation Intentional

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]

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

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

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 a 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 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 are 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. Strong code provisions and enforcement have demonstrated a greater ability to decrease fire problems than continuing to acquire more traditional fire department resources.

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 the 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.

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.

Figure 6
Five Es of prevention
in a community risk reduction program.
Image credit: www.beaherosaveahero.org

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

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.

Community	ISO Rating
Chesterfield	9
Cummington	9
Goshen	9 /10
Plainfield	9
Worthington	9

Figure 7
ISO Ratings

Note: Spilt rating indicates different areas of town

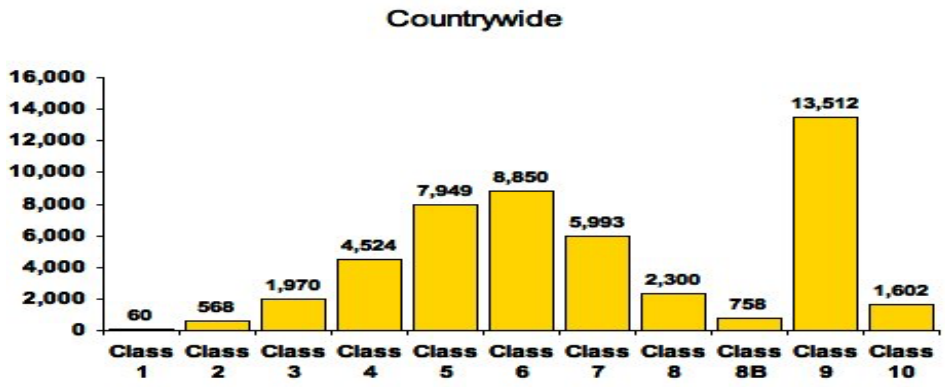


Figure 8
ISO Grading Chart USA
2019

The goal of this initiative should be to move the departments from the current class to a lower class over five years, and ultimately, an even lower class within ten as ISO bands residential insurance rates, it would be fiscally advantageous for the community to move to a lower class. MRI believes that this grade reduction could be accomplished through at least focusing on 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. For victims trapped on higher floors, a ladder truck may be their only option for escape. Buildings six or more floors in height present even more challenges to the Fire Department. Aerial ladder trucks often cannot reach beyond the sixth to the eighth floor (and never higher than the 10th floor) depending upon setbacks, obstructions to placement, etc. Thus, rescue and firefighting activities must be conducted strictly from the interior stairwells. This requires additional personnel to transport equipment up to higher floors. Large area buildings sometimes referred to as horizontal high-rises, such as warehouses, malls, and large "big box" stores 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 study area, 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 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.

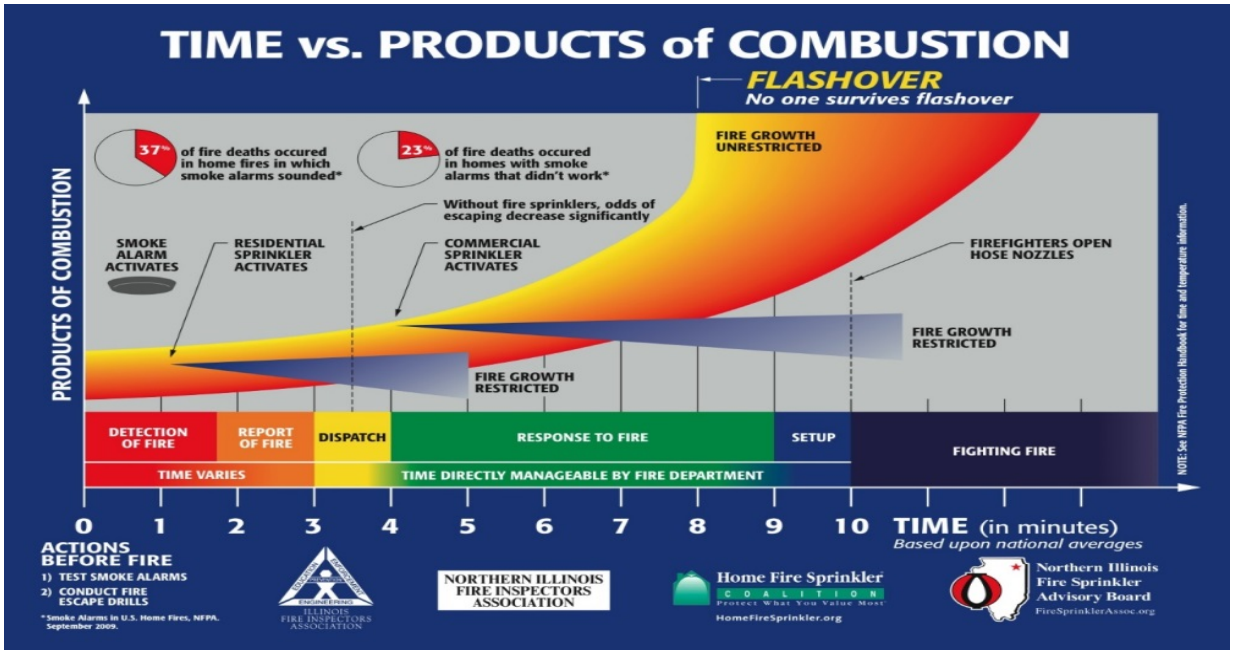


Figure 9

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

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%.**

Like most communities, all of the study communities have 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 fire emergency. Staffing and deployment decisions should be made with consideration of the level of risk within each area of a community.

[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.

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 10.

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

Figure 10
Community Risk Assessment Hazard index

The weather a community experiences can impact the Fire Department's 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 in an average year. Tropical storms and hurricanes also occasionally impact the area. Snowfall is experienced annually, and occasionally in amounts that paralyzes the region.

The above information is intended to provide a regional "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 feels is an acceptable level of risk for the town.

Looking ahead, the area will continue to experience a slow to moderate growth increase in growth and development, 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 quantitatively and accurately predict. 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 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 spills***

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***

<u>High Risk</u>:

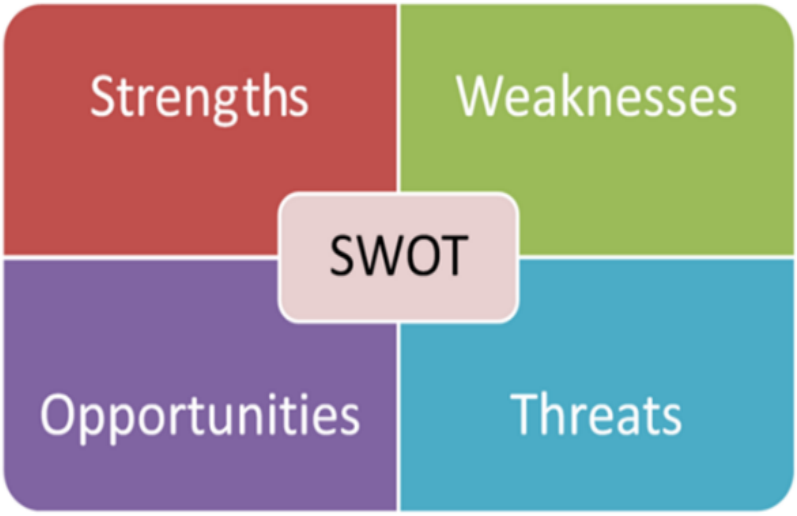
- ***Fires in larger commercial properties and target hazards with a sustained attack (fire flows more than 1,000 gallons per minute)***
- ***Cardiac/respiratory arrest***
- ***Multiple patient medical/mass casualty incidents with more than 10 but less than 25 patients***
- ***Major releases of hazardous 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***

<u>Special Risk:</u>

- ***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. In addition, ensuring that existing buildings continue to maintain code compliance is an important component of an overall community's fire protection system.

FIRE AND FIRST RESPONSE EMS SYSTEM S.W.O.T. PROFILE



A SWOT analysis is a business term utilized to identify the strengths, weaknesses, opportunities, and threats present within an agency's operating environment. This type of analysis involves specifying the objective or mission of an organization and identifying the internal and external factors that are favorable and unfavorable to achieve that objective.

Figure 11
SWOT Analysis

1. **Strengths:** Characteristics of the agency that allow it to meet its mission, work toward achieving its vision, or provide exceptional service to a community.
2. **Weaknesses:** Characteristics of the agency that may create internal conflict, dysfunction, and/or frustrate organizational performance thus creating a disadvantage to the organization in its efforts to meet the goals established by its mission statement.
3. **Opportunities:** Elements that the organization could pursue or develop to its advantage.
4. **Threats:** Elements in the environment that could create organizational instability or reduce the ability of an agency to fulfill its mission and/or achieve its vision.

A SWOT analysis aims to identify the key internal and external factors seen as important to achieving an organizational objective. SWOT analysis generally groups key pieces of information into two main categories:

1. **Internal factors:** The strengths and weaknesses internal to the organization.
2. **External factors:** The opportunities and threats presented by the environment external to the organization.

Analysis may view the internal factors as strengths or as weaknesses depending upon their effect on the organization's objectives. What may represent strengths with respect to one objective may be weaknesses (distractions) for another objective.
A SWOT analysis can be used to:

A. Explore new solutions to problems.

B. Identify barriers that will limit goals/objectives.

C. Decide on direction that will be most effective.

D. Reveal possibilities and limitations for change.

E. To revise plans to refocus on an organization's mission statement.

F. As a brainstorming and recording device as a means of communication.

G. Creating a series of recommendations in the context of an organizational study.

The SWOT analysis in public safety framework is beneficial because it helps organizations decide whether an objective is obtainable; therefore, enables agencies to set achievable goals, objectives, and steps to further the change, or enhance organizational development. It enables organizers to take visions and produce practical and efficient outcomes that effect long-lasting change. It also helps organizations gather meaningful information to maximize their potential. Completing a SWOT analysis is a useful process regarding the consideration of key organizational priorities.

This process, undertaken by the project team included an evaluation of both the external environment, as well as the Fire and first response EMS services internal factors and the interrelationship between the two. This was accomplished through virtual interviews, along with the analysis of data obtained from various sources. By approaching the SWOT analysis in this way, the process continues to reinforce a primarily – but not entirely - stakeholder-driven perspective.

Strengths:

- The passion and dedication of all fire and first response EMS personnel – they care and strive to provide excellent service;
- A strong interest by fire department leadership to work with other departments
- A high degree of mission buy-in and ownership;

- A high regard for the customer;
- High quality apparatus and equipment that is well distributed throughout the County;
- Strong support from community leadership;
- Strong support from the public;
- Regularly scheduled training programs;
- Exceptional centralized resources for training and coordination of effort;
- Best practice centralized resource coordination and deployment dispatch system;
- Recognition of current and potential challenges;
- Recognition that there is no one solution;
- High level of engagement in this study;
- A single regional dispatch center providing service to all participating departments;
- A high-quality apparatus set;

Weaknesses:

- Societal change, and generational differences have changed the value of on-call participation;
- Many active members are aging out;
- An overall reduction in active personnel and response staffing;
- The American Fire and EMS services have an increasing risk profile such as cancer, active shooter incidents, and more recently, COVID-19, which may change the level of interest of traditional candidates;
- Increasing training requirements which consumes more leisure time;
- Increasing economic pressure on potential responders;
- Shifting concepts of who is responsible for cost;
- Political change in an increasingly divisive society;
- A large gap by the municipal governments in developing a thorough knowledge of what emergency services are delivered to their community;
- Lack of adequate financial support from municipalities relative to the true costs of providing services;
- Although well intentioned, recruitment and retention effort that has had only marginal success;
- Increasing response metrics;
- Lack of education of the public and local officials regarding all facets – including financial – of the fire service delivery system;
- Continued primary use of traditional response practices for on-call fire response.

Opportunities:

- Use of legislative processes to secure funding at both the local, regional, state, and federal levels;
- The ability to work with the community to identify the current level of service and set realistic service level/cost expectations;
- Development of regional grant applications to fund a portion of this initiative;
- Increase in regional collaborations and endeavors within the area
- Create QRF (quick reaction force) model with regional deployment staffed by on-calls paid as per diems as an interim staffing measure;
- Provide Highland ambulance with a backup unit during QRF hour;
- Development of more intensive local recruitment and retention efforts;
- Development of dual role positions to bolster daytime response;
- Address recruitment and retention area-wide, by consolidation of efforts;
- Demonstrate problem solving abilities through programs and by providing a model approach to the declining on-call crisis;
- Explore new forms of outreach and marketing to inform the community of the challenges ahead;
- Marketing and communicating the social identity and benefits of being an on-call firefighter in the Fire Department;
- Identify and harness the best practices from across the nation relative to the further development of recruitment and retention strategies;
- Develop new support roles for on-call personnel (tech, social media, marketing, etc.)

Threats:

- The fire services' ability to improvise and get a mission accomplished despite the absence of appropriate financial resources;
- The inability to provide a timely response to multiple overlapping emergency calls;
- The projection of a problem that does not exist, described as "a crises without evidence". The fire department sees the service gaps but the public sees and accepts a level of service continuity that goes against the description of the problem;
- Continued decline of on-call firefighters across the study area, part of an overall nationwide reduction in volunteerism;
- Continued exodus of younger, trained on-call personnel to career job opportunities;
- The financial costs to communities who will be required to take over the delivery of fire service delivery in municipalities due to the closing of providers;
- The fiscal and operational impact of the Covid-19 pandemic which may significantly impact on-call participation;

- Fire service agencies that resist being transparent about their finances even as they request additional public funding;
- Reduction in operational safety based on staffing trends;
- Aging on-call personnel who in many cases keep the lights on and the apparatus responding;
- Generational and cultural differences in the emergency services that is not always as inclusive as they should be;

Looking ahead, each community's stakeholders should use the SWOT analysis 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 SWOT analysis, the project team believes that the five communities have a strong potential to create a regional augmentation program. However, to be effective each 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.

Recommendations

II-1: Each Town or a group of towns should develop a five-year plan to enhance training documentation and water supply inspection, and flow testing to move toward reclassifying the ISO ratings.

II-2: A group of towns should develop a ten-year plan to enhance training, documentation, water supply inspection, flow testing, and emergency telecommunications operations to move toward reclassifying the departments to an even lower ISO rating.

II-3: Each department 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 utilizes 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: 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.

In this section two important factors have been reviewed. The first is the number and type of incidents in each of the three years studied. The second is a series of data that looks at the call volume by times of day as well as the response time.

