

**FINAL REPORT**  
**BERLIN, MA**  
**FIRE DEPARTMENT**  
**AND**  
**RESCUE SQUAD**  
**ORGANIZATIONAL ANALYSIS**  
**MAY 2015**

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# ***FINAL REPORT***



Municipal  
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## **FINAL REPORT**

### **BERLIN, MA**

### **FIRE DEPARTMENT AND RESCUE SQUAD**

## **ORGANIZATIONAL ANALYSIS**

**MAY 2015**

### **CHAPTER 1**

### **OVERVIEW, SCOPE OF WORK, AND METHODOLOGY**

#### **OVERVIEW**

The Town of Berlin is located in Worcester County, in central Massachusetts. It is located approximately 30 miles west of Boston on the western edge of what is considered to be the Metro West area. Berlin is bordered by the Town of Hudson and City of Marlborough to the east, the Town of Bolton to the north, the Towns of Clinton and Boylston to the west, and the Town of Northborough to the south.

Municipal Resources, Inc. (MRI) was engaged by the Town of Berlin, to conduct a staffing, utilization, and management study of the town's public safety departments to identify opportunities for improvements in economy, efficiency, and effectiveness of operations, and to make recommendations to determine how to best deliver the level of service the citizens of Berlin have determined that they want. This specific report will primarily focus on fire and Emergency Medical Services (EMS)/rescue operations and the respective departments that provide those services to the town. We have attempted to produce a report containing

recommendations that will assist the town, the fire department, and the rescue squad, to set a clear course of action for future service improvements.

The population of the Town of Berlin stands at 2,902; a number provided to MRI by the Police Department and believed to be current. The Police Chief indicates that the population figure is not impacted by seasonal changes. According to the United States Census Bureau, Berlin had an official 2010 population of 2,866 in 1,125 households<sup>1</sup>. This represented an increase of 486 or 20.4% from the 2000<sup>2</sup> population of 2,380. The town has a total area of 13.1 square miles, of which 12.9 square miles is land and 0.2 square miles, or 1.22%, is water<sup>3</sup>. The population density of the town is approximately 222 persons per square mile, which firmly classifies it as a rural community (population density < 500 people per square mile). There are 49.8 miles of public paved roads. There are no public roads that remain unpaved. The Massachusetts Area Planning Council (MAPC) projects that Berlin's resident population will continue to grow slowly, reaching 3,024 (+158/5.5%) in 2020, and 3,164 (+298/10.3%) by 2030<sup>4</sup>. As a result of this growth, the town can expect approximately 484 new housing units during this time.

Berlin provides an interesting mix of challenges and hazards that must be protected by emergency services. Although the town remains a community that is definitely rural and primarily residential in nature, it does have several pockets of significant and intensified commercial growth on two of its borders. On the southeast edge of town, Berlin shares the Solomon Pond Mall with the neighboring City of Marlborough. It was reported to the study team that approximately 60% of the mall and surrounding commercial complexes are located in Berlin. On the other end of the town, Berlin shares the currently being developed Highland Commons, a large, new, regional shopping destination that straddles its border with Hudson. The anchor and biggest draw of this new target hazard will be a soon to open Cabela's which is a destination attraction estimated to draw hundreds of thousands of visitors per year. Additional new developments including a hotel are in various stages of planning and approval. Based upon the commercial nature of these pockets of high density development, the population does increase on a daily basis. As a result, in reality, at many times, particularly during normal retail shopping hours, which range from about 10:00 AM to 10:00 PM, Berlin is not a town of 2,800 anymore; it is probably more accurately a town of between 6,000 and 8,000.

Although most of these structures are equipped throughout with complete automatic fire suppression (sprinkler) systems, the firefighting and emergency response challenges that confront firefighters in these types of commercial structures and occupancies are none the less

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<sup>1</sup> <http://factfinder.census.gov/> February 8, 2015

<sup>2</sup> <http://factfinder.census.gov/> February 8, 2015

<sup>3</sup> <http://factfinder.census.gov/> February 8, 2015

<sup>4</sup> <ftp://ftp.mapc.org/projections/Municipal%20PDF%20Reports/BERLIN.pdf> February 8, 2015

much more complex, require more resources to mitigate, and are potentially more dangerous from a life safety perspective, to both occupants and firefighters, than those usually found in single family dwellings. In addition, the presence of the popular retail and shopping destinations in the town creates frequent heavy traffic conditions in the area of these complexes. This includes not only the roads around and leading directly to them, but on other roads as well, as drivers attempt to avoid the congestion found on the primary highways. These traffic conditions not only create additional incidents such as motor vehicle accidents, they can also impact response times.

The town is protected by separate fire and rescue organizations which are fully call with the exception of the fire chief and rescue squad chief, which are both part-time paid positions.

### **BERLIN FIRE DEPARTMENT**



The Berlin Fire Department is a call department, consisting of 27 firefighters and officers. As a call department, personnel do not normally staff the station on regular shifts or on a consistent basis. Rather they respond to emergency calls from wherever they may be when an incident is dispatched or “toned out”. The department responds to an average of 230 calls per year. In addition to responding to incidents, the department is responsible for handling a wide variety of permits, inspections, and fire details.

### **BERLIN RESCUE SQUAD**



Founded in 1958, the Berlin Rescue Squad, in cooperation with the police and fire departments, provides the Town of Berlin with pre-hospital care at the basic life support (BLS) level in emergency situations requiring rescue and ambulance services. Over the past four years, they have averaged 260 annual responses. The rescue squad is also a call organization with personnel responding to emergency incidents from whatever location they are at when they are paged.

As the study progressed, several predominate themes emerged which provided primary direction for the study:

- Even though they share common membership of about 50%, there is a major divide between the fire department and rescue squad caused primarily by events in the past and a personal animosity between the two current chiefs.

- The fire department's organizational structure and oversight board is antiquated and needs to be revised to reflect contemporary practices.
- Both organizations are having significant difficulty properly staffing for their respective emergency incidents. Response times, and personnel staffing levels, generally do not meet the recommended standards and need to be improved.
- The fire department is unable to keep up with the fire code enforcement, fire inspections, and general fire prevention needs of a community that is continuing to experience significant commercial growth.
- There is debate over whether the town needs a ladder truck, and if so, what is the appropriate type.
- There is no strong commitment to, or program in place, recruit and then retain call firefighters or Emergency Medical Technicians (EMTs).
- The time has come for the fire department and rescue squad to be merged into a single fire rescue department to be led by a full-time, career, fire and rescue chief. A new organizational structure needs to be developed.
- The time has also probably arrived for the town to hire several full-time, career, firefighter/EMTs, particularly during the day to provide guaranteed response to incidents such as EMS/rescue ones, and to assist with other duties such as performing fire inspections and code enforcement.

Overall, and despite their shortcomings, and the challenges they are facing, the Berlin Fire Department and Berlin Rescue Squad appear to have fairly positive public images, and are respected for their long-standing service to the community. This is commendable. If the recommendations contained in this report are implemented, those levels of service will only improve to the ultimate benefit of every citizen of, and visitor to, the Town of Berlin.

This report should be studied and considered in its entirety to gain a complete picture of MRI's recommendations. While the recommendations are numbered in each section, they have NOT been listed in any preferential manner or order of importance. The numbering is for reference purposes only. The areas that need improvement are by no means insurmountable, or beyond the town and its leadership's ability to deal with them. However, there are some significant issues that are facing the Berlin Fire Department and the Berlin Rescue Squad. The town and emergency services leaderships should prioritize the recommendations, and coordinate solutions, based upon time, personnel availability, and fiscal realities.

In order to address the recommendations contained in this report, the town and its emergency services leadership and personnel should:

- Approach them strategically and in a systematic manner.
- Use them as the basis for the development of a long-range strategic plan for change and improvement.
- Break them down into reasonably sized components. Categorize them as short-term and long-term and/or high-priority and low-priority. This will allow a clear implementation plan to emerge that considers things such as which items can be accomplished within existing resources, and which items will require additional funding and/or time to accomplish in the coming years.
- Refer to them when making various recommendations, check them off as they are accomplished, revise the plan as necessary moving forward just making sure to maintain forward progress and most importantly, recognize the positive achievements publicly.

## **SCOPE OF WORK**

This report will provide a comprehensive review of the manner in which fire, rescue, and EMS, services are provided within the community. The evaluation completed herein is designed to assist the Town of Berlin, the Berlin Fire Department, and the Berlin Rescue Squad, in their desire to provide the highest level of service, in accordance with national standards and accepted industry best practices, to all its residents, businesses, and visitors, balanced with reasonable, effective costs for personnel, equipment, training, and related operational and administrative needs.

Using this review as a basis, MRI makes recommendations for improvements that take into consideration the current and future financial ability of the community to fund their emergency services, appropriate modifications to the delivery systems to provide optimum service to the entire community, adequacy of physical facilities and equipment, efficient use of resources, and whether the current organizational structure is appropriate or should be modified.

In performing this study, MRI focused on the following aspects of the fire department and rescue squad and their respective operations:

- Fire department and rescue squad organizational structures and governance.
- Internal communications and cross functionality.

- Fire department and rescue squad organizational, managerial, and operational practices.
- Policies, rules and regulations, and standard operating procedures (SOPs).
- Recruitment and retention programs and staffing levels and needs.
- Community risks, vulnerabilities, and concerns, including achieving an understanding and appreciation of the values and personality of the community and the local government, and identifying potential areas of risk and associated liability.
- Fire and EMS operations, including incident analysis and deployment of resources.
- Training.
- Fire prevention.
- Fire department and rescue squad apparatus and equipment.
- Fire department and rescue squad facilities.
- Communications and use of technology.
- Budgeting, fiscal management, and grants.
- External stakeholders' perceptions concerning the fire department and rescue squad and relationships with various officials.
- Benchmarking and comparative analysis.
- Strategic planning for the future needs of the community.

## **METHODOLOGY**

To fulfill the requirements of this study, members of the study team held an initial orientation meeting with the fire chief, his staff, and the rescue squad chief, and in partnership with them, gathered a variety of statistical information and data on the town and their respective departments and operations. MRI consultants performed several days of on-site work, interviews, and observations, in Berlin.

The MRI study team made several visits to Berlin and conducted a variety of activities in the development of this report. There were twenty-four major work elements involved in this review. These are:

1. A review of compiled data regarding key operational aspects of the departments.
2. A thorough tour of the community to gain a sense of the physical environment, the primary fire and life safety risk exposures, and the location of population and commercial centers in relation to existing facilities.
3. Interviews with two of the three members of the Board of Selectmen.
4. Interviews with approximately 50% of the members of the Board of Fire Engineers (BOFE) (only those who are currently chief officers in the fire department).
5. Interviews with the police chief, building commissioner, town accountant, tax assessor tax collector, and town treasurer (as a member of the rescue squad).
6. Extensive interviews and interaction with the fire chief.
7. Extensive interviews and interaction with the rescue squad chief.
8. Interviews with the deputy and assistant fire chiefs.
9. Interviews with the fire department's training personnel.
10. Interviews with the fire department's fire prevention officer.
11. Review and evaluation of training and fire prevention/inspection records.
12. Interviews with area fire chiefs.

13. Interviews with the rescue squad deputy chief and several other members.
14. Interviews with a number of other stakeholders and interested persons.
15. Tour of the town's public safety communications center.
16. Inspection and review of the fire department and rescue squad facility, apparatus/vehicles, and equipment.
17. Analysis of the fire department and rescue squad's current deployment strategy, including responses to the Solomon Pond Mall and the Highland Commons Shopping Center.
18. Review and evaluation of mutual aid capabilities.
19. Review and evaluation of existing fire department and rescue squad policies, procedures, and practices.
20. Analyze compliance with applicable regulations and standards.
21. Review of the fire department and rescue squad's incident reporting system.
22. Review and analysis of fire department and rescue squad's incident/response time statistics.
23. Review of numerous documents, including municipal budgets, fire department and rescue squad budgets, grants, fire prevention fees, and ambulance billing and collections.
24. Development and analysis of a summary comparative using nationally accepted norms and practices of other Massachusetts communities of similar type and size.

The MRI study team investigated areas such as the organizational and command structures of the fire department and rescue squad, chains of command, budgeting, service demands, fire prevention services, the deployment of personnel and resources, the communications and data processing functions, working relationships between the fire department and rescue squad and with other persons and agencies, responsiveness, internal policies and procedures, facilities and equipment, and compliance with various state and federal regulations.

In conjunction with the on-site visits, the data collected and observations made were subjected to analysis by the project team, both individually and collectively. All fire and EMS recommendations for improvement are based on various administrative regulations promulgated at the federal and state levels, nationally accepted consensus standards developed by ISO (Insurance Services Office), NFPA (National Fire Protection Association), CFAI (Commission on Fire Accreditation International), CAAS (Commission on Accreditation of Ambulance Service), and industry best practices and procedures. However, since every community has unique characteristics, challenges, and resource limitations, our recommendations are specifically designed to address the immediate and long-term needs of the Town of Berlin.

This report is the work product of several months of observations, information gathering, research, and analysis. The observations made within this report are believed to be accurate based on the information gathered by/provided to, and, the combined judgment of the entire MRI fire and rescue/EMS study team. The resulting recommendations are based upon an acknowledgement that fire departments and rescue squads are living and constantly evolving organizations. They must constantly change and adapt to current and anticipated, conditions and realities. Municipal fire and emergency medical service organizations must be progressive and proactive, and require a perpetual commitment to improvement. The modern fire and emergency medical services are constantly besieged with ever-increasing demands from the public and must readily adapt to changes in technology, constantly evolving risks and hazards, and new generations of men and women entering this highly rewarding, yet challenging, community service endeavor. In addition, this comes at a time when community service and volunteerism, particularly in the emergency services, are in steep decline. The delivery of high quality fire and emergency medical services requires energetic, enlightened, progressive, and proactive, leadership at all levels of their respective departments. Every day must include an effort to improve and move forward.

MRI would like to take this opportunity to thank the Town of Berlin, the members of the Board of Selectmen, the Board of Fire Engineers, Police Chief Galvin, and the staff members at Berlin Town Hall for being most cooperative and helpful in assisting us in carrying out our work on this project. We especially appreciate the candor and integrity of Chief Bruce Ricard of the Berlin Fire Department, Chief Dennis Bartlett of the Berlin Rescue Squad, and the members of their respective organizations who demonstrated their professionalism and genuine desire to

improve and strengthen the fire and emergency medical services that they deliver to the citizens of, and visitors to, the Town of Berlin.



## **CHAPTER 2**

### **FIRE AND RESCUE FACILITY**

Fire and EMS/rescue stations are critical community assets. The station facilities of modern fire departments and other emergency services providers are designed to do much more than simply provide a garage for apparatus or vehicles and a place for on duty personnel to wait for a call. Well-designed fire and EMS facilities enable staff to perform their duties effectively, efficiently, and safely.

The Berlin Fire Department and Berlin Rescue Squad currently operate from a single joint facility located at 23 Linden Street. The fire and EMS/rescue departments occupy the rear portion of the joint public safety building which also houses the town's police department and emergency communications/dispatch center. The public safety facility which opened in June 2000 is attached to the renovated former Berlin Memorial School which now houses the town government offices. The modern public safety facility which is one story, Type II, non-combustible construction, houses all of the department's operational and administrative functions. This attractive facility appears to be in excellent condition, and is, rightfully so, a source of pride to both the community, as well as, the dedicated members of Berlin's public safety community. It appears to be of adequate size to meet the needs of Berlin for many years to come. The MRI study team found the station (and all apparatus, vehicles, and equipment) to be very clean. Considering that the fire department and rescue squad do not have any full-time personnel, it indicates that the membership takes pride in their facility and operations and exhibit a positive culture.

The entire public safety facility is equipped throughout with an automatic fire suppression (sprinkler) system. It is also equipped throughout with an automatic fire detection system consisting of smoke detectors, manual pull stations, and horns/strobes. Both systems were reported to be tested and inspected on a regular basis; however, no supporting documentation was immediately available for inspection. The facility is equipped with an emergency generator which provides back up power to the fire department, rescue squad, police department, and 9-1-1 communications center. The generator is reported to be inspected, tested, and run on a regular basis; however, those records were also not immediately available for review.

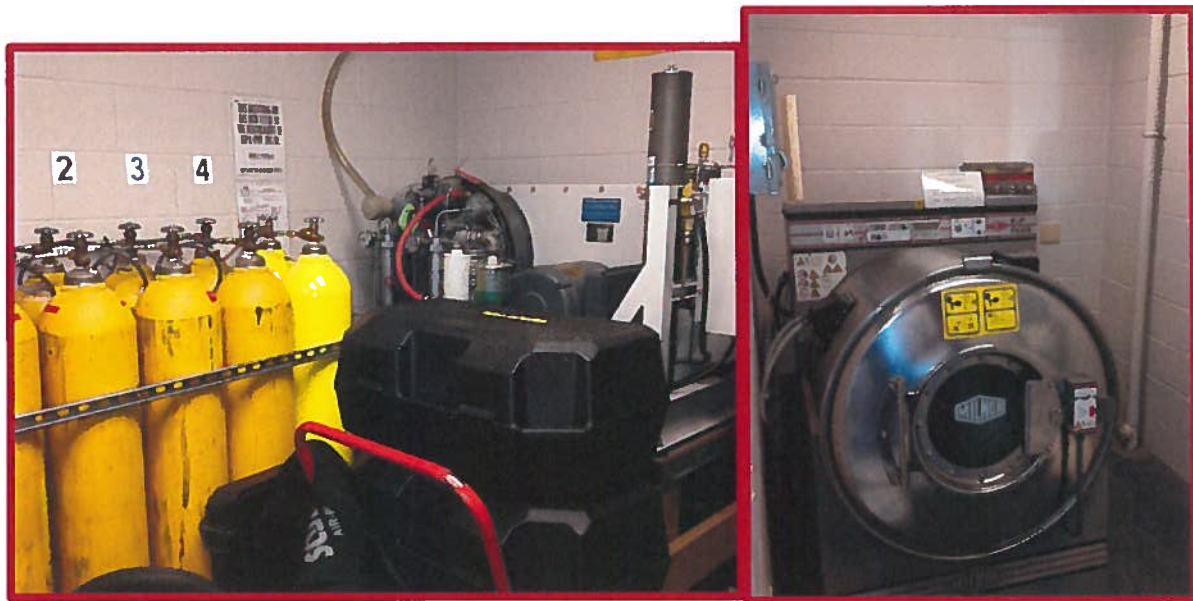


**Figure 2-1: Front view of Berlin Public Safety Building  
(Photo: Mass Fire Trucks)**



**Figures 2-2 and 2-3: Fire department and rescue squad apparatus bays. (Left) Front side for primary apparatus and (right) rear side for additional units.**

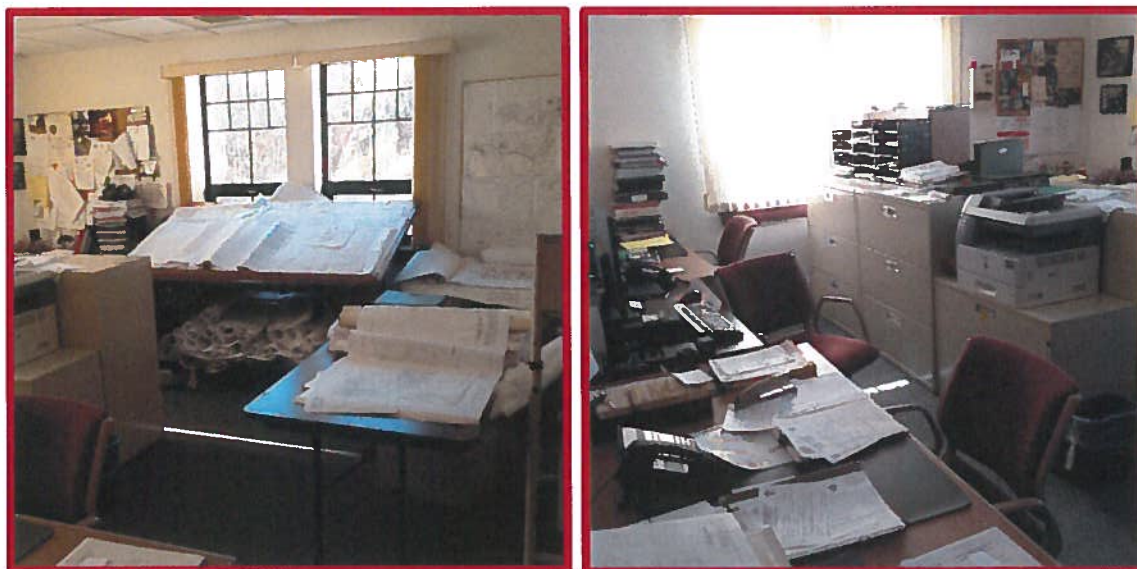
The fire and rescue station portion of the facility consists of four spacious, double depth apparatus/vehicle storage bays, all of which are the drive through type, although that option is generally not available due to the number of vehicles which operate from the station. Open grid storage lockers for member's personal protective equipment (PPE) are located along the walls of this area. The apparatus bays are equipped with a source capture vehicle exhaust extraction system to capture and remove harmful vehicle exhaust emissions from the station. There are several storage rooms located along the inner wall of the bays that the fire department and rescue squad utilize for their respective agency's storage and maintenance needs. The station is equipped with a breathing air compressor and cascade system for refilling the fire department's self-contained breathing apparatus (SCBA) cylinders. This unit, along with an extractor (specialized washing machine) for cleaning PPE is located in one of the storage rooms.



**Figures 2-4 & 2-5: (Left) SCBA breathing air compressor and cascade system and (Right) extractor (washing machine) for cleaning firefighter PPE.**

The station is equipped with electrical shorelines as is the recommended practice in the emergency services today. These lines which are plugged into the apparatus when it is parked in the station, and automatically ejected as soon as the engine is started, serve two purposes. First, they make sure that the vehicle's electrical system is maintained on a full charge at all times. They also provide power to charge important pieces of equipment carried on the apparatus or vehicle such as portable radios, thermal imaging cameras, gas detection meters, automatic external defibrillators (AEDs), and suction units, insuring they are ready for use when needed. It is also outfitted with air shore lines whose purpose is to insure that the vehicle's air system is kept fully charged allowing emergency responses to be made quicker since there is no time delay associated with waiting to build up pressure in the air brake system.

The administrative and crew areas of the station consist of several offices and a small day room/kitchen area that are all located off several short hallways between the reception area of the facility in the front, and the apparatus/vehicle bays in the rear. The fire chief has his own office. A second office is shared by the other chief officers and the training personnel, while a third office (the largest one) is utilized for fire prevention activities, plans reviews, and as a general work area for the department's other officers and personnel. The rescue squad has one office between the fire chief's and fire prevention that is utilized for all of its administrative duties. A small area for general administrative needs and equipment, such as a fax machine, is located in an alcove along the hallway. Along a perpendicular hallway is a small conference room, and a large modern shower and locker room. The small day room and kitchen area is located off a short hallway that leads from this hallway to the apparatus floor.



**Figures 2-6 & 2-7: Office for fire prevention staff activities and general work area for fire department officers and personnel.**



**Figures 2-8 & 2-9: (Left) Main hallway in fire rescue administrative area looking toward entrance door from lobby/reception area. Chief's office of right with office for other chiefs and training at the end of the hall. Administrative equipment and support area is to the left. Rescue Squad office would be to the left of the photographer and fire prevention to the rear. (Right) Small day room and kitchen area for emergency services personnel.**

Members of the public seeking access to the fire and rescue section of the building must first speak with the on duty dispatcher in the reception area. They must then be buzzed into the secure administration area.

National best practices and recommendations provided by the National Fire Protection Association (NFPA) and the Federal Emergency Management Agency (FEMA) provide guidance and recommendations on features that should be included in fire and emergency services stations. Many of the most significant of these recommendations and guidelines were included in the design and construction of Berlin's facility.

As would be expected, since it is only about 15 years old and in very good condition, overall the MRI study team was very impressed with the condition of this complex, and the level of compliance with the recommendations and guidelines for the design and construction of this type of facility. However, it is important to keep in mind that in order for the emergency services departments to be able to adequately respond to the challenges they will face with providing ever increasing levels of service to the community, their operational capabilities, and by extension and necessity their facilities, may also need to be modified to keep pace with the evolving and expanding operational and administrative needs of those departments. Keeping that thought in mind, there are a few areas where the team feels the facility could be improved or upgraded. Over the next several years the Town of Berlin may want to consider an investment in some renovations and modifications to the fire/rescue part of this facility to not

only to improve current operations, but also provide enhanced capabilities for many years to come.

The MRI study team noted a lack of carbon monoxide (CO) detectors in the facility. We believe the facility should be equipped with them.

Having adequate space for both training and periodic department meetings that involve a significant percentage of the membership are critical to the successful operation of any fire department, and the latter, particularly for a call/volunteer department. The emergency services agencies have access to a 50 seat training room to utilize for these purposes that is located on the lower level of the town hall. There is also a physical fitness room located in the same area that emergency personnel can utilize. Finally, although the station includes a spacious locker room area, it does not currently have any sleeping accommodations for personnel. Although Berlin's emergency services providers are fully call at this time there are occasions where personnel may spend time in the station and need to be able to sleep. These instances may include standbys during severe weather events, and the possibility of implementing some type of duty crew system to lessen the incident response burden on the overall department. The unfinished second floor area of the station would seem to present a space that could be renovated to provide personnel spaces that would benefit the department. This could include a larger, more comfortable, crew day room or lounge area, a larger, more functional kitchen and eating area, and sleeping areas for crews. Any renovations undertaken should give consideration to future storage needs of the departments, as storage space is always at a premium in emergency services stations.



**Figure 2-10: The unfinished area on the 2nd floor of the existing facility could possibly be renovated to provide sleeping facilities and a larger day room and kitchen facility for emergency services personnel.**

## **RECOMMENDATIONS**

The MRI study team recognizes that the implementation of the recommendations concerning facilities is a costly proposition. However, the town needs to consider and plan for the future operational needs of the department and its personnel.

- 2-1 The entire public safety facility should be equipped with carbon monoxide alarms. These important life safety devices should be installed as soon as possible.**
- 2-2 The Town of Berlin should give consideration to investing money to renovate the existing second floor area of the fire and EMS/rescue area of the public safety building. Should they undertake this initiative, it is MRI's recommendation that the modifications and improvements to the facility include, if possible:**
  - **Personnel facilities including a day room, enhanced kitchen/eating area, and sleeping quarters.**

**We would recommend that these renovations are undertaken within the next three to five years.**

## **CHAPTER 3**

### **APPARATUS AND EQUIPMENT**

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. Berlin's characteristics present the fire department with a somewhat unique variety of strategic and tactical challenges related to emergency response preparedness and mitigation. While primarily a rural community with the expected limited fire potential, Berlin does have two border pockets of high-density commercial development that changes the necessary calculations somewhat. Large commercial buildings and shopping centers present much different operational hazards and challenges than those required for operations in single-family dwellings. New single-family dwellings are almost exclusively 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.