	2018	2019	2020
Chesterfield	118	114	103
		-3%	-10%
Cummington	101	131	81
		30%	-62%
Goshen	92	102	105
		11%	3%
Plainfield	147	109	88
		-35%	-24%
Worthington	109	127	143
		17%	13%
Year Total	567	583	520
Difference		3%	-12%

Figure 12
Comparison of Annual Call volume

The analysis of the overall call volume is not indicative of what is typically seen throughout the Country. It is unclear why the overall numbers dropped from calendar year 2019 to 2020 by 12%; however, it is likely that call volume has changed due to the impact of the Covid-19 Pandemic, response modifications and the reduced activity within each community. In 2020 the fire response volume within the region averages 1.42 calls per day.

An analysis of the type of incidents the study communities responded to from 2018 thru 2020 was completed with data provided by the dispatch center. The table below shows a broad classification of the types of incidents and an average of the number of responses to each, over the 3-year period. It is important to understand that not all departments provide the exact same level of service. Regardless of the actual incident address all responses were calculated as it was a service that was provided by a department.

The highest demand for service is for Medical Emergencies followed secondly by hazardous conditions. This class reflects trees and power lines down, spill and leaks etc. Fires themselves consistently reflect 7% of the response volume in each year of the study. Typically, fires start at a higher percentage and drop over the years and medical emergencies climb.

	2018		2019		2020		Average	
Medical Emergencies	373	(66%)	342	(59%)	326	(63%)	347	(62.6%)
Fire Incidents	41	(7%)	39	(7%)	38	(7%)	39	(7%)
Motor Vehicle Accidents	35	(6%)	32	(5%)	30	(6%)	32	(5.6%)
Fire alarm & Co Alarms	57	(10%)	64	(11%)	48	(9%)	56	(10%)
Assists (service calls)	16	(3%)	22	(4%)	08	(2%)	15	(3%)
Not Classified	15	(3%)	20	(3%)	30	(6%)	22	(20%)
Hazardous Conditions	30	(5%)	64	(11%)	40	(7%)	4	(44.6%)

Figure 13
Fire Department Three Year Call Analysis by Incident type

Incidents by time of day and month 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.

		0000-0359	0400-0759	0800-1159	1200-1559	1600-1959	2000-2359
	Chesterfield	3	17	25	20	23	15
	Cummington	4	13	19	13	18	14
2020	Goshen	7	10	20	22	29	17
	Plainfield	6	12	10	23	24	13
	Worthington	12	12	31	30	36	22
	Total	32	64	105	108	130	81
	Average	4.6	9.1	15.0	15.4	18.6	11.6
	Chesterfield	11	7	22	24	33	17
	Cummington	8	8	29	35	34	17
2019	Goshen	9	11	28	21	26	7
	Plainfield	9	15	23	18	26	18
	Worthington	11	20	23	27	32	14
	Total	48	61	125	125	151	73
	Average	6.9	8.7	17.9	17.9	21.6	10.4
	Chesterfield	9	15	24	30	22	18
	Cummington	7	10	19	39	13	13
2018	Goshen	5	10	16	21	28	12
	Plainfield	13	12	30	31	33	28
	Worthington	10	14	21	30	20	14
	Total	44	61	110	151	116	85
	Average	6.3	8.7	15.7	21.6	16.6	12.1
	Chesterfield	23	39	71	74	78	50
	Cummington	19	31	67	87	65	44
3 Year	Goshen	21	31	64	64	83	36
Combined	Plainfield	28	39	63	72	83	59
	Worthington	33	46	75	87	88	50
	Total	101	147	269	310	319	189
	Chesterfield	7.7	13.0	23.7	24.7	26.0	16.7
	Cummington	6.3	10.3	22.3	29.0	21.7	14.7
3 Year	Goshen	7.0	10.3	21.3	21.3	27.7	12.0
average	Plainfield	9.3	13.0	21.0	24.0	27.7	19.7
	Worthington	11.0	15.3	25.0	29.0	29.3	16.7
	Total	33.7	49.0	89.7	103.3	106.3	63.0
	Average	4.8	7.0	12.8	14.8	15.2	9.0

Figure 14
Incidents by time of day

The time-of-day data indicates that the peak time of service is from 8:00 AM to 8:00 PM. This seems to correspond well with the time most of the residents are up and about and doing their daily business. The second highest time frame was from 8 PM to midnight with 40 calls for service followed by 4 AM to 8 AM, when people are just waking up. Not surprisingly the time frame from midnight to 4 AM, when most people are sleeping indicates the slowest time. What is truly clear is that the public needs are; twenty-four-hour needs. It is important to be able to respond efficiently and effectively to the incidents all day every day.

The months of the year was next studied, to see how many calls per month each community respond to and what is the average call for each community over the three-year period of 2018 thru 2020. In order to get a better picture of the department's monthly responses the team looked at two distinctively different average figures. The average monthly responses over the three-year period for all towns within the study were 32.18 calls per month. All this information will become important when looking at potential staffing models for the years to come.

Totals and Average over three years (2018-2020)

		Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Avg call per month
Chesterfield	Total	29.0	30.0	14.0	28.0	23.0	20.0	37.0	47.0	24.0	24.0	25.0	34.0	
	Avg	9.7	10.0	4.7	9.3	7.7	6.7	12.3	15.7	8.0	8.0	8.3	11.3	17.0
Cummington	Total	51.0	64.0	29.0	44.0	45.0	49.0	61.0	86.0	43.0	52.0	56.0	68.0	
	Avg	17.0	21.3	9.7	14.7	15.0	16.3	20.3	28.7	14.3	17.3	18.7	22.7	27.2
Goshen	Total	29.0	21.0	25.0	15.0	32.0	24.0	27.0	31.0	36.0	26.0	18.0	15.0	
	Avg	9.7	7.0	8.3	5.0	10.7	8.0	9.0	10.3	12.0	8.7	6.0	5.0	5.7
Plainfield	Total	27.0	28.0	23.0	28.0	18.0	27.0	26.0	30.0	18.0	55.0	27.0	37.0	
	Avg	9.0	9.3	7.7	9.3	6.0	9.0	8.7	10.0	6.0	18.3	9.0	12.3	9.6
Worthington	Total	32.0	35.0	32.0	27.0	28.0	30.0	34.0	42.0	32.0	36.0	20.0	31.0	
	Avg	10.7	11.7	10.7	9.0	9.3	10.0	11.3	14.0	10.7	12.0	6.7	10.3	11.9

Figure 15
Incidents by month

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 of 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.

The response 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 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. Four out of five communities have decreased the response time.

[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, 2014 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.*

	2020	2019	2018
Chesterfield	11.65	12.44	12.05
Cummington	9.11	9.04	11.45
Goshen	7.41	8.06	8.11
Plainfield	9.2	9.31	11.0
Worthington	14.34	13.39	12.05
Average	10.34	10.44	10.93
Prior year decrease	.10	.49	-

Figure 16
Response times in Minutes

Recommendations

IV-1: ***Each town must look at the response times and work to improve these times in an effort to save lives and prevent property damage.***

IV-2: ***Each Town should be asked to select an appropriate service level, and if that requires the rapid response of a single unit, the town should appropriate sufficient funding to put towards a collaborative two-person day schedule Monday thru Friday. (Greater details on this effort are outlined in Chapter XIII – Mapping Out the Future.)***

IV-3: ***Every effort should be made to preserve the primary responder role of volunteer and on-call personnel within each Fire Department.***

IV-4: ***Each fire department should continue to exist and be funded on the local level. Pursuing regional augmentation strategy should not replace local response.***

V: STAFFING

Staffing is the biggest key to the success of any fire service response. For the most part the average citizen only sees the amount of shiny red fire trucks a department has, and sees that as their "fire department". 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 them. 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.

The chart below indicates the staffing levels in each of the study fire departments in the Fall of 2020.

Community	Total	Active	Chief	C2	Captain	Lt	FF	Explorer	Support	Other	
Chesterfield	**21**	16	1	1	2	2	14	1	0	0	
Cummington	**18**	13	1	3	0	1	11	0	1	1	Jr FF
Goshen	**24**	24	1	1	2	3	12	5	0	0	
Plainfield	**20**	20	1	1	2	2	14	2	1	0	
Worthington	**15**	8	1	1	2	2	9	5	1	0	
	98	**81**	**5**	**7**	**8**	**10**	**60**	**13**	**3**	**1**	

Figure 17
Staffing Level by Department

Community	Basic EMT or Higher level
Chesterfield	**1**
Cummington	**4**
Goshen	**4**
Plainfield	**5**
Worthington	**1**
TOTAL	**15**

Figure 18
EMS by Department

Having a number of people listed on a roster may give a false sense of security and be misleading. Their participation in training and actual response to incidents shows the real numbers and the level of service the department can actually deliver.

Most firefighters 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. In an effort 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. Stipends for making certain benchmarks are another way of compensating staff. A consideration 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.

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.

Table 4.3.2, Staffing and Response Time				
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.

Figure19
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 20
Example of a significant incident requiring the response of several communities.

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 21 identifies, and Figure 22 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

CRITICAL TASK	NEEDED PERSONNEL
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
Effective Response Force	14/15

Figure 21
CRITICAL TASKING: LOW AND MODERATE RISK STRUCTURE FIRE

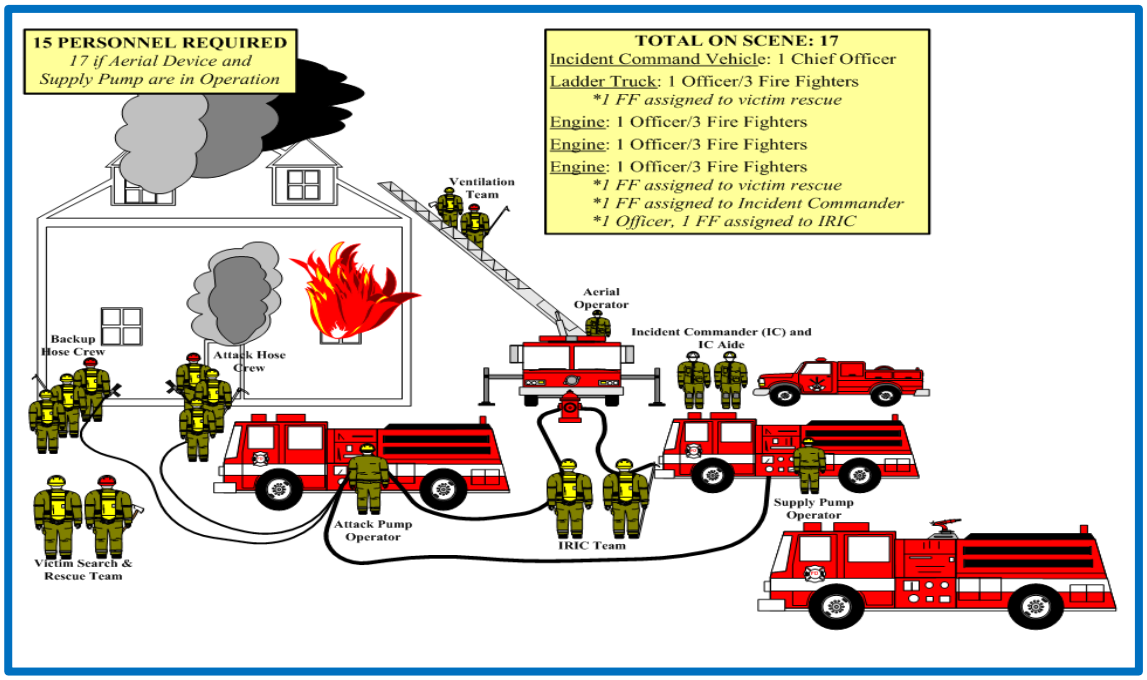


Figure 22
TYPICAL BASIC STAFFING NEEDS FOR A SINGLE-FAMILY DWELLING FIRE.
Image credit: IAFF 266

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 23).

CRITICAL TASK	NEEDED PERSONNEL
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
Effective Response Force	27/28

Figure 23
CRITICAL TASKING: MODERATE RISK STRUCTURE FIRE

Figure 24 identifies critical tasking for fires involving high risk structures such as hospitals, nursing homes, and assisted living facilities.

CRITICAL TASK	NEEDED PERSONNEL
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
Effective Response Force	35/37

Figure 24
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. 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/Tow-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.

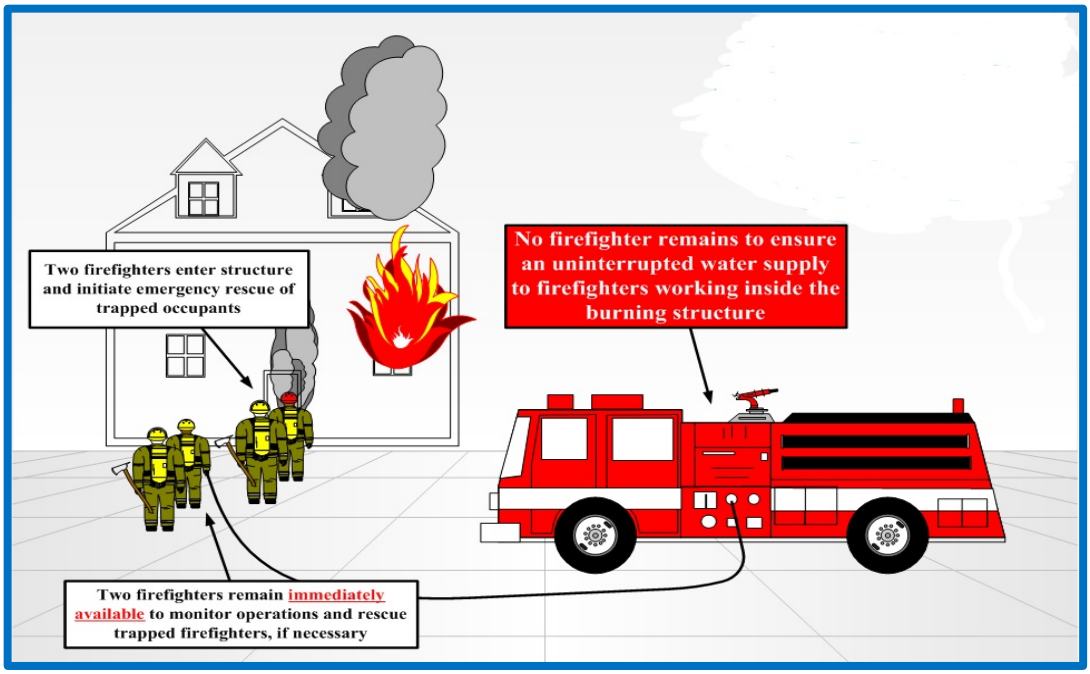


Figure 25
OSHA TWO-IN/TWO-OUT
Image Credit: IAFF 266

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 increased risk of serious injury, or death, to building occupants and firefighters, and increased

[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.

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. Assuming that additional funding is provided to develop a 24/7 quick response force (QRF), the project team does not recommend adding additional career personnel unless all other coverage options have been exhausted. When working with a successful on-call organization such as six of the seven communities the focus is to develop and support on-call operations. The rapid introduction of career staff on a 24/7 basis changes the on-call function, and relegates on-call personnel to secondary responders often serving as support personnel, and tends to rapidly diminish participation.