The tools and equipment that a fire department utilizes cover a wide assortment of resources necessary to effectively, efficiently, and safely, respond to, and mitigate, a wide range of emergency incidents. These resources include, but are certainly not limited to, the firefighters personal protective equipment (PPE), self-contained breathing apparatus (SCBA), hose, nozzles, adapters, master stream appliances<sup>5</sup>, ground ladders, radios, hydraulic rescue tools and equipment, and various hand and power tools. The technology and standards for fire department equipment are constantly evolving to improve the effectiveness, efficiency, and safety of firefighters.

Today's fire departments are obligated to establish and document formal programs and procedures to ensure that equipment is replaced regularly, maintained properly, and deployed in accordance with accepted standards and department procedures. Proper training on the use and maintenance of equipment is essential to effective and safe firefighter performance and minimizes the Town of Berlin's risk of exposure.

#### **FIRE APPARATUS**

A review of the Berlin Fire Department's apparatus in terms of age, condition, and capabilities finds a mixed age fleet whose conditions ranges from excellent to fair. The department's pumpers are three, eleven, and nineteen years old. The aerial ladder is twenty-five years old

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<sup>5</sup> "Master streams" are large capacity nozzles that can be placed on the ground or are affixed to aerial devices.

and was leased by the department in 2013. The brush truck is seven years old, while the tanker is the oldest vehicle in the fleet at thirty-three years. The department also operates a twenty-five year old pickup truck as a utility vehicle.

The newest pieces of apparatus, Engine 1 (2012) and Engine 3 (2004), are the department's two primary firefighting units. Both appear to be well maintained and cared for, are in excellent condition, and appear to meet or exceed the national standards commensurate with their age. Both are very well equipped with a wide variety of tools and equipment including a complete hydraulic rescue tool set for vehicle extrication on Engine 1.

Engine 3 underwent major repairs in 2012 to have significant cab damage repaired after a large tree fell on it during a major snow and ice storm. It was also reported to the MRI team that Engine 3 is equipped with a compressed air foam system (CAFS) that some departments are utilizing to more effectively and efficiently extinguish structure fires. However, the system on Engine 3 has been problematic and has failed on at least two occasions.

Ladder 1, although just in fair condition, is well equipped to perform its diverse missions as a quint<sup>6</sup>. It also appears to meet NFPA and ISO standards for equipment carried.

Tender 1 (water tanker) and Engine 2 are both in relatively good condition considering their ages. They are not as well equipped as the other vehicles, but appear to still meet minimal national standards commensurate with their ages. Although the tanker body was added in 2002, with a cab and chassis that are thirty-three years of age, Tender 1 is probably nearing the end of its useful service life.

Forestry 1 the brush/wildland unit is in very good condition and appears to meet the department's needs appropriately for these types of incidents. This 2008 unit replaced a 1963 International 4 x 4 brush unit that was forty-five years old at the time Berlin purchased a new unit. While still in service with another small fire department in New Hampshire and they report that it is still "functional", they also report that mechanical issues are becoming more frequent with it and spare parts are harder to obtain.

The following information summarizes the Berlin Fire Department apparatus fleet:

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<sup>6</sup> A "quint" serves the dual purpose of an engine and a ladder truck. The name *quint* refers to the five functions that a quint provides: pump, water tank, fire hose, aerial device and ground ladders.

## Engines



**Figure 3-1: Engine 1 - 2012 Spartan/Smeal  
1,500 gallon per minute pump capacity – 1,250 gallon water tank  
Foam system and 30 gallon Class A foam tank  
Excellent Condition  
(Photo: Mass Fire Trucks)**



**Figure 3-2: Engine 2 - 1996 Pierce Saber  
1,500 gallon per minute pump capacity - 750 gallon water tank  
4,000 feet of 5" large diameter hose  
Good condition  
(Photo: Mass Fire Trucks)**



**Figure 3-3: Engine 3 - 2004 Pierce Enforcer  
1,500 gallon per minute pump capacity – 1,500 gallon water tank  
Excellent condition  
(Photo: Mass Fire Trucks)**

## Ladder



**Figure 3-4: Ladder 1 - 1990 Pierce Arrow Quint (former Nashua, NH Ladder 3)  
1,250 gallon per minute pump capacity - 300 gallon water tank - 40 gallon foam tank  
100 foot medium duty aerial ladder  
Fair condition  
(Photo: Mass Fire Trucks)**

## Tender



**Figure 3-5: Tender 1 - 1982 Mack R 2005cab and chassis/2002 V-Tech water tanker body  
2600 gallon vacuum tanker  
Good Condition  
(Photo: Mass Fire Trucks)**

## Brush Truck



**Figure 3-6: Forestry 1 - 2008 Ford F-550 4 x 4/New England Truck Design  
250 gallon per minute pump capacity - 250 gallon water tank  
Very good condition  
(Photo: Mass Fire Trucks)**

## Command/Staff Vehicles



**Figure 3-7: Car 1 - Chief's car. 2008 Ford Crown Victoria with 180,000+ miles.  
Fair condition (old police car).  
Not set up or suitable for use as an incident command vehicle.**



**Figure 3-8: Car 2 - 1990 Chevrolet 4x4 pick-up used as a utility vehicle. Fair condition.**

## Trailers



**Figure 3-9: Fire department, police and OEM trailers stored on the exterior of the station.**

Of these trailers, only one actually belongs to the fire department. The others are utilized by the police department and the Office of Emergency Management. The fire department trailer is outfitted with hazardous materials spill equipment such as booms and pads, along with some collapse rescue shoring.

All of the department's apparatus and equipment are inspected monthly on the second Monday. Vehicle and equipment inspection sheets/reports are located on clipboards in one of the storage/shop rooms. Problems noted, or repairs needed, during these inspections, or at any other time, are reported. The study team was advised that to the extent possible repairs are made and issues addressed as soon as possible.

For its staffing and normal expected operational needs, the Berlin Fire Department has too large an apparatus fleet. Although this situation is not unusual in volunteer and call fire

departments, we believe that the department and the community would be better served long-term by downsizing and consolidating the current apparatus fleet into one with more operationally diverse capabilities.

When compared to national averages a community the size of Berlin would typically have the following resources:

- **2 Pumpers**
  - 73.2% of communities with populations between 2,500 and 4,999 have either one or two pumpers
  - 23.5% have three or four pumpers
- **1 - 3 “other” vehicles such as tankers, brush trucks, rescues, etc.**
  - 20.9% have one
  - 28.2% have two
  - 28.7% have three
- **0 Aerials**
  - 89.6% do not have an aerial ladder
  - 10.0% do have an aerial

An inventory of the current and recommended apparatus sets are detailed below:

CURRENT APPARATUS SET	RECOMMENDED APPARATUS SET*
3 - Pumpers	1 – Rescue Pumper
1 – Tanker	1 – Tanker/Pumper
1 – Quint/Ladder – 100’	1 – Quint/Ladder 75’**
1 – Brush/Forestry Truck	1 – Brush/Forestry Truck
1 – Utility Vehicle	1 – Utility Vehicle ***
1 – Chief’s Car	1– SUV Command Vehicle

\* Does not include ambulances should the fire department and rescue squad combine into a single entity.

\*\* As will be discussed in Chapter 5 *Fire Department Operations*, Berlin will need to employ mutual aid for any reported structure fire, or fire in a target hazard. One component of this aid should include the response of a ladder with a longer aerial from a surrounding community, particularly to the large target hazards.

**\*\*\* Should the fire department and rescue squad merge into a single entity, the current rescue truck could perform double duty as a back-up rescue unit and a utility vehicle outfitted for special operations. It could also be utilized for an EMS first responder unit.**

A fire/rescue pumper or squad combines the functions of an engine (pump, hose, water) with vehicle extrication and possibly other basic special hazards/operations (technical rescue/hazardous materials) tools and equipment . The current Engine 1 is basically set up and functions as a rescue pumper. It is our opinion that this concept of operations should be continued, and in fact be the basis of Berlin's rescue operations which are almost exclusively going to be related to vehicle rescue and extrication operations. Should the fire department and rescue squad merge into a single entity, the current rescue truck could perform double duty as a rescue unit and a utility vehicle outfitted for special operations. It could also be utilized for an EMS first responder unit.

The MRI study team is very cognizant of the fact that the debate over whether the Berlin Fire Department needs its own ladder is a hot button issue within the community. At the same time, we do not ascribe to the theory that just because we had one previously we need to continue to have one. As with any other resource utilized by the fire department, whether a community has need for an aerial device, and if so, what type, is determined by individual circumstances within that particular town and should be based upon facts.

The Berlin Fire Department has had several different aerial ladders over the past 30 years acquiring its first one in about 1985. The department's current ladder is a leased unit that is 24 years old and was previously owned by Nashua, New Hampshire. This unit replaces one that was taken out of service in November 2012 due to severe deficiencies in its aerial ladder that could have failed catastrophically on an emergency incident. That apparatus was a 1996 Pierce cab and chassis with a 1982 Hahn aerial and body mounted on it. After being re-engineered to mitigate known weaknesses in its original design it was acquired by Berlin in 1997 utilizing \$250,000 in mitigation money that the town received in relationship to the development of the Solomon Pond Mall.

The department has put together a compelling "Aerial Ladder Fact Sheet" that lays out in detail their case for replacing the ladder that was taken out of service. However, a close review of this document reveals that while accurate for the most part, it does put a definite subjective spin on certain aspects of their justification. For instance, it is stated under frequently asked questions and answers that the ladder is used approximately 160 times a year in Berlin. We believe this answer is misleading. The truck may be dispatched 160 times a year which is still quite high for a small, rural community like Berlin; however, we highly doubt it responded that many times and we are positive it was not "used" anywhere near that number of times. Research on the use of the aerial devices on ladder trucks even in the largest cities indicate they

are used on only 10% or less of all responses those vehicles make. In 2013, Berlin reported seven building fires and one chimney fire. In 2014, there were ten building fires and one chimney fire. Even if the aerial ladder itself was utilized on every one of these incidents that would be nineteen times in twenty-four months, well less than once per month.

In another part of the fact sheet it is suggested that with a number of homes on private roads or sharing common driveways that the ladders and towers from some of the surrounding mutual aid communities are too large and would therefore not be able to gain access to provide maximum operational benefits. However, it is then argued that Berlin needs a 100' aerial with water and other operational necessities that will create a significant sized vehicle that will require tandem rear axles. A vehicle of this size would seem to have the same type of access problems that have been expressed as a concern.

The Berlin Fire Department provided the MRI study team with photos and a brief report of onsite evaluations they performed at various buildings and locations around town in an attempt to illustrate the limitations that a 75' ladder would impose on them. While the report indicates that in some cases the location chosen was the only one acceptable for building access and consideration of potential collapse zones, we did not actually witness these evaluations, so it is impossible for us to comment on their validity, or if there were other possible options for accessing the same buildings by positioning the ladder in a different location to achieve the same objective.

We commend the Berlin Fire Department personnel who undertook this evaluation for their conviction and passion regarding what is obviously an issue they feel very strongly about. However, as experienced fire chiefs, we do know that we are constantly basing decisions on probabilities. In other words, what is the likelihood of an event transpiring, and if it does, what are the potential implications or outcomes? The point that we want to stress is that even with a 100' ladder there may be locations that cannot be reached, or buildings where proper access is going to be difficult, or perhaps even, impossible. In these instances, we must develop different approaches and adjust tactics accordingly to be able to effectively, efficiently, and safely, achieve our established strategic objectives.

The argument in favor of a ladder also seems to discount the widespread use of mutual and even automatic aid that is a staple of fire service operations in Massachusetts. While it is true that there may be times when a neighboring ladder may be unavailable for various reasons, it is a stretch to suggest that this is a situation that would occur on a regular basis. Furthermore, the automatic and mutual aid system that is in place does not normally result in emergency services partners, or neighboring communities, billing the town they responded to for assistance for any costs they incur. In addition, the largest commercial buildings in town, at

Solomon Pond Mall and Hudson Commons, are going to automatically receive responses by ladders from Marlborough and Hudson respectively. Finally, by necessity, and as recommended in other parts of this report, any reported structure fire in Berlin should include the dispatch of mutual aid resources from surrounding communities such as Northborough, Clinton, Boylston, Bolton, and Hudson. When Berlin sets up the agreements with these towns, they should ensure that one of them is responding with a longer ladder to incidents in the larger target hazards. Given the relative infrequent occurrence of structure fires in target hazards, the capacity to respond is well within the capabilities of each of the communities referenced above. Second alarm and greater fires would also result in the response of additional ladders.

The MRI study team also has concerns about the current leased quint/ladder. The town is paying \$30,000 per year (\$2,500 monthly) for a vehicle that is 24 years old and in fair condition after having served a relatively busy, urban, department. As illustrated in Figure 3-10 and 3-11, among other issues, this unit has significant rusting, severe enough in some areas to have necessitated the replacement of compartments. In addition, the town is responsible for all maintenance on the unit increasing the annual costs even farther.



**Figures 3-11 & 3-12: Ladder 1 shows significant areas of body rusting (left) which has already necessitated the replacement of one whole compartment (right).**

With all of that said, the MRI study team believes that Berlin having a ladder or aerial device does provide important tactical and operational benefits to the department, and by extension, the town. These benefits will be increased if additional development projects proposed for the town progress from concept to reality. Virtually all new construction, including new housing and condominium developments, are built using lightweight construction methods and materials that are prone to early failure and collapse during fires. Lightweight construction creates significantly magnified risks and safety issues for firefighters during emergencies and necessitates firefighting tactical operations to be approached much differently.

The MRI study team believes strongly that a ladder, or aerial of some type, should respond automatically to every reported structural fire incident including activated fire alarms. Many of these incidents turn out to be minor; however, that fact is not going to be known until qualified fire department personnel arrive on the scene and make an assessment. When there is an actual fire, particularly a significant one, it is not cliché to say that minutes, and even seconds, can make a difference. The immediate availability of an aerial ladder can play a significant tactical role in the overall successful mitigation of the incident for numerous time critical operations involving rescuing trapped civilians or firefighters, accessing roofs (or chimneys), and conducting coordinated ventilation operations.

After reviewing the apparatus fleet, and considering all of the information discussed above, we recommend that the third pumper and the aerial ladder be combined into a 75' single axle "Quint" which will contribute to what we believe will be an effective, and appropriate, apparatus set for the town. Long-term, having one of the pumpers and the ladder combined into a quint, Berlin will have a diverse firefighting resource that provides maximum operational flexibility and options for safe, effective, and efficient operations, particularly when operating with minimal staffing levels that would be expected in an all call department, especially during the day. In addition, by combining the two vehicles into one, the town will reduce the size of its apparatus fleet and thus probably reduce its long-term maintenance costs. It will also eliminate the need to replace another vehicle a few years down the road. However, as this does reduce a unit, and limits available reserve apparatus, it is important that all units in the primary apparatus set be well equipped, properly maintained, and replaced, in accordance with a reasonable life expectancy.



**Figure 3-13: Berlin firefighters battle a structure fire at 79 Randall Road using the department's aerial ladder. (Photo: Berlin Fire Department)**

The department's tanker/tender, with a cab and chassis that is thirty-three years old, is in surprisingly good condition. While not specifically reported by department personnel, it would not seem at all unreasonable that significant breakdowns/maintenance issues could occur at any time with this unit, and parts availability is probably growing scarce. For that reason, as previously noted (and even though the tanker body was added in 2002), this unit is probably near the end of its useful service life and is currently targeted for replacement in the town's 2018 capital plan. In addition, older water tankers/tenders tend to not have many of the safety features found on newer vehicles designed for this purpose and experience a high incidence of accidents, particularly rollovers. Since it carries 1,500 gallons of water, Engine 3 could technically be classified as a pumper/tanker according to National Incident Management System (NIMS) guidelines. Another option, should the existing Tender 1 experience a non-repairable mechanical issue, would be for the town to purchase a good, serviceable, used tender/tanker to replace it until such time as they could combine the tender and an engine into a single unit with a larger water carrying capacity.

The MRI study team observed that the department has only two staff/command vehicles. One is a sedan used by the fire chief (a former police car), and the other is a 25 year old pick-up truck utilized by department members to attend training and perform other department duties and projects. The pick-up truck is also utilized to tow the various trailers. Both are in just fair condition. As discussed in Chapter 5 *Fire Department Operations*, we also have concerns about the lack of any appropriately equipped command vehicles for use by the department's officers (primarily the chief officers) in emergency incident management/command operations.

Determining a schedule to make the suggested long-term modifications to, and downsizing of, the apparatus fleet presents a bit of a challenge, as the department's two main pumpers are both relatively new and in really excellent condition. Some fire service guidelines suggest that one piece of apparatus should be purchased every five years. The goal of this strategy is to spread major purchases out in an effort to match these purchases with a consistent level of debt service for the town.

Preventative maintenance on the department's vehicles (engine, drive train, etc.), as well as maintenance and repairs on the specialized aspects of the vehicles such as fire pumps and aerial ladders, are performed under contract with New England Fire Equipment and Apparatus (NEFEA). The periodic preventative maintenance is performed right at the Berlin station. For larger repairs, the work is performed at NEFEA's facility in North Haven, Connecticut. The Berlin Fire Department has one member who will make minor repairs and adjustments to the apparatus in-house when needed.

It was reported to the study team that annual pump testing required by NFPA and ISO, and ladder testing as required by NFPA, are both generally performed as required. The department contracts with an outside vendor to perform these services. The pump test reports, performed by NEFEA, were reviewed by the study team and appeared to be current and in good order. Berlin has utilized several different companies to perform ladder testing the past few years. Ladder test reports were reviewed by the team and also appeared to be appropriate. However, it was also noted that the most recent ladder tests were performed in 2013, so it has been more than 12 months since these tests were performed. We were informed that testing was scheduled for March 2015. The Berlin Fire Department should continue performing pump and ladder tests annually and at intervals of not greater than 12 months.

## **FIRE EQUIPMENT**

National Fire Protection Association (NFPA) 1901, *Standard for Automotive Fire Apparatus* (2009 edition) and ISO provide standards for the minimum compliment of equipment carried on fire apparatus. It is important to recognize that each agency has different requirements for apparatus and equipment. NFPA focuses broadly on the safety and performance of the

apparatus, while ISO focuses specifically on the fire suppression capabilities of the apparatus as it potentially can impact the fire insurance rating for a community.

The Berlin Fire Department's apparatus has a typical selection of portable hand power and service tools and equipment utilized for firefighting and other emergency operations. For the most part, the equipment appears to be well organized, and well maintained. It appears that most apparatus closely meets the minimum NFPA and ISO requirements for equipment to be carried. The department maintains what appears to be a fairly comprehensive inventory of the equipment carried on each vehicle.

Personal protective equipment (PPE) includes the full ensemble that encapsulates a firefighter who will be engaging in firefighting operations: helmet, PBI Gold® hood, turnout coat, turnout pants, boots, SCBA, gloves, and eye shields. The specifications and related requirements for PPE can be found in various NFPA standards. The use of PPE is regulated by the Occupational Safety and Health Administration (OSHA).

The department has a variety of firefighter PPE. The MRI study team performed a random visual inspection of a number of sets of PPE and found them to be in good condition. It should be noted that the current edition of NFPA 1851, *Standard on Selection, Care and Maintenance of Protective Ensemble for Structural Firefighting and Proximity Firefighting*, recommends that firefighter PPE be replaced at no greater than 10 year intervals. PPE should also be formally inspected on a periodic basis.

A number of Berlin firefighters also have forestry PPE for use when involved in brush or wildland firefighting operations. This equipment includes Bullard full rim brush helmets, leather brush gloves, ESS goggles, Crew Boss jumpsuits, and approved foot protection. Most of this equipment was obtained through Volunteer Fire Assistance – National Fire Plan 50/50 matching grants.

Berlin tests all of its fire hose, in-house, annually, as recommended by NFPA and ISO. Due to the time constraints this process involves for the call personnel, the department is considering contracting with an outside vendor to perform these tests. Hose test records were reviewed by the study team and also appeared to be in order. This testing should continue to be performed annually and at intervals no greater than 12 months.

The Berlin Fire Department has a total of 24 in-service self-contained breathing apparatus (SCBA) (including rapid intervention team (RIT) packs). All are variations of the Scott model 50 all utilizing 45 minute duration air cylinders. The SCBA appear to be properly maintained and are equipped with integrated personal alert safety system (PASS) devices, heads-up displays (HUD) that allow the user to monitor his/her air supply through an electronic display in the wearer's face piece, and universal RIT connections. The six newest SCBA, which are located on Engine 1, are equipped with the Scott Pak-Tracker firefighter locator system which allows the

incident commander and/or rapid intervention team (RIT) too much more quickly locate and assist lost, disoriented, or trapped firefighters through a transmitter located on their SCBA unit. Use of this system definitely provides an additional measure of safety and emergency scene accountability to Berlin's firefighters.

Annual flow testing of SCBA is required by NFPA Standard 1852, *Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA)*, and manufacturer's recommendations. This testing is performed as required and the department plans to continue with this program. We strongly encourage the town to continue with this program.

The department has a total of 44 Scott 4.5 (4500 PSI) 45 minute duration SCBA cylinders, adequate to meet the requirements of NFPA to have one cylinder, and one spare cylinder, for each SCBA carried/in service (several SCBA are maintained as spares for training or to replace units out of service for repair). The age of these cylinders varies.

As required by NFPA standards, the department does have one SCBA for each riding position on each piece of apparatus (except the brush truck), including the driver. The chief has one in his fire department vehicle, while the assistant chief carries one in his personal vehicle.

SCBA inspections are performed monthly during the apparatus and equipment inspections and other times after use. One of the department's captains and one of the lieutenants have been certified as Scott field level technicians. This allows them to perform minor repairs on SCBA such as replacing batteries in the PASS devices and changing straps and buckles. The department also maintains several spare SCBA for training use and to allow a unit on the apparatus to be replaced should it need to be sent out for more specialized repair.

The department has a total of 45 SCBA masks. Each SCBA carried on the apparatus has a standard Scott AV 3000 mask assigned to it. With the exception of several members who fit testing has indicated require a non-standard size face piece members are not issued their own personal SCBA mask as is the commonly accepted practice in the fire service. The rationale for issuing individual facemasks is to minimize the chance of exposure/transmission of infectious and/or communicable diseases and other illnesses (even the common cold) between members. Each member having their own personal mask also insures that they are wearing a correctly sized, properly fitting mask, not just the mask that happened to be available. While the department does have spare SCBA masks available, they are not carried on the apparatus. Consequently, a minor mask component malfunction, or failure, effectively places the entire SCBA unit out of service. With a total inventory of 45 masks and a roster of 32 personnel, some who already have been issued a personal face piece, the department should be in a position

where they could issue each member their own face piece and still have some left to be used as spares on the apparatus.

The OSHA *Respiratory Protection Standard*, 29 CFR 1910.134, and NFPA Standard 1500, *Standard Fire Department Occupational Safety and Health Program*, mandate that annual SCBA mask fit testing be completed, after personnel have been medically cleared to wear SCBA. The Berlin Fire Department does perform this testing annually with a company that provides the testing right at the station. One testing date and one make-up date are scheduled. If personnel do not complete their annual test, their yellow helmet is replaced with a black one which limits their emergency scene participation to exterior non-hazardous atmosphere, operations only.

Three rapid intervention team (RIT) packs (a portable air supply for providing air to a downed or trapped firefighter) have been purchased and are carried on Engine 1, Engine 3, and Ladder 1. They are equipped with a 60 minute, 4500 PSI air cylinder, and outfitted with emergency buddy breathing attachments. There is also one spare 60 minute cylinder for each RIT pack.

SCBA breathing air refilling is accomplished with a compressor/cascade system located in a storage room off the apparatus bay. The compressor obtains its intake air from the exterior of the station, as is proper. The department does have a contract for annual servicing and testing. Air quality sampling/testing is done on an annual basis to insure that the air quality being produced by the compressor is at least Grade "D", as required by the OSHA Respiratory Protection Standard. Complete test results for each test, as well as previous certificates, are maintained in a central file. The most recent certificate is displayed next to the unit. Due to its location in a confined area hearing protection is mandatory when operating the compressor.

It is the current best practice in the fire service that every firefighter who is wearing SCBA and/or entering an atmosphere that is immediately dangerous to life and health (IDLH) should be equipped with a portable radio. Should a firefighter become trapped, lost, disoriented, or experience any other type of emergency, he/she can summon help on the portable radio. Many departments now have a portable radio assigned to either every riding position on every piece of apparatus, and/or to every on duty member. Berlin uses the former system with a portable radio assigned to every riding position on each piece of apparatus.

The Berlin Fire Department currently has one set of Resqtec hydraulic rescue tools (Jaws of Life type tools) located on Engine 1. This equipment, which consists of a spreader jaws, cutters and several rams, was a demo set that was purchased with the vehicle. It was reported that there is an annual service/maintenance contract in place for these units, and they are serviced on an annual basis. They are not, however, interchangeable or compatible with the rescue squad's hydraulic rescue tools.

The Berlin Fire Department has three thermal imaging cameras (TIC) that are deployed on Engine 1, Engine 3, and Ladder 1. The oldest of the three is a Scott Eagle unit which lacks much of the latest up to date technology. It is scheduled to be replaced this year. The department will need to select a different brand for the new unit, as Scott is no longer manufacturing cameras. The other two units are ISIs.

Engine 1, Engine 3, Ladder 1, and Forestry 1, as well as, the chief's car are equipped with automatic external defibrillators (AED). All department personnel are either certified emergency medical technicians (EMT), or first responders, and are trained to be able to treat cardiac patients using this critically important life-saving tool. The department's other apparatus and vehicles are not equipped with AEDs; however, all of the town's police vehicles are. All of these apparatus also are equipped with full EMS jump kits.

Engine 1, Engine 3, and Ladder 1 are outfitted with combustible gas meters. Two of these are MSA Avitar combustible 5 gas detectors/meters while one is a Scott unit. Engine 1 and Engine 3 are also equipped with MSA single gas detection meters in their EMS jump bags.

## **RECOMMENDATIONS**

- 3-1 In consideration of the numerous tactical operations and firefighter safety benefits they provide, the Berlin Fire Department should continue to maintain and operate an aerial equipped apparatus.**
- 3-2 The Berlin Fire Department should transition toward the consolidation of apparatus and the local response of a 75' quint. Consolidate the replacement of the leased 1991 Pierce Arrow 100' quint and the 1996 Pierce Saber pumper into a single "quint" that has a 75' aerial ladder and is configured to also fully function as a fire pumper. The automatic response of a larger aerial from Clinton, Hudson , or Northborough should be immediately requested upon the report of a structure fire at a target hazard. Consideration could also be given to the purchase of a recent, but not current, model year "demo" unit as a potentially lower cost option.**



**Figure 3-14: A Quint such as this one recently placed in service in Springfield and equipped with a 1500 gallon per minute pump, 500 gallon water tank and 75' aerial will more than adequately meet the vast majority of the Berlin Fire Department's operational needs and provide the community with a versatile, multi-function vehicle particularly in limited staffing conditions and when responding as the first out unit and "engine" to many incidents. (Photo: Mass Fire Trucks)**

- 3-3 The procurement of the "quint" recommended in 3-2, above, should be funded at the fiscal year 2016 town meeting. A federal Assistance to Firefighters Grant (AFG or FireAct) should also be pursued during the 2015 grant period which will open later this year. If the AFG grant application is successful, then the FY 2016 capital project can be cancelled.**
- 3-4 The procurement of a replacement pumper/tanker should be considered in the fiscal year 2021 or 2022 budgets. Consideration should be given at that time to combining Engine 3 and the tender into a single unit. Should the existing Tender 1 experience a non-repairable mechanical issue prior to that time the town should consider the purchase of a good, serviceable used tender/tanker to replace it until such time as they could combine the tender and an engine into one unit with a larger water**

carrying capacity. An AFG grant for funds to purchase this vehicle should be pursued prior to money be appropriated through the town's capital budget.

- 3-5 The MRI study team recommends that the town take advantage, if possible, of the fire apparatus and ambulance group purchasing system that is sponsored by the Fire Chiefs Association of Massachusetts (FCAM) and the Metropolitan Area Planning Council (MAPC). Municipalities may select a specific design and manufacturer from a pre-determined bid list and are not required to establish their own bid process. It is estimated that this group purchasing system will save approximately five to ten percent of the cost of a fire truck or ambulance (see [www.mapc.org](http://www.mapc.org)).
- 3-6 The department should adopt a policy of purchasing new NFPA 1901 and ISO compliant equipment when new apparatus is purchased. This policy will ensure that equipment is the most technologically up-to-date and that it is safe and functional.
- 3-7 The Berlin Fire Department should acquire an SUV for use by the department's chief officers for a command vehicle to facilitate more effective, efficient, and safe incident management/command operations on all types of emergency incidents. It is recommended that this vehicle be budgeted in fiscal year 2016.
- 3-8 The department should establish a weekly (as opposed to monthly) apparatus inspection and serviceability procedure. This inspection would be the equivalent of a daily pre-trip inspection as outlined in commercial driver manuals. NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus* (2012 edition), has an appendix in the rear of the standard with suggestions for routine vehicle and component inspection and testing. The weekly inspection should also include an inventory and serviceability check of the tools, equipment, and SCBA that is carried on the apparatus.
- 3-9 The department should issue all personnel their own personal SCBA mask. The rationale for issuing individual facemasks is to minimize the chance of transmission/exposure of infectious and/or communicable diseases and other illnesses (even the common cold) between members.
- 3-10 The department should purchase a supply of spare SCBA masks in any size that is utilized by a member of the department. A minimum of one spare mask of each of these sizes should be placed on each apparatus for emergency use in the event of the failure of a mask during emergency operations.

## **CHAPTER 4**

### **ORGANIZATIONAL STRUCTURE/CHAIN OF COMMAND**

### **AND**

### **STAFFING**

#### **ORGANIZATIONAL STRUCTURE/CHAIN OF COMMAND**

The organizational structure of any organization or entity, whether public or private, establishes and illustrates the important hierarchical relationships between various personnel, supervisors/subordinates, levels, divisions, and bureaus within the organization that allow it to function properly, and operate effectively and efficiently in its daily operations, or the pursuit of its mission. It also helps to clearly define the organizational chain of command from top to bottom, an especially important consideration in a quasi-military, public safety organization such as the fire department, where everyone from the highest rank to the lowest is subject to receiving orders, and with the exception of the lowest rank also issues them. Effective communications in any organization, but especially public safety agencies, are essential and a cohesive chain of command allows everyone to know exactly who they report to, and/or who reports to them.

The Berlin Fire Department is headed by a fire chief who is the department's highest-ranking officer and who is also designated to serve as the administrative and operational head of the organization. At the time of this assessment, the fire chief is a part-time career position. The chief is authorized to work up to 30 hours per week and receives a salary of \$35,000 per year. As of July 1, 2015, it has been proposed that the fire chief be made a full-time position at an annual salary of \$51,000. He is appointed by, and reports to, the Board of Fire Engineers, which is a semi-autonomous entity appointed by the Board of Selectmen (BOS). Chief Bruce Ricard, the current chief, is a long time Berlin firefighter who has led the department since 2006.

As mentioned briefly above, the Board of Fire Engineers (BOFE) is a semi-autonomous board that oversees the operations of the fire department. It meets monthly on the first Thursday. The BOFE is currently comprised of either six or seven members that are appointed annually, in April, by the BOS. Among the current members of the board are all three of the fire department's chief level officers. In fact, the fire chief serves as the chief engineer. It was reported to the MRI study team that the BOFE was originally comprised of three members, later increasing to five, before finally growing in size again to its current configuration. The board is responsible for all personnel actions in the department including hiring and firing. It also approves the payment of bills which are then forwarded on the BOS.

Once a fairly common way of overseeing fire protection in communities, BOFEs have gradually been replaced by more traditional systems of governance. Today, there are only a handful of

these relics from an earlier era still operating in Massachusetts. The MRI study team has several concerns about the current set-up. First, a significant percentage of the board's make-up is comprised of the department's chief officers whom the board is tasked with overseeing, directing, and supervising. As noted, the fire chief is also the chief engineer, thus also leading the board. This situation is comparable to the CEO of a large corporation not only serving on the board that he reports to, but also including his senior management team, and possibly deciding who else is appointed to that board. Although still found occasionally in autonomous fire districts as well, this arrangement justifiably does not evoke confidence that there is adequate transparency and an appropriate level of checks and balances in the system. In a worst case scenario it presents a blatant conflict of interest. Secondly, the BOFC also votes to pay fire department bills, then forwards them along to the BOS for their approval. However, although the BOS is responsible for providing fiscal oversight for all town expenditures, in this case, BOS approval is little more than a formality as they apparently have little choice but to almost rubber stamp their approval on the BOFE approved expenditures. Finally, despite several offers do so at their convenience, only one of the members of the BOFE, other than the fire department's chief officers, choose to speak with the MRI study team during this study. This certainly raises questions regarding why they chose not to provide input into a process that will provide a recommended roadmap for the future of the Berlin Fire Department, and in a broader context, the overall provision of emergency services in the town in the coming years.

The Berlin Fire Department's current formal table of organization lists one deputy fire chief and one assistant fire chief. Although the organizational chart shows them basically as equal to each other, the study team was informed that in practice they are the number two and three positions respectively. These officers, like all others in the department, are part-time, on-call positions. The current assistant chief also concurrently serves as the department's primary training officer.

Below the deputy and assistant fire chiefs are two part-time on call captains, although only one of those positions is currently filled. The current captain concurrently serves as the fire department's primary fire prevention officer and inspector. Under the captains are four lieutenants, two of whom report to each captain. One of the lieutenants also assists the training officer with his duties. Each of the lieutenants is assigned as the commander of one or more units in the department's apparatus fleet.

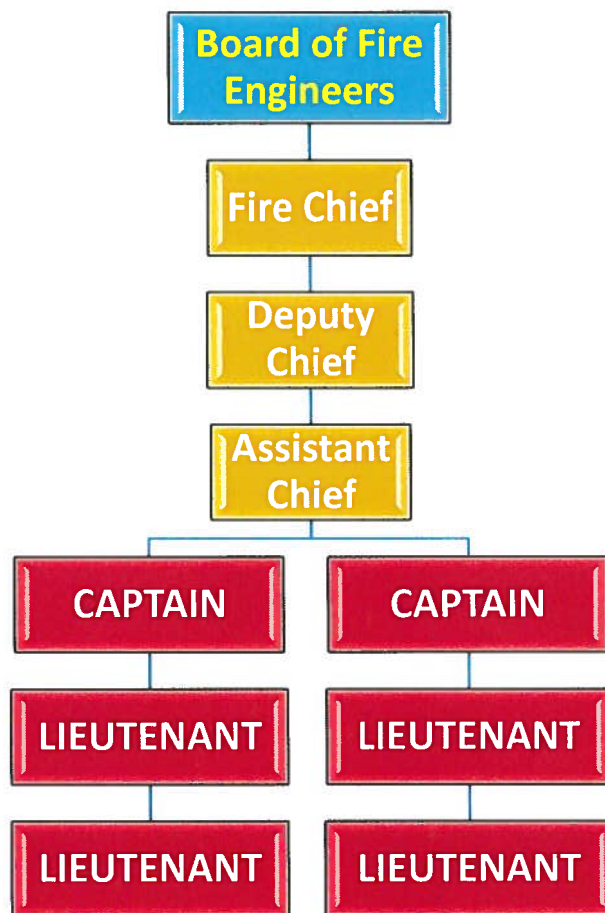
The Berlin Fire Department's current roster lists a total of 33 personnel, all of whom are considered to be "active" firefighting personnel. It is important to remember that in call/volunteer fire departments that actual numbers tend to fluctuate as members move on or new members are recruited and join. Based upon the fact that out of 33 personnel, there are 8 officers, that leaves 25 active firefighters in the department, although a few of those are either non-certified firefighters/motor pump operators or outside personnel. The MRI study team believes that all personnel in the department should be certified firefighters and all members of the department should be qualified to drive and operate at least the engines. Personnel who

are drivers, or outside personnel only, provide a limited benefit to the department, particularly in minimum staffing conditions.

The department's 25 firefighters are assigned to the various apparatus, under the command of the various officers; however, this does not mean that they are limited to operating just with that unit. Most personnel can operate wherever they are needed on each particular incident. About 16 of the members listed on the roster (48.5%) are what would be considered to be truly active members, those who respond to a significant percentage of incidents.

The department's current organizational chart for officers is shown in Figure 4-1.

**FIGURE 4-1**  
**CURRENT BERLIN FIRE DEPARTMENT ORGANIZATIONAL STRUCTURE**



The Berlin Fire Department does have a policy on promotions, although at the current time it does not involve a testing and/or assessment process. Promotions are based upon an

evaluation of the applicant's overall training, certifications, and experience, in addition to achieving mandated rank appropriate skills and education benchmarks. This is followed by an interview with the fire chief who makes the final selection and recommendation to the BOFE. At the time of this study, the BOFE was in the process of reviewing and updating the department's standards for promotion to the various officer ranks. The study team was also informed that several promotions were being considered.

The department does have well written job descriptions for each position in the department. This is something not found in many fire departments and rarely ever seen in predominantly call or volunteer departments. Overall, we found these job descriptions to be very thorough and detailed. Sections contained within include the basic function of the position, principal responsibilities, qualifications, education and skills upon appointment, and qualifications, education, and skills, which the officer must obtain within three years of appointment.

The chief does hold monthly officers meetings, and according to the officers, communications, and the flow of information up and down the chain of command is good.

All members of the department are considered to be paid on-call in that they receive monetary compensation for their services as opposed to being true volunteers. Firefighters earn \$17.17 per hour with a two hour minimum compensation. The lieutenants, captains, and chief officers, are paid on a high scale up to about \$25.25 per hour. Personnel are compensated for emergency calls/incidents only, not training, or other duties. The department does have a small account that can be used to compensate personnel to participate in incentivized training.

There is currently no real succession plan in place in the fire department. With Chief Ricard facing mandatory retirement due to age on February 1, 2016, Berlin's town leadership needs to start a succession planning process as soon as possible. They will need to very carefully examine their options for making this transition successful, and selecting the department's next leader. It is our opinion that in addition to the requisite education and experience, the successful candidate will need to have excellent leadership, management, and communications skills to be able to articulate his/her vision for the department moving forward; insure that all personnel are working in unison toward common goals and to achieve that vision; to implement whatever remaining recommendations found in this report that have not been addressed; and to just, in general, navigate through the choppy waters that major transition brings to any organization. Previous experience managing a combination department that remains primarily call with a small career staff, and experience managing EMS operations, particularly during that continued transition, will be a definite plus.

As will be developed further in Chapter 12, *Conclusions and Fire/Rescue/EMS Service Delivery Options*, it is our opinion that the town will need to revise the department's overall table of organization to clearly delineate the emergency services chain of command and make it more effective, particularly if the fire department and rescue squad are merged into a single

department. In order to stress the fact that the Berlin Fire Department will continue, for the foreseeable future, to be primarily a call department, possibly supplemented by a small career staff, the department's #2 position should remain a call position. This and all other officer positions 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 rank appropriate assessment process, and a basic practical skills evaluation. All officers should have one or more administrative duties/responsibilities to assist the fire chief with the department's overall management, in addition to their normal emergency scene operational duties and station management responsibilities.

In conjunction with the officers holding the remainder of the department's key leadership positions, the next fire chief should work to implement a career development program and succession planning process to insure that all officers can perform their superior's duties, as well as, identify the core future leaders of the department.

## **STAFFING**

The emergency scene in general, and the fire ground involving a structure fire in particular, is a dynamic, dangerous, frequently unpredictable, and rapidly changing environment where conditions can deteriorate very quickly placing firefighters in extreme personal danger. 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 of 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. Ultimately, determining the acceptable level of risk they are willing to assume for the citizens they represent will be a key decision that the Board of Selectmen will need to make.

National Fire Protection Association (NFPA) Standard 1720, Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments (2010 Edition), is the nationally recognized consensus standard on staffing and deployment by volunteer/call, and primarily (85%) volunteer/call fire department. It is the benchmark standard that the United States Department of Homeland Security utilizes when evaluating applications for staffing grants under the Staffing for Adequate Fire and Emergency Response (SAFER) grant program.

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

- Paragraph 4.3.1 on *Staffing and Deployment* states that the fire department shall identify minimum staffing requirements to ensure that a sufficient number of members are available to operate safely and effectively.
- Paragraph 4.3.2 on *Staffing and Deployment* states that Table 4.3.2 (Figure 4-2) 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.

**Figure 4-2: Staffing and Response Time Table from NFPA 1720**

Table 4.3.2, Staffing and Response Time				
Demand Zone	Demographics <sup>1</sup>	Minimum Staff to Respond	Response Time <sup>2</sup> (minutes)	Meets Objective (% of time)
Special risks	AHJ	AHJ	AHJ	90 %
Urban	>1000 people/mi. <sup>2</sup>	15	9	90 %
Suburban	500-1000 people/mi. <sup>2</sup>	10	10	80 %
Rural	< 500 people/mi. <sup>2</sup>	6	14	80 %
Remote*	Travel dist. > 8 mi.	4	Dependent upon travel distance	90 %

<sup>1</sup>Berlin is a rural community by definition with an average of 222 residents per square mile.

<sup>2</sup>Response time begins at the completion of dispatch notification and ends at the time interval shown in the table.

- 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 2 minutes, 90 percent of the time.

- 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.
- 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.
- 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.

To get a much better idea of the **actual minimum personnel** requirements necessary to be able to conduct sustained firefighting operations as required above, it is necessary to turn to 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* (2010 Edition), which is the nationally recognized consensus standard on staffing and deployment by career fire departments.

- Paragraph 5.2.4.2.2 *Initial Full Alarm Assignment Capability* establishes the following **minimum** personnel requirements on the full first alarm assignment which should arrive on scene within eight minutes of dispatch (Figure 4-3).

<b>TASK</b>	<b># Personnel</b>
Incident Commander	1
Attack engine driver/operator	1
Water supply engine driver/operator	1
Two hand lines with two personnel each	4
Support/back-up firefighter for each handling	2
Search & rescue team	2
Ventilation team	2
Ladder company driver/operator	1
Rapid intervention team (RIT)	2
<b>TOTAL MINIMUM NUMBER OF PERSONNEL</b>	<b>16</b>

Figure 4-3: Minimum personnel requirements for career or primarily career fire departments on the full first alarm assignment which should arrive on scene within eight minutes of dispatch.

It is important to understand that these numbers reflect personnel needs for a fire involving several rooms in the same 2,000 square foot, one-family, residential occupancy described in Paragraph 4.3.2 of NFPA 1720. These are the proverbial “bread and butter” structural fire incidents that fire departments respond to, and are by far the most common type of structure fire, accounting for around 70% of those types of incidents. However, fires develop and burn the same in every community regardless of its demographics/characteristics and/or type of fire department.



Figure 4-4: Berlin firefighters battle a fire in a typical size single family dwelling at 68 Carter. Sufficient personnel must be on scene within a certain period of time in order to successfully conduct operations that require close coordination. (Photo: Berlin Fire Department)

Experienced fire officers know that one of the hard facts of fireground operations is that the recommendations in Figure 4-3 are much more realistic and appropriate than those found in NFPA 1720 (Figure 4-2/Table 4.3.2), even extending out both the time for the initial unit to arrive on scene, as well as for the remainder of the assignment to arrive. Personnel needs for fires involving large, more complex, structures such as large commercial occupancies, of which Berlin has a growing number of, will require a significantly greater commitment of initial personnel, probably minimally in the area of 22 to 25. It is important to note that both NFPA 1710 and 1720 permit fire departments to use established automatic aid, and mutual aid, agreements to comply with the staffing and response requirements. These types of agreements will be mission critical to the Berlin Fire Department being able to handle even basic single-family dwelling fires, and attempt to gain compliance with NFPA 1720.

**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. When applying any standard, including the NFPA standards, it is important to apply the document in its entirety. One should not selectively extract requirements to the exclusion of others or take a requirement out of context.*

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 does carry 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. 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 study 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 United State Fire Administration (USFA), part of the Federal Emergency Management Agency (FEMA) in the Department of Homeland Security (DHS) recommends that a minimum of

four firefighters respond on or with each apparatus. In its respected text book *Managing Fire Services*, the International City/County Management Association (ICMA) states, “that at least four and often eight 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”.

There has been much research done by a number of 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 fires in residential occupancies where the majority of 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.

By strict definition, the Berlin Fire Department is a combination fire department by virtue of the fact that it has a part-time (soon to be full-time) chief. In reality, and from a practical standpoint, it is still truly a call organization since there are currently no other career staff. As previously noted, the on call members are only compensated for the time they spend responding to emergencies.

At the time this study was conducted, the department’s roll call sheet showed thirty-three members<sup>7</sup>, eight officers, and twenty-five firefighters. Most, but not all, of these personnel are certified firefighters. The department roster lists several personnel who are “outside” firefighters and one who is solely a motor pump operator (MPO). The average age of the members of the department is slightly more than 40 years old. As with many call/volunteer departments today, there is a core group of older, long-time members of the department with a second group of young, newer firefighters. There is a dearth of personnel who would fall into the middle between the other groups both in age and years of experience. Although not unusual in today’s call/volunteer fire service, the average age of the department’s personnel is also a reason for long-term concern as its members are aging without an offset in new, younger personnel.

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<sup>7</sup> It is important to remember that in call/volunteer fire departments that actual numbers tend to fluctuate as members move on, or new members are recruited and join. At the time of this assessment, the Berlin Fire Department was in the process of bringing on several new members. These new personnel are not yet reflected on the department’s official roster and therefore are not included in these statistics.

The size of the department, personnel wise, would generally be adequate to handle the expected emergency workload in a town the size of Berlin. However, 19 (57%) of the department's current members list an address other than in Berlin so the majority of the department's members reside in nearby communities rather than actually being Berlin residents. The current policy of the BOFE is to allow membership in the department to those who live, or work, in either Berlin or a contiguous community. This is a fairly common practice in the volunteer and call fire service driven by the departments constantly striving to bolster their number of active personnel. While some of these members may actually be closer to Berlin's fire station than the one in the community they reside in, there are others who live a considerable distance away making their timely contribution to emergency operations questionable. Conversely, the study team was advised that there are a number of Berlin residents who are members of fire departments in the surrounding communities. The team did interview several of these personnel.

In almost any call/volunteer 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 staffing picture becomes more of a concern. It was reported to the MRI study team that about 16 (48.5%) members of the department are truly active and respond to a significant number of calls.

The study team saw strong evidence of this situation in Berlin. Although the 2014 call attendance roster shows 32 active firefighting members<sup>8</sup>, 21 (65.6%) of those responded to 25% (52), or less, of the 208 fire calls in 2014. Eleven members (34.4%), so slightly more than one-third of the department responded to less than ten percent (10%) of the incidents. Only two members (6.3%) responded to at least 50% (104) of these incidents. The member with the highest response percentage, 69%, made 143 calls.

As recommended by NFPA 1720 in Figure 4.3.2 (Figure 4-2) as a "rural" fire department the Berlin Fire Department, should, at a minimum, be able to have 6 qualified/certified firefighting personnel on the scene of a structure fire with 14 minutes of dispatch, 80% of the time. It is important to keep in perspective the fact that the six qualified personnel on the scene in fourteen minutes is ten personnel less than the actual minimum number realistically required to handle a basic structure fire (Figure 4-3), and it gives six minutes more to accomplish this reduced response. A fire can double in size and intensity every 30 seconds so a quick, effective response and attack is essential to successful incident mitigation. While not covered by the NFPA 1720 recommendations, other types of incidents (vehicles fires, brush fires, motor vehicle accidents) may still require six or more personnel to mitigate.

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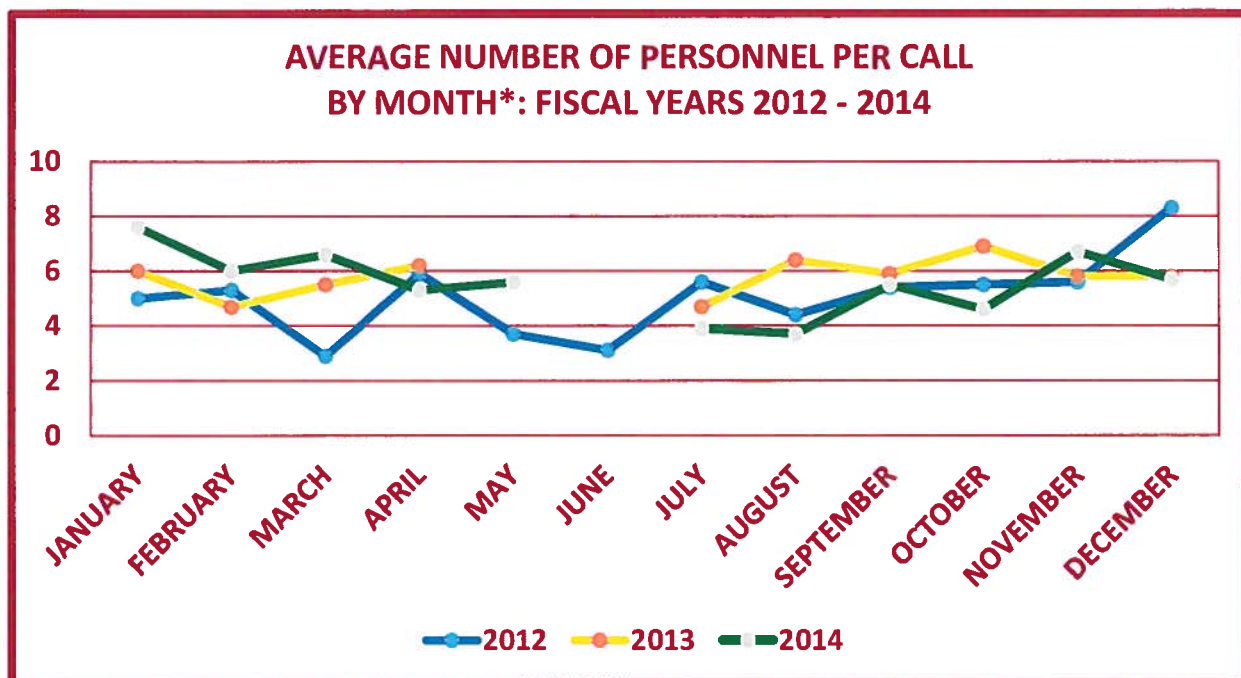
<sup>8</sup> Does not include one (1) new probationary firefighter included on other 2014 reports such as training but not this report.



**Figure 4-5: Berlin firefighters attack a heavily involved vehicle fire which can require a minimum of three (3) to four (4), or more, personnel to successfully mitigate. (Photo: Berlin Fire Department)**

The Berlin Fire Department could not provide the study team with any data that provides a breakdown of the average number of personnel that respond to incidents in general, by time of the day (day versus night), or days of the week (weekdays versus weekends). The only way to tabulate these statistics appeared to be to do so manually, and even then, the accuracy of the data would have been questionable at best, as personnel who were listed as having “responded” may have arrived late in the incident, or just stood by at the station, among other possible scenarios. It was reported to the study team that during the day an average of two to three members responding could be expected. Nights and weekends were reported to be somewhat better but still not nearly at a level that would demonstrate a reliable and credible response force for the town. The fire department could not provide the study team with any statistics on NFPA 1720 compliance for structure fire responses.

The study team was able to analyze some basic personnel response statistics by taking the number of incidents that occurred each month and dividing that number into the total number of personnel responses for the month. While not a particularly accurate way to look at this data for a number of reasons it is the best illustration that we could provide given the information available to us. As the chart below shows, over the past three years Berlin has averaged between 2.9 personnel per call in March of 2012 to 8.3 per call in December 2012.



Monthly Average of Personnel Per Call = Number of Total Personnel Responses ÷ Number of Total Calls

\* No data provided for May 2013, June 2013 and June 2014

Figure 4-6 Average Number of Personnel Per Call By Month: FY 2012 - 2014

Overall, the department averaged 4.8 personnel per call in 2012, a figure which rose to 6.3 in 2013 before dipping back to 4.9 in 2014. Put simply, in 2014 on average, less than five Berlin fire department personnel responded to each emergency incident. Framed a different way, on average 15.3% of the fire department's members respond to each call dispatched.