The federal government has a version of the Staffing for Fire and Emergency Response (SAFER) grant program that pertains strictly to volunteer and on-call firefighters. It provides competitively awarded funds to municipalities to recruit and retain on-call and volunteer firefighters. The grant funds expenses, such as recruitment campaigns, providing money for such expenses as tuition for college curriculums in fire science, for EMT and paramedic training, for health insurance for call members, for physical fitness programs, uniforms, and various tax incentives offered to attract new candidates to join the Fire Department, and then stay for an extended period of time.

MRI believes that the towns/departments or regional group should attempt to secure a SAFER grant to recruit and retain on-call members for the first time. This grant should note the staffing issue that currently exists and indicate that the grant would be an attempt to meet the NFPA 1720 fire response standard. The goal of developing a viable call force of twenty-five total on-call firefighters would also be a goal to articulate in the grant application. It is quite possible that a portion of the health care program cost described above may be eligible for incorporating in a SAFER grant.

There are no easy or guaranteed solutions to the staffing quandary facing the study communities and many other communities throughout the country. It is also important to stress that what may work in one community with regards to staffing and call/volunteer recruitment and retention may not work in another nearby community. Each community must individually determine what programs, incentives, and motivations will work, and be most effective in their community.

Note: much of the following section is inserted as a best practice example of how and where the on-call volunteer staffing is elsewhere and that the participating communities are not alone in working on properly staffing the department.

THE VANISHING ON-CALL / VOLUNTEER FIREFIGHTER

All of the towns in the study have expressed a desire to retain a strong on-call firefighting force. The project team concurs and believes that goal is realistic and achievable for the foreseeable future, albeit with changes in traditional operational procedures, and the introduction of a larger career force to supplement the call force. However, achieving this goal will require the implementation of program(s) to recruit; and then perhaps more importantly, retain personnel. This will take strong commitment from each fire department and each municipality.

In March 2004, the International Association of Fire Chiefs (IAFC) issued a report by the Volunteer and Combination Officers Section, entitled ***"A Call for Action: Preserving and Improving the Future of the Volunteer Fire Service"*** (Appendix A). Among other things, the report highlighted the fact that the ranks of on-call firefighters nationwide are declining due at least in part, to an increasing demand for services. There are also various other factors that are prevalent to the reduction in the number of on-call firefighters in communities. Among them is that the demographics of many communities today do not support a sufficient number of the type of person who is 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. According to the SR 6 report, the average age of an on-call firefighter in Pennsylvania is 48 years old. In many cases those who are looking for a career leave the Hill town area as soon as they are offered a job, which is often in other nearby states.

MRI has found that on average, for every five on-call firefighters recruited, two or three will remain active after a period of about 48 months has elapsed. This fact alone can frustrate recruitment efforts, which in and of themselves are a time intensive endeavor. The task of recruitment and retention is further complicated if the fire company and/or the municipalities it serves lacks a true commitment (whether real or perceived) to the on-call firefighters.

Making the challenge even greater, in 2020 the average citizen does not want to spend a great deal of personal time dedicated to the fire and emergency services, especially when family commitments take priority. Other reasons for difficulty recruiting and retaining members include:

- An overall reduction in leisure time;
- Employment obligations and the common need to maintain more than one job;
- The virtual elimination of employers understanding and flexibility relating to this form of community service;
- Increased family demands;
- Generational differences;
- Increasing training requirements;

- The cost of housing in many affluent communities;
- Organizational culture;
- Internal respect;
- Recognition of personnel;
- Internal communication;
- Department leadership styles and commitments;
- Severe lack of funding;
- Outdated service delivery models;
- Political polarization.

In November 2005, the IAFC Volunteer and Combination Officer's Section released a second report, called ***"Lighting the Path of Evolution: Leading the Transition in Volunteer and Combination Fire Departments"*** (Appendix B). This report further expanded on issues and strategies for maintaining high service levels to the community, and safety for emergency response personnel while simultaneously keeping costs down. One prominent question asked in the report was ***"How can fire departments ensure the delivery of services are reliable?"*** The answer was the development of a list of "indicators for change", were fire department managers and local government leaders need to be cognizant of warning signs pointing to potential problems and "prepare for change before it is forced on them by external circumstances". These "indicators" of change include:

Community Growth: Generally speaking, the larger the community, the larger the call volume and higher level of service, people expect.

Community Aging: Maintaining an appropriate level of service depends on the fire department's ability to recruit new and younger members. This appears to be a major issue as many long time, senior members are nearing retirement or are faced with health problems (even before COVID-19) that limited their availability.

Missed Calls: A critical issue because it is a failure that is highly visible to the public and there is an over-reliance on mutual aid for coverage.

Extended response times: A reliability problem as the public is not provided the appropriate service.

Reduced staffing: A serious problem as it puts citizens and first responder safety at a greater risk.

Most of these issues appear to have growing applicability to the communities and its fire service delivery system as a whole. These warning indicators are not necessarily an indictment

of anything wrong in the area; the same problems are facing on-call fire companies and departments across the state and the entire country. The challenge is finding ways to preserve and improve the fire service in the communities for the foreseeable future.

In September of 2020 the National Volunteer Fire Council published results of a research that was titled and focused around **"Why Do Volunteers Stop Volunteering?"**. In this study former volunteers were surveyed to learn of the reasons they left a department, and these results were compared to the perception of the current volunteer leaders and non-leaders alike. Not surprising to the MRI team, the results indicated the primary reason for leaving was not money; but was due to the lack of support and the lack of flexibility in dealing with the department requirements and that of a family life. In fact, the primary reason for leaving was due to the department atmosphere being full of cliques and groups that exclude others. The current volunteers in the research conducted, indicated that leadership and not focusing on or supporting the needs of members as another of the top three reasons. To round out the top three points of contention, current volunteers cited a lack of clear expectations on how much time and effort is required each week or month to meet training requirements. All of these items will be discussed in the future section of this report.

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 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 fires, 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:

1. 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.
2. 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.

3. 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.

Although all the fire departments are facing emerging operational staffing challenges, the project team believes that all the departments can remain successful, primarily on-call organizations, with reduce response times, and meeting OSHA "Two-in/Two-out" for at least the next decade. However, continuing the on-call composition of the organization will require a concerted effort and the deployment of several best practices, and non-traditional strategies. Although the department is open to new members, a new level of effort needs to be directed toward recruitment and retention initiatives.

While police and fire personnel often have no interest in the other public safety profession, which is often the source a failure of forced public safety pilot programs, encouraging police officers to consider serving the community as on-call firefighters when off duty, should be considered as best practice. It must be recognized that should a full-time police officer that lives in the immediate area become an on-call firefighter he/she would be paid at their Police overtime rate for all additional hours based upon the restrictions of the Fair Labor Standards act (FLSA).

Another best practice to enhance the daytime availability of personnel, is to provide preference when hiring Department of Public Works (DPW) Laborers to existing on-call firefighters. In the alternative if no on-call personnel are interested or qualified, the new DPW hire could have the requirement to become and remain active as an on-call firefighter. This strategy has worked in several communities to enhance daytime coverage during the work week when on-call personnel are often least available. An example of this practice was in Hopkinton Massachusetts where at one time several members of the DPW staff were on-call firefighters and would deploy to emergencies if they were not involved in a critical DPW activity. In that community, each DPW utility vehicle had both an emergency and non-emergency lighting package to enable a rapid response and support DPW operations.

SEVEN MOST SIGNIFICANT CHALLENGES FACING FIRE SERVICES

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 operations, part of a nationwide trend. The cost associated with addressing this issue will be the biggest challenge ahead for all the stakeholders, both internal and external.

2. Emerging generational differences that 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 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 are have 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. The reason that many stakeholders – municipal leaders and the general 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 taking action 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 it will be money wisely invested. Even with success, the reality is that the fire and first response EMS services in the five participating Hill town communities are going to evolve into more of as combination system with the need for an increasing number of career personnel to supplement on-call personnel. This too will come with an increase 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. ***"If we lose our on-call fire and first response EMS personnel the taxpayers will face a very steep price tag."*** That could eventually be the ultimate implication of not taking action.

Recommendations

V-1: Fire Departments should require its personnel, and strongly encourage its call officers, to obtain a certain level of fire officer certification as a job requirement, such as Fire Officer I for lieutenant, Fire Officer III for deputy fire chief, and Fire Officer Level IV for fire chief.

V-2: Fire Departments 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.

V-3: As part of the succession planning process, the Fire Chiefs 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.

V-4: All Departments should continue to foster and support any member to be trained and certified to the Firefighter 1 and preferably the Firefighter 2 level.

V-5: Working with the 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 by 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.

V-6: In consultation and cooperation with its neighboring departments, all participating Fire Departments should enter into formal automatic aid agreements that specifies the number and types of resources that should be dispatched immediately to various types of reported emergencies, such as structure fires. These recommendations should be based upon a community-wide risk management process and/or pre-fire/incident plan.

V-7: 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 SOC with the goal of attempting to have at least 16 personnel on the scene of any reported structure fire within 14 minutes.

V-8: ***Fire Departments 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 1710/1720 and Commission on the Accreditation of Ambulance Services (CAAS) recommendations.***

V-9: ***Fire Departments 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. With the current staffing model in place and no other calls in progress, this is something that can be met, if the staff in the station is properly qualified with the appropriate level of training and qualifications. A closer look at simultaneous calls and calls that run back-to-back (ambulance is transporting, and a second call comes in) should be looked at. At the time of this evaluation the program of having per diem staff in the station was still in its infancy, and it is not known if the station was sufficiently covered while this crew was committed to the first call.***

V-10: ***Fire Departments should work with the communities listed on each of the "run cards" to assure the number and qualification of staffing, that will be sent on the assignments. In order to be able to meet a safe level of on scene staffing, it will be important to know not only what the department will be receiving and how long it will take, but also to outline what each town will be sending, when these communities request resources from them.***

V-11: ***Review the department roster and look to the members with low participation and find out what can be done to increase their involvement. Work with these members to increase their participation within a pre-determined time frame.***

V-12: ***Fire Department should set a minimum criterion for 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.***

V-13: ***The town should consider encouraging members of Police Departments that live in the area to become on-call firefighters.***

V-14: ***Fire Departments should work with their Road Agents to ensure that on-call firefighters are given preference when DPW personnel are hired. If on-call members are not interested and or qualified the town should hire personnel that are willing to become an on-call firefighter as a condition of employment.***

V-15: ***Unless critical DPW operations are underway, DPW personnel that are on-call firefighters should respond to emergencies to supplement staffing and assist in meeting the OSHA "Two-in/Two-Out" Standard.***

V-16: ***Towns either individually or jointly should apply for a federal SAFER grant for on-call recruitment and retention. This grant should be utilized to develop a comprehensive marketing program to attract new members, and provide incentives for the retention of those personnel, such as tuition reimbursement, health care benefits, tax abatements, etc. This competitive grant requires a lot of time and dedication to write and to be successful to obtain.***

V-17: ***All towns should recognize that the only way to develop a more active and properly staffed fire department in the absence of hiring a larger force of career firefighters is to determine what would motivate potential responders and craft a program of investment that meets these extrinsic and intrinsic needs.***

V-18: ***All towns should jointly convene a focus group to determine what concepts and recruitment and retention strategies are feasible and most attractive to potential candidates.***

V-19: ***Fire Departments should set a realistic goal of recruiting at least 5 to 10 new members over the next three years, and simultaneously set a goal of increasing the overall call member force to around 25 to 30 active personnel. These personnel should be required to be properly trained and certified to the Firefighter I/II level, and preferably to the minimum of EMR level.***

V-20: All Departments should make it a priority to develop an active on-call recruitment program led by a Chief Officer. At a minimum, this program should consist of:

1. ***Developing a recruitment brochure and mailing it to all residents***
2. ***Holding periodic open houses at the fire station***
3. ***Performing public outreach through the local media***
4. ***Contacting community and service groups***
5. ***Developing an eye-catching banner on the town's and fire department's web sites***
6. ***Placing signs recruiting call/volunteer personnel at the main entrances to town***
7. ***Placing a temporary sign board at various locations within the community***
8. ***Placing signs for call/recruiting volunteers in local businesses, particularly high-volume locations***

9. ***Implementing a fire explorer program***
10. ***Radio and media advertisements***
11. ***Although time consuming, consideration should also be given to conducting a door-to-door recruitment campaign of every residence in the town.***
12. ***The proposed SAFER Grant could be utilized to cover many of the above expenses.***

V-21: The Fire Chief should develop a 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.

V-22: The Fire Chief or his designee should create a quarterly "newsletter" that will highlight the positive things that the department has done the prior months. This newsletter should be posted on the town's web page, shared in social media, given to the town manager who in turn should share with the Board of Selectmen. It is important that the public is made aware of all of the great people and all the good things the department does.

V-23: The towns and the fire departments should attempt to enter partnerships with local businesses to allow their personnel to respond, when needed, to emergency incidents during working hours, without any financial penalty.

V-24: The towns should explore the feasibility of utilizing, and in fact encouraging, town employees to perform "dual roles" by serving not only in their full-time positions, but also serving the town as call firefighters and/or rescue personnel. Caution is needed here though as there are provisions of the Fair Labor Standards Act that would be applicable, particularly if these personnel respond to incidents during times when they are not working.

V-25: Fire Departments should develop a series of team-based activities that build involvement in the organization.

V-26: 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.

V-27: Fire Department 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.

V-28: Visit the National Volunteer Fire Council web site for cooperative programs they have posted. One of the newer programs is looking to attract returning or former military personnel into the fire service.

VI: AUTOMATIC AND MUTUAL AID PRACTICES

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.

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 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

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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.

From discussions with the Fire Chiefs in the study, it appears that for the most part automatic aide is being requested. The MRI team would encourage each community to review this and that this becomes the norm for most fire calls and if appropriate, EMS calls.

VII: ON CALL RECRUITMENT AND RETENTION

All Departments have expressed a desire to retain a strong call firefighting force. MRI concurs and believes that goal is realistic and achievable for the foreseeable future. However, it will require the implementation of program(s) to recruit and then retain personnel; a strong commitment from the town; and strong leadership in the Fire Department.

As was described in the section titled **"*The Vanishing Volunteer*",** the number of on-call firefighters across the country is rapidly declining, a trend that has been occurring for several decades (Figure 26). To demonstrate this point, the project team utilized Pennsylvania as an example. According to the Pennsylvania Fire and Emergency Services Institute, the number of on-call firefighters in Pennsylvania have declined from around 300,000 in the 1970's, to about 60,000 in the early 2000's. and to 38,000 in 2018. It should be noted also that Pennsylvania has one of the strongest and proudest traditions of on-call firefighters in the United States, and, has more on-call fire companies than any other state.