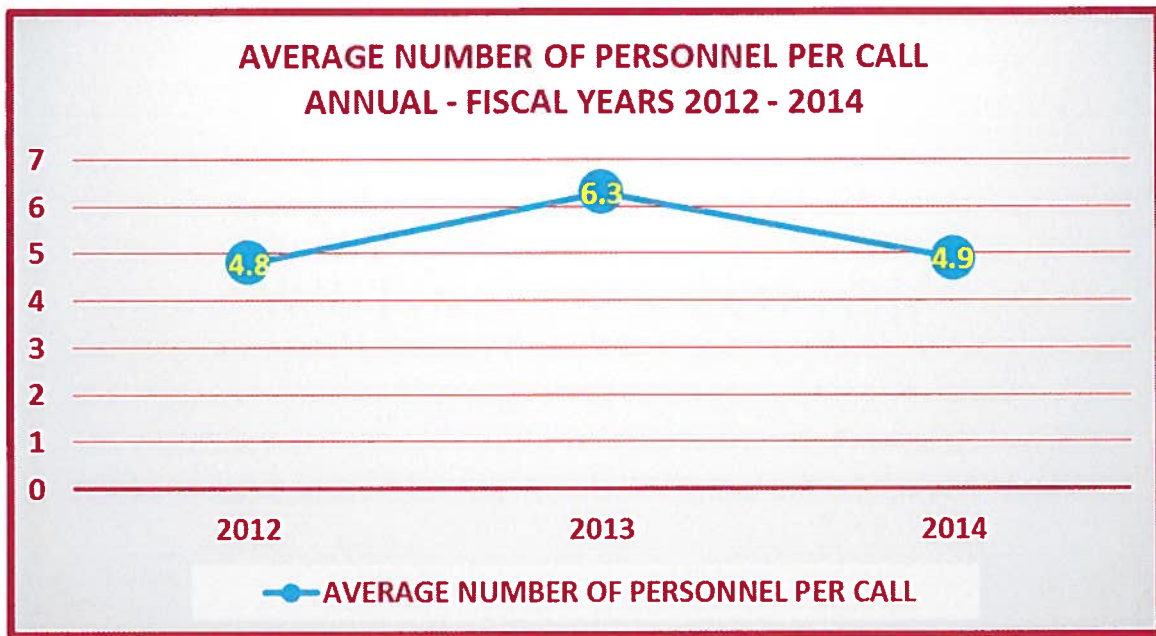


Figure 4-7: Average Number of Personnel Per Call Annually: FY 2012 - 2014

It is very clear to the study team that Berlin is struggling with its fire department staffing, and the department frequently does not muster sufficient qualified/certified personnel to effectively, efficiently, and possibly even safely handle many incidents. The average number of personnel who respond to the emergency incidents illustrates the staffing challenges facing the town. This is not a situation that is limited to Berlin, or even the northeast, it has been occurring across the country for probably the last 20 or 25 years.

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 volunteer/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 volunteer and on-call firefighters in communities such as Berlin. Among them is that the demographics of many communities today do not support a sufficient numbers 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.

The Berlin Fire Department does not have a formal recruitment and retention program for call personnel and has only very infrequently actively recruited for new members. The MRI study 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 department's website, or even a person to contact if someone is interested in joining the department. This

information is something that is frequently displayed very prominently on the websites of many call/volunteer departments.

There are a number of things that the Town of Berlin and the Berlin Fire Department could try as part of their efforts to increase the number of call firefighters in the department. These suggestions include, but are certainly not limited to:

- Working with local businesses in an attempt to form partnerships that would allow employees to leave work to respond to emergency incidents when needed.
- Creating a marketing program to recruit new personnel into the department.
- Hire a volunteer firefighter “Recruitment and Retention Coordinator” to develop, implement and coordinate these activities. This could possibly be undertaken by a number of communities as a regional endeavor.
- Nurture the volunteer/call fire department.
- Provide a tax abatement incentive for volunteer firefighters modeled after a program in place in the State of Connecticut.

Even if the recruitment obstacles can be overcome, hurdles remain before a new member is a productive member of the department. The training commitment alone is daunting, as well as 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 (if required) skills and certifications. Unfortunately, in 2015 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.

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 2015, this is an increasingly difficult problem to overcome. However, a common thread that we heard throughout a number of our interviews related to this study is that there is still a small town feel to Berlin, 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.

The Town of Berlin has expressed a desire to retain a strong call firefighting force. We concur and believe 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.

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 grants fund expenses such as recruitment campaigns, and can provide money for such as expenses as tuition for college curriculums in fire science, for 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, then stay for an extended period of time. We believe that the town/department should attempt to secure a SAFER grant to recruit and retain on-call members, citing an attempt to meet the NFPA 1720 fire response standards.

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", where 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".

At a minimum, caused primarily by limited availability of the call firefighters due to their commitments to their regular, full-time, occupations, effective day time responses appear to be growing increasingly problematic for the department. There are occasional instances where the department is unable to field personnel to respond at all, requiring the dispatch of mutual aid resources. Other times, although made, the response is slow resulting in an unacceptably long delay in getting emergency assistance to the 9-1-1 caller. In still other instances, although the apparatus may respond, it is not adequately staffed with SCBA qualified firefighters, thus limiting the on-scene fire suppression tactical options should they be necessary.

We fully support the continued use of a strong, primarily call fire department in Berlin, and believe that this model can continue to serve the needs of the town for the foreseeable future. However, we also believe that the call volume, which will most likely continue to increase each year, along with the multitude of other daily tasks which need to be performed, not the least of which is a large number of fire inspections and other fire prevention activities, indicate that the time has arrived for the town to consider the transition to a combination fire department utilizing a small career staff to supplement the call force. This will be particularly true if the fire department and rescue squad are combined into a single emergency services provider.

While effective, efficient, and safe, emergency scene operations, particularly initial fire attack operations, is the overriding reason for considering the addition of career staffing, that is not the sole justification. Some of the other benefits have having the career staff in place,

particularly during the day when most of the call force are at their primary jobs, include, but would certainly not be limited to:

- Quicker and greater compliance with the OSHA Two in-Two Out requirement for initial fire attack;
- Guaranteed, and usually immediate, EMS response by the ambulance to get life-saving help to the 9-1-1 caller quicker;
- performing fire prevention inspections (possible future duty) and other fire prevention activities;
- developing pre-fire/incident plans;
- performing fire apparatus, tool, and equipment inspections, testing and maintenance;
- performing basic station maintenance;
- performing static water supply source testing, maintenance and flow testing; and
- assisting the fire/rescue chief with various day-to-day administrative duties and/or special projects.

Each of the career staff would be assigned several ancillary duties that they would be responsible for performing and/or coordinating. The sum total of these benefits would be to assist with taking the workload off the call staff and letting them focus their available time on training and emergency incident response.

Another viable solution to the staffing challenges, one that has been successful in many other call/volunteer fire departments and rescue squads, is the implementation of a duty crew system. Under the duty crew system, the department could be divided into two or three duty crews. Each duty crew would have their own separate alert tone and would function on some type of a rotational system with the other crews, perhaps one week on and either one or two weeks off. Only the “duty crew” would be dispatched initially to minor incidents often referred to as “still alarms”. The advantage of the duty crew system is two-fold. It preserves the active, primary response role of what is a relatively strong call force while simultaneously reducing the constant need for personnel to respond to all incidents. Whether this duty crew is compensated or not would be a decision the town would need to make based upon conversations with the members of the department. Statistical analysis of incident response data and trends, once the program is operational, would provide guidance on what adjustments to the program may be required to optimize its effectiveness.

There are no easy or guaranteed solutions to the staffing quandary facing Berlin 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. It is

also very important to advise the town that should they decide to transition from a fully call fire department to a combination one that the process may be difficult one. However, this situation is one that many fire departments experience during this time of their evolution and growing pains would not be unique at all to Berlin.

## **RECOMMENDATIONS**

- 4-1** The Town of Berlin should take steps to streamline the oversight and direction of the Berlin Fire Department by abolishing the Board of Fire Engineers and place control, direction, and supervision, of the fire department under the control of the Board of Selectmen the same as the other town emergency services. It is our belief that as configured the BOFE does not provide the appropriate level of checks and balances to properly and transparently oversee the operations of a 21<sup>st</sup> century fire department.
- 4-2** Managing, administering, and leading, a modern day fire department requires a complex set of knowledge, skills, abilities, training, and experience. As a result, the Town of Berlin should maintain the position of fire chief as a full-time, career position as is proposed to take effect July 1, 2015. This chief should be a working chief, that is, one who responds to most emergency incidents and takes an active, hands on role in incident mitigation. In conjunction with the current chief, they should begin a succession planning process to begin looking toward the future and the changes that will bring to the department.
- 4-3** The position of full-time, career fire chief, although reporting to the Board of Selectmen should be designated a “strong” fire chief. In order for the town to attract and retain a high quality chief he/she must have a significant level of autonomy to lead and manage the department, including at times making unpopular decisions, without undue political influence, or even meddling, as may be more inclined to occur with a “weak” chief who would be more susceptible to these pressures. The town and the chief should negotiate a strong personal services contract to ensure that the interests of both parties are properly addressed and protected.
- 4-4** As will be developed in more detail in Chapter 12, *Conclusions and Fire/Rescue/EMS Service Delivery Options*, it is our opinion that the town will need to revise the department’s overall table of organization to clearly delineate the chain of command and make it more effective particularly if the fire department and rescue squad are merged into a single department.
- 4-5** The salary for the full-time, career fire chief should be increased to make the salary competitive with other communities in the area and other similar sized communities

**AND to make it attractive to recruit and retain a high quality candidate to serve as the town's next fire chief.**

- 4-6 Prior to the retirement of the current chief, and possibly utilizing the services of a professional consulting firm, through a variety of evaluative and assessment measures the town should attempt to select for their next chief a leader who possesses the ideal combination of assets they have identified as necessary to meet the unique needs of the Berlin Fire Department to lead it through this critical transition process.**
- 4-7 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.**
- 4-8 All officers should have one or more administrative duties/responsibilities to assist the fire chief with the department's overall management, in addition to their normal emergency scene operational duties and station management responsibilities.**
- 4-9 As part of the succession planning process, the next fire chief should work to implement a career development program to insure that all officers can perform their superior's duties, as well as, identify the core future leaders of the department.**
- 4-10 The Berlin Fire Department 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.**
- 4-11 The Berlin Fire Department should make it a priority to develop an active on-call recruitment program led by a call chief officer. At a minimum, this program should concentrate on recruiting personnel from within Berlin and consist of:**
  - Developing a recruitment brochure and mailing it to all residents,**
  - Performing public outreach through the local media,**
  - Contacting community and service groups,**
  - Developing an eye catching banner on the town's web site,**
  - Placing signs recruiting call/volunteer personnel at the main entrances to town,**
  - Placing signs call/recruiting volunteer in local businesses particularly high volume locations; and**
  - an active and visible presence at the local high school.**

Although time consuming, consideration should also be given to conducting a door-to-door recruitment campaign of every residence in the town. Increasing the number of personnel in the department should result in an enhancement of the number of personnel responding to incidents.

- 4-12 In conjunction with neighboring towns such as Bolton, Boylston, Clinton, Hudson, Northborough, and perhaps other interested local communities, the Town of Berlin and Berlin Fire Department should give consideration to hiring a call/volunteer “Recruitment and Retention Coordinator” to develop, implement and coordinate recruitment and retention efforts and programs for the cooperating communities.
- 4-13 The Town of Berlin and the Berlin Fire Department should attempt to enter into partnerships with local businesses to allow their personnel to respond, when needed, to emergency incidents during working hours, without any financial penalty.
- 4-14 The Town of Berlin should give consideration to hiring two full-time career firefighters who along with the fire chief would provide a three person crew to insure guaranteed, timely, and qualified, response to day time emergency incidents and augment staffing at the time when most call members are least available to respond. With three personnel available for immediate response, perhaps supplemented by an available call firefighter to bring the crew size to four the department would much more frequently comply with the initial fire attack requirements recommended by NFPA, and required by OSHA.

**NOTE:** This recommendation will be more fully developed in Chapter 12, *Conclusions and Future Fire/Rescue/EMS Service Delivery Options*.

- 4-15 The Town of Berlin and Berlin Fire Department should give consideration to implementing a duty crew system whereby the department will be divided into two or three duty crews. Utilizing their own separate dispatch tone the duty crew would be dispatched to minor incidents reducing the need for the entire department to respond.

Under the duty crew system the entire department would be dispatched and respond to potentially serious incidents such as any type of reported fire, rescue incidents, etc.

- 4-16 The Berlin Fire Department should work to develop statistics that indicate the frequency with which the department is able to comply with the requirements of NFPA 1720, and also, the average number of call personnel who respond to each incident. These statistics should be further broken down by weekday daytime (normal working hours 7:00 AM to 6:00 PM), weekday night time (6:00 PM to 7:00 AM) and weekends.

- 4-17** As primarily call organizations where personnel respond from various locations upon receipt of an emergency incident dispatch, both the Berlin Fire Department, and Berlin Rescue Squad, should purchase, and implement, a system to track members who are responding to the incident such as the *"I Am Responding"* system.

## **CHAPTER 5**

### **FIRE DEPARTMENT OPERATIONS**

Fire, and in many cases, rescue, and emergency medical system (EMS) incidents, and the fire department's ability to respond to, manage, and mitigate, them effectively, efficiently and safely are mission critical components of the emergency services delivery system. In fact, fire, and again, in many cases rescue and EMS operations, provide the primary, and certainly most important, basis for the very existence of the fire department. Insuring that the department is operationally prepared; necessary equipment is provided, tested, inspected, and maintained; and that adequate funding is allocated to insure that the department is able to fulfill its core mission, are basic responsibilities of the governing body of the municipality that it serves. Utilization of an incident command system and adherence to safety procedures are also important pieces of the system.

As introduced in Chapter 4, *Fire Department Organizational Structure/Chain of Command and Staffing*, 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*, 2010 edition (National Fire Protection Association, Quincy, MA) outlines organization and deployment of operations by volunteer/call, and primarily volunteer/call fire departments.

In addition to structural and other types of firefighting operations, the fire department is tasked with responding to, and managing, a broad spectrum of other types of emergencies, including, but not limited to, vehicle crashes, building collapse, water and ice rescue, mass casualty incidents, weather related emergencies, and natural and technological disasters. These types of incidents require specialized equipment and training, and in small communities are frequently handled by a regional team, or by a larger, more capable neighbor. In all types of emergency responses, an incident command system (ICS) should be utilized that conforms to the National Incident Management System (NIMS) guidelines that have been promulgated by the U.S. Department of Homeland Security. While firefighter safety is a primary focus throughout all operations, a formal component of the ICS program includes the consistent designation, and use, of an on-scene safety officer when appropriate.

The Berlin Fire Department is fortunate to have a dedicated membership who strive to provide the best possible services to the community given the limitations and constraints, primarily from a time commitment standpoint, of a call fire department. Overall, the department appears to be well trained, well equipped, and generally well prepared to serve the needs of the community that it protects. In fact, in our opinion, they probably do so more effectively and efficiently than a lot of other fire departments of comparable size and composition do. However, that does not mean they are without weakness, or areas where there could be significant improvement. Concerns include a lack of standardized response assignments, and

extended response times with associated staffing challenges. Certain aspects of the staffing issues are identified in Chapter 4, *Fire Department Organizational Structure/Chain of Command and Staffing* while others will be discussed in this chapter.

Berlin provides an interesting mix of challenges and hazards that must be protected by its fire department. While large portions of the town still reflect its traditional rural, and primarily residential, character, the areas around Solomon Pond Mall and Highland Commons present a much different picture. These pockets are home to several very large shopping complexes. The area from the Solomon Pond Mall to the South Berlin Rotary is also targeted for significant development over the next few years. The firefighting and emergency response challenges that confront firefighters in these types of structures and occupancies are much more complex, require more resources to mitigate, and are potentially more dangerous from a life safety perspective to both occupants and firefighters, than those usually found in single family dwellings. In addition, the presence of these facilities/occupancies in the town creates increasingly heavy traffic conditions, not only on in the vicinity of these complexes, but on other roads as well as drivers attempt to avoid the congestion found on the primary highways. These traffic conditions not only will create additional incidents such as motor vehicle accidents, they can also impact response times and routes from one area of town to another.

The strategic and tactical challenges that the widely varied hazards the department protects need to be identified and planned for through a community risk analysis planning and management process as recommended in paragraphs 4.2 and 4.2.1, *Community Risk Management* of National Fire Protection Association (NFPA) Standard 1720 – *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* (2010 Edition).

Despite its growing commercial base, the department does not have any type of pre-fire/incident planning program which is one of the most effective tools the fire department has to assist them with handling fires and other emergencies in these facilities. Paragraph 5.5.1 of NFPA 1720 states, “the fire department shall set forth operational guidelines to conduct pre-incident planning”, while paragraph 5.5.2 states, “particular attention shall be provided to target hazards”. The chief reports that he has important, basic information, such as fire flows, on some of the town’s main target hazards such as the lumber yard located in the center of town but the plans are not really written or formal.

The purpose of a fire pre-planning program is to allow firefighters to become familiar with buildings and/or facilities within their response area prior to an emergency, alert them to on site hazards and risks, and develop a detailed fire response plan for them that includes specific tactics that will be required to mitigate fires or other emergencies. Information collected for pre-fire/incident plans includes, but is certainly not limited to, data such as:

- the occupancy type
- floor plans/layouts
- building construction type and features
- fire protection systems (sprinkler system, standpipe systems, etc.)
- utility locations
- hazards to firefighters and/or firefighting operations
- special conditions in the building
- apparatus placement plan
- fire flow requirements and/or water supply plan
- forcible entry and ventilation plan

The information contained in pre-fire/incident plans allows firefighters and officers to have a familiarity with the building/facility, its features, characteristics, operations, and hazards, thus enabling them to more effectively, efficiently, and safely, conduct firefighting and other emergency operations. Pre-fire/incident plans should be reviewed regularly and tested by periodic table-top exercises and on-site drills. As a community which is rural in nature and lacks a municipal water supply system, the Berlin Fire Department has developed a comprehensive list of water source locations from where water can be obtained for firefighting operations throughout the community. They should be commended for this effort. They are also encouraged to begin to develop these pre-re/incident plans for the target hazards and business/commercial occupancies in the town.

Paragraph 4.1, *Fire Suppression Organization* in NFPA 1720 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”.

At the time of this study, when a call was received reporting any type of a fire/emergency incident in a structure (smoke/fire in the building, interior gas leak, etc.), regardless of size, the Berlin Fire Department is, for the most part, dispatched alone for the incident. The notable exception is at Solomon Pond Mall where all alarms are received and dispatching performed, by the City of Marlborough. For these incidents, the Marlborough Fire Department will also be responding with an appropriate number of resources for the type of incident reported.

While Berlin utilizes a standard 10 alarm box alarm/run card system it does not specify the initial dispatch of a certain number of resources, i.e.: engines, ladders (other than Berlin), chiefs, etc. at the time of first dispatch. The number of apparatus and personnel who respond initially would be determined solely by the number of call firefighters who were available at that time and who responded. The decision on whether to request additional resources to

respond is made on a case by case basis by the highest ranking officer responding predicated upon information they may be receiving while enroute and/or upon conditions encountered upon their arrival on the scene. This procedure is a concern as it results in delays in the dispatch and response of additional needed mutual aid resources who may also be faced with the realities of limited staffing, extended travel distance, and as a result, longer response time. With an average of between 4.8 and 6.3 members responding to each call from 2012 through 2014 the result is not only little chance of Berlin achieving NFPA 1720 compliance with the recommended number of personnel on scene within a predetermined period of time (discussed in detail in Chapter 4, *Fire Department Organizational Structure/Chain of Command and Staffing*), from a more practical operational stand point it can significantly impact the ability of the department to quickly mitigate the incident resulting in potentially increased fire damage and loss.

At the time of initial dispatch, the incident is toned out over the department's radios and pagers. An alpha page is also sent out to members' cell phones. After one minute, the incident is toned out again and is supposed to be toned out every minute after until there is a response, or an officer signs on radio who can provide direction. The officers do pull rotational duty each week so there should always be at least a lieutenant available to respond. If there is no response after the third tone (about three to four minutes) mutual aid is supposed to be dispatched. However, it was reported to the study team that this often does not occur. In fact, the study team observed an incident that was toned out at least four times before response during one of our field visits. The Berlin Fire Department does not utilize the *I Am Responding*, or similar system, whereby members can notify dispatch that they are responding even if they have not arrived at the station.

Once a unit arrives on location and determines that there is a working fire an additional career engine from Hudson, Clinton, or Northborough is dispatched to serve as a rapid intervention team (RIT). Berlin is located in Fire District 8 and when a fire reaches greater than a third alarm communications are supposed to be transferred to Mid-State Control in Fitchburg. However, it was reported to the study team that there are frequently problems with this transfer and subsequent communications and operations.



**Figure 5-1: Under current operational procedures Berlin responds alone to reported structure fires in town until it is determined that the incident is an actual fire at which time mutual aid is requested such as for this fire at 32 Jones Road. (Photo: Berlin Fire Department)**

As previously discussed in detail in Chapter 4, *Fire Department Organizational Structure/Chain of Command and Staffing*, but important enough to re-emphasis here, the emergency scene in general, and the fire ground involving a structure fire in particular, is a dynamic, dangerous, frequently unpredictable, and rapidly changing environment where conditions can deteriorate very quickly placing firefighters in extreme personal danger. 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 of 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 Berlin does 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. It is our opinion that Berlin, with their current personnel resources, will rarely be able to get either sufficient apparatus, or firefighters, to the scene of an incident without turning to their neighboring departments for assistance. This is common practice in both career and on call fire departments throughout the country and should not be viewed negatively in any way. Paragraph 4.7.3 of NFPA 1720 states, “the fire department shall be allowed to use established automatic aid or mutual aid agreements to comply with the requirements of Section 4.7, *Sustained Firefighting Operations*”. Paragraph 4.3.5, *Staffing and Deployment* states, “standard response assignments and procedures, including mutual aid response and mutual aid agreements predetermined by the location and nature of the reported incident, shall regulate the dispatch of companies, response groups, and command officers to fires and other emergency incidents”.

All of Berlin’s neighboring fire departments stated a qualified willingness to enter into mutual aid agreements with them for immediate response to reported structure fires provided the town is not trying to abdicate their own responsibility to provide primary fire protection and emergency services to building and facilities within their own borders. It is our opinion that Berlin needs to establish appropriate automatic mutual aid agreements with its neighboring departments to provide appropriate additional resources on initial dispatch to any type of structural incident.

The chiefs of the surrounding departments generally have a positive opinion of the Berlin Fire Department and its personnel. Although they all mentioned that Berlin does struggle more with staffing since they are fully call, and thus have a tendency to have extended response times to get units to the scene of an emergency, once they arrive on the fire ground the personnel who are there are ready to work, and can be counted on to complete the assignments they are given. Overall, they view the department as professional and they do their job well. However, several did mention that they are reluctant to call Berlin for mutual aid because of their staffing and the related extended response time issues.

The apparatus and equipment operated by a fire department is closely integrated into its operations and capabilities. A review and assessment of the Berlin Fire Department’s fire suppression equipment inventory indicated that the department has a well-maintained, well equipped, apparatus fleet that has sufficient versatility to handle the variety of incidents that the department will most likely encounter. However, as discussed in Chapter 3, *Apparatus and Equipment*, we believe the town’s apparatus fleet is too large and can be consolidated, and right sized, over time.

The Berlin Fire Department does have an Incident Management System (IMS) in place, and from most accounts it is effective, and is utilized on most incidents. Use of an IMS is mandated by federal regulations, as well as, numerous other regulations and standards. It is imperative that the Incident Commander (IC) exercise overall command and control to insure the proper coordination of incident operations, which prevents freelancing, and/or competing/dangerous

strategies and tactics being employed. However, there were some problems reported with the use of a unified or integrated command structure on some incidents where both the fire department and rescue squad were operating that has led to freelancing. A shortage of qualified personnel in Berlin to fill some ICS roles and responsibilities was mentioned by several mutual aid chiefs. Incident Command System (ICS) operations in Berlin are also more challenging for the chief officers by virtue of the fact that they do not have an appropriate command vehicle to utilize for the management of any significant incident.

A critical component of ICS is the establishment of the role of safety officer to monitor conditions at an incident scene to ensure that appropriate safety procedures are being followed. The Berlin Fire Department appears to have a strong and long-standing safety culture that was driven by the late Chief Jack Peltier. It was reported to the team that, when necessary, a safety officer is usually assigned to an incident. The department does have a personnel accountability system that appears to work and be effective. It is imperative that officers lead by example as this set the tenor for the entire safety culture of the department.

Being able to develop an adequate water supply for firefighting purposes is perhaps the most critical, non-safety, aspect of firefighting operations. Quite simply, if an adequate water supply cannot be established quickly, and maintained, effective firefighting operations will not be possible. Only a very small part of Berlin is protected by a municipal water supply system limited to the commercial development areas that straddle the Marlborough and Hudson borders. In fact, the areas with hydrants are fed by those communities' respective water supply systems.

The remainder of the town does not have a water system requiring the fire department to establish, and then maintain, an adequate supply of water to fight the fire. The establishment of rural a water supply operation requires significant resources, both personnel and equipment, all part of a closely coordinated effort. Portable tanks are set up near the fire scene to supply engines operating to attack the fire. Water tenders transport water from supply sources located throughout the town to the dump tanks near the incident. The size of the fire, and the distance from the fire to the closest source(s) of water, will both directly impact the size and complexity of this type of operation. At an absolute minimum, three rated Class A pumpers are required to maintain a rural water supply operation, along with an adequate number tenders/tankers. For working fires in Berlin, in addition to the town's own tender, water supply tenders are dispatched from Boylston and Harvard (3000 gallon each) and Stow (2200 gallon).

There are a number of water supply cisterns and dry hydrants/standpipes that have been installed at various locations in the town including several planned developments. If a water supply is being established from these sources through the use of large diameter hose, an additional pumper will be required at intervals of no greater than 1,000 feet. There are several benefits to these systems notably being able to more safely deliver a continuous, uninterrupted water supply to the fire scene.



**Figure 5-2: With no municipal water system and fire hydrants Berlin frequently must utilize water tenders to transport water for firefighting operation to the scene to supply portable tanks. (Photo: Berlin Fire Department)**

The Town of Berlin has adopted a bylaw applicable to any new subdivision being built with three or more houses that requires the homes to be equipped with automatic fire suppression (sprinkler) systems, or that a water supply cistern to hold water necessary for fire suppression operations be installed in the development. The requirements for these system are detailed in several NFPA standards. This is an extremely important fire and life safety initiative for a rural community. However, it appears that enforcement of this bylaw has been somewhat inconsistent. The Town of Berlin should be commended for the adoption of this progressive fire safety bylaw. We encourage the town to fully enforce it to the extent practical including retroactively requiring compliance for developments which were approved/ completed subsequent to the effective date but which may have still been occupied without the installation of approved fire and life safety systems.



**Figure 5-3 and 5-4: Pump house and fire department connections to access water in below ground cistern stored for firefighting use in a planned subdivision in Berlin. The town should aggressively enforce this proactive fire and life safety bylaw.**

A community and fire department's ISO rating may play a major role in determining the fire insurance rates that are paid by property owners in that community. The ISO rating system classifies fire departments from Class 1 to Class 9, with 1 being the best and 9 being the lowest. Most communities with no municipal water supply system are a Class 9 which is what Berlin's current classification is. An ISO rating of 9 is a reflection of very limited fire protection in the community thus resulting in potentially higher fire insurance premiums for both residential and commercial properties. Communities such as Berlin that have areas protected by a water system, as well as, areas that have no water can receive a split classification. Individual facilities and occupancies can also receive their own distinct ISO rating. Some in Berlin are reported to have an ISI Class 6 rating although this information could not be verified by the team.

ISO also awards communities a Class 8B rating which is a special classification that recognizes a superior level of fire protection in otherwise Class 9 areas. It is designed to represent a fire protection delivery system that is superior except for a lack of a water supply system capable of the minimum Fire Suppression Rating Schedule (FSRS) fire flow criteria of 250 GPM for 2 hours. Achieving a Class 8B rating should result in savings on fire insurance premiums for at least some of the town's businesses and homeowners. The Town of Berlin and Berlin Fire Department are encouraged to pursue an ISO re-evaluation with a goal of lowering the town's overall ISO rating and possible receive a split classification for the hydrant/non-hydrant areas of the community.

One of the best ways to get a broad overview picture of an emergency services provider is to look at, and analyze, their emergency response/incident statistics. Looking at statistical data that is compiled from incident reports that are generated for each and every emergency response, and/or request for assistance, will assist with determining the adequacy of current operations, as well, identify trends in responses, i.e.: increasing vs. decreasing, changing types

of incident requests, increasing response times, frequency of simultaneous incidents, etc. Utilizing current trends to help predict future ones, while not an exact science, can be helpful to communities and fire departments in predicting, and planning for future operational needs. However, as with any other type of statistical analysis, the information that is analyzed is only as good, and/or reliable, as the data that was originally entered, and has been provided for evaluation.

The data that was analyzed for this report was provided to the MRI study team by the Berlin Fire Department, and the Berlin Police Department who operates the town's emergency communications center. The MRI study team evaluated Berlin Fire Department incident response data for a three year period covering 2012 through 2014. It is important for us to note that there were discrepancies noted between data obtained from different sources. The 2012 fire department report prepared for inclusion in the town report indicates the department responded to a total of 316 "runs" that year when the sum of the various categories listed is actually 205. In both 2013 and 2014, the department listed their inspections under the classification of "Other Types of Incidents" which to the untrained reader would show significantly more incidents or responses than actually occurred. The fire department reports also differ from some of the statistical reports provided by the police department from the Pamet data base particularly those related to response times.

According to the reports provided to us by the fire department, during the three year period from January 1, 2012 through December 31, 2014, the Berlin Fire Department responded to a total of 690 emergency requests for assistance, an average of 230 per year, or .63 per day. The dispatch center provided data was lower all three years. Although the data from these years did not show a definitive pattern, nationwide statistics, as well as, the ongoing commercial development occurring in town would suggest that these incidents will continue to gradually increase from year to year.

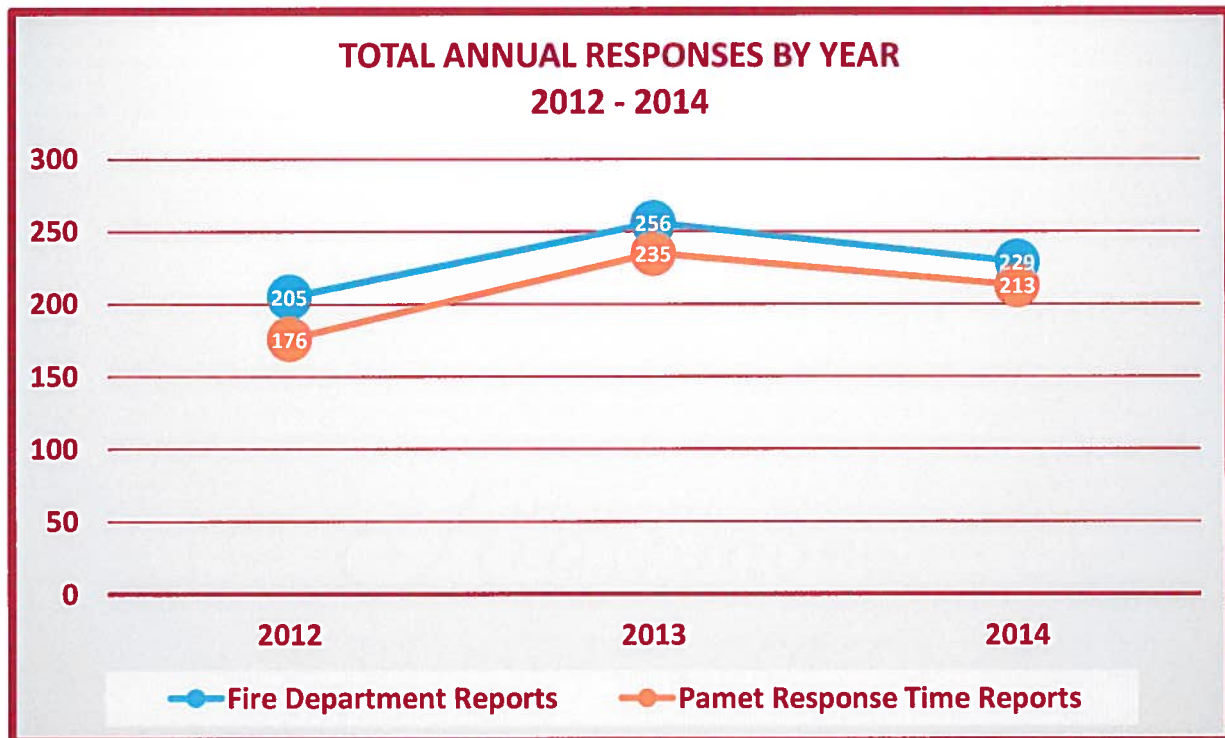


Figure 5-5: Annual Fire Department Responses 2012 - 2014

For actual fire incidents, the statistical sample is quite small, however, that would not be unexpected in a smaller community such as Berlin. It is very important to note that per National Fire Incident Reporting System (NFIRS) protocols, the category for "Fire Incident" must be an actual fire situation that in many, but not all, situations caused some type of damage. Many of the incidents that are classified under other types of incidents were probably initially dispatched as some type of fire incident, but ultimately were classified otherwise, for reporting purposes, based upon the situation actually found at the scene. From 2012 through 2014, the department responded to a total of 88 actual fire incidents, an average of 29.3 per year, or a little more than one every other week. Actual fires accounted for 12.8% of the department's total responses during these years and ranged from 10.2% in 2012 to 15.2% in 2013.

One data set that the MRI study team was provided with was "Incidents – By Type" from Pamet for 2014. This report listed 130 building fires for Berlin in 2014, the majority of them on Donald Lynch Boulevard, and at times, with several occurring on the same dates. There is no doubt in our mind that this information is incorrect. In all probability, the majority of these incidents were for automatic fire alarm activations at the Solomon Pond Mall and were incorrectly classified as building fires. Berlin actually responded to ten building fires in 2014.

Fire departments also respond to many other types of incidents that may, or may not, be fire related. These types of incidents frequently constitute the largest number of fire department responses and each must be treated as an emergency. In the case of automatic fire alarm systems, the incident must be treated as a potential actual fire until such time as a trained and

qualified emergency responder arrives on the scene and determines otherwise. Other incidents, such as fuel or chemical spills, create other dangers and hazards to people, property, and the environment, unless they are properly mitigated.

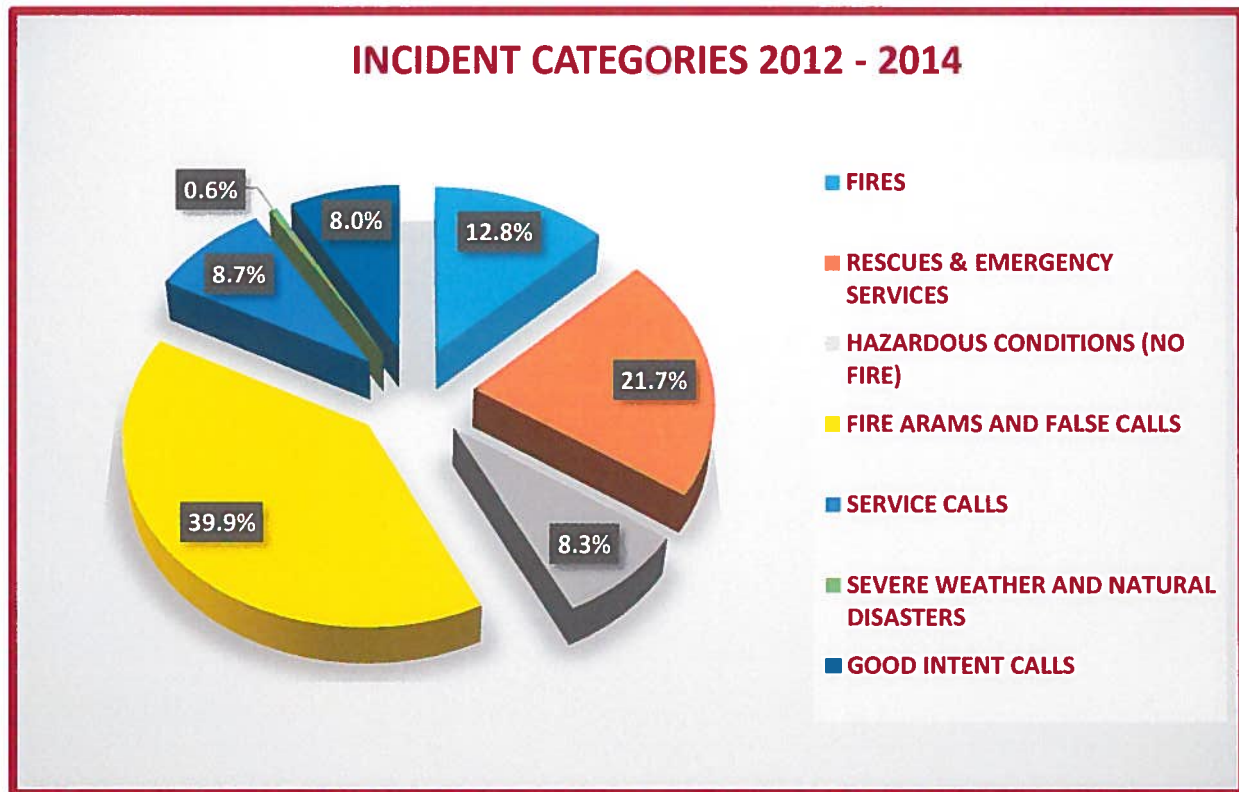


Figure 5-6: Incident Categories 2012 - 2014

### ANNUAL RESPONSES BY INCIDENT TYPE 2012 - 2014

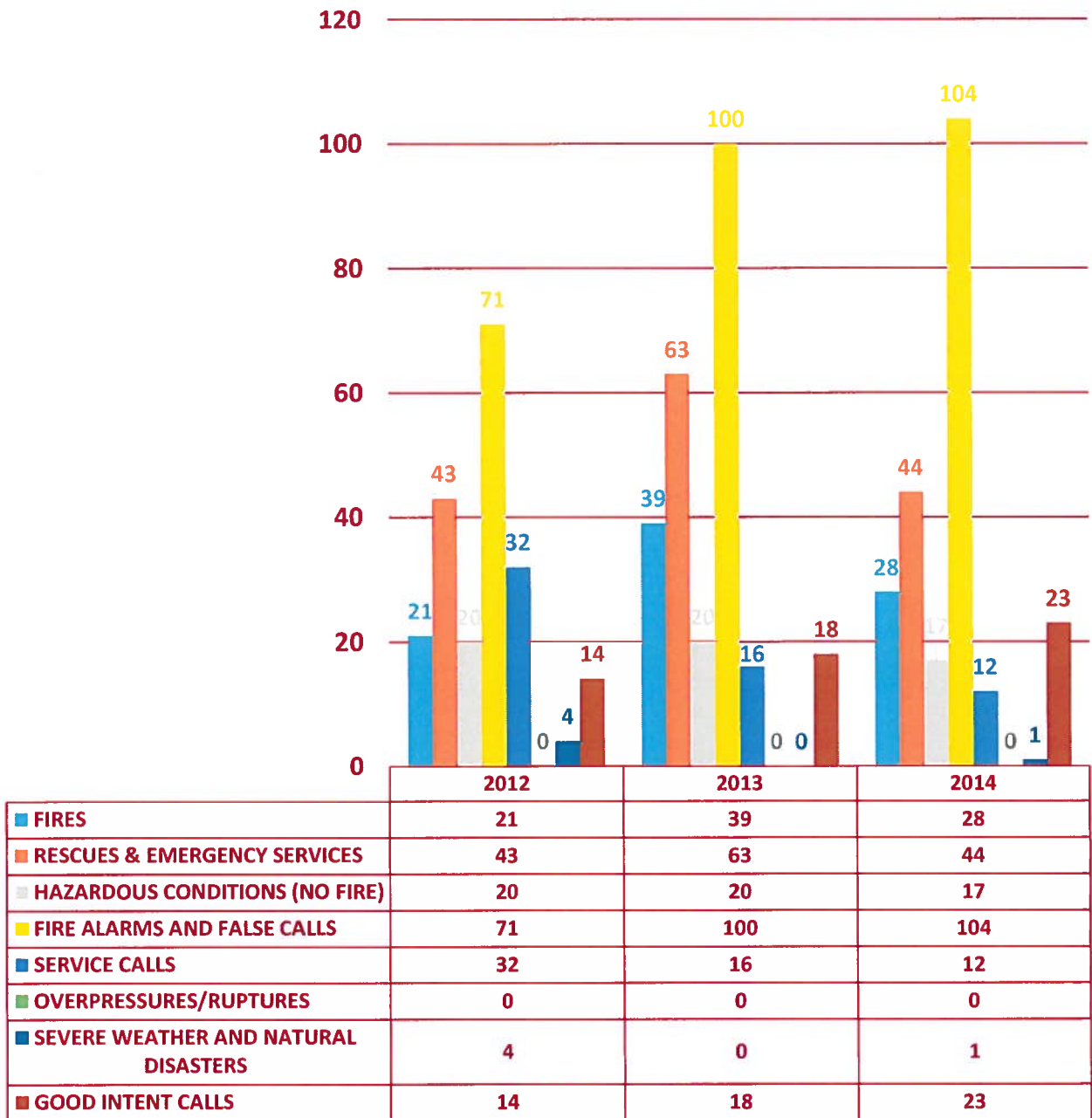


Figure 5-7: Annual Responses by Incident Type 2012 - 2014

Response time is another important measuring instrument to determine how well a fire department 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

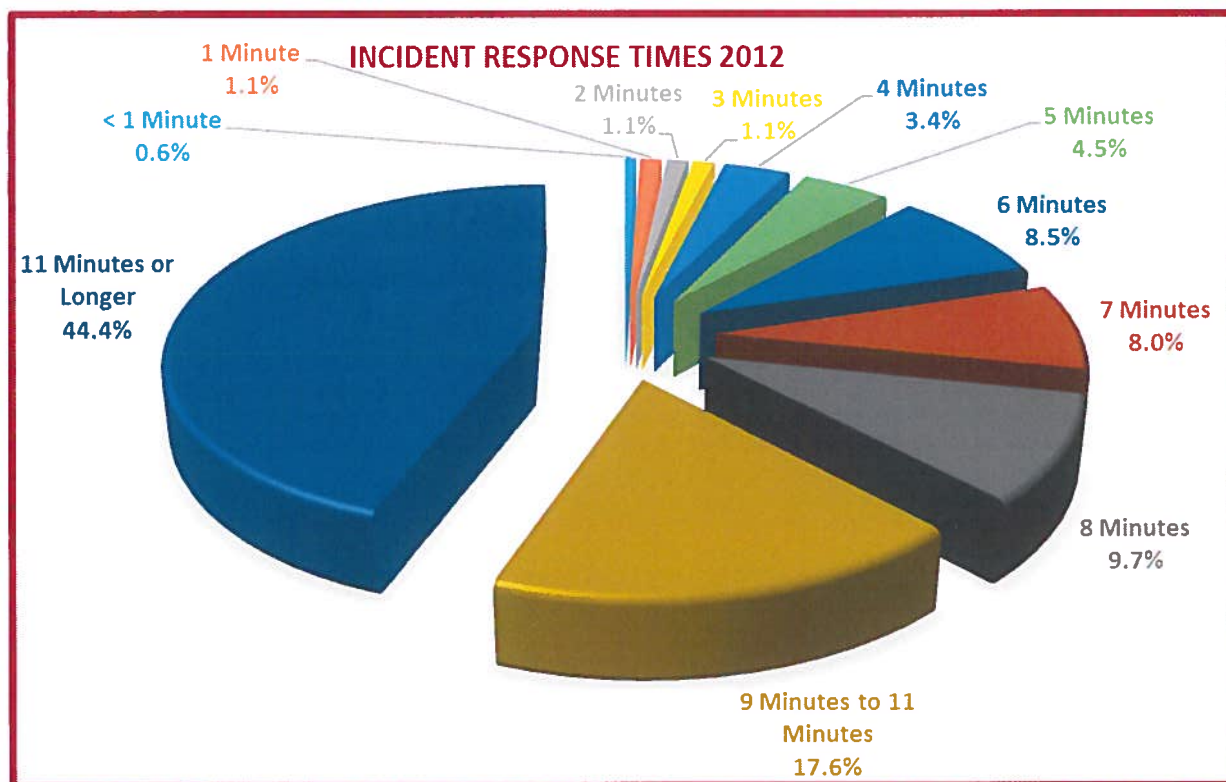
time possible may be critical to the survival of the patient, and/or successful mitigation of the incident. Achieving the quickest, and safest, response times possible should be a fundamental goal of every fire department.

While National Fire Protection Association (NFPA) Standard 1720 – *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments* (2010 Edition) which is the nationally recognized consensus standard on staffing and deployment by volunteer/call and combination fire departments provides only limited guidance as far as overall on scene response times, its companion standard 1710 - *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments* (2010 Edition) sets a number of benchmarks. These are the benchmark standards that the United States Department of Homeland Security utilizes when evaluating applications for staffing grants under the Staffing for Adequate Fire and Emergency Response (SAFER) grant program. While as a fully call department the provisions of NFPA 1710 are not really applicable to the Berlin Fire Department they can provide some valuable benchmarking guidelines.

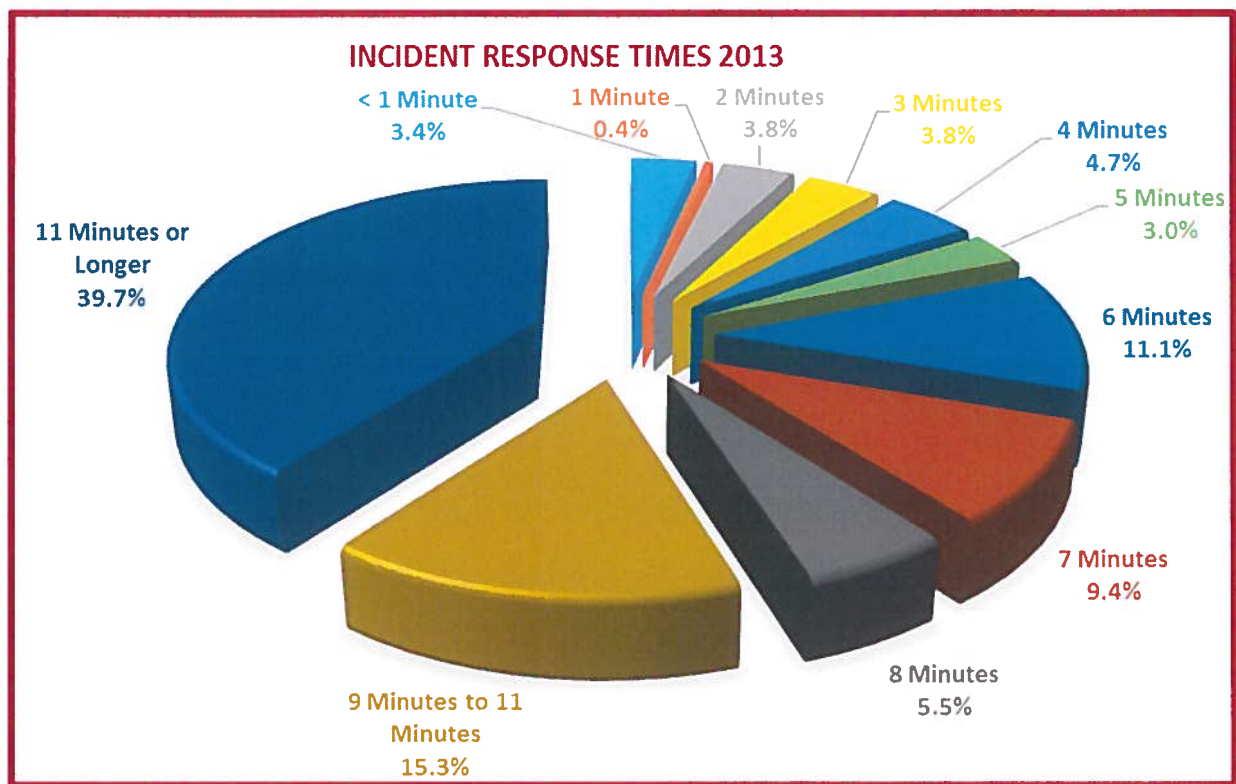
- Paragraph 4.1.2.1 states that the first arriving engine company shall arrive at the scene of a fire suppression incident within four minutes or less after the unit is responding. For EMS incidents, a unit with first responder or higher-level trained personnel should arrive within four minutes, and an Advanced Life Support (ALS) unit should arrive on scene within eight minutes. Paragraph 4.1.2.2 requires the establishment of a 90% performance objective for these response times.

**NOTE:** The four minute response time is from when the units are physically moving to the incident. One minute can be added for call processing and dispatch, and one minute can be added for turnout time, that is from when firefighters in the station are notified until they are actually responding, **providing six total minutes from the time the 9-1-1 call is answered until the first unit arrives on location.**

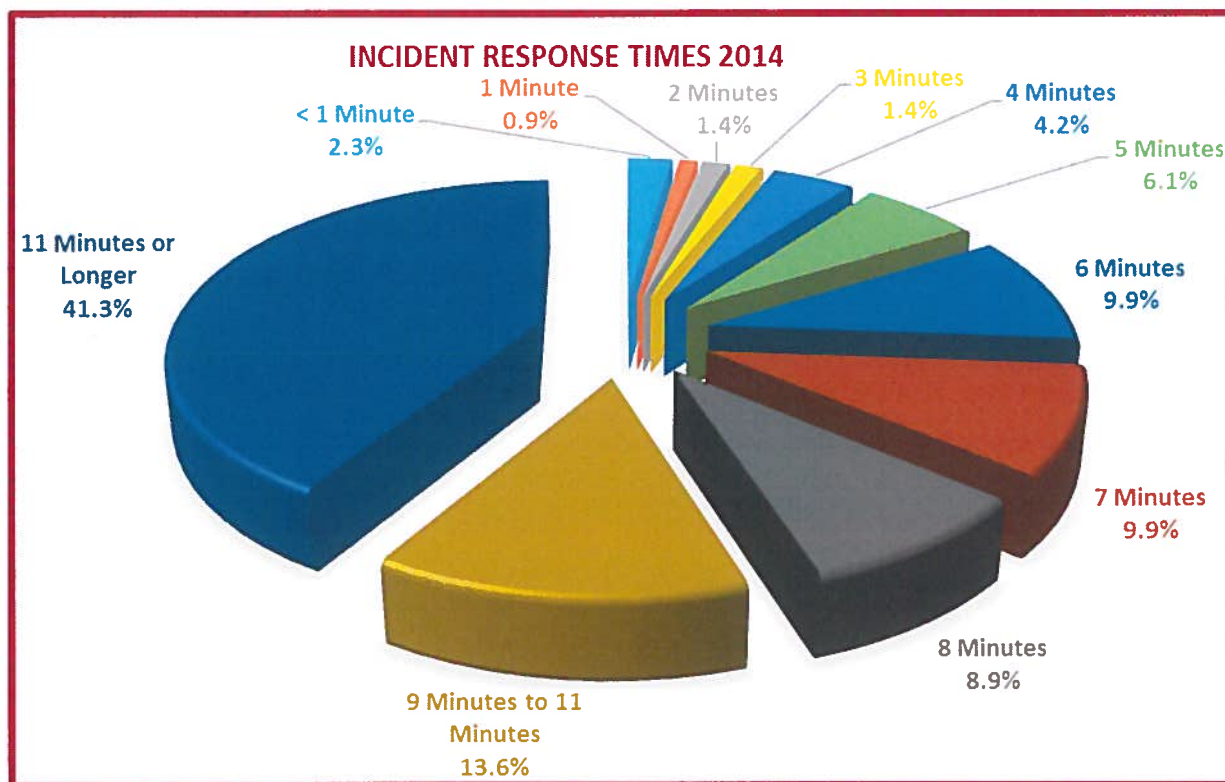
An analysis of response time data from January 1, 2012 through December 31, 2014 indicated that the department's average response time is generally much higher than recommended by the standard (**NOTE:** These average response times are from the time the call is received by the 9-1-1 dispatcher so it includes the one minute for call processing). While that is to be expected in a rural community with longer response distances, many of these response times are excessive and need to be reduced. The need for consideration of some level of career staffing and/or in station duty crews is clearly illustrated in these statistics.



**Figure 5-8: Incident Response Times 2012**  
**SOURCE: Pamet database from Berlin Police (176 responses)**



**Figure 5-9: Incident Response Times 2013**  
**SOURCE: Pamet database from Berlin Police (235 responses)**



**Figure 5-10: Incident Response Times 2014**  
**SOURCE: Pamet database from Berlin Police (213 responses)**

For the three years analyzed, response times of six minutes or less were achieved between 11.8 % of the time in 2012 and 19.1% of the time in 2013. In 2014, this benchmark was achieved 16.3% of the time. In 2012, 44.4% of all incidents, the Berlin Fire Department responded to had response times of 11 minutes or longer from the time the call was received until the first unit arrived on location. In 2013, 39.7% of responses were 11 minutes or longer while in 2014 the number rose slightly to 41.3%.

A recent fire incident that provides a snap shot of the staffing challenges facing the Berlin Fire Department occurred on Saturday morning, March 7, 2015. At 7:36 AM, the department was dispatched for a truck on fire at the lumberyard in the center of Berlin. Although the chief arrived on scene within four minutes, it was not until 7:51 AM, a full 15 minutes after the department was dispatched, that the first Berlin engine, Engine 3 arrived on the scene, which is just a few blocks from the fire station. Clinton was requested to assist and was dispatched at 7:54 AM arriving on scene two minutes later at 7:56 AM. Apparently their career crew had heard the incident developing in Berlin and had started moving in that direction in anticipation of being called to assist. Berlin's second engine, Engine 1, did not arrive on scene until 7:59 AM, three minutes after Clinton and a full nineteen minutes after dispatch.