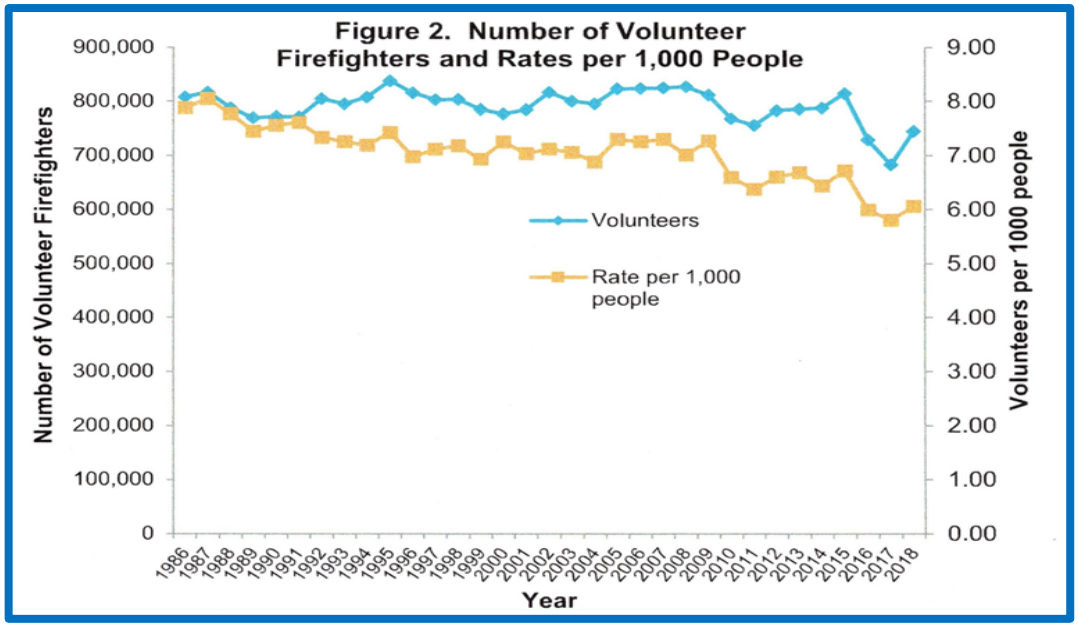

Figure 26
NUMBER AND RATES OF VOLUNTEER FIREFIGHTERS: 1986 – 2018

In March 2004, the International Association of Fire Chiefs (IAFC) issued a report by the Volunteer and Combination Officers Section, entitled ***A Call for Action: Preserving and Improving the Future of the Volunteer Fire Service***. Among other things, the report highlighted

the fact that the ranks of on-call firefighters nationwide are declining due, at least in part, to an increasing demand for services. There are also various other factors that are prevalent to the reduction in the number of on-call firefighters in communities such as the study departments. Among them is that the demographics of many communities today do not support a sufficient number of the types of person who is 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. The project team has found that on average, for every five on-call firefighters recruited, two will remain active after a period of 48 months has elapsed. The task of recruitment and retention is further complicated when the department lacks leadership and a true commitment (whether real or perceived) to the on-call force.

On its own, this number may look to be sufficient for the activity level. However, in almost any on-call emergency services organization there is going to be a percentage of members whose names still appear on the "active" roster, yet they no longer truly are, or are minimally so, for a variety of reasons. Factor in that most members of the department have a primary job, other than the Fire Department, that probably limits their availability to respond, mostly during normal business hours, and the current personnel picture becomes much more of a concern. Based upon the analysis only about three or four of the on-call personnel respond to incidents on a regular basis.

With many members of the department "aging out" in the next three to five years, a significant effort will need to be put forth towards recruitment and retention of on-call personnel. Although the study communities are far from alone in dealing with this reduction in on-call staff, it is essential that addressing this situation is clearly identified as a top priority of the Fire Chief and be adopted as a shared mission of the entire department.

Most Fire Departments also do not have a formal recruitment and retention program for call personnel and has only very infrequently actively recruited for new members. The MRI project team was informed that most new members of the department are recruited by word of mouth or are "walk ins". There is no mention of the need for additional members on the towns' or fire departments' websites, or even a person to contact if someone is interested in joining the department. This is something that is frequently displayed very prominently on the websites of many on-call departments.

It is easy to believe that increasing the number of on-call firefighters can be a cure all to eliminate all staffing, and thus response problems. Unfortunately, in 2020, this is an increasingly difficult problem to overcome. However, there still appears to be a small town feel in most of the study towns, and perhaps more importantly, still a sense of community. These are key attributes that may increase the likelihood of success for any call firefighter recruitment and retention program. Some studies and reports prepared by various entities have noted that

many on-call fire departments serving small to medium sized communities anticipate that about one percent of its year-round population, will be members of the fire department.

In the smaller government, anti-taxes, and benefits climate of today, many of these benefits can be controversial. However, after considering these strategies, the project team has focused on developing innovative strategies for consideration. One example of an unconventional and innovative best practice that may work is to provide a health insurance package for self-employed, year-round residents, provided they complete training, certification, and provide the town with a high level of immediate response. Typically, this type of program attracts electricians, plumbers, painters, and other trades, as well as self-employed professionals that would be beneficial to the organizations. The town may also want to explore the opportunity to offer a deferred compensation package as another incentive program in a similar fashion as health insurance model.

In August 2017, a Fire Chiefs association was awarded a SAFER grant for $381,000 for volunteer recruitment and retention. In June 2019, the MRI project team had the opportunity to be present at a committee meeting which was attended by five members, consisting of two fire chiefs, two firefighters, and a vendor who is providing marketing services. Some of the obstacles to recruitment that have been identified include:

A. Prospective members sometimes have difficulty connecting with local fire departments and feeling welcomed to the organization.

B. Websites often do not market properly. A random sampling of fire department and municipal websites by the MRI project team found that almost none have the need for call firefighters and first response EMS personnel displayed prominently in a pinned or scrolling heading, on the home page of their websites. Many have a tab, but they are often in with the website's other tabs.

C. Recruitment itself is a very involved, time consuming and labor-intensive endeavor. It needs to be conducted almost continuously and to be successful it must have follow-through and a true commitment to put in the effort.

It was also noted that the Fire Chief needs to be number one advocate for their organization and be an active participant in recruiting efforts. The chief must also quickly respond to and answer inquiries from prospective members.

An example advertising and marketing campaign called Help Fight Fire. A website dedicated to this effort is located at https://www.helpfightfire.com/. A campaign such as the example depicted could be a valuable resource to the Fire Departments.

Even if the recruitment obstacles can be overcome; hurdles remain, before a new member is a productive member of the Fire Department. Once an individual becomes interested in becoming an on-call firefighter, they must achieve a level of ever-increasing specialized skill that is time-consuming. Often exit interviews reveal that the training commitment alone is daunting and one of the primary reasons that on-call personnel resign. It is also costly to the fire company. To become a certified firefighter takes several hundred hours. Once certified, there are dozens of hours training annually, maintaining firefighter and possibly EMT or paramedic skills and certifications. Younger on-call firefighters frequently use their training and opportunities as a steppingstone to seek employment as full-time firefighters, which often results in their loss to the community.

As most suburban communities across the United States are dealing with the reduction of on-call staff, trying to reverse this trend has become a common issue in many places. When compared to the ever-increasing costs of employing additional full- time career personnel, many communities have concluded that investing in on-call personnel is the best and more cost-effective practice and, to that end, they have pursued some of the following strategies:

- Placing a prominent banner or link on the home page of each fire company and municipal website and along with on all social media platforms. This should be done as a priority that can be accomplished for little to no cost.
- Conducting a recruitment mailing to all residential properties in each municipality with information about the fire company and recruiting new members.
- Placement of temporary signboards at various locations throughout the Community in addition to the billboards from Help Fight Fire. At least one fire company does this in their response area.
- Placement of a recruitment message on the signboard at the various municipal buildings and fire stations.
- Working with local businesses to form partnerships that would allow employees to leave work to respond to emergency incidents when needed.
- Appoint an on-call firefighter “Recruitment and Retention Coordinator” to develop, implement, and coordinate these activities. This should be undertaken as a community endeavor.
- Provide a reduction in property taxes, or a tax abatement incentive, for on-call service.
- Provide on-call firefighters with community-based benefits such as free dump stickers, etc.
- Provide community-based awards and recognitions such as implementing an incentive for members that attain a level of more than 25% response. An

example would be to provide gift certificates for local restaurants, concerts, or other entertainment as a reward for attaining a high level of response.

- Distribute posters to convenience stores, gas stations, restaurants, and other high traffic locations seeking to recruit new members.

Figure 27
On-call recruitment poster from Recruit NY volunteer recruitment program

Figure 28
Recruitment poster

One of the challenges that many on-call organizations face today is that the motivation of newer members is much different than the older, long-time members. The newer members tend to need to receive something tangible to show that their service is appreciated. An associated concern that the MRI project team often hears is the need for better communications within the fire company. This is usually not referring to the company's formal communications system, but more so, the interpersonal levels of communication that occurs within the company and at the station level. This is frequently an area of concern in on-call organizations as the cultures and ideas of the older members, who have served the company for many years, often clash with those of the younger, newer members. These intergenerational differences can be even more problematic if those older members, who often no longer respond to calls, are perceived as having an excessive say in company operations. Conversely, there is a perception that the younger members do not take things seriously and show the proper respect for the company and the experience of the senior members. Handling this situation is often a delicate balancing act that the company leadership will need to be able

to navigate, if they want to maximize the participation of their most important resource, the active firefighters. Portraying a unified and welcoming environment as part of the recruitment and retention strategy of the fire company is an important component necessary for those efforts to be successful.

As the Hill towns and the surrounding areas become more diverse, the Fire Departments in the area will need to adjust accordingly to be more inclusive and welcome in new members from different cultures. This is a changing dynamic that the fire companies will need to maintain awareness of as they try to determine the most effective focus of their recruitment, and perhaps more importantly, retention efforts. One of the most important keys to the latter, is that the fire company presents a positive and inclusive atmosphere and there is a sense that the leadership is competent. In addition, disciplined, policy driven on-call organizations are often more successful than those where there is little to no discipline and the attitude is, "we're only on-call, so leave us alone".

Some other on-call recruitment and retention programs that have been implemented elsewhere and might be considered include:

A. Connecticut has a property tax relief program in the form of a $1,000 per year abatement on property taxes for on-call emergency services personnel.

B. A program in Wisconsin brings together fire departments, high schools, and a college working to target future on-call firefighters as a recruitment and retention tool. The program, called "Start College Now", brings together area high schools and fire departments to provide training using firefighting equipment to certify students in firefighting, as well as to get them college credits.

C. In Illinois, a recently enacted law creates a hiring preference for career fire service applicants with at least 600 hours of fire suppression work within the previous 12 months in a certified apprenticeship program. Program participants can have up to 20 points added onto their eligibility list scores. Several community colleges are working to develop three-year apprenticeship programs.

D. North Carolina provides free hunting licenses to on-call firefighters, a benefit that would probably have significant appeal to avid outdoor enthusiasts.

The National Volunteer Fire Council has excellent resources on the recruitment of new volunteer personnel. They can be found at https://www.nvfc.org/make-me-a-firefighter-six-steps-to-recruitment-success-2/. The International Association of Firefighter also has resources

that can be found at https://www.iafc.org/topics-and-tools/resources/resource/guide-to-best-practices-in-volunteer-firefighter-recruitment-and-retention.

Some of the critical steps to ensuring engagement with potential members during the recruitment process include:

- Keeping prospective members engaged throughout the entire recruitment process with emails and phone calls;
- Clearly articulate expectations;
- Providing them with a clear point of contact if they have any question, concerns or issues that may arise during the recruitment process, or, if they just want additional information or to stay in the loop;
- Invite them to department events, meetings, training sessions, work details, or even just to ride along (if permitted by department policy and insurance regulations.

Once the recruit is accepted into full; or at least probationary membership of the fire company the focus should now shift to ensuring *their* success:

A. Consider pairing them with a mentor, an experienced (and positive) member who can help guide them through their fire experience in the fire/EMS service and start to teach them how to do the "job".

B. Implement a tracking program to follow the member's progress through their probationary period. Are they engaged and showing interest? Are they hitting the right marks? Where do they need help? Any number of programs can also to help track key certifications, schedule duty shifts, hold emergency contact information and more.

C. Create a "New Member Guide" with various checklists, progression information, copies of primary response maps, key forms and other critical details they'll need to know as a member of the fire company. Solicit the **"what"** for the document from both the department's longstanding members (what do they wish new members knew sooner?) and the newer members (what do they wish they had known faster when they first joined?)

The new member making a connection with, and feeling welcomed into the company is going to be a major driver in their success and level of involvement with the fire company. If they are successful, the company will be also; as they gain another important asset. To that end, one of the things the Brighton Fire Department near Rochester, New York did to improve their recruitment and retention efforts, was to engage with an executive coach from the business

community (without fire service experience) to mentor their officers, and to create and facilitate an advisory team to collect input on big issues and decisions from across the membership; while bringing the key leadership team members together on "organizational culture improvement." Changing the long-standing culture of many on-call fire departments in acknowledgement of the diversification of society, will be critical to the long-term survival of the on-call fire service.

There are no easy or guaranteed solutions to the declining number of on-call firefighters and the related staffing quandary facing communities throughout the country. It is also important to stress that what may work in one community or fire company with regards to staffing and on-call recruitment and retention, may not work in another nearby community or the fire company next door. Each community and fire company must individually determine what programs, incentives, and motivations will work, and be most effective in their community or company. It is also very important to advise the stakeholders in the towns that should they decide to transition from a mostly on-call fire service, to a more combination service, the process may be difficult. However, this situation is one that many fire companies/departments and communities experience during the time of their evolution, and growing pains would not be unique at all to the departments.

One huge unknown for the fire and EMS services is the long-term implications of COVID-19 from a personnel standpoint. The implications here could be particularly acute to the on-call services. In New Jersey, as well as other states, several on-call EMS organizations were forced to suspend operations due to a lack of personnel to provide coverage and response to calls. The on-call emergency services are aging (the average age for an on-call firefighter in Pennsylvania is 48), so a significant percentage of on-call responders are going to be at, or close to, being higher risk just based upon their age, without factoring in any other underlying health issues. These personnel may decide it is time to take a well-earned retirement. Younger members with families may find themselves reassessing the risks involved in providing on-call services and conclude that it is too great and step away. The pandemic is also certain to impact future recruitment efforts. The Fire Departments need to monitor this situation and be prepared for whatever the results ultimately are on their membership.