Structural firefighting has become far more challenging and dangerous in the last thirty years with the introduction of significant quantities of plastic and foam based products into homes and businesses (e.g., furnishings, mattresses, bedding, plumbing and electrical components, home and business electronics, decorative materials, insulation, and structural components). These materials ignite and burn quickly, and produce extreme heat and toxic smoke. If firefighters cannot arrive in a timely manner and attack the fire quickly, a strong possibility exists that a dangerous flashover (simultaneous ignition of the 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 trapped civilian, or firefighter, can face and is not survivable for either. When a flashover occurs, initial firefighting forces are generally overwhelmed and will require significantly more resources to affect fire control and extinguishment.

Berlin Fire Department could not provide the study team with any statistics or data regarding how well it complies with even the very low staffing requirement of six personnel on scene of a structure fire within fourteen minutes as recommended by NFPA 1720. This is a function of this data not being extractable from the current Pamet records system. It is important to note that based upon the facts cited above the structural firefighting operations in rural areas are frequently restricted to limited defensive operations due to an inadequate number of available personnel. While Berlin is by definition rural, it does have pockets that are definitely more suburban in nature. This fact coupled with the ready availability of additional resources in neighboring communities should result in the Town of Berlin taking the necessary steps to improve staffing levels, and response times, resulting in the fire department being able to provide the community with a higher level of protection than may be currently available.

In 2012, the Berlin Fire Department reported a total of 13 incidents that involved injury, death, or property loss. That number increased significantly to 22 incidents in 2013, before decreasing to 17 in 2014. Fortunately, there were no civilian or firefighter deaths reported during these three years. There was one civilian fire injury reported which occurred in 2014. There were a total of four firefighter injuries during this time, two in 2013 and two in 2014. All were minor in nature. It should be noted, however, that according to our benchmarking analysis Berlin had a significantly higher number of structure fires and a proportionally higher dollar loss from fire than its peer communities.

	2012	2013	2014
<b>Incidents Involving Property Loss From Fire</b>	<b>10</b>	<b>18</b>	<b>15</b>
<b>Property Loss</b>	<b>\$612,900</b>	<b>\$271,008</b>	<b>\$307,955</b>
<b>Incidents Involving Contents Loss From Fire</b>	<b>11</b>	<b>11</b>	<b>9</b>
<b>Contents Loss</b>	<b>\$175,530</b>	<b>\$ 76,526</b>	<b>\$ 40,680</b>
<b>Total Fire Loss</b>	<b>\$788,430</b>	<b>\$347,534</b>	<b>\$348,635</b>
<b>Civilian Fire Injuries</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Civilian Fire Deaths</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Firefighter Injuries</b>	<b>0</b>	<b>2</b>	<b>0</b>
<b>Firefighter Deaths</b>	<b>0</b>	<b>0</b>	<b>0</b>

Figure 5-11: Berlin Fire Losses 2012 – 2014

The MRI study team noted that Berlin Fire Department has somewhat limited specialized operations capabilities. There are a number of valid reasons for this, and the situation here is in fact quite common with smaller, call fire departments that do not have the resources, or personnel, to undertake these types of endeavors. Specialized operations can include but are not limited to:

- Hazardous materials incidents
- Rope rescue including high angle
- Water and ice rescue
- Trench/collapse rescue
- Confined space rescue
- Urban search and rescue (building collapse)

The department has provided hazardous materials awareness and operational level training to all of its personnel. More specialized, technical level resources to handle these rare but dangerous types of incidents are available regionally through the Massachusetts fire service deployment system. It is imperative that Berlin Fire Department personnel understand their roles and responsibilities when responding to these types of incidents, know what operations they can safely perform, as well as, be fully aware of what they cannot do. Joint training with the teams that will provide these operations to Berlin should be conducted periodically.

## **RECOMMENDATIONS**

- 5-1** The Berlin Fire Department should work with the Berlin Police Department dispatch to insure that all incidents that occur in Berlin are being recorded so that data and statistics are consistent with regard to numbers from both entities. They should also work collaboratively to develop consistent response time statistics to determine compliance with the provisions of NFPA 1720.
- 5-2** The department should establish a formal pre-incident planning program with the goal of having an up to date pre-plan for every business and commercial occupancy (including schools, churches, etc.). The purpose of a pre-incident planning program is to develop a fire/emergency response plan for buildings in the town. A pre-fire/incident plan includes data such as the occupancy type, floor plans, construction type, hazards to firefighting, special conditions in the building, apparatus placement plan, water supply plan, and forcible entry and ventilation plan. Pre-planning will improve the firefighter knowledge of the specific tactics needed to handle a fire or other emergency at a facility and will alert them to on-site hazards and risks. Pre-fire/incident plans should be reviewed regularly and tested by periodic table-top exercises and on-site drills. It is recommended they utilize a cloud based system that utilizes iPad in apparatus and other vehicles to enhance response capability by providing the information for use enroute to an incident and while on scene.
- 5-3** When there is a report of a structure fire, or smoke in a structure, a full structural response should be automatically initiated. This would include the immediate, and automatic, response of several departments. Although cultural resistance should be expected, this is a common and successful practice employed in a number of smaller communities that have limited response capabilities.
- 5-4** In consultation and cooperation with its neighboring departments, the Berlin Fire Department should enter into automatic aid agreements that specifies the number and types of resources that should be dispatched to various types of reported emergencies. While the recommendations contained in this report can be adjusted/revised based upon a risk management process or pre-fire/incident plan, these processes take time. In the interim, we recommend that additional resources be dispatched to structural fire and emergency incidents.
- 5-5** Although more stringent than the requirements found in Table 4.3.2 of NFPA 1720 for rural communities, through the utilization of automatic mutual aid agreements with neighboring communities, the Berlin Fire Department should attempt to achieve a goal of having a minimum of 16 personnel on the scene of any reported structure fire within 14 minutes or less.

- 5-6** The Town of Berlin and Berlin Fire Department should attempt to significantly improve its initial unit on scene response times.
- 5-7** The Berlin Fire Department should enhance its excellent safety culture and emphasis through the establishment of a formal fireground/incident safety officer program. All department officers should receive safety officer training, obtain safety officer certification, and an operational procedure should be implemented that results in a guaranteed response of at least one (preferably two) additional chief officer on every working/all hands incident.
- 5-8** The Berlin Fire Department and Berlin Police Department dispatch center should work closely together to ensure that the dispatch procedure that if the department is dispatched to an emergency incident, and has not responded after three tones and/or within four minutes, that mutual aid is automatically requested. Berlin should continue to be dispatched again, simultaneously; however, mutual aid resources will be on their way to the incident.
- 5-9** In acknowledgement of the fact that they frequently operate in a minimal staffing mode, the Berlin Fire Department should equip all of their apparatus, and develop standardized tactical operations that will enable them to quickly develop, and place in service, high volume fire flows of at least 1200 to 1500 gallons per minute (if the water supply will permit this), utilizing multiple lines/devices. This flow should be able to be developed within three to five minutes after arrival of an engine, or quint, staffed with three or four personnel.
- 5-10** The Berlin Fire Department should acquire an SUV for use by the department's chief officers as a command vehicle to facilitate more effective, efficient, and safe, incident management/command operations on all types of emergency incidents, and allow the establishment of formal command posts on the scene.



**Figure 5-12: ICS command module in rear of vehicle to assist the chief with properly managing the incident.**

- 5-11** The Town of Berlin is encouraged to fully enforce its bylaw requiring the installation of residential sprinkler systems, or a fire water supply cistern, in any new development consisting of three or more homes. We also encourage the town to seek any and all legal and practical remedies to retroactively require compliance for developments which were approved/ completed subsequent to the effective date but have still been occupied without the installation of these approved fire and life safety systems.
- 5-12** Once a number of the key recommendations found in this report are implemented, Berlin should request that ISO conduct an updated evaluation of the town, and its fire department, for the purpose of lowering the rating resulting in lowered insurance premiums for certain residents and businesses.

## **CHAPTER 6**

### **ORGANIZATIONAL COMMUNICATIONS**

The use of rules and regulations, operational procedures, and various other forms of written communications are vital parts of a fire department's overall operations. Rules and regulations establish expected levels of conduct and general obligations of department members, identify prohibited activities, and provide for the good order and discipline necessary for the credible operation of a quasi-military emergency services organization. Operational procedures ensure the consistent, effective, efficient, and safe operation of various aspects of the department's operations, both emergency and routine. One of many common denominators among the best fire departments across the United States is that they have a comprehensive and up-to-date operational procedural manual, and their personnel are well versed and well trained in those procedures. The inclusion of written documents such as training and safety bulletins serves to make the system more effective.

Statutes carry the full force of law and are enacted by legislation at either the federal and/or state level. All applicable parties within their scope are bound by their provisions and responsible for compliance and/or adherence. Regulations often carry nearly the same weight, the only exception being they are adopted through an administrative process rather than by legislation. Personnel policies comprise an important set of documents for employees that outline the expectations of the employer regarding employee conduct. They establish obligations of the employer and the employee. They also clearly establish the position of the employer regarding issues that could result in liability for the employer, and they establish employer compliance with a wide range of federal and state statutes and regulations. Finally, when employees are properly trained, and policies are properly enforced, the consistency of the employers operation is significantly improved. Standard Operating Procedures (SOPs) address a wide range of day-to-day operations, both administrative and emergency. They may also establish specific procedures on how the implementation of, and/or compliance with specific statutes, regulations and policies are to be achieved, or accomplished, within a specific department.

Fire department rules, regulations, and policies should work in tandem, and be consistent with, the overarching ordinances, rules, regulations, and policies that have been adopted by the Town of Berlin. For example, policies concerning such topics as non-discrimination, sexual harassment, purchasing, freedom of information, internet and computer usage (including social media), and smoking (on town premises or in municipal vehicles) are typically applied across-the-board to all departments, employees, and personnel. While the town should provide training and familiarization concerning these policies on a regular basis (an annual review is usually adequate, with appropriate documentation), personnel are obligated to be familiar with, and comply, with each policy.

The MRI study team evaluated the Berlin Fire Department's current written policy and procedures system and found it limited in scope, content, and timeliness. There are significant inconsistencies in the current system, and an absence of important procedures.

The Berlin Fire Department does have a formal stand-alone rules and regulations document that addresses the following major areas:

- Introduction
- Statement of Harassment
- Organization – Job Descriptions
- Duties and Responsibilities – All Personnel
- Entrance Requirements
- Training Meetings
- Driving Regulations
- Safety

Overall, the rules and regulations are well written, and much more comprehensive than we normally find in such documents particularly in a primarily call department. While there are a few areas that are not included that probably could be, it is important that the rules and regulations clearly delineate the expected standards of behavior and conduct, as well as, identify prohibited activities. They should also be tailored to the needs of each individual community and department. We believe that for the most part the current rules and regulations achieve those goals as written.

Our main concern with the document is that it does not say when the rules were adopted, or by whom. They also do not indicate if they have ever been revised. In addition, it must be ensured that the town's personnel and other policies that are applicable to members of the fire department are fully integrated into the fire department's written communications system and are available to all members of the department since they should be applicable to them. The relative importance and relationship to each of the various types of documents should be clearly delineated in the rules and regulations.

Department level communications should be referred to as standard operating procedures (SOPs) or standard operating guidelines (SOGs). General orders can be used for the issuance of immediate and/or specific directives.

The Berlin Fire Department has very few other standard operating procedures/guidelines (SOPs/SOGs). The material provided to the study team contained just 23 total documents in the folder titled SOP-SOG-Policy. The documents contained within were issued between 2000 and 2014 and variously referred to as memos, policies, policy memos, and standard operating procedures. These terms appear to be considered to be the same and are used interchangeably in the documents including in the form header. For example on November 4,

2013, two different documents were issued regarding personnel accountability. One was referred to as “*Accountability System Policy*” while the other was referred to as “*Personnel Accountability SOP*”. Both documents were substantially similar to one another.

Effective communications systems are key to successful operation of any emergency services organization. SOPs/SOGs and other orders are mission critical to consistent, effective, and safe operations. Without them there is a tendency to “freelance” and personnel may not all be on the “same page” regarding a wide range of emergency and administrative operations.

Working on the assumption that these documents comprise the extent of the department’s current written communications system, the system as it exists is seriously deficient for providing the wide ranging guidance, and direction, necessary for operations involving a 21<sup>st</sup> century fire and EMS provider. The lack of an effective system of standard operating procedures/guidelines (SOPs/SOGs) will have an adverse impact on many different facets of the day-to-day operations of the department that can result in a lack of consistency during operations, freelancing, unsafe actions, loss of accountability and discipline, poor performance of individuals and operational crews, and increased risk to firefighters and citizens.

There are no operational procedures/guidelines in place to deal with mission critical operations such as *Structure Fires, Basic Engine Company and/or Truck Company Operations, Vehicle Fire, Vehicle Extrication Operations, Rural Water Supply/Tender Operations, or Thermal Imaging Camera and Automatic External Defibrillator Use* to name just a few. These are the types of operational procedures/guidelines that are most important and provide standardization and consistency of operations. On the administrative side, MRI was not provided with policies, or procedures, that might cover topics such as personal grooming, reporting of injuries and exposures, incident reports, etc.

In addition to providing normal operational direction, the SOP/SOG manual can be used to develop procedures or guidelines necessary to implement and/or comply with various statutes, regulations, policies, and plans. Doing this provides not only a clear distinction between the various types of documents; it would also serve to clarify the relative importance of each type of document. Generally speaking, the superseding order of these documents would be:

1. Statutes
2. Administrative Regulations
3. Town Policies
4. Rules and Regulations/Code of Conduct
5. Standard Operating Procedures/Guidelines

Fire department personnel can provide a valuable technical resource in the development of SOPs and SOGs. For the most part, the development and drafting of these policies should not be a top-down management driven process. Input from personnel at all levels will strengthen

the quality and effectiveness of SOPs and SOGs. In addition, the department training officer should play a critical role in the development and implementation of any SOPs and SOGs. We also encourage fire departments to draw upon the policies, practices, and procedures of other organizations, both local and distant. The experiences and lessons learned from other fire departments can be extremely helpful in the development of SOPs and SOGs. No fire department should be expected to write a policy document from scratch, or without a template.

Although they do try to comply with the appropriate regulations as part of their operations the Berlin Fire Department does not have either a formal respiratory protection plan, or a blood borne pathogens/exposure control plan. Both of these plans are critical to the safety of employees, to the department's overall risk management program, and are required by OSHA regulations. Failure to have an appropriate plan can present liability issues to the town and department. Model plans are available on line that can be easily adopted to Berlin.

The MRI study team did note that all department communications are posted in the officer's office, as well as, on a clipboard that is found under the notice board in the dayroom of the station. In addition, a January 2009 policy establishes that as of that time official department notices and memos will be sent via e-mail to department personnel if the department has their current e-mail address on file. The policy still places the onus on department personnel for being familiar with those policies and procedures.

## **RECOMMENDATIONS**

**6-1 The Berlin Fire Department should form a committee to perform a review and update of the department's rules and regulations. This document, which could be further enhanced as suggested below, should then be submitted for approval by the Board of Selectmen, and then be distributed to, and signed for by each member of the department. It could then provide an orientation overview, and indoctrination to the department's behavioral expectations for new personnel. Some additional suggested sections for the Rules and Regulations could include, but are by no means limited to:**

- **A preamble**
- **The department's mission statement**
- **Objectives of the department**
- **Purpose of the rules and regulations**
- **Organization**
- **Conflicts between department documents (state statutes, town policy, rules and regulations, operational procedures, general orders)**

**6-2 The Berlin Fire Department should form a committee to begin development of a comprehensive department standard operations procedures or guidelines (SOP/SOG) manual starting with mission critical procedures such as, but not limited to, basic**

engine company and truck company operations, dwelling fires, commercial structures, rapid intervention team operations, rural water supply/tender operations, personnel accountability, gas leaks, hazardous materials incidents, ice rescue, vehicle extrication operations, and thermal imaging camera and automatic external defibrillator use.

If necessary, outside professional assistance is available to assist with facilitating this endeavor.

The first operational procedure should identify and explain the components of the written communications system, including the use and organization of the SOP manual, and other components of the system such as standardized forms. This procedure should also contain a provision that the entire SOP manual will be reviewed on at least an annual basis and that updates and revisions can/will be made at any time, as necessary. All procedures/revisions should be approved and issued after being signed by the fire chief.

**6-3 The Berlin Fire Department should adopt a standardized SOP/SOG form that includes the following information:**

- Title of the SOP/SOG
- Number of the SOP/SOG
- Category of the SOP/SOG (EMS, Operations, Training, Administration, etc.)
- Page number and total number of pages
- Effective date
- Revision date (if applicable)
- Approval/signature of the fire chief

If a procedure is re-issued with only minor to moderate revisions, it can carry the original issue date with the revision date also noted. Revisions from the previous version should be identified by some means within the revised document. Full-scale revisions to a procedure should result in it being reissued with a new issue date.

Each SOP/SOG should, at a minimum, contain the following sections:

- Purpose
- Scope (If necessary and/or appropriate)
- Definitions of terms (If necessary and/or appropriate)
- Procedure(s)/Main body
- References (If necessary and/or appropriate)

- 6-4 The Berlin Fire Department should institute a process for issuing general orders, which are directives and/or special instructions that cover various facets of department operations, but can be quickly issued as needed. They may cover a particular period of time regarding a special situation, or may provide a temporary procedure pending development and issue of a full operational procedure.**

Also included in the system should be training bulletins that would be issued to serve as reference with regard to tested and approved methods of performing tasks; safety bulletins, that are issued to serve as references with regard to general and specific safety and health issues; and informational bulletins, or memorandums, that are published for the general knowledge of recipients such as temporary street closures, hydrants out of service, community events, etc. A numbering system should be implemented to keep track of these documents for indexing and future reference purposes.

- 6-5 The Berlin Fire Department should develop an effective system for ensuring that any new standard operating procedures, general orders, training bulletins, safety bulletins, and informational bulletins are distributed to all personnel and stations. Electronic communications is highly recommended as the method of choice for distributing departmental communications and documents. All department policies and procedures should be posted on the department intranet, and all personnel should be required to review this information. All revisions should be e-mailed to each member and then posted on the intranet.**
- 6-6 In order to improve overall intra-departmental communications, the Town of Berlin should provide all members of the Berlin Fire Department with a town e-mail account. This e-mail account should be considered the department's only official form of communications.**
- 6-7 The Berlin Fire Department should develop, and implement, a procedure that provides for the documented review of policies, procedures, general orders, training and/or safety bulletins, etc. that includes a provision requiring each member of the department to sign that they received the document, have read it, and understand it.**
- 6-8 The Berlin Fire Department should develop a comprehensive respiratory protection plan in accordance with 29 CFR 1910.134, and a blood borne pathogens/exposure control plan in accordance with 29 CFR 1910.1030. Appropriate SOPs that implement various components of these plans should also be developed. Annual training as required should be provided to all personnel.**

- 6-9 In order to facilitate improved intra-departmental communications the Berlin Fire Department should hold periodic department meetings. At a minimum these meetings should be held twice per year (quarterly would probably be better) to provide members with a forum to be provided with departmental updates, discuss pertinent issues, provide suggestions and feedback to the officers, and assist with the formulation of organizational goals and objectives.**

## CHAPTER 7

### TRAINING AND PROFESSIONAL DEVELOPMENT

An effective fire department training program must cover all of the essential elements of that specific department's core missions and responsibilities. The program must include an appropriate combination of technical/classroom training and manipulative or hands-on/practical evolutions. Most of the training, but particularly the practical, standardized, hands-on training evolutions should be developed based upon the department's own operating procedures and operations while remaining cognizant of widely accepted practices and standards that could be used as a benchmark to judge the department's operations for any number of reasons. As with all other fire department operations, there must be consistency in how the training is being conducted.

Certain Occupational Safety and Health Administration (OSHA) regulations dictate that minimum training must be completed on an annual basis, covering various topics including: a review of the respiratory protection standard, self-contained breathing apparatus (SCBA) refresher and user competency training, and SCBA fit testing (29 CFR 1910.134); blood borne pathogens training (29 CFR 1910.1030); hazardous materials training (29 CFR 1910.120), confined space training (29 CFR 1910.146), and structural firefighting training (29 CFR 1910.156). In addition, National Fire Protection Association (NFPA) standards contain recommendations for training on various topics such as a requirement for a minimum of 24 hours of structural firefighting training annually for each fire department member.

There are a number of ways to evaluate the effectiveness of the fire department's training program. One increasingly common way is through the use of annual skills proficiency evaluations where all members of the department are required to successfully perform certain skills, and/or complete standardized evolutions, either individually, or as part of a team. Post course evaluations, post incident critiques, and evaluation of incident operations and statistics can also provide important feedback regarding the training program. **It is important that all training, no matter how minor or inconsequential should be documented.** Failure to do so can expose the department, and town, to significant liability.

Professional development for fire department personnel, especially officers is also an important part of overall training. There are numerous excellent opportunities for firefighters and officers to attend training on a wide range of topics outside of Berlin, including several nearby county fire academies, the Massachusetts Firefighting Academy in Stow, and the Volunteer Incentive Program (VIP) at the National Fire Academy (NFA) in Emmitsburg, Maryland. Annual events such as the Fire Department Instructor's Conference (FDIC) in Indianapolis and the Firehouse Expo in Baltimore provide a wide range classroom training as well as extensive hands on evolutions. The International Association of Fire Chiefs (IAFC) annual convention known as Fire Rescue International (FRI) is also an excellent source of professional training opportunities. The Berlin Fire Department does not have a dedicated training division, as the department is small and has a variety of other functions it is engaged in. This is not uncommon for a department of

this size. Assistant Chief James Peltier (the #3 position in the department) serves as the department's primary training officer in addition to his other duties. He is regularly assisted with this endeavor by Lieutenant Patricia Correia. Both Chief Peltier and Lt. Correia possess Fire Instructor levels I and II certifications. One additional member of the department possesses a Level II fire instructor certification while three more are certified Level I. Two other members of the department hold teaching certifications.

The MRI study team believes that training is an important priority for the department. Obtaining training and certification is promoted, and in fact expected, within the department. The department, and its leadership, should be commended for promoting this culture.

**The Berlin Fire Department and its leadership should be commended for promoting a culture within the department that highly promotes the importance of training and certifications.**

Almost all currently active personnel in the department are trained to at least the Firefighter I level. The department's current roster shows that of thirty-three personnel listed 28 (84.8%) have at least Firefighter I. This is a very good percentage for a fully call department. Of those who are not certified one is currently enrolled in Fire I and three are designated as outside firefighters only. All department personnel are also shown to be certified to the hazardous materials operations level with two personnel certified as hazardous materials technicians.

New personnel who join the department are expected to at least be enrolled, if not having completed, Firefighter I and II training within one year. Overall 20 personnel (60.6%) have completed Firefighter II training and certification. Personnel who struggle with the program either academically, or with the practical evolutions, are provided with whatever assistance they need to be successful.

Newer members of the department who have not completed at least Firefighter I training are considered to be provisional firefighters. They can respond to incidents and perform certain functions consistent with their level of training; however, they are not permitted to engage in interior firefighting operations. These personnel wear orange helmets so they can be easily identified on the emergency scene. Motor pump operators (MPOs) and personnel who are strictly outside firefighters wear black helmets for identification. However, all of these personnel are reported to have received basic SCBA training and are fit tested.

Regular department training sessions are conducted on the first and third Mondays of each month for about two hours each. These drills usually emphasis basic firefighting skills. The training follows the Jones and Bartlett basic firefighter training curriculum. The department does provide textbooks and work books to members to support the training.



**Figure 7-1: An adequate amount of relevant hands on training is mission critical to every fire department. Berlin firefighters conduct aerial ladder and roof top operations during a training session at Memorial School. (Photo: Berlin Fire Department)**

Mandatory training sessions for certain subjects are held on a periodic, or annual, basis as required. These training sessions include hazardous materials operations and CPR refresher training. In keeping with the mandatory nature of this training, all personnel are expected to attend. Those who do not, and do not attend a make-up session or complete equivalent training, are counselled and are required to wear orange helmets until they complete the required class(es).

The Berlin Fire Department does not hold separate training classes for other annual training classes mandated by OSHA regulations. This includes blood borne pathogens/exposure control and respiratory protection training. Their rationale is that these subjects would be covered through either EMT or first responder training. While this may be true to some extent it is the responsibility of each department to document that their personnel have received this training something that may not occur if the training occurs in another venue. Personnel also probably only complete each required module of training once during an EMT recertification cycle so

there is a good possibility the training is not completed annually. Finally, most departments prefer to present this training to all personnel at the same time each year as it simplifies keeping track of who has completed it and who has not. It is also very unlikely that fire department compliant respiratory protection training would occur as part of an EMT class.

On the second Monday members conduct thorough inspections of the apparatus and equipment. Familiarity with all aspects of a department's apparatus and equipment is an important component of any comprehensive training program and should be documented as a training exercise.

When compared to many other call fire departments Berlin has an average to somewhat above average amount of training. However, other than the mandatory training sessions there is no set minimum amount of training personnel must complete each year. Personnel who are perceived as not participating sufficiently in training are counselled by the officers and may not be re-appointed if they do not show improvement. They may also have their yellow helmets replaced by an orange one.

In talking with some members of the department, it seems that those members wish to expand the training program even further. It is our recommendation that an excellent, and realistic, goal for the delivery of an exceptional training program would be to provide 72 hours of training per member per year. Increasing the amount of training that is offered will not only pay direct dividends through deployment of a better trained department able to more effectively, efficiently, and safely, handle emergency incidents; it can also produce indirect benefits such as earning extra training credit points during an ISO evaluation. Given the nature of a volunteer/call organization, this should not be forced but offered. However, all personnel should be required to complete certain mandatory training, and participate in an established minimum number of training sessions or training hours annually. Personnel input on the training program which has been solicited in the past should continue to be sought and to the extent practical, utilized.

In addition to the department's normal twice monthly drills additional specialized, or more complex, training sessions are periodically scheduled as necessary resources are available. These opportunities can include things like having the Department of Fire Services maze trailer, or flashover simulator at Berlin's station for training. The department will occasionally go to Worcester's training facility to utilize the burn building or training tower. Acquired structures are also used for training when available, including live fire evolutions, provided a DEP permit can be obtained, and the building can be made NFPA 1404 *Standard on Live Fire Training* compliant.

The Berlin Fire Department has a thorough apparatus driver/operator training program that requires personnel to complete a number of training programs and demonstrate proficiency in various operations before being approved to drive and operate the various vehicles. All drivers must successfully complete a basic driver's course such as the National Safety Council (NSC) Fire Vehicle Operators Course, the National Volunteer Fireman's Insurance (VFIS) Emergency Driver

Training Program, or the Massachusetts Inter-local Insurance Association (MIIA) Driver Training Program. Personnel must also have a minimum of five hours of driver training on each piece of apparatus, and successfully complete the Massachusetts Fire Academy (MFA) Pumps and Hydraulics Class and the Aerial Ladder Class, or an approved equivalent.

The department places a strong emphasis on the training of motor pump operators. These are personnel that can drive the apparatus and run the pump but are not cleared to perform interior firefighting operations. While there can be definite benefits in a call department to having these personnel available to drive and operate the apparatus particularly at times when the number of members available to respond is limited. However, if these personnel are not permitted, or able, to perform interior firefighting operations they cannot be counted in minimum staffing numbers, nor be utilized to comply with "Two-In/Two-Out" requirements.

Five of the department's eight current officers are certified at least Fire Officer Level I. One has a Fire Officer Level II certification and one has earned Fire Officer Level IV, the highest level attainable. The fire chief and assistant fire chief have both obtained the Chief Fire Officer certification. Three other personnel, who are not officers, also possess fire officer certifications; one Level I, one Level II, and one Level III. The study team was informed that the chiefs and the Board of Fire Engineers are currently in the process of reviewing and updating the standards that are utilized for personnel to be promoted to higher ranks. We would highly recommend that these standards include some provision requiring completion of Fire Instructor Level I and Fire Officer Level I as a minimum.

One area where the department admits they are a little behind is on ensuring that all personnel, particularly the newest members, are up to date with their National Incident Management System (NIMS) training. Up to date records on which levels personnel had completed were not immediately available.

All of the department's members are required to be trained to a minimum of the EMS First Responder level and have a current CPR card. Eighteen of the department's personnel (54.5%) are emergency medical technicians (EMT) with one those being an intermediate EMT and one being a paramedic. One member is currently completing basic EMT training. Six members of the department possess fire prevention certifications; three basic, one Level I, one Level II, and one Level III. The member with Level III certification is also certified as a fire investigator.

Two members of the department have obtained confined space rescue certifications while one is qualified for high angle rescue. One member who is a Master Sergeant in the United States Air Force Reserve is certified in aircraft rescue firefighting (ARFF) and is also a certified instructor.

While not directly related to fire department operations five department members have completed their Bachelor's degrees. The chief and deputy chief have both earned their Master's degrees. One department member is a medical doctor.

At the time of this assessment, no annual skills or proficiency evaluations, or reviews, are conducted.

While the department encourages personnel to attend outside training opportunities only the fire chief has attended the National Fire Academy. He has attended all of the fire prevention technical classes, as well as, having completed coursework in the prestigious Executive Fire Officer (EFO) program. Each year a few personnel will attend FDIC and/or the Firehouse Expo but this is usually done on their own. The department does utilize a standardized form for personnel to request approval to participate in training outside of the department.

Most training records are kept either manually, or on excel spreadsheets. The lieutenant who assists with training maintains the training records. At the time of this assessment, she was working to obtain access to the Pamet system (the town's overall records management system) to start entering training records. Each member of the Berlin Fire Department has a training file that is maintained by the training officers separate from their personnel file. This file contains information on training these personnel have completed, course completion certificates, and copies of certifications that must be renewed periodically. The MRI study team examined a random sample of training files and found them to be thorough and well maintained.

For the most part even though they are a paid on call department members are not compensated for attendance at training sessions. The chief reported that he did have a \$12,000 line item that was intended for incentivizing training. We believe that the use of a training incentive such as this can provide the department with a very positive return on a minimal investment and should be encouraged, and possibly even expanded, to encourage greater participation in training opportunities. Unfortunately, the chief believed that he was going to need to transfer most of that money to cover call stipends.

## **RECOMMENDATIONS**

- 7-1 The Berlin Fire Department should continue to periodically conduct formal training needs evaluations and assessments for the purpose of determining training program priorities, and to ensure that the current program continues to meet the department's operational needs.**
- 7-2 To the extent possible, training should be delivered and/or conducted utilizing formal, standardized lesson plans that include objectives and performance criterion. However, when this is not possible, or practical (a frequent occurrence in the fire**

service), a detailed description of the training should be included in the narrative section of the training report.

- 7-3 The Berlin Fire Department should give consideration to developing an annual schedule of training that increases the monthly training schedule from two drills per month to three in order to further enhance an already very good program. The Town of Berlin should make it a fiscal priority to provide sufficient incentive funding stipends for personnel to participate in additional monthly training.
  - 7-4 Additional, high intensity training on various subjects, including periodic live fire training, should be conducted on a quarterly, or semi-annual, basis at a formal fire academy where appropriate training facilities, structures, and props are available.
  - 7-5 The Berlin Fire Department should implement periodic basic skills proficiency evaluations for ALL personnel. These proficiency evaluations, consisting of standardized evolutions, can be based upon recognized standards and benchmarks, in conjunction with performance criterion, and benchmarks, established through evaluation of, and based upon, Berlin Fire Department operations and procedures.
  - 7-6 In order to assist with the large amount of training that needs to be done, and in recognition of their important role in the delivery of training and the success of the program, the Berlin Fire Department should provide fire instructor training for any additional members of the department, who wish to take it. All officers should be formally certified at a minimum of Fire Instructor Level I.
  - 7-7 The Berlin Fire Department should insure that all department members are trained/certified to the minimal NIMS level required for their duties/responsibilities and ranks. The department should also further enhance the level of incident management training provided to the members of the department. In addition to the basic I-100/I-700 training mandated, it is our recommendation that all personnel be trained to the ICS-200 level. All officers should be trained to the ICS-300 level. All chief level officers should be trained to the ICS-400 level.
- NOTE:** While outside the scope of this study, the Town of Berlin should conduct an internal, town wide assessment to determine current compliance with NIMS training requirements for all town employees and elected officials.
- 7-8 The Berlin Fire Department should strongly encourage its officers to obtain a certain level of fire officer certification as a position requirement such as Fire Officer I for lieutenant, Fire Officer II for captain, Fire Officer III for deputy/assistant fire chief, and Fire Officer Level IV for fire chief.

- 7-9 The department should require that all officers be certified as Incident Safety Officers. Additional personnel who may be interested should be encouraged to take this training and obtain this important firefighter safety certification.
- 7-10 The Berlin Fire Department should continue to encourage personnel to seek additional training on their own, and to the financial and practical extent possible, send personnel to outside training opportunities such as the Firehouse Expo in Baltimore, and the Fire Department Instructors Conference in Indianapolis. Information gained at this training can then be brought back and delivered to other members of the department.
- 7-11 The Berlin Fire Department should make an effort to send some of its officers to the National Fire Academy, particularly the Volunteer Incentive Program (VIP). The training officer should be enrolled in the Academy's *Management of Training Programs* course. The fire prevention officer should attend courses on fire prevention. As with any and all outside training, training reports should be completed and copies of certificates placed in the personnel and training files.
- 7-12 The Berlin Fire Department should seek annual funding in the training budget to enhance, and upgrade as necessary, its training resources such as manuals, DVDs, and subscriptions to other available training resources.
- 7-13 The Berlin Fire Department should, as part of its written communications system, should develop Training Bulletins, which would be issued to serve as reference with regard to tested and approved methods of performing various tasks, and Safety Bulletins, which should be issued to serve as references with regard to general and specific safety and health issues.

## **CHAPTER 8**

### **FIRE PREVENTION**

Fire prevention activities are one of the most important missions that the modern day fire department is involved in. Fire prevention activities in a municipal town fire department typically include fire safety inspections; fire code enforcement; issuance and oversight of permits; review of construction plans for new buildings and the renovation of existing buildings; and public fire safety education programs. Preventing fires before they occur, and limiting the impact of those that do, should be priority missions of every fire department. Educating the public about fire safety, and teaching them appropriate behaviors on how to react should they be confronted with a fire, is also an important life safety responsibility of the fire department. At some level, fire prevention efforts should involve all members of the department, or in call departments, as many personnel as possible.

Since fire prevention should truly be approached in a systematic manner and many community stakeholders have a vested interest and/or responsibility in this endeavor, various activities such as plan reviews, permits, and inspections, should be coordinated with similar activities in the municipal building inspection and planning departments. Inspection and code enforcement procedures and policies must conform to Commonwealth of Massachusetts statutory requirements, and the regulations and the policies of the Massachusetts Department of Fire Services, Office of the State Fire Marshal. The local fire chief, or designee, is authorized to enforce 527 CMR (Code of Massachusetts Regulations), Board of Fire Prevention Regulations, also known as the Massachusetts Comprehensive Fire Safety Code.

Fire prevention and inspection operations in the Berlin Fire Department are primarily the responsibility of Captain David Lichwell who serves as the department's code enforcement officer. His duties include performing both inspections and plans review. Despite the significant commercial growth that the town has previously experienced (Solomon Pond Mall) and is currently undergoing (Highland Commons) the inspector performs these duties in a part-time capacity usually just one morning (Tuesday) each week. Captain Lichwell possesses a Fire Inspector Level I certification. The fire chief, who is also a part-time employee, will step in to assist the inspector when needed. The chief has completed all of the fire prevention technical classes offered at the National Fire Academy, and has earned Fire Inspector I and II certifications. There is also one other firefighter who can be utilized to assist with these duties. The remainder of the officers and firefighters do not perform inspections although three other members of the department have either completed, or are currently enrolled in, the basic fire prevention inspector training. One additional member has achieved Fire Inspector Levels I, II, and III certification, and is a certified fire investigator.

# BERLIN FIRE DEPARTMENT ANNUAL PERMITS AND INSPECTIONS - 2012 – 2014

TYPE OF INSPECTION/PERMIT	2012	2013	2014
Smoke Detector and Carbon Monoxide Detector	39	70	67
Black Powder	0	1	3
Blasting	1	2	1
Wet (17A) Systems	0	0	1
Fire Alarm	0	9	16
Commercial Space Inspection	4	12	9
Flammable and Combustible Storage	4	4	10
Bulk Mulch Storage	0	0	1
Underground Tanks	0	5	2
Above Ground Tanks (AST)	6	4	10
AST Removal	4	5	10
Commercial LP (Propane)	2	5	4
Residential LP (Propane)	19	29	16
Oil Burner Alteration	4	7	7
Building Plans Review	3	8	14
Sprinkler Plans Review	3	6	20
Sprinkler Shutdown	4	12	11
Transfer Tank Inspection	19	3	17
Waste Container	16	16	27
Welding and Cutting	1	5	12
Open Burning	266	239	191
Other or Miscellaneous Permits			
<b>TOTAL ANNUAL PERMITS</b>	<b>395</b>	<b>442</b>	<b>450</b>

Figure 8-1

Source: Berlin Fire Department

From strictly a fire prevention perspective, the fire prevention officer's duties could include:

- plans reviews for new construction and renovations including fire sprinkler systems and fire alarm systems
- in progress inspections of various construction and renovation projects
- signing off on certificates of occupancy for occupancy for new and renovated buildings
- issuing permits and conducting various permit-related inspections
- conducting quarterly school inspections

- conducting annual liquor license inspections
- conducting other routine fire prevention/occupancy inspections
- performing change of ownership smoke detector/carbon monoxide detector inspections in residential occupancies
- observing acceptance tests of fire protection systems (fire alarm systems, automatic fire sprinkler systems and fire extinguishing systems)
- supervising underground tank removals
- performing oil burner inspections
- conducting public fire education programs, and
- responding to citizen inquiries and complaints

In a town with an expanding commercial occupancy base, these duties alone would seem to be enough to probably keep one relatively full-time person reasonably busy. In reality, the primary fire prevention activities of the fire department are conducted one-half day each week. There is also no clerical support available to assist with the myriad of administrative duties associated with fire prevention and code enforcement (or general fire department administration). The MRI study team heard from multiple stakeholders that one of the most significant challenges facing the Berlin Fire Department both today, and looking toward the future, is how to meet the ever growing fire prevention related demands on the department. Several of the stakeholders interviewed stated that the department is, quite simply, overwhelmed by building and code issues.

The MRI study team received significantly different responses when they asked how many commercial businesses are currently located in Berlin. The fire inspector estimated approximately 125 including home based businesses while the building commissioner estimated around 50. Both stated they may be able to provide more accurate figures but they would need to do some “research”. In our opinion, the “approximate” figures are significant in that neither the fire department, nor the building department, could easily provide an exact current count of businesses to the study team. It is difficult to fully assess the current fire prevention workload, and analyze it to provide projections for future needs, without accurate, and consistent, statistics although it is pretty clear that the workload will continue to increase over the next several years. Ultimately, the fire department provided a figure of 236 businesses in town from records maintained by the tax assessor’s office, and significantly higher than either of the previous estimates.

Although Berlin is primarily zoned for agricultural uses, and the town has rejected “big box” types of commercial development, through the use of overlay districts certain areas have been designated where commercial or higher density development can occur. These areas will be the engine that powers the town’s continued growth. In March of 2015 a new 100,000+ square foot Cabela’s is opening in the Berlin portion of Highland Commons. There are an additional three units in Berlin that are currently under construction and will probably be receiving their certificates of occupancies during Spring 2015. There are still five or six more buildings yet to

be built in this complex that will be located wholly in the town. Each of these buildings could contain three or four occupancies depending upon their eventual tenants. A new three story, 108 room Hilton Garden Inn is expected to break ground in the summer of 2015 near the South Berlin Rotary. Also planned for that area is the Riverbridge development which will incorporate 208 houses, and some smaller strip mall type commercial occupancies. A four story Department of Housing and Urban Development (HUD) 40 unit assisted living project known as Northbrook Village II is also proposed. In Berlin Woods, the developer is awaiting approval to construct an additional 35 townhouses, after just completing an initial 38 units.



**Figure 8-2: Buildings such as this under construction senior citizen housing complex require at least annual fire and life safety inspections. Facilities like these should also have complete pre-fire/incident plans developed for them.**

The one area of growth that has slowed in the past several years is construction of new standalone single-family residences. This may be attributable to a number of factors including the high cost of property in Berlin. Nonetheless, the Massachusetts Area Planning Council

(MAPC) projects that Berlin's resident population will increase by about 10.3% between now and 2030, and as a result, the town can expect approximately 484 new housing units during this time.

The Commonwealth of Massachusetts requires that the fire department and the building department work together to enforce their respective codes/regulations. There is significant overlap in their respective responsibilities, particularly in restaurants, assembly occupancies, and educational uses, and in many areas they share joint jurisdiction. Both the fire chief and the building commissioner need to sign off annually that required fire and life safety inspections have been satisfactorily completed, as required, for businesses that hold a liquor license, and some place of assembly uses.

Fire prevention and inspection records are maintained electronically in the Pamet system and with hard copies in individual files.

The Berlin building commissioner informed the MRI study team that as of September 2014 his hours had been increased to basically full-time status at 36 hours per week. This is an increase of 50% from the 24 hours per week he was working previously. As recently as 2011, he worked just 20 hours per week. He has also been provided with clerical staff support to assist him with his heavy workload. He believes that there is a good relationship between his office and the fire department, and in fact, it has improved over the past several years. He informed the team that communications from the fire department to the building department is very good, which is extremely important particularly with large projects that they must work on jointly.

The fire department on the other hand reported to the study team that there is a strained, and at times dysfunctional, relationship between the departments. Both the fire chief, and the fire prevention officer, expressed frustration over what they perceive is a lack of effective communications between the two departments and officials. This in turn can cause additional problems with permit procedures, availability, and necessary follow-ups. There have apparently been times when inspections were conducted without fire department involvement where their input and expertise was required. There have also been instances where the fire department received no direct notification that a permit had been issued; they learned about it through a monthly statistical report.

The department has a fee schedule for a wide range of permits, licenses, and inspections. The authority for the issuance of permits and licenses is pursuant to Massachusetts General Law (MGL) Chapter 148, or 527 CMR. The authority to charge fees is derived from MGL Chapter 148, section 10A. Most of the fees are established by the commonwealth and individual towns cannot charge more than the state maximum. The current fee schedule is found on the fire department page of the town's website. With the last amendment to the fee schedule by the Board of Fire Engineers, in October 2010, for the most part, the town charges the maximum amount permitted by statute. As the state regulates the maximum permit/inspection fees

allowed there is no annual fee escalator included in the fee structure. The fees schedule is broken down into residential and commercial. For both residential and commercial occupancies, the department charges \$50.00 per hour for consulting services and \$42.50 per hour/per firefighter for fire details.

On the residential side, the overall fees range from \$25.00 to \$150.00. The initial fees include the required permit and one inspection. Additional inspections are subject to a re-inspection fee. The fee for residential smoke and carbon monoxide (CO) detector inspections required for the resale of homes is either \$50.00 or \$75.00 depending upon when the home was constructed and the number of detectors it has. The department charges \$75.00 for plans review.

For commercial occupancies, the fees range from \$50.00 to \$500.00, which also include the permit and one inspection. Plans review fees are based upon the size of the occupancy in square feet and range from \$100.00 to \$350.00. Both inspection/permit and plans review fees are higher for buildings larger than 80,000 square feet. Recent changes to the fee structure has eliminated separate fire inspection fees on building permits for the installation of fire suppression and fire alarm systems. When necessary for larger and/or more complex projects the department does utilize outside consultants to assist with plan review and/or inspections. This outside assistance can include fire protection engineers and personnel from the state fire marshal's Office of Code Enforcement.

Over the past three years, these fees have generated between \$7,225.00 and \$18,300.00 per year in revenue to offset the fire prevention operations.

2012	2013	2014
\$7,225.00	\$15,450.00	\$18,300.00

Figure 8-3

Source: Berlin Accountant

In what the MRI study team found to be a very unusual practice, one that would seem to legitimately raise proverbial red flags, the fire inspector's agreement with the board stipulates that he is paid by way of the fees that are generated. The inspector receives 95% of the fee while the department retains 5% to cover administrative expenses. While this practice is not prohibited, and could be easily audited if meticulous records were maintained, in this era of calls for increased transparency, and awareness of governmental spending, this arrangement is far from a model or best practice. We strongly recommend that it be modified as soon as possible to a standard municipal employee salary agreement based upon hours of work.

Permit and inspection fees are collected in the public safety building at the time that the application is received. A selection of the most common applications is maintained in the reception foyer. If no one is available in the fire department, or when an applicant comes in

outside of normal business hours, the on duty dispatcher will accept the application and required fee. Checks and cash are accepted, and receipts are issued for all transactions. At the present time, applications for permits and inspections can only be applied for in person. There is no capability at the present time to apply for an inspection/permit on line.

The study team was informed that under the authority of 21E CMR regarding hazardous materials response recovery there are provisions in place to allow the Berlin Fire Department to bill for these expenses for the purposes of cost recovery. At the time of this study, this billing was occurring sporadically, primarily due to a lack of staff to accomplish the task. This regulation also permits billing for motor vehicle accidents that involve extrication. However, Berlin does not bill for these responses.

As permitted under MGL, Berlin has a false alarm billing bylaw, to use as a tool against locations from which repeat false fire alarms are received. After three false alarms, the offender is supposed to be issued a penalty of \$25.00 and directed to repair the system to proper working order. The chief reported to the MRI team that penalties are rarely issued. One reason is disagreement over what constitutes a "false alarm". The other concern that he has is consistent false alarm enforcement throughout the complexes that are shared with other communities. He stated that he was never able to get Marlborough to agree to address the issue at the Solomon Pond Mall. He did report that changes to the fire code that allow duct smoke detectors to be transmitted as a supervisory trouble signal rather than as an activated fire alarm has reduced the number of false alarm that occur in the commercial occupancies.

The captain does not have a dedicated vehicle in which to conduct fire prevention activities. At various times, he uses Car 2, the department's utility pick-up truck; Forestry 1, the brush truck to give its engine a chance to run; or even his personal vehicle.

The department does have a formal, year-round public fire education program, rather than just the normal October fire prevention blitz, and should be commended for this endeavor. Firefighter Brian Ingram assisted by other members of department, visits the kindergarten through fifth grade Berlin Memorial School periodically throughout the school year to promote fire safety, and provide fire safety education. He has also started visiting the Growing Room, a new Kindergarten through sixth grade private school that opened in the spring of 2014. The department is awarded an annual Student Awareness of Fire Education (SAFE) grant by the Executive Office of Public Safety. More than 200 children in the school system receive vital fire safety information.

In partnership with several local business sponsors, the Berlin Fire Department with participation by the Berlin Rescue Squad conducts an annual community open house in October during Fire Prevention week. This community event is usually well attended and is an annual civic highlight.



**Figures 8-4 and 8-5: Berlin firefighters providing fire safety instructions and demonstrations during the department's annual open house. (Photo: Berlin Fire Department)**

Investigation of the basic origin and cause of fires also generally falls under the responsibility of the fire prevention bureau in a fire department. The Berlin Fire Department does not have a formal written procedure in place regarding the investigation of fires. Generally, for any fire that results in property damage the fire chief will conduct an initial investigation to provide fire cause and origin determination. Investigators from the state fire marshal's office are requested to assist with large or complex fire investigations, if the fire is deemed to be suspicious or incendiary, or when specialized investigative resources are required (such as an accelerant detection dog), which is typical for communities the size of Berlin. The state fire marshal's office is also called in for fires that result in a fatality.

As previously noted, Berlin had a significantly higher number of structure fires, and a proportionally highly dollar loss from fire, than that of the peer communities utilized in our benchmarking analysis. While this is definitely a trend of concern, it also represents an opportunity to positively engage the public and reduce the level of risk in the community.

## **RECOMMENDATIONS**

Fire prevention should continue to be promoted as a key component of the vision of the Berlin Fire Department and should be a major aspect of its primary mission. Aggressive fire prevention programs are the most efficient and cost-effective way to reduce fire risks, fire loss, and fire deaths and injuries in the community. Fire prevention is a key responsibility of every member of the fire department and to the extent practical, every member of the department should have a responsibility for fire prevention.

### **8-1 The Town of Berlin and Berlin Fire Department's emphasis on fire inspection and code compliance should be increased. This is supported based on the abnormally high**

incidence, and loss, from structure fires, and the relatively low number of inspections performed by the fire department.

- 8-2** The Berlin Fire Department should consult with the Massachusetts Department of Fire Services to analyze the town's incident history and trends, and obtain assistance with identifying occupancies that are most at risk.
- 8-3** The Berlin Fire Department should utilize the resources and assistance of the Code Compliance Division in the Massachusetts Department of Fire Services to assist in increasing the level of community interaction and code compliance activities related to fire prevention.
- 8-4** The Town of Berlin and Berlin Fire Department should provide a sufficient number of personnel who are dedicated to fire prevention activities in order to insure that all necessary fire prevention activities including mandated inspections are completed at the required intervals, and allow the operation of a comprehensive, multi-faceted fire prevention program that includes periodic inspections (preferably on an annual basis) of all commercial/business occupancies, and ongoing public fire education activities throughout the year. Increasing the number of inspections conducted should bring increased revenue to offset expenses.
- 8-5** The Town of Berlin should revise the fire inspector's compensation system and/or agreement, as soon as possible, from the current one where he receives 95% of permit revenue to a standard salary, or hourly rate, predicated upon the number of hours that he works each week.
- 8-6** The department should continue to support and promote training and professional development activities for the any personnel who are interested and can actively participate in the fire prevention and fire inspection areas. This can includes, among other endeavors, attendance at the Fire Prevention Association of Massachusetts, and Massachusetts Firefighting Academy. Certification at the Fire Inspector I and Fire Inspector II levels should be required for the fire prevention personnel, and the career fire chief, should the town decide to create that position. Any additional full-time personnel should be required to possess/obtain a Fire Inspector I and II certification as a condition of employment. Call personnel should be encouraged to obtain this training/certification as well. If the chief is full-time, he/she should also be required to attend fire prevention and management courses at the National Fire Academy.
- 8-7** The department should hire a clerical person that is assigned at least part-time (approximately 15 to 20 hours per week) to the fire prevention program. The person filing this position would be responsible for among other duties, administering a

permit management system, scheduling fire inspections, filing, and other related duties, such as performing hazardous materials response and false fire alarm billing.

**NOTE:** *While this person should be dedicated part-time to assist with the fire prevention program and general fire department duties, in conjunction with other recommendations made in police report, we ultimately recommend that the clerical position be a full-time position shared by the police and fire departments.*

- 8-8** Should the Town of Berlin decide to hire additional full-time, career personnel, the department should establish a formal in-service fire safety inspection program. The on-duty personnel can be assigned with the responsibility for “in-service” inspections to identify and mitigate fire hazards in buildings, and to familiarize firefighters with the layout of buildings, identify risks that may be encountered during firefighting operations, and to develop pre-fire plans. On-duty personnel in many departments are assigned responsibility for permit inspections and public fire safety education activities.
- 8-9** The department should develop, and maintain, statistics concerning fire prevention and inspection activities and produce an annual report that includes the following:
- Number of inspections by occupancy type
  - Number of permits by type
  - Revenues
  - Number of plan reviews by occupancy type
  - Number of acceptance tests observed/monitored by type of inspection
  - Number of in-service inspections by occupancy type
  - Public fire education activities
- 8-10** The Berlin Fire Department should acquire some type of mobile computers (laptops, tablets, etc.) along with printers, for use by all personnel conducting field inspections. In this way once the inspection is completed the inspection report can be completed on the computer, an inspection report and/or other appropriate documentation, certificates, etc. can be printed out and given to the facility/building representative. Once personnel return to the station, the inspection reports can be uploaded into the main database. The inspection system and associated data base(s) should be cloud based systems that integrate with the rest of the department’s records management system.
- 8-11** The Berlin Fire Department should continue to update its website on a regular basis to provide its customers, and other interested parties, as much information as possible on fire safety, fire prevention, and the department as a whole. The department

should also work actively to make on-line permitting, inspection scheduling, etc. a reality.

- 8-12** The Berlin Fire Department should continue to maintain and enhance its library of fire prevention reference materials, including continuing to maintain its online subscriptions such as NFPA and its professional subscriptions.
- 8-13** The Berlin Fire Department should continue its year round public fire safety education programs, in the schools, and throughout the community. Personnel should be encouraged to obtain the Fire and Life Safety Educator certification issued by the state fire marshal's office.

## CHAPTER 9

### RESCUE SQUAD OPERATIONS

Emergency Medical Services (EMS) operations are an important component of the comprehensive emergency services delivery system in any community. Together with the delivery of police and fire services, it forms the backbone of the community's overall public safety life net. In fact, as a percentage of overall incidents responded to, it could be argued that EMS incidents constitute the greatest number of "true" emergencies, where intervention by trained personnel does truly make a difference, sometimes literally between life and death.