The Federal Government has a version of the Staffing for Fire and Emergency Response (SAFER) grant program that pertains strictly to on-call firefighters. It provides competitively awarded funds to municipalities to recruit and retain on-call firefighters. The grant funds expenses, such as recruitment campaigns, tuition for college curriculums in fire science, EMT and paramedic training, health insurance for call members, physical fitness programs, uniforms, and various tax incentives offered to attract new candidates to join the Fire Department, and then stay for an extended period of time.

MRI believes that the town/department or the region should attempt to secure a SAFER grant to recruit and retain on-call members. This grant should note the staffing issue that currently exists and indicate that the grant would be an attempt to meet the NFPA 1720 fire response standard. The goal of developing a viable call force of twenty-five total on-call firefighters, would also be a goal to articulate in the grant application. It is quite possible that a portion of the health care program cost described above may be eligible for incorporating in a SAFER grant.

Even if the recruitment obstacles can be overcome, hurdles remain before a new member is a productive member of the department. Once an individual becomes interested in becoming an on-call firefighter, they must achieve a level of ever-increasing specialized skill that is time consuming. Often exit interviews reveal that the training commitment alone is daunting and one of the primary reasons that on-call personnel resign. It is also costly to the department. To become a certified firefighter takes several hundred hours. Once certified, there are the dozens of hours training annually spent maintaining firefighter and EMT or paramedic (if required) skills and certifications. Unfortunately, in 2020, the average citizen does not want to spend a great deal of personal time dedicated to the fire and emergency services, especially when family commitments take priority. In addition, many on-call firefighters in departments that have a career force handling the day-to-day emergencies, find it hard to stay motivated if they are not being utilized frequently. Other reasons are for difficulty recruiting and retaining members include:

- An overall reduction in leisure time
- Employment obligations and the common need to maintain more than one job
- Increased family demands
- Generational differences
- Increasing training requirements
- Organizational culture
- Internal respect
- Recognition of personnel
- Internal communication
- Department leadership styles and commitment

VIII: Budgets

		2019	2020	2021
Total Budget	Chesterfield	$ 38,031.00	$ 38,171.00	$ 39,606.00
	Cummington	$ 21,171.00	$ 22,204.00	$ 22,489.00
	Goshen	$ 56,583.00	$ 57,003.00	$ 57,157.00
	Plainfield	$ 33,810.21	$ 35,952.71	$ 35,685.71
	Worthington	$ 19,390.75	$ 21,522.86	$ 22,800.00
	TOTALS	**$ 168,985.96**	**$ 174,853.57**	**$ 177,737.71**
Capital	Chesterfield	$ 31,841.00	$ 32,121.00	$ 32,643.00
	Cummington	$ 4,000.00	$ 4,000.00	$ -
	Goshen	$ -	$ 75,000.00	$ -
	Plainfield	$ 55,000.00	$ -	$ -
	Worthington	$ -		$ -
	TOTALS	**$ 90,841.00**	**$ 111,121.00**	**$ 32,643.00**

Figure 29
Budget 2019-2021

It is important to note that not all budgets above consist of the same components. For example some community budgets include some or all of the expenses for the facility (fire station) and the maintenance and repairs to them, others do not. It is also important to note that not all departments pay the staff at the same rates and in fact some are still volunteer departments.

The annual budgets also do not include any bond payments for capital items where the funds have been borrowed and payments are being made.

The budgets for the departments appear to be in line for the current operations that are being supported. Due to the nature of how each department and its members are or are not compensated have a great deal of impact on the overall operational budgets are made up. The budgets are included in this report as a reference and should be referred to when the report is reviewed, and future actions are being considered.

IX: APPARATUS AND EQUIPMENT

Figure 30
Example Apparatus from the Study Area

The geography, infrastructure, hazards, and construction features within the community all play a major role in determining the composition of each department's unique and individualized apparatus fleet and equipment inventory. The regional response area is primarily rural communities with the expected limited fire potential such communities usually present. However, new single-family dwellings are nearly all built utilizing lightweight construction which presents many safety hazards to firefighters. These factors, as well as projected future needs, must be taken into consideration when specifying and purchasing apparatus and equipment. Every effort should be made to make new apparatus as versatile and multi-functional/capable as is possible and practical.

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.

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.

Despite the lack of clear guidance in the various NFPA standards, there is a significant body of knowledge that suggests that fire apparatus definitely has a finite lifespan. The reasonable serviceable lifespan of fire apparatus will depend on a number of variables such as the level of use, local environment, and operating conditions, and very importantly, the scope of preventative maintenance. It is generally accepted that lower use fire apparatus, such as units serving communities that are suburban in nature, might still be mechanically sound after twenty years or more, due to their lower frequency of use. However, after twenty years, technical and functional obsolescence may make the apparatus less desirable to use even if mechanically sound and serviceable. Nevertheless, that does not mean that it will still not be serviceable as a spare or reserve apparatus.

One of the biggest factors that can impact the serviceable life of the apparatus is the level of preventative maintenance that is received. NFPA 1911: *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus* (2012 edition) provides guidance on this important aspect of fire department support operations. Apparatus manufacturers also identify suggested programs and procedures to be performed at various intervals. As apparatus ages, it is reasonable to expect that parts will wear out and need to be replaced. It follows then that maintenance costs and overall operating expenses will increase. As a result, cost history and projected costs for the future must be considered as a factor in determining when to replace or refurbish a fire apparatus. In addition, the reliability of the apparatus must be considered. Experiencing low downtime and high parts availability are critical factors for emergency equipment maintenance and serviceability. A pro-active preventative maintenance program can assist with holding costs to an acceptable level.

A white paper developed by the Fire Apparatus Manufacturer's Association (FAMA) suggests that the front-line lifespan of active-duty fire apparatus in a suburban setting ranges from 16 to 19 years, with the possibility of an additional 9 to 10 years in a reserve, or spare status. The International City/County Management Association (ICMA) suggests that the lifespan of a fire pumper should be 20 years, and the lifespan of an aerial ladder should be 25 years. The National Fire Protection Association suggests 15 years in front line service with an additional five in reserve status.

One common recommended practice is to purchase one major piece of fire apparatus every 5 years. The goal of this strategy is to spread major purchases out over time in an effort to allow the governmental entity to maintain a consistent level of debt service. Regardless, the decision is left to each locality and represents a balancing of numerous factors: fire department activity levels, maintenance costs and history, individual vehicle reliability, funding availability, technological changes, firefighter safety, and vehicle use. Fire apparatus must be replaced before it becomes unreliable, but it must be held in service for as long as practical to maximize the benefit of the large initial investment from the community.

As the value of the apparatus or vehicle depreciates, the maintenance costs are evaluated along with the age, mileage, and engine hours so that expected maintenance costs do not exceed the value of the apparatus or vehicle. When considering apparatus usage, hours on the engine and pump must be taken into consideration. Fire apparatus typically spends more time idling while at the scene of emergencies, or when operating the fire pump at a fire. A rule of thumb that can be used is that each hour on the motor is the equivalent of 30 - 35 miles of actual driving mileage.

As newer technological improvements are introduced that increase safety and efficiency for the department, the capital replacement plan should be evaluated in an ongoing manner, and these other factors should be considered as a component in scheduling replacement apparatus. An important component of the plan is that it allows front-line apparatus to be replaced before it is no longer serviceable due to safety or efficiency issues, but still be usable as a reserve or backup unit.

The departments appear to have an adequate apparatus set based on call volume for all types of incidents except brush or grass fires where additional small 4wd vehicle may be better suited for off road response than a structure piece. A consideration for the number of apparatus is the number of actual qualified responders. It is unclear if the department has enough properly trained and available staff to operate the trucks when they are needed. With the large percentage of the areas being out of a pressurized water district the department should continue with assuring the future apparatus have sufficient water on board with a minimum of 1000 gallons. All the apparatus appears to be well maintained and in good shape. (A full complete thorough inspection was not conducted as part of this project.)

Recommendations

IX-1: Each Department should identify and prioritize its most critical equipment, training and/or operational needs, and apply annually to the Assistance to Firefighters Grant (AFG) program. This should include making applications for apparatus capital

replacement projects that will otherwise be funded through the town's capital budget and at town meeting.

IX-2: ***Towns should actively continue to search for other grant opportunities. Grants for fire protection, fire safety, fire prevention, domestic and emergency preparedness, and homeland security may be available from federal, state, corporate, and foundation sources.***

IX-3: ***Towns should actively seek out businesses that may be interested in establishing public/private partnerships that could provide, or assist with, funding for various programs, projects, or initiatives.***

IX-4: ***Towns should expand its formal replacement plan for equipment. The regular replacement of large cost items such as hose, ladders, PPE, portable radios, AEDs, and even SCBA on an incremental basis will avoid major one-time increases in the annual operating budget where such purchases should be funded. For instance, the hose and ladders on one vehicle can be replaced in one fiscal year, another the following year, etc. The life expectancy of these items can be estimated based on usage and manufacturer's recommendations. Items such as hose and ladders can remain in service indefinitely, provided they continue to successfully pass their annual tests.***

X: STATIONS

The Fire stations are typical New England Fire stations with the design and capacity of call/volunteer departments. Most stations are under size for the type and amount of equipment that is needed to carry out the mission of the departments in a modern-day fire service. Storage and room for expansion is very limited in most if not all the departments in the study. The consolidated reviews of the stations are listed below.

	Sq Feet	Year Built	Bays	# Equipment	Available Space	Training Room Capacity
Chesterfield	1512	1950's	2	4	No	20
Cummington	4806		4	12	No	50
Goshen		1989	3	4	No	40
Plainfield	10,000		6	10	No	80
Worthington		1990's	3	6	No	30

	Living Space	Bunk Rooms	Bathroom	Shower	Kitchen	Storage
Chesterfield	No	No	Yes	No	Small	No
Cummington	No	No	Yes	Yes	135 sq ft	Yes (600 sq ft)
Goshen	Yes	No	Yes	No	Yes	Yes (107 sq ft)
Plainfield	Yes	No	Yes	Yes	Yes	Yes (190 sq ft)
Worthington	No	No	Yes	Yes	Yes	Yes (1063 sq ft)

	B/U Power	Room for Expansion	Notes
Chesterfield	No	NO	Washer/Dryer, files, skid unit stored at Chiefs house due to lack of space
Cummington	Yes	Very Little	Conference Room for 10, Communications 56 Sq ft
Goshen	Yes	Limited	
Plainfield	Yes	Yes	Back up for Northampton Control
Worthington	Yes	Yes	Dispatch area of 90 sq ft/ Office for Police

Figure 31
Fire Station Stats

Figure 32
Typical Apparatus bay

Figure 33
Cummington Fire Front view

Figure 34
Fitness Area

Figure 35
Conference Room

Figure 36
Kitchen

X: GRANTS

There are several federal, state, 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.

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 to 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. It is included to illustrate the long odds of successfully obtaining a grant even with a strong application.

XI: DEPARTMENT NEEDS

As part of the teams review of the departments several questions were asked of the Chiefs in order for the team to have a better understanding of the local concerns, problems and needs and hopefully be able to address these in some fashion with recommendations for the future.

Although the questions and answers were given to each department it is important to look at each of the following question not only as individual departments but more importantly as the group of departments. The experience from the MRI team is that not any one department within the study group due to size would be able to have all the right equipment and or staffing to handle each of the specialized events listed.

It is clear from the results that there is a great need to increase training and equipment on each of the subjects. There is not a single line with an average that is at or above the middle of the road. This truly is something that a collaborative effort with all the towns involved can be greatly improved upon. Recommendations on how this can be accomplished are forthcoming in this document.

As part of the data collection a set of questions were asked of the Chiefs with combined results listed below.

Question: What are the top three operational concerns with your department?

- Assistant to do paperwork
- Recruiting new members
- Sufficient trained staff for 24/7 responses
- Station and an area for winter training
- Training

Question: What are the top three training needs for your department?

- Live Fire
- Officer training
- Hazardous Materials
- Tech Rescue
- Roof Operations
- More regular scheduled training
- Utilization of outside instructors

Question: What are your top three purchasing needs?

- Station
- Tanker
- Air Compressor for SCBA filling
- Engine
- Bucket truck
- SCBA
- Rescue truck
- Battery auto X tools
- New UTV
- Mini Pump
- Training Props

The project team clearly recognizes and appreciates all the comments from the Chiefs on what they know are the department needs in a variety of ways. Often these comments are seen first-hand and are backed up by the visits conducted by the MRI team and further backed up with the data received and reviewed. It is important that each of the items mentioned are part of any plan moving forward, and that careful consideration is made to assure that every department need will be in some manner addressed.

XII: MAPPING OUT THE FUTURE

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

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 the recommendations detailed below. These recommendations have been grouped into seven phases and a means to pace change, evaluate success and provide the necessary resources to support this project.

It is important to keep in mind that these phases are in a particular order, and are dependent on the success of the ones before it. The project team has tried to allow the communities to be able to implement the ideas that work best for the five participating communities and then to take incremental steps to move toward success. Ultimately, it is up to each 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 it is true that regionalizing will 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, stakeholders in each community town and each Fire Chief, 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 communities can individually decide if they wish to continue to participate in the process.

The MRI team sees this process moving carefully forward, with the hope that other towns will join in the process thus expanding the footprint of this regional initiative. 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 sharing.

It is important to note that not all departments will choose to participate, or in some cases are capable of partaking in all the steps identified in this document. It is essential to realize that it is not a good practice to put all your capabilities into one or two departments. The five participating communities should consider capitalizing on organization's strengths, resources and skills while at the same time developing a depth of service delivery.

There are some regional service options that have worked in other parts of the Country and the project team has identified these programs as alternatives. As the five participating communities consider the next steps, there are three options to choose from.

1) The first and most costly will be to create **one regional department**. This new department would consist of both fulltime and combination staffing. The political challenges with this model far outweigh any advantages and if selected would takes a significant period, to obtain authorization from all levels of local governments, before it could even get off the ground. The challenges of personnel, equipment, stations, response time, and the vast area requiring coverage will all need to be addressed.

2) The second approach would be to consider a **regional support for independent fire departments**. This regional approach would be for training and policy development as well as consideration for regional fire prevention services. This approach will do little if anything to improve on response times, response levels and more importantly to improve the actual services being delivered to stakeholders in each participating community.

3.) **Regional Hub and Spoke Concept (semi regional approach)** which maintains individual fire departments/companies on the local level and amplifies service delivery through regional training, coordination and a single unit quick reaction response force and availability of additional personnel on a recall basis. MRI recommends that this is the optimal approach for the study communities. This initiative is modular in that communities can choose the specific services that would be provided. Examples of services that could be provided are listed below:

- Regional training development and delivery
- Regional policy and Standard Operating Procedure/Guideline development
- Fire Prevention and inspection services
- Quick reaction response (single unit)
- Reserve force activation
- Mobile integrated health care services

Considering the options outlined above, MRI strongly advocates that the participating hill town communities move forward with the Regional hub and spoke approach, starting off with small pilot programs and then build a larger regional footprint based upon demonstrated success. **MRI believes that developing a hybrid regionalization model that supports existing fire departments is feasible if paced, and developed utilizing a phased approach.** The project team has developed a series of seven recommended phases with each phase building on the success of the previous phase. Where practical, the project team produced a reasonable timeline and a cost estimate for the individual and or combined components of a specific phase.

As with any other budget estimate, costs will need to be recalculated and adjusted on at least an annual basis. To further assist with looking at the individual community costs, the project team used a successful hybrid formula to indicate in dollars, as well as percentage of the cost of the program. This is the foundation to identifying an effective means of cost sharing between the participating communities.

To provide some options for cost sharing, at the conclusion of this section, MRI has harnessed the project team's experience to provide an overview of a few examples of regional cost sharing methodologies. MRI hopes that other area communities will want to become part of this ongoing collaboration and will help spread the overall costs. This economy of scale would serve to proportionally lower the cost per community.

The MRI project team has proposed a timeline to guide the implementation of objectives and provide sufficient time to complete each phase before moving forward to the next step. It is clearly understood that there are many factors that may not allow this timeline to be strictly followed. The timeline can be easily adjusted based on the pace that best serves the communities.

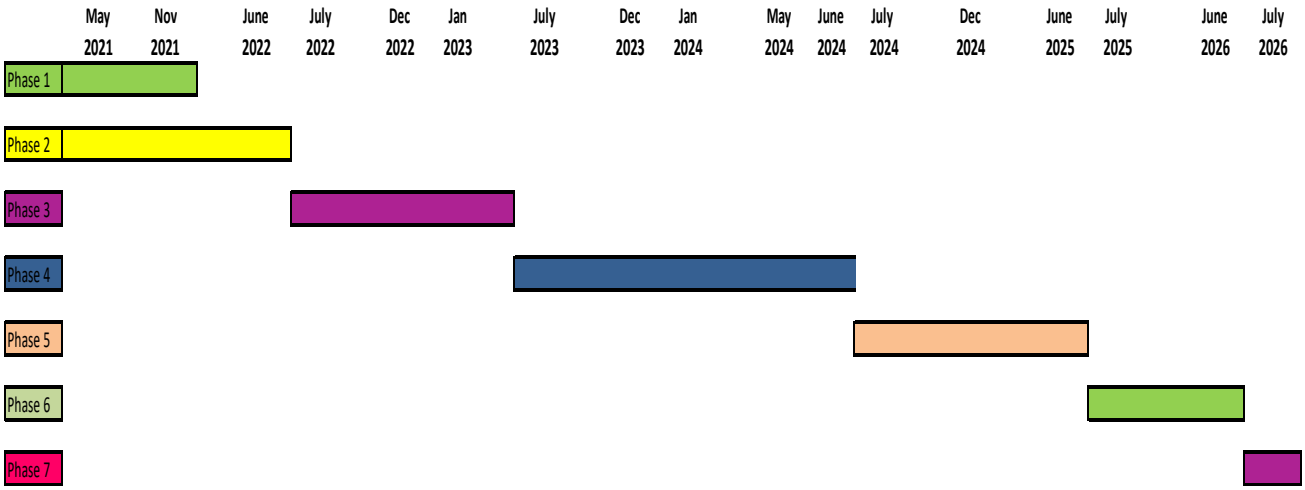

Figure 37
Projected Phased Timeline

NOTE: For each of the phases the project team has calculated a budget figure that will need to be reviewed and possibly adjusted on an annual basis. All staffing line items have been calculated an indirect cost that would reflect the cost to a community. A 21% indirect cost for part-time and a 40% indirect cost for full-time staff has been added.

PHASE 1 - May 2021 – November 2021

In this phase the MRI team recommends that the communities utilize the services of the Eric Weiss and the Pioneer Valley Planning Commission to review this document and to decide how and when they want to proceed. A key component to this phase is to involve the Fire Chiefs, Select Boards and the staff on the departments. For any improvements to be made at a regional level all the people that are impacted should have some input. Planning will be key to developing budgets and for any true success to happen. It is clearly understood that some departments need things to happen faster than others. In order for anything to be successful it must be clearly vetted by each community first.

Cost = Working with the Pioneer Valley each community will not have to appropriate money but will have to participate.

PHASE 2 - June 2021 to June 2022

Phase two is the foundation of the program. It is here that the creation of sharing of resources and building the necessary relationships will begin to foster. With this phase the collaboration of the departments is truly going to be the key to success. This phase has also been designed as a low-cost phase as budgets will already be in place for the operational period.

Objectives:

1) **SOP Development Team** - Create a team to develop Standard Operating Procedures that each community can follow. To start with, these SOP's cover common operational procedures, examples include wearing of PPE, use of SCBA, May Day procedures, and ventilation operations. To assist with the development of this action item, refer to the SOP index and example in Appendix E.

2) **Online Inventory -** Develop an online inventory of resources and assets that can be quickly referenced by Incident Commanders and Dispatchers. This list should be for items such as boats, ATVs, snowmobiles, Rad 57 Meters, multi gas meters, MCI equipment, water rescue equipment, ice rescue equipment, dive teams, air bags and other special operations resources.

3) **Water Supply Plan -** Each community will need to develop and communicate a water supply plan for specific response areas. This project can be a multi town project as the needs, equipment; water supply locations etc. are

similar. The dispatch centers should be consulted for formatting purposes and to enhance the consistency of this plan. The plan needs to be shared and when possible reviewed by all personnel that will be involved in response. Once developed each community should host a training session that involves the use and review of this plan.

4) **Enhanced Automatic Aid -** Automatic aid needs to be expanded as discussed earlier in this document. Each community must assure they have adequate staffing on scene or responding to a fire call to ensure the safety of both the responders and the life safety of the occupants. In areas where water supply is a concern, this additional element must be considered early as the time necessary to establish a static water supply can become an operational barrier. Based on the project team's experience MRI recommends that upon the report of a structure fire four communities be toned to respond.

5) **Cooperative Purchasing -** Equipment needs and purchasing. This is one area that can produce a significant cost savings. Most manufacturers and vendors will offer a price discount based on volume (economy of scale). Participation from all communities is the key to making this concept work. Each department should develop a list of typical annual purchases as well as long term or capital purchases. These should be combined and analyzed to combine purchase timing and specifications to obtain better volume-based pricing. It is not uncommon for a list of this type to be sent out to prospective suppliers to be bid on; thus, eliminating a delay in procurement when items are needed.

Part Time Fire Coordinator - Obtain the services of a part time fire coordinator. This person would keep records, documents and to facilitate meetings and develop regional opportunities that bring the departments together. This position can be an hourly or a salary-based position with an average of 12 hours per week. Some agencies have expanded the responsibility of this position to include significant incident response in support of the local Fire Chief. This operational possibility should only be considered after this position is administratively established.

		Hours	Rate	Weeks	Sub Total	Indirect Costs	Total
Coordinator		12	$ 15.00	50	$ 9,000.00	$ 1,890.00	$ 10,890.00
Office Supplies					$ 500.00	$ -	$ 500.00
Phone reimburse					$ 200.00	$ -	$ 200.00
						TOTAL	$ 11,590.00

	Phase 2		Budget	$11,590.00	Valuation	Population		
Town	Grand List	Square Miles	Population	10% fixed	40% total Budget	50% total budget	Total Amount	% of budget
Chesterfield	$ 165,075,500.00	31.2	1222	$ 231.80	$ 1,011.22	$ 1,430.03	$ 2,673.05	23%
Cummington	$ 136,764,000.00	23.1	872	$ 231.80	$ 837.79	$ 1,020.44	$ 2,090.04	18%
Goshen	$ 173,818,900.00	17.72	1054	$ 231.80	$ 1,064.79	$ 1,233.43	$ 2,530.01	22%
Plainfield	$ 98,187,300.00	21.27	648	$ 231.80	$ 601.48	$ 758.31	$ 1,591.59	14%
Worthington	$ 182,949,300.00	32.1	1156	$ 231.80	$ 1,120.72	$ 1,352.79	$ 2,705.31	23%

Figure 38
Phase Two Cost Sharing Matrix

PHASE 3 - July 2022 – June 2023

This phase has three components that should be considered. The first is the consideration of two or more towns merging fire departments. Due to the staffing levels in this phase the departments would still maintain their individual fire stations, fire apparatus, equipment and staffing. The intent of this merger would be to facilitate cross training of personnel on each departments equipment to increase response. These two stations would respond as a single unit to pre-established types of calls. The goal would be to have a greater number of responders going to any one of the stations (that may be closer to their response location and or closer to the incident) and provide for more of a proper rapid response.

This second component of this phase takes training to the next level with the creation of standardized training components as well as a wide range of training props that can and should be shared among all departments. The importance of unified training on Standard Operating Procedures is the foundation of effective regional response.

The third and final component would harness the talents of members from all departments and to begin to create a cadre of "Specialty Teams". These specialty teams will be a tremendous asset to the region as there is no one department that has the properly trained staff, proper equipment or fiscal resources to handle these types of incidents alone.

Objectives:

1. **Continue the services of a part time coordinator**. This person would keep records, documents and to facilitate meetings all to develop a regional opportunity to bring the departments together. It is possible that this person

be given some administrative duties for any department that would like it. This position can be an hourly or a salary-based position with an average of 12 hours per week.

2. **Pilot Program – Two or three Departments Share All Personnel** - There has been a great deal of success with departments merging with each other for operational purposes while still maintaining their name and to some degree their own autonomy. In the study area, there are some smaller departments that would benefit by conducting a pilot program of merging. For example, if two departments merged, they would increase available staffing, decrease response time to emergency incidents, add additional response resources to the emergency. These two departments would conduct training together, while still maintaining their own equipment and stations. This type of pilot program could be developed for any towns that feel it may work and it may be with more than just two. These pilot programs should be pursued as a one-year trial with a minimum of quarterly review and discussion that includes input from all the stakeholders. There two examples in the Lakes Region in New Hampshire that this pilot could be modeled after. The Towns of Campton and Thornton have successful and efficiently merged, and the Towns of Tilton and Northfield have merged and can offer some lessons learned.

3. **Emphasize and Expand Firefighter I Training** - is a critical success factor. Although the training may be long it is imperative that all the fire staff have this basic training to keep themselves safe and develop operational capability. Participating departments should join forces and provide the structure and resources necessary to deliver these programs.

4. **Conduct Frequent Shared Training Sessions** – Each participating fire department trainings on similar subjects on a monthly basis. These organizations should join together and offered shared training evolutions on a regular basis. Combining two compartments (or more) at a single training session often adds a new positive dynamic to the training. Training does not need to be mundane and with very little effort it could become a fun active event that people will look forward to.

   Training can be done at different stations on different scheduled nights. If the subject matter and the instructors facilitating the training are willing and available, the program could be offered more than once in different locations and all should be encouraged to attend one of the sessions. This would not

only foster inter agency relationships, but it would provide firefighters with flexibility.

The only drawback to this type of training is that of local preference. It must be stated right up front that in most of the training conducted there may be and often there is more than one way of completing the task. Sometimes it is better to have a change of scenery and a look at a different way of doing something while being respectful of the different way at the same time. More importantly it is ok for people to admit that they do not know something, as long as they are willing to learn.

5. **Develop Shared Training Props -** The creation of realistic training props is a common need of departments. For the most part props do not need to cost thousands of dollars. Plans for the development of these props can be found online. If possible, training props should be shared and constructed to be transported to various locations. If props are made to be available to many departments generally, local stores are more willing to donate supplies to build them (for a little credit). Firefighters can be very creative if given the opportunity to build and operate good safe training props leaving the expensive labor cost out of the equation.

Figure 39
Window Prop

Figure 40
Restrictive Prop

Figure 41
Roof Prop

6. **Develop Officer Training for Current and Future Officers -** There is a lot more to be an officer than just the title. Officers need to be proficient at all things fire service related. This does not happen overnight and is very dangerous if conducted by a populous vote and not that of knowledge skills and abilities. For the fire service to succeed mentoring is a necessity. There is a lot of talent in the senior firefighters, and there is need to develop them into mentors in order to pass along the knowledge base they have.

7. **Apply for A Collaborative Grant to Help Fund Equipment Needs -** It has been shown that a multi town grant application with support letters have seen grant awards. Because a grant will cover more than one community and serve a larger group of the local population as well as a larger group of firefighters and fire departments all with a defined need, would go a long way to demonstrating the need and commitment.

							Total
Training Props				$ 5,000.00			$ 5,000.00
Equipment				$15,000.00			$ 15,000.00
						TOTAL	$ 20,000.00

	Phase 3		Budget	$ 20,000.00	Valuation	Population		
Town	Grand List	Square Miles	Population	10% fixed	40% total Budget	50% total budget	Total Amount	% of budget
Chesterfield	$ 165,075,500.00	31.2	1222	$ 400.00	$ 1,745.00	$ 2,467.69	$ 4,612.69	23%
Cummington	$ 136,764,000.00	23.1	872	$ 400.00	$ 1,445.72	$ 1,760.90	$ 3,606.62	18%
Goshen	$ 173,818,900.00	17.72	1054	$ 400.00	$ 1,837.42	$ 2,128.43	$ 4,365.85	22%
Plainfield	$ 98,187,300.00	21.27	648	$ 400.00	$ 1,037.93	$ 1,308.56	$ 2,746.49	14%
Worthington	$ 182,949,300.00	32.1	1156	$ 400.00	$ 1,933.94	$ 2,334.41	$ 4,668.35	23%

Figure 42
Phase Three Cost Sharing Matrix

PHASE 4 - July 2023 – June 2024

In this phase, daytime staffing will be added for a minimum of a two-year pilot program. MRI recommends an initial staffing pattern of eight-hour shifts Monday thru Friday with a staff of two people being assigned to an existing piece of Apparatus from a participating community. One of the two positions should be filled with a fulltime person and the second would be from a pool of part time or per diem staffing. This crew would augment the current response policies of participating departments. **The priority for filling the per diem staffing would be from firefighters from within participating departments.** The pilot program should be under constant review and at a minimum on a quarterly basis a SWOT analysis should be undertaken to further define performance and enhance future opportunities.

Objectives:

1. **Expand Fire Coordinators position** - The logistical work as well as the documentation of the Coordinator should continue to build, and the position in this phase will have the hours and rate increased. This person could serve as the fulltime component of the rapid response force listed below.

2. **Create a Regional Rapid Response Force -** With the projected continued increase in response times during the weekday 8-4 hours, the group should look to implement a program that will assist the area with staffing during peak hours. It is recommended that the program have one fulltime fire/first response EMS person working with a per-diem person, that will be scheduled by the coordinator from an active pool of staff. There will need to be many questions answered before this program starts, some of these questions are listed below:

a. What will the actual work hours be (maximum before benefits for per diem staff)?
b. How many people will be scheduled to work?
c. What will the pay rate pay?
d. What vehicle(s) will they use?
e. What incidents will they respond to?
f. What station will they work out of?
g. How will they be paid?
h. What community will assume them as employees?
i. What will the hiring process be and who will handle this?
j. What will the uniforms and PPE be?
k. Where do they fit in the organizational chart and who do they report to?
l. What other tasks can they do between incident responses?
    - ❖ Truck and equipment check
    - ❖ Light maintenance
    - ❖ Record keeping
    - ❖ Inspections
    - ❖ Public education
    - ❖ Training development
    - ❖ Preplanning
    - ❖ Target hazard analysis

	Phase 4		Budget	$154,384.80	Valuation	Population		
Town	Grand List	Square Miles	Population	10% fixed	40% total Budget	50% total budget	Total Amount	% of budget
Chesterfield	$ 165,075,500.00	31.2	1222	$ 3,087.70	$ 13,470.04	$ 19,048.69	$ 35,606.43	23%
Cummington	$ 136,764,000.00	23.1	872	$ 3,087.70	$ 11,159.84	$ 13,592.85	$ 27,840.39	18%
Goshen	$ 173,818,900.00	17.72	1054	$ 3,087.70	$ 14,183.50	$ 16,429.88	$ 33,701.08	22%
Plainfield	$ 98,187,300.00	21.27	648	$ 3,087.70	$ 8,012.01	$ 10,101.11	$ 21,200.82	14%
Worthington	$ 182,949,300.00	32.1	1156	$ 3,087.70	$ 14,928.53	$ 18,019.87	$ 36,036.10	23%

Note: The budget figure for this phase includes the costs as outlined below. It should be noted that these are figures that are average for the time this report was created and may need to be adjusted according to standards that are normal for the time frame.

		Hours	Rate	Weeks	Sub Total	Indirect Costs	Total
Coordinator		40	$ 15.00	50	$ 30,000.00	$ 6,300.00	$ 36,300.00
FT FF/EMT		40	$ 18.00	52	$ 37,440.00	$ 14,976.00	$ 52,416.00
PT FF/EMT		40	$ 16.00	52	$ 33,280.00	$ 6,988.80	$ 40,268.80
Props							$ 6,200.00
Tech Rescue							$ 8,000.00
Uniforms -PPE							$ 10,000.00
Office Supplies							$ 1,200.00
						TOTAL	**$154,384.80**

Figure 43
Phase Four Cost Sharing Matrix

PHASE 5 - July 2024 – July 2025

With the build-out of the program to date, MRI recommends that an official structure be established to guide future action. This group can be made up as an Association, or a Board of Directors, or other similar type of organizational structure. The importance of guidance and professional leadership will be key to the success of the next phases. Whatever the name or structure that will lead into the future, they will need to do so as transparent as possible while at the same time assuring that each community and their fire department are players in the decisions that affect them. The following objectives have been stated as a basis to begin to layout this form or organization. To further assist this, MRI has included in the appendix of this document a working example of By-laws for a regional service area. Without question legal advice will need to be consulted to assure that all Federal, State and local laws are being followed.

Objectives:

1. **Enter an Intermunicipal Fire Protection Agreement -** Following the guidance of a legal counsel the group should develop and execute an intermunicipal fire protection agreement for shared services. This agreement should be reviewed by Counsel to ensure that it complies with applicable Massachusetts law.

2. **Create a Fire Association -** Following the guidance of a legal professional the group should create a "Association" that follows Massachusetts and Federal Laws. Simultaneously the group should create a Board of Directors and develop operational By-Laws for all to follow.

3. **Create a Board of Directors -** Create a Board that will be charged with working with all stakeholders in the creation of the "District".

4. **Identify Composition of the Board of Directors -** The Board will consist of a single member of each town's fire department and a single member from town government. Each town should have equal representation on the Board so it is recommended that there be a two-person maximum.

5. **Fill Key Positions -** This group will come together and create a mission statement and vote on filling the position of Chairman, Vice Chairman and secretary- treasurer (these may be separate positions.)

6. **Create Appropriate Bylaws -** The newly created board will create By-Laws that will govern the group. The first set of By-Laws should be voted on by the Board. The procedure for future additions, deletions, and edits will be part of the By-Laws and should be voted on by the full body.

7. **Evaluate Bylaws -** The By-laws should clearly answer the following questions:
    - Mission and purpose of the group
    - Who belongs to the association (towns), how can a town be included?
    - How is each town represented at the board level?
    - How do other department members have a voice?
    - Will there be a fee structure?
    - Development of a job description for each position on the board
    - How and how often and each position within the board changed
        - For continuity purposes, it is suggested that the Chairman and Vice Chairman are elected with a one-to-two-year separation.

	Phase 5		Budget	$157,754.40	Valuation	Population		
Town	Grand List	Square Miles	Population	10% fixed	40% total Budget	50% total budget	Total Amount	% of budget
Chesterfield	$ 165,075,500.00	31.2	1222	$ 3,155.09	$ 13,764.04	$ 19,464.45	$ 36,383.57	23%
Cummington	$ 136,764,000.00	23.1	872	$ 3,155.09	$ 11,403.42	$ 13,889.52	$ 28,448.03	18%
Goshen	$ 173,818,900.00	17.72	1054	$ 3,155.09	$ 14,493.06	$ 16,788.48	$ 34,436.64	22%
Plainfield	$ 98,187,300.00	21.27	648	$ 3,155.09	$ 8,186.88	$ 10,321.57	$ 21,663.54	14%
Worthington	$ 182,949,300.00	32.1	1156	$ 3,155.09	$ 15,254.36	$ 18,413.17	$ 36,822.62	23%

		Hours	Rate	Weeks	Sub Total	Indirect costs	
Coordinator		40	$ 16.00	52	$ 33,280.00	$ 6,988.80	$ 40,268.80
FT FF/EMT		40	$ 19.00	50	$ 38,000.00	$ 15,200.00	$ 53,200.00
PT FF/EMT		40	$ 17.00	52	$ 35,360.00	$ 7,425.60	$ 42,785.60
Props							$ 500.00
Tech Rescue							$ 5,000.00
Uniforms -PPE							$ 6,500.00
Office Supplies							$ 1,500.00
Legal Fees							$ 8,000.00
						TOTAL	**$157,754.40**

Figure 44
Phase Five Cost Sharing Matrix

PHASE 6 July 2025

Building on the program to assist in moving departments to a more consistent training program, as well as to increase the available response hours of the response team by increase of shift hours from eight to sixteen will be optimal. This would provide a staffing level of a coordinator and two personnel during the day and two personnel for evening coverage.

Objectives:

1. **Increase Rapid Response Force (RRF) Staffing to Two FTEs** - Increase the fulltime response staffing to 2. One will be scheduled to be on duty at a time working with a per-diem staff member. A 40-hour week will be scheduled.

2. **Increase Per Diem Shifts and Staffing Level to Four Personnel.** Increase the number of available shifts for per-diems to work.

3. **Continue fulltime Fire Coordinator Position**- Increase the hours of the coordinator from part time to full time and to take a more active role in operations (training and meetings) and to assist with developing additional regional opportunities to bring the departments together.

4. **Continue Training Program Development** - Continue to fund Training programs. RRF should deliver all regional training programs.

5. **Continue Technical Rescue Program Development -** Continue to fund Tech Rescue program

	Phase 6		Budget	$314,878.08	Valuation	Population		
Town	Grand List	Square Miles	Population	10% fixed	40% total Budget	50% total budget	Total Amount	% of budget
Chesterfield	$ 165,075,500.00	31.2	1222	$ 6,297.56	$ 27,473.04	$ 38,851.07	$ 72,621.68	23%
Cummington	$ 136,764,000.00	23.1	872	$ 6,297.56	$ 22,761.24	$ 27,723.51	$ 56,782.32	18%
Goshen	$ 173,818,900.00	17.72	1054	$ 6,297.56	$ 28,928.18	$ 33,509.84	$ 68,735.59	22%
Plainfield	$ 98,187,300.00	21.27	648	$ 6,297.56	$ 16,341.03	$ 20,601.88	$ 43,240.47	14%
Worthington	$ 182,949,300.00	32.1	1156	$ 6,297.56	$ 30,447.73	$ 36,752.73	$ 73,498.02	23%

		Hours	Rate	Weeks	Sub Total	Indriect costs	
Coordinator		40	$ 17.00	52	$ 35,360.00	$ 7,425.60	$ 42,785.60
FT FF/EMT - Sr.		48	$ 19.00	52	$ 47,424.00	$ 18,969.60	$ 66,393.60
FT FF/EMT		48	$ 18.00	52	$ 44,928.00	$ 17,971.20	$ 62,899.20
PT FF/EMT		112	$ 17.00	52	$ 99,008.00	$ 20,791.68	$119,799.68
Overtime					$ 5,000.00		$ 5,000.00
Props							$ 1,500.00
Tech Rescue							$ 5,000.00
Uniforms -PPE							$ 10,000.00
Office Supplies							$ 1,500.00
						TOTAL	$ 314,878.08

Figure 46
Phase Six Cost Sharing Matrix

PHASE 7 - July 2026

In this phase MRI is proposing that the Coordinator works Monday – Friday, days (40 hours) and the RRF program move to a 24-hour seven day a week model utilizing three work groups each and full-time staff member and a per-diem member working each shift (24/7).

	Phase 7		Budget	$453,645.52	Valuation	Population		
Town	Grand List	Square Miles	Population	10% fixed	40% total Budget	50% total budget	Total Amount	% of budget
Chesterfield	$ 165,075,500.00	31.2	1222	$ 9,072.91	$ 39,580.47	$ 55,972.82	$ 104,626.21	23%
Cummington	$ 136,764,000.00	23.1	872	$ 9,072.91	$ 32,792.17	$ 39,941.33	$ 81,806.41	18%
Goshen	$ 173,818,900.00	17.72	1054	$ 9,072.91	$ 41,676.90	$ 48,277.70	$ 99,027.51	22%
Plainfield	$ 98,187,300.00	21.27	648	$ 9,072.91	$ 23,542.56	$ 29,681.17	$ 62,296.64	14%
Worthington	$ 182,949,300.00	32.1	1156	$ 9,072.91	$ 43,866.11	$ 52,949.74	$ 105,888.76	23%

		Hours	Rate	Weeks	Sub Total	Benefits	
Coordinator		40	$ 17.00	52	$ 35,360.00	$ 14,144.00	$ 49,504.00
FT FF/EMT - Sr.		48	$ 19.00	52	$ 47,424.00	$ 18,969.60	$ 66,393.60
FT FF/EMT		48	$ 18.00	52	$ 44,928.00	$ 17,971.20	$ 62,899.20
FT FF/EMT		48	$ 18.00	52	$ 44,928.00	$ 17,971.20	$ 62,899.20
PT FF/EMT		168	$ 17.00	52	$148,512.00	$ 31,187.52	$179,699.52
Overtime					$ 10,000.00	$ 4,000.00	$ 14,000.00
Props							$ 1,500.00
Tech Rescue							$ 5,000.00
Uniforms -PPE							$ 10,000.00
Office Supplies							$ 1,750.00
						TOTAL	$ 453,645.52

Figure 47
Phase Seven Cost Sharing Matrix

The total budget amount for all Phases:

Phase	Amount	Start Time
1	$ -	May 2021
2	$ 7,900.00	May 2021
3	$ 20,000.00	July 2022
4	$ 176,216.00	July 2023
5	$ 183,682.00	July 2024
6	$ 357,365.76	July 2025
7	$ 498,499.60	July 2026
Total	$ 1,243,663.36	

Figure 48
Total Budget Calculation

Cost Sharing Options:

If the communities all agree to move forward with a program that is a combination of any of the above recommendations it will require that there be some type of funding. The simplest way of coming up with the community cost would be to divide the budget figure equally by the number of towns.

There are many other ways to calculate a fee to divide up a budget into a reasonable cost per community. There are also many variables that could be considered when doing the calculations for this purpose. Some are more complex such as combining population and number of structures and others like call volume, dollar loss, are an annual moving target that is hard to use. For this project, the project team has calculated a fee schedule four different ways all using the budget figure of $100,000.00 and uses all other data from 2019. The MRI team does not favor one method over another and is using the types of calculations below to give the communities examples of other ways the costs can be looked at. Obviously if another community that is not part of the study would like to be on board with whatever the collective group decides, then the overall percentage and costs for each community would go down.

The far-right column in each of the first three charts indicates the percentage of the total fire department budget each community would pay.

Population Only			
Chesterfield	1222	$ 24,676.90	25%
Cummington	872	$ 17,609.05	18%
Goshen	1054	$ 21,284.33	21%
Plainfield	648	$ 13,085.62	13%
Worthington	1156	$ 23,344.10	23%
Total	**4952**	**$ 100,000.00**	**100%**

Figure 49
Cost by Population

Residential Strutures			
Chesterfield	575	$ 21,391.37	21%
Cummington	505	$ 18,787.20	19%
Goshen	614	$ 22,842.26	23%
Plainfield	340	$ 12,648.81	13%
Worthington	654	$ 24,330.36	24%
Total	**2688**	**$ 100,000.00**	**100%**

Figure 50
Cost by Residential Structures
Data from Citi-Data.com

Call Volume (2020)			
Chesterfield	103	$ 19,807.69	20%
Cummington	81	$ 15,576.92	16%
Goshen	105	$ 20,192.31	20%
Plainfield	88	$ 16,923.08	17%
Worthington	143	$ 27,500.00	28%
Total	**520**	**$ 100,000.00**	**100%**

Figure 51
Cost by Incident Volume

Hybrid								
				Fixed	Valuation	Population		
Town	Grand List	Square Miles	Population	10% fixed	40% total Budget	50% total budget	Total Amount	% of budget
Chesterfield	$ 165,075,500.00	31.2	1222	$ 2,000.00	$ 8,724.98	$ 12,338.45	$ 23,063.43	23%
Cummington	$ 136,764,000.00	23.1	872	$ 2,000.00	$ 7,228.59	$ 8,804.52	$ 18,033.11	18%
Goshen	$ 173,818,900.00	17.72	1054	$ 2,000.00	$ 9,187.11	$ 10,642.16	$ 21,829.27	22%
Plainfield	$ 98,187,300.00	21.27	648	$ 2,000.00	$ 5,189.64	$ 6,542.81	$ 13,732.45	14%
Worthington	$ 182,949,300.00	32.1	1156	$ 2,000.00	$ 9,669.69	$ 11,672.05	$ 23,341.74	23%
Total	**756,795,000.00**	**125.39**	**4952**	$ 10,000.00	$ 40,000.00	$ 50,000.00	$ 100,000.00	100%

Figure 52
Cost by Hybrid Formula

All of the above charts are easy to follow except for the last one referred to as a Hybrid that requires a more detailed explanation. This formula has been used in a Regionalized area for many years and works well.

The Hybrid formula for Community Assessment is arrived at using a method that takes into account fixed costs (10% of the total budget), property valuations (40%) and population (50%) of each community.

- **Fixed Costs is 10%** of the total budget and is divided by the number of communities in the cost share program.
- **Valuation Factor is 40%** of the assessment value (Grand List) on a community's total property value. A formula has been arrived at, that takes these different figures into account and ensures an equitable assessment to each town based on the fact that each one is different.
- **Population Factor is 50%** of the assessment value based on a community's population. The population factor is arrived at by dividing 50% of the total budget by the total population of all member communities.

The Chart below is a side-by-side comparison of the results of the different formulas used to calculate the cost sharing of the $100,000.00 budget for each community. It is MRI's opinion that there is no one single way that is best, and that if there is an appropriate methodology to sharing the costs; it is up to the communities to agree on how the sharing should be done. It should be noted that the formula for cost sharing should be included in the written agreement that is signed each year.

Town	Population	Residential Structures	Call Volume	Hybrid
Chesterfield	25%	21%	20%	23%
Cummington	18%	19%	16%	18%
Goshen	21%	23%	20%	22%
Plainfield	13%	13%	17%	14%
Worthington	23%	24%	28%	23%

Figure 52
Comparison of Formula type

XIII: CONCLUSIONS AND IMPLEMENTING CHANGE

Based upon the analysis of the current day operations of the departments within the study area, the MRI project team has found five functional fire departments that are operating well but struggling to provide the communities they serve with the expected level of service. The departments are well respected in the area. During their time speaking with people for this project, the project team heard how much the departments do for the Community's 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 will be very noticeable in the quality and quantity of work performed, but also with the spirit and passion that the work of the organization is accomplished.

All the departments lack any type of long-range or strategic plan that charts its projected path to the future. To the best of the project team's knowledge, the departments do not have a mission statement. A mission statement, if carefully developed and truly accurate, should provide the very foundation for the fire department and why it exists. The mission statement should be providing that broad direction that everything else that the fire department does is going to be built upon. The fire departments also do not currently have any formal vision statement, nor has it developed any core values that will help to drive the organization forward.

Looking ahead, the fire departments possess 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. With volunteerism declining and the ranks of on-call and volunteer emergency services personnel dwindling nationwide, all the departments are facing the dual challenges of attempting to balance a credible emergency response system, staffed with on-call or volunteer members, while simultaneously facing a slowly increasing number of requests for service, both emergency and non-emergency.

The culture of the fire service is very resistant to change. This is not something new and certainly not just with the five communities that participated in this study. Whatever changes are made to the department they need to be implemented at a reasonable pace and most importantly communicated to all members ahead of time.

As part of the process in creating this document the Strategic plan dated March 3, 2021 for the Town of Ashfield was reviewed. The document is well done and outlines many of the same concerns and needs the MRI team has found and outlined in this report. The MRI review team does not feel that the recommendations in the Ashfield report line up with the findings, wishes and desires of the communities as part of this study and does not recommend using or comparing that report in considering the future of the study communities.

In conclusion, the missions performed by the fire 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 fire departments, 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. It is the opinion of the assessment team that having a call department is appropriate for the number of incidents and type of calls they respond to. 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.

The challenges brought on by the unprecedented responses to the COVID-19 made this project and research associated with it very much different than what MRI would typically do. The lack of in person community-based meetings and ability to physically see and document more in person is something taken for granted. The tremendous cooperation from all those the MRI Team spoke with, especially; the Chiefs and community leaders has allowed them to do a fair assessment and be able to provide the information and recommendations included in this document.

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

XIV: CONSOLIDATED RECCOMENDATIONS

III-1: ***Each Town or a group of towns should develop a five-year plan to enhance training documentation and water supply inspection, and flow testing to move toward reclassifying the ISO ratings.***

III-2: ***A group of towns should develop a ten-year plan to enhance training, documentation, water supply inspection, flow testing, and emergency telecommunications operations to move toward reclassifying the departments to an even lower ISO rating.***

III-3: ***Each department 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 utilizes 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-1: ***Each town must look at the response times and work to improve these times in an effort to save lives and prevent property damage.***

IV-2: ***Each Town should be asked to select an appropriate service level, and if that requires the rapid response of a single unit, the town should appropriate sufficient funding to put towards a collaborative two-person day schedule Monday thru Friday. (Greater details on this effort are outlined in Chapter XIII – Mapping Out the Future.)***

IV-3: ***Every effort should be made to preserve the primary responder role of volunteer and on-call personnel within each Fire Department.***

IV-4: ***Each fire department should continue to exist and be funded on the local level. Pursuing regional augmentation strategy should not replace local response.***

V-1: ***Fire Departments should require its personnel, and strongly encourage its call officers, to obtain a certain level of fire officer certification as a job requirement, such as Fire Officer I for lieutenant, Fire Officer III for deputy fire chief, and Fire Officer Level IV for fire chief.***

V-2: ***Fire Departments 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.***

V-3: ***As part of the succession planning process, the Fire Chiefs 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.***

V-4: ***All Departments should continue to foster and support any member to be trained and certified to the Firefighter 1 and preferably the Firefighter 2 level.***

V-5: ***Working with the 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 by 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.***

V-6: ***In consultation and cooperation with its neighboring departments, all participating Fire Departments should enter into formal automatic aid agreements that specifies the number and types of resources that should be dispatched immediately to various types of reported emergencies, such as structure fires. These recommendations should be based upon a community-wide risk management process and/or pre-fire/incident plan.***

V-7: ***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 SOC with the goal of attempting to have at least 16 personnel on the scene of any reported structure fire within 14 minutes.***

V-8: ***Fire Departments 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 1710/1720 and Commission on the Accreditation of Ambulance Services (CAAS) recommendations.***

V-9: ***Fire Departments 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. With the current staffing model in place and no other calls in progress, this is something that can be met, if the staff in the station is properly qualified with the appropriate level of training and qualifications. A closer look at simultaneous calls and calls that run back-to-back (ambulance is transporting, and a second call comes in) should be looked at. At the time of this evaluation the program of having per diem staff in the station was still in its infancy, and it is not known if the station was sufficiently covered while this crew was committed to the first call.***

V-10: Fire Departments should work with the communities listed on each of the "run cards" to assure the number and qualification of staffing, that will be sent on the assignments. In order to be able to meet a safe level of on scene staffing, it will be important to know not only what the department will be receiving and how long it will take, but also to outline what each town will be sending, when these communities request resources from them.

V-11: Review the department roster and look to the members with low participation and find out what can be done to increase their involvement. Work with these members to increase their participation within a pre-determined time frame.

V-12: Fire Department should set a minimum criterion for 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.

V-13: The town should consider encouraging members of Police Departments that live in the area to become on-call firefighters.

V-14: Fire Departments should work with their Road Agents to ensure that on-call firefighters are given preference when DPW personnel are hired. If on-call members are not interested and or qualified the town should hire personnel that are willing to become an on-call firefighter as a condition of employment.

V-15: ***Unless critical DPW operations are underway, DPW personnel that are on-call firefighters should respond to emergencies to supplement staffing and assist in meeting the OSHA "Two-in/Two-Out" Standard.***

V-16: Towns either individually or jointly should apply for a federal SAFER grant for on-call recruitment and retention. This grant should be utilized to develop a comprehensive marketing program to attract new members, and provide incentives for the retention of those personnel, such as tuition reimbursement, health care benefits, tax abatements, etc. This competitive grant requires a lot of time and dedication to write and to be successful to obtain.

V-17: All towns should recognize that the only way to develop a more active and

properly staffed fire department in the absence of hiring a larger force of career firefighters is to determine what would motivate potential responders and craft a program of investment that meets these extrinsic and intrinsic needs.

V-18: ***All towns should jointly convene a focus group to determine what concepts and recruitment and retention strategies are feasible and most attractive to potential candidates.***

V-19: ***Fire Departments should set a realistic goal of recruiting at least 5 to 10 new members over the next three years, and simultaneously set a goal of increasing the overall call member force to around 25 to 30 active personnel. These personnel should be required to be properly trained and certified to the Firefighter I/II level, and preferably to the minimum of EMR level.***

V-20: All Departments should make it a priority to develop an active on-call recruitment program led by a Chief Officer. At a minimum, this program should consist of:

1. ***Developing a recruitment brochure and mailing it to all residents***
2. ***Holding periodic open houses at the fire station***
3. ***Performing public outreach through the local media***
4. ***Contacting community and service groups***
5. ***Developing an eye-catching banner on the town's and fire department's web sites***
6. ***Placing signs recruiting call/volunteer personnel at the main entrances to town***
7. ***Placing a temporary sign board at various locations within the community***
8. ***Placing signs for call/recruiting volunteers in local businesses, particularly high-volume locations***
9. ***Implementing a fire explorer program***
10. ***Radio and media advertisements***
11. ***Although time consuming, consideration should also be given to conducting a door-to-door recruitment campaign of every residence in the town.***
12. ***The proposed SAFER Grant could be utilized to cover many of the above expenses.***

V-21: The Fire Chief should develop a 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.

V-22: The Fire Chief or his designee should create a quarterly "newsletter" that will highlight

the positive things that the department has done the prior months. This newsletter should be posted on the town's web page, shared in social media, given to the town manager who in turn should share with the Board of Selectmen. It is important that the public is made aware of all of the great people and all the good things the department does.

V-23: The towns and the fire departments should attempt to enter partnerships with local businesses to allow their personnel to respond, when needed, to emergency incidents during working hours, without any financial penalty.

V-24: The towns should explore the feasibility of utilizing, and in fact encouraging, town employees to perform "dual roles" by serving not only in their full-time positions, but also serving the town as call firefighters and/or rescue personnel. Caution is needed here though as there are provisions of the Fair Labor Standards Act that would be applicable, particularly if these personnel respond to incidents during times when they are not working.

V-25: Fire Departments should develop a series of team-based activities that build involvement in the organization.

V-26: 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.

V-27: Fire Department 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.

V-28: Visit the National Volunteer Fire Council web site for cooperative programs they have posted. One of the newer programs is looking to attract returning or former military personnel into the fire service.

IX-1: ***Each Department should identify and prioritize its most critical equipment, training and/or operational needs, and apply annually to the Assistance to Firefighters Grant (AFG) program. This should include making applications for apparatus capital replacement projects that will otherwise be funded through the town's capital budget and at town meeting.***

IX-2: ***Towns should actively continue to search for other grant opportunities. Grants for fire protection, fire safety, fire prevention, domestic and emergency preparedness, and homeland security may be available from federal, state, corporate, and foundation sources.***

IX-3: ***Towns should actively seek out businesses that may be interested in establishing public/private partnerships that could provide, or assist with, funding for various programs, projects, or initiatives.***

IX-4: ***Towns should expand its formal replacement plan for equipment. The regular replacement of large cost items such as hose, ladders, PPE, portable radios, AEDs, and even SCBA on an incremental basis will avoid major one-time increases in the annual operating budget where such purchases should be funded. For instance, the hose and ladders on one vehicle can be replaced in one fiscal year, another the following year, etc. The life expectancy of these items can be estimated based on usage and manufacturer's recommendations. Items such as hose and ladders can remain in service indefinitely, provided they continue to successfully pass their annual tests.***

XVII: APPENDICES

The MRI team has provided the following documents as a separate attachment to this report. These documents have been included based on relevance to the project and to provide the five participating communities with additional information. It is MRI's hope the appendices will be utilized as a reference source that is a source of for the implementation of recommendations.

- **Appendix A - *A Call for Action: Preserving and Improving the Future of the Volunteer Fire Service"***

- **Appendix B - "*Lighting the Path of Evolution: Leading the Transition in Volunteer and Combination Fire Departments"***

- **Appendix C – Example SOP Index**

- **Appendix D – Example Standard Operating Procedure (SOP)**

- **Appendix E – Example Organizational Bylaws**

XVII: TEAM PROFILES

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.

John Ingram is a professional and dedicated fire and emergency service manager who recently became the Fire Chief in the Town of Belchertown Massachusetts. As the Fire Chief John leads a combination department that includes a 16-person career staff. John had a 33-year career with the Amherst Fire Department rising through the ranks to the position of Fire Captain. John had the great privilege to be the Leverett Massachusetts Fire Chief for six years. During his time there, he brought the Leverett Fire Department up to today's standards and into the 21st century. John is an Accreditation Fire Chief in Massachusetts and holds a Masters degree in Fire

Administration from Anna Maria College. John is also a certified Emergency Medical Technician both at the National Level and within the Commonwealth of Massachusetts.

John has also served as the vice president to the Northwestern D.A. NoFires program, the program concentrates on juvenile fire setting and uses education to learn the dangers of fire. He served on many other operational and safety related committees in both Leverett and Amherst. John is an active member in several associations including The Fire Chiefs Association of Massachusetts, Western Massachusetts Fire Chiefs Association and the Hampshire County Fire Defense Association. John is also a member of the Fire Prevention Association of Massachusetts, and New England Association of Fire Chiefs.

Ellen Murray most recently served as the Fire Chief of the Naugatuck CT Fire Department where she retired in June 2020. She held the position of Chief for nearly 5 years. Prior to Chief, she was the Deputy Chief of Naugatuck FD for over 4 years.

Ellen started her nearly 38-year career when she was appointed to the Stratford CT Fire Department in September of 1982; giving her the distinction of being the first female career firefighter in the State of CT. Ellen spent most of her career in Engine Company and Rescue Company operations, is a licensed paramedic and a certified Open Water SCUBA Diver. She rose through the ranks and retired as Assistant Fire Chief in June 2010. While at the Stratford Fire Department Ellen's duties included being a Line Firefighter, Company Officer on an Engine Company, Shift Commander, and Department EMS Chief as well as supervising the Joint Public Safety Dispatch Center.

Ellen is a graduate of Southern Connecticut State College where she obtained a Bachelor of Science degree in Physical Education. Her Fire Service education includes CT certified Fire Officer, CT certified Fire Instructor, numerous courses of study through both the CT State Fire Academy and the National Fire Academy as well as numerous FEMA certifications. Ellen also has numerous credits toward her Master's Degree in Emergency Management.

She is a member of the Waterbury Fire Chiefs Association, and the International Association of Fire Chefs. She was a member of the inaugural meeting of the nationwide Women Fire Chief Council. Ellen is on the Board of Directors for the CT Firefighters Charitable Foundation and was recently an honoree at the CT Woman's Hall of Fame.