**The mission of the Berlin Rescue Squad is, in cooperation with the town's police and fire departments, to provide the Town of Berlin with the highest level of professional care in emergency situations requiring rescue and ambulance services.**

The Berlin Rescue Squad (BRS) was organized in 1958. Although at the time the fire department apparently had some type of rescue service the catalyst behind the squad's formation was that emergency medical services were extremely limited and some type of formal delivery system was desired. Like many rescue squads from that era the first members possessed basic first aid training and were primarily concerned with getting the patient to the nearest hospital. Over the years, the system has evolved into a full-fledged emergency medical services provider that operates today at the basic life support (BLS) level. The BRS is headquartered in the Berlin public safety building, and shares both the apparatus bays and administrative/crew spaces with the fire department.

At the time of this assessment the Berlin Rescue Squad is a fully call organization led by Chief Dennis Bartlett who also concurrently serves as the town's office of emergency management (OEM) coordinator. Chief Bartlett's position as chief is considered to be part-time for which he receives annual compensation of \$13,625.00. He receives an additional \$2,500.00 as the OEM coordinator. The MRI study team received conflicting information regarding whether there are currently any other formally appointed officers other than the chief. Chief Bartlett informed the study team that there is currently no real organizational chart for the rescue squad and that he is the only officer. However, the team was contacted by, and interviewed, a member who was referred to as "deputy chief". Although this title appears to be more informal than appropriately established organizationally, its use could cause confusion on an incident scene. We also received documents that listed a deputy chief. In any case, there are no established officer positions beyond the chief, and possibly, the deputy chief. Current department protocol stipulates that the most senior member present take command of any emergency incidents. This lack of formally designated, or sworn, officers creates an unacceptably large span of control for supervision, particularly on the emergency scene. It may also place unqualified personnel into important decision making positions for which they are not prepared exposing a

wide cross section of stakeholders to potentially negative consequences. Although not holding formal titles, there are a number of personnel who assist the chief with various aspects of running the organization.

In December of 2014, the chief did submit a proposal to the BOS requesting approval for a change in the rank, and structure, of the organization. The proposed organizational changes include the formal creation of a position of deputy chief to serve as the second in command and two captains who will each supervise a squad of personnel. Among the valid reasons for requesting this change is an attempt to provide better scene management, and accountability of personnel, while simultaneously seeking better compliance with current NIMS/ICS protocols. These positions would receive a higher compensation than the other members of the rescue squad. We believe that short-term, pending future decisions on the overall provisions of emergency services in the town, that this reorganization be approved and personnel appointed, at least provisionally, to fill these officer positions provided they meet the minimum qualifications specified in the request to the board.

The January 1, 2015 rescue squad roster listed a total of 38 active members. Of these, there is one paramedic, twenty-eight emergency medical technicians (EMTs), and nine first responders. The “roster” also lists twelve “inactive” personnel, and two police officers who are certified EMTs but not members of the rescue squad. It is important to remember that in call/volunteer emergency service providers that actual numbers tend to fluctuate as members move on, or new members are recruited and join. It was reported to the study team that about 15 of the squad’s members are fairly active with regard to responding to emergency calls. About 50% of the current members of the rescue squad are also members of the fire department. This is consistent with information provided by the fire department that 18 of their personnel also belong to the rescue squad. The squad’s EMTs are compensated \$17.17 per hour for response to emergency incidents. This is the same as members of the fire department. Personnel who are certified first responders receive around \$14.00 per hour.

The Berlin Rescue Squad operates a single, fully equipped, BLS ambulance. It also operates a well-equipped light rescue truck for used primarily for vehicle extrication operations. The rescue truck is equipped with a wide array extrication equipment including a complete set of Hurst Jaws of Life hydraulic extrication tools, vehicle stabilization equipment, cold water rescue survival suits, and extensive portable lighting. In addition, it is equipped with medical supplies to work in conjunction with the ambulance on larger incidents. It is also equipped with, and provides, rehabilitation supplies for use at larger or long duration incidents. The ambulance is also equipped with an electric set of hydraulic extrication tools allowing the crew to perform minor patient access or extrication operations, such as door pops, even if the rescue truck is not on the scene. Both vehicles are in very good condition, are appropriately equipped, and appear to meet applicable vehicle standards commensurate with their age.

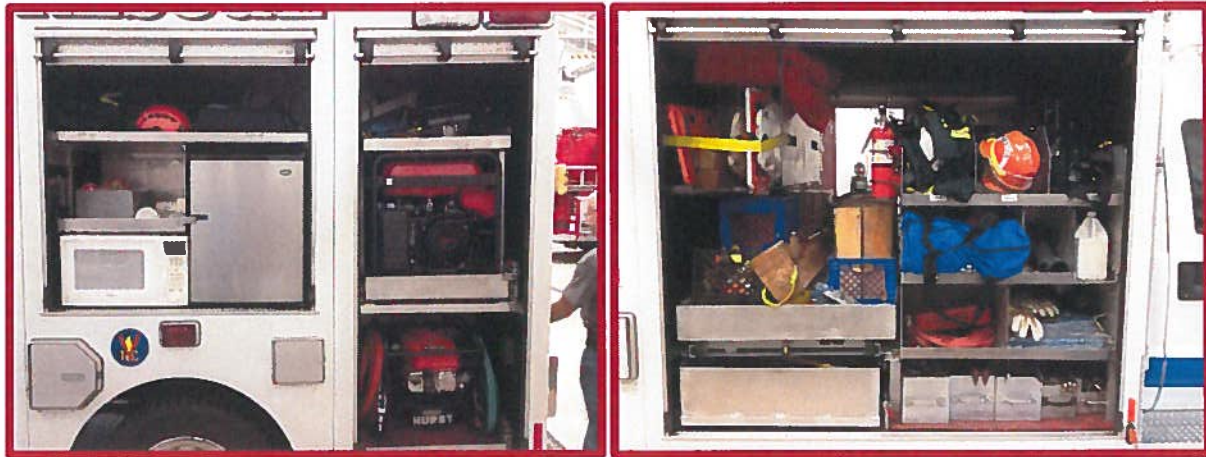
The following summarizes the Berlin Rescue Squad fleet:



**Figure 9-1: Ambulance 6-A - 2010 Ford E-450/Osage  
20,645 miles  
Excellent condition  
(Photo: Mass Fire Trucks)**



**Figure 9-2: Rescue 6-R - 2004 Ford F-550/V-Tech  
5,908 miles  
Very good condition  
(Photo: Mass Fire Trucks)**



Figures 9-3 and 9-4: Various rescue tools and equipment carried on the rescue truck.



Figure 9-5: Complete Hurst hydraulic rescue tools compliment carried on rescue truck.

Routine maintenance, as well as minor repairs, on the squad's vehicles is performed at a local vehicle repair shop. Larger, or more complex, repairs are performed at either the Ford dealer for chassis and drive train issues, or at an emergency vehicle dealer's shop for problems involving the ambulance or rescue truck bodies. While the squad does not purchase an annual service contract to cover repairs and service on their hydraulic rescue tools they are reported to have them serviced on an annual basis.

The MRI study team has significant operational concerns over the fact that despite having a roster of 29 members who are certified as EMTs or higher, the Berlin Rescue Squad has only one ambulance. In any community there are going to be occasions where there are simultaneous, or at least overlapping incidents, or situations, even relatively minor motor vehicle accidents, where more than one ambulance may be required. In each of these cases, mutual aid would need to be summoned to Berlin to handle the second incident. The odds of simultaneous, or overlapping, incidents increases in a community such as Berlin where every transport to the hospital will take time by virtue of the fact that all the local hospitals are located in neighboring communities, some with extended travel distances that lengthen turn-around time. This is especially true when road conditions may be hazardous, particularly during the winter. In addition, anytime the ambulance must be taken out of service for routine maintenance, or minor repairs, the squad has no ambulance to respond with again forcing a reliance on mutual aid. Any type of significant mechanical problem, or an accident involving the single ambulance could effectively render the rescue squad out of service for an extended period of time.

The current 2010 ambulance replaced a 2000 Ford E-450 Life Line vehicle that although 10 years old at the time (and would be 15 years old now) was reportedly not in bad condition, and did not have excessive mileage on it. It appears that this unit could have been retained by the squad as a second ambulance for any of the possibilities identified above. Long-term, the town should give serious consideration to maintaining two ambulances in its emergency vehicle fleet. One would function as the primary response unit while one would serve as a back-up, and second unit, when needed. Based upon usage a new ambulance should be purchased every five to seven years. As a new vehicle is placed in service the current second unit/spare could be removed from service while the current primary unit is moved to second unit/spare status.

We are also concerned about several aspects of vehicle extrication operations as they are conducted in the town. First, as noted above, the ambulance carries a small electric set of extrication tools that allow them to perform minor patient access, or vehicle extrication, operations. However, personnel responding on the ambulance are not normally equipped with proper personal protective equipment (PPE) to perform these types of operations that would include head, eye/face, and foot protection, gloves, and appropriate protection for the remainder of the rescuer's body. This exposes the personnel to a real risk of personal injury while performing these operations. In addition, if the ambulance is only staffed with two, or even three personnel, the need to use hydraulic rescue tools is going to divert the attention of these members away from their primary responsibility: patient stabilization and care. Finally,

although the fire department also has a complete set of hydraulic rescue tools on Engine 1 it is from a different manufacturer and is not compatible or interchangeable with the rescue squad's equipment. Complicating the situation further, the rescue squad and fire department rarely, if ever, train together even on extrication operations which by necessity will need to be conducted jointly.

Our benchmarking analysis of peer communities indicates that although Berlin seems to experience fewer overall motor vehicle crashes, those crashes also appear to have a greater degree of severity as the need to extricate patients is more frequent. The ability to extricate patients is a critical skill set that should be shared between fire department and rescue squad personnel. All extrication training should be conducted jointly.

The rescue squad has a very limited number of written documents that are used to guide their operations. The chief informed the study team that he was not aware of any specific municipal ordinances, bylaws, policies, documents, and/or plans that would directly affect his department, and none of these documents were provided for review. The team was provided with a complete packet of information that is given to all new members of the department. The contents of this packet includes:

1. Welcome letter which provides the new member with a brief over view of the squad's operations.
2. New member orientation packet which identifies statutorily required items that the new member must complete. It also includes a number of basic skills that each new member must be evaluated on, and satisfactorily complete, for an approved senior member of the squad. This packet is very thorough and comprehensive, and if adhered to, provides new members with an excellent orientation to the organization's operations, while simultaneously giving them an opportunity to practice and demonstrate their proficiency at performing a wide range of basic EMS skills.
3. Rules and regulations which are identified as a supplement to the town's policies and procedures. This document stipulates basic membership requirements and briefly describes expected conduct of personnel. It also provides a number of operational level procedures governing emergency incident response and operations. This document listed an amended date of October 2005 and then stated it was revised in 2006.
4. Red light laws of the Commonwealth of Massachusetts.
5. Radio communications commands for both rescue squad vehicles, and for utilizing CMED radio to contact the hospital.

6. Association bylaws which cover the routine business and operations of the parallel, but somewhat autonomous, Berlin Rescue Association.
7. Signature letter acknowledging receipt of the entire membership packet.

Overall, the MRI team found that the documents provided to us, although limited in scope, content, and timeliness, were fairly well written. We particularly commend the rescue squad for its use of the new member orientation packet as an instrument to assess (along with requisite practice) the proficiency of new members on a wide range of skills. The squad may find benefit to using this process to periodically evaluate various random skills of all personnel.

Many of the other documents did not appear to have been reviewed, revised, or updated, in a number of years. For instance, the rules and regulations do not state when they were initially adopted, or by whom. They do not appear to have been updated, or revised, since at least 2006 and even then, it is unclear by whom. Important policies and procedures that guide a wide range of daily operations should be reviewed on at least an annual basis, and revised/updated, as necessary. We also found that the rules and regulations contain just a single paragraph regarding conduct of personnel. It is important that the rules and regulations clearly delineate the expected standards of behavior and conduct, as well as, identify prohibited activities. They should be tailored to the needs of each individual community and department. In addition, it must be ensured that the town's personnel and other policies that are applicable to members of the rescue squad are fully integrated into the rescue squad's written communications system, and are available to all members of the department since they should be applicable to them. The relative importance and relationship to each of the various types of documents should be clearly delineated in the rules and regulations.

Effective communications systems are key to successful operation of any emergency services organization. Standard operating procedures and/or standard operating guidelines (SOPs/SOGs) and other orders are mission critical to consistent, effective, and safe, operations. Without them there is a tendency to "freelance" and personnel may not all be on the "same page" regarding a wide range of emergency and administrative operations. We found much of this guidance in the rescue squads rules and regulations. However, we believe the system would be better if many of the operational procedures found in the rules and regulations were actually developed into an SOP/SOG manual.

In addition to providing normal operational direction, the SOP/SOG manual can be used to develop procedures, or guidelines, necessary to implement, and/or comply, with various statutes, regulations, policies, and plans. Doing this provides not only a clear distinction between the various types of documents, it would also serve to clarify the relative importance of each type of document. Generally speaking, the superseding order of these documents would be:

1. Statutes
2. Administrative Regulations
3. Town Policies
4. Rules and Regulations/Code of Conduct
5. Standard Operating Procedures/Guidelines
6. Association Bylaws

The only other document that was provided to the study team was “*Dispatch Policies and Procedures*” which were identified as Revision 2.1, and were approved in August 2008. The procedures contain names and contact numbers of specific individuals who may no longer serve in the roles for which they are identified. The remainder of the procedures are fairly basic and straight forward. However, one significant area of concern is that they indicate that mutual aid is not summoned for no response from the BRS for a full six minutes after initial dispatch. While this is apparently no longer the procedure that is utilized, calling for mutual aid quicker is more a function of the fact that these procedures are apparently not available in dispatch, according to the police chief, rather than revising them to better serve the 9-1-1 caller.

It does not appear that the squad has either a standalone Blood borne Pathogens/Exposure Control Plan, or Respiratory Protection Plan (required if personnel are required to wear any type of mask or respiratory protection device).

**NOTE:** Much more detailed information on department communications is found in Chapter 6 *Organizational Communications*. While this chapter focuses on communications from the fire department perspective, all of the concepts and issues discussed there are also applicable to EMS/rescue providers, the main difference being the focus of some of their operational procedures. Should the town decide to combine fire and rescue into a single organization the recommendations found in that chapter will provide the primary guidance on the development of the necessary documents for operations of the new department.

Training for the rescue squad is conducted monthly on the 1<sup>st</sup> Wednesday. Most of the EMS training requirements are dictated by the Commonwealth of Massachusetts, or other licensing and/or certification authorities, and primarily involves continuing education requirements for recertification. These requirements can be fairly substantial from a time commitment standpoint particularly for call/volunteer personnel. The squad contracts with a third party vendor to provide these CEU (Continuing Education Unit) based training sessions at the station about 10 times per year. Ultimately, the members are responsible for obtaining sufficient credits to maintain their certifications. It generally appears that about 50% to 60% of the members attend these training sessions. Topics covered in 2014 include:

- January – Intranasal Naloxone
- February – Assisted Albuterol
- June – Syncope and Medical Skills Lab
- July – BLS Protocols
- September – HazMat and Medical Review/Spinal Immobilization
- October – Blood borne Pathogens and Unprotected Exposures
- November – NCCR Refresher
- December – HIPPA and Patient Confidentiality

It was also reported to the study team that on the 3<sup>rd</sup> Thursday of each month the Berlin Rescue Association holds a meeting. At the conclusion of these meetings, they generally try to do some training for the members in attendance on some practical hands on skill or evolution.

Two members of the squad are responsible for assisting the chief with the maintenance of training records. These personnel are primarily responsible for ensuring that personnel are up to date with their training records, and that they maintain current, and valid, EMT certifications and driver's licenses. The team was provided with a summary of monthly topics covered in training for the past several years, as well as, an excel spreadsheet that indicates member attendance at various training sessions. No other training records were available for review, and no signed training report attendance records are maintained.

NFPA 450 *Guidelines for Emergency Medical Services (EMS) and Systems*, 2009 edition (National Fire Protection Association, Quincy, MA) provides a template for local stakeholders to evaluate an EMS system and to make improvements based on that evaluation. The Commission on Accreditation of Ambulance Services (CAAS)<sup>9</sup> also promulgates standards that are applicable to their accreditation process for ambulance services. The Commonwealth of Massachusetts regulates EMS agencies, and certain federal Medicare regulations are also applicable.

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 for emergency medical incidents. It is not just a cliché that during critical life threatening situations, minutes, and even seconds, truly do count.

Heart attack and stroke victims require rapid intervention, 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

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<sup>9</sup> The Commission on Accreditation of Ambulance Services (CAAS) is an independent commission that established a comprehensive series of standards for the ambulance service industry.

during cardiac arrest decreases exponentially with each passing minute that cardio-pulmonary resuscitation (CPR), or cardiac defibrillation, is delayed.

Section 4.9 of NFPA 1720<sup>10</sup> on Emergency Medical Services is silent on required on scene response times. However, paragraph 4.1.2.1(4) of NFPA 1710<sup>11</sup> 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, and an Advanced Life Support (ALS) unit should arrive on scene within eight minutes. Paragraph 4.1.2.2 recommends the establishment of a 90% performance objective for these response times.

The Berlin Rescue Squad is fortunate to have a dedicated membership who strive to provide the best possible services to the community given the limitations and constraints, primarily from a time commitment standpoint, of a still fully call rescue squad. Overall, the squad appears to be well trained, well equipped, and generally well prepared to serve the needs of the community that it protects. However, that does not mean they are without weakness, or areas where there could be significant improvement; the most significant of which is that nearly one in five responses that occurred in Berlin in 2014 the rescue squad was unable to handle alone due to a lack of adequate staffing. On nearly 10% of the incidents, the squad was unable to respond at all. In addition, there seems to be little interest in responding to incidents being generated by the large shopping complexes that straddle the town line in several places.

Over the past three years, the Berlin Rescue Squad's number of incidents have been gradually increasing from 237 in 2011, to 257 in 2012, and 279 in 2013, before decreasing slightly to 266 in 2014. This represents a 15% increase over the first three years with a 4.7% decrease in 2014. These numbers represent an average of 4.6 incidents per week and .65 per day in 2011; 4.9 per week and .7 per day in 2012; 5.4 per week and .76 per day in 2013; and 5.1 per week and .73 per day in 2014. The statistics reflected above were obtained from the rescue squad's annual reports to the Town of Berlin. Other data that the study team analyzed indicated different numbers of responses in each year. This includes dispatch data from Pamet. The reason for the discrepancies could not be ascertained but were consistent with similar differences in numbers for the fire department.

**It is very important to note that Berlin Rescue Squad does not respond first to any incidents at the Solomon Pond Mall which would be estimated to increase responses by about 100 per**

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<sup>10</sup> 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*, 2010 edition (National Fire Protection Association, Quincy, MA), outlines organization and deployment of operations by call/volunteer and primarily call/volunteer fire departments.

<sup>11</sup> NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Career Fire Departments*, 2010 edition (National Fire Protection Association, Quincy, MA), outlines organization and deployment of operations by career and primarily career fire departments.

year or two per week. Adding in Solomon Pond responses would have the BRS responding to just about one incident per day.

With a membership roster of 38 personnel, and the majority of incidents requiring just two, possibly three members, the current call volume would seem to be within the capabilities of a vibrant call/volunteer organization. Information provided to the MRI study team indicates that the average number of EMTs on scene for each incident in 2011 and 2012 was three, increasing to four in 2013, before decreasing back to three in 2014.

The Berlin emergency communications center does utilize emergency medical dispatch protocols to triage, and prioritize, emergency calls they receive. BRS procedures dictate the simultaneous dispatch of the nearest ALS unit for twenty-one different types of medical emergencies and injuries, including all situations where the patient cannot speak, is not breathing, or is unconscious. In addition, ALS is also immediately dispatched for five different categories motor vehicle accidents. The primary ALS units that respond to Berlin include Community Ambulance from Marlborough, Vital Ambulance from Clinton, and Patriot Ambulance from Hudson. Of the total annual incidents 74 (31.2%) in 2011, 73 (28.4%) in 2012, 95 (34.1%) in 2013, and 82 (30.8%) in 2014 required advanced life support (ALS) intervention for patient care, and during transport to the hospital. These figures are slightly lower than national averages which indicate that about 35% of EMS incidents meet the ALS treatment criterion.

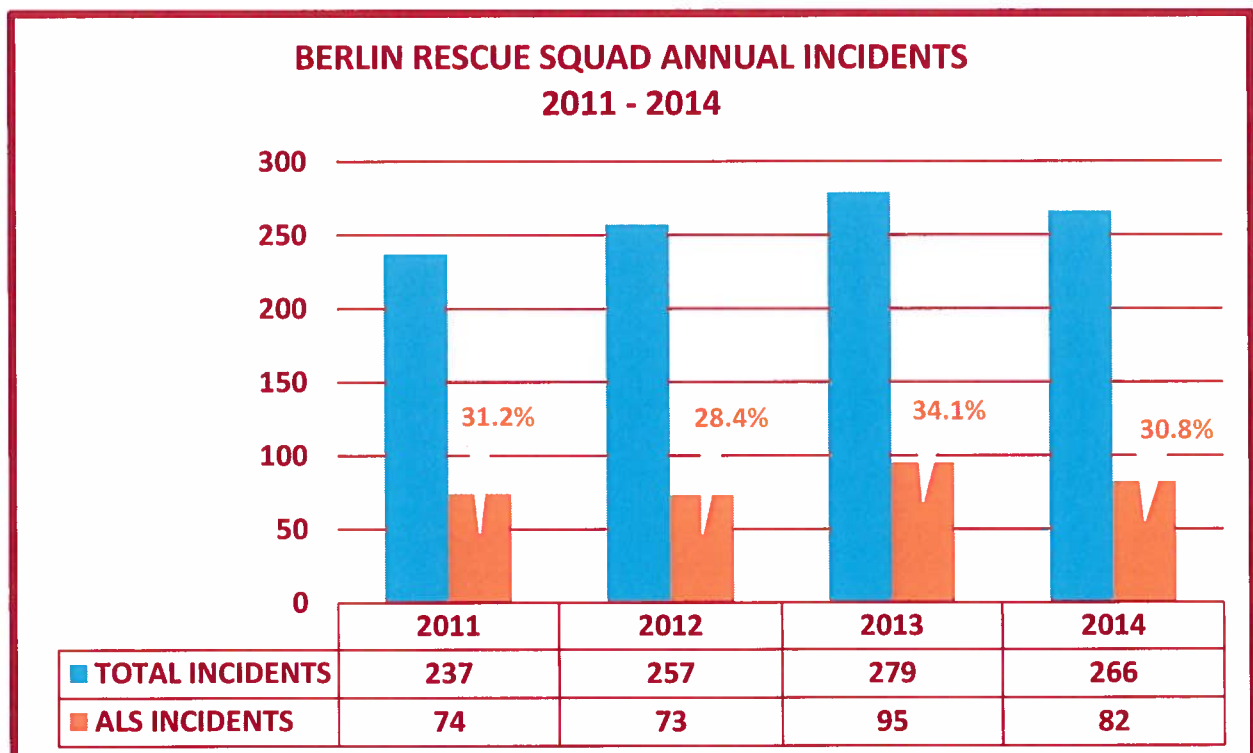


Figure 9-6  
Source: Berlin Rescue Squad Annual Reports

## BERLIN RESCUE SQUAD INCIDENT RECAP – 2011 - 2014

STATISTICAL CATEGORY	2011	2012	2013	2014
Total Emergency Incidents	237	257	279	266
ALS Requested	79	78	96	87
ALS Treat/Transport	74	73	95	82
Airway/Chest Pains	18	29	10	33
Motor Vehicle Accidents	58	64	57	45
Trauma Patients	90	94	92	86
Total Patients	250	290	315	289
Total Patients Transported	212	249	229	205
Patient Refusals	36	90	86	61

Figure 9-7

Source: Berlin Rescue Squad Annual Reports

It should be noted that in some cases the statistics found in Figure 9-7, above, do not total correctly. Although we were unable to confirm this conclusively without manually reviewing each report, it appears that there were a number of cases each year, probably motor vehicle accidents with multiple patients, where Berlin Rescue personnel may have initially treated patients on scene before transferring care to another EMS unit for transport. There were also a number of cases where Berlin EMS responded to the incident but was unable to transport due to lacking two qualified EMTs. It also appears to us that BRS uses a particularly liberal definition of the term “trauma” to include any injury. That is the only plausible explanation for the very high percentage of “trauma” patients compared to the overall number of incidents. This is particularly true when one considers that the total number of “trauma” patients each significantly exceeded the number of ALS treats that occurred in town. In most cases, any significant trauma related injury will result in ALS intervention. When incidents are categorized for reporting purposes, they should be categorized specifically for the situation found rather than the type of incident the initial dispatch was for or into overly broad classifications.

When a 9-1-1 call is received by Berlin dispatch, the dispatcher utilizes EMD protocols to triage and prioritize the emergency and then dispatch the appropriate resources including the rescue squad, and the nearest ALS unit, if the information available indicates the emergency meets the appropriate criterion. After one minute, the incident is toned out again. If there is no response from the rescue squad (or no information has been received that enough personnel are responding) after three to five minutes then the nearest ALS unit is dispatched to handle the incident even if it is the type of emergency that would normally be handled by a BLS unit. The ALS unit will then treat and transport the patient. The rescue squad does not utilize the “*I am Responding*” or similar system.

The MRI study team was informed by BRS personnel that, on average, it takes approximately eight to ten minutes for the ambulance to respond, and about fifteen minutes total to arrive on

scene. According to response time statistics provided from the Pamet dispatch database the average response times for a BLS unit to arrive on location after dispatch ranged from six minutes, twenty- seconds (6:27) in 2013 to six minutes, fifty-five seconds (6:55) in 2012. In 2014, the average response time was six minutes, forty-three seconds (6:43). The average time for an ALS unit to arrive on location after dispatch ranged from a low of three minutes, forty-seven seconds (3:27) in 2013 to five minutes, twenty-eight seconds (5:28) (Figure 9-8).

In Massachusetts, 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. NFPA 1710 suggests that a unit with first responder or higher level training, and equipped with an AED should also be on scene with six minutes of the receipt of the emergency call while CAAS recommends that an ambulance arrives on scene within eight minutes, fifty-nine seconds (8:59) of dispatch. Figure 9-9 provides a breakdown of the percentage for each minute of response time for the rescue squad for all incidents from 2012 through 2014. Nearly three out of ten incidents (29.8%) had a response time of eight minutes or greater exceeding even the most generous recommended standard for ambulance response time those promulgated by the CAAS. Less than 50% of responses met the Massachusetts standard of care protocol. More than one in six incidents (16.1%) had a response time of ten minutes or greater. In a significant number of incidents, an ALS unit responding from another community arrived on scene prior to Berlin's ambulance.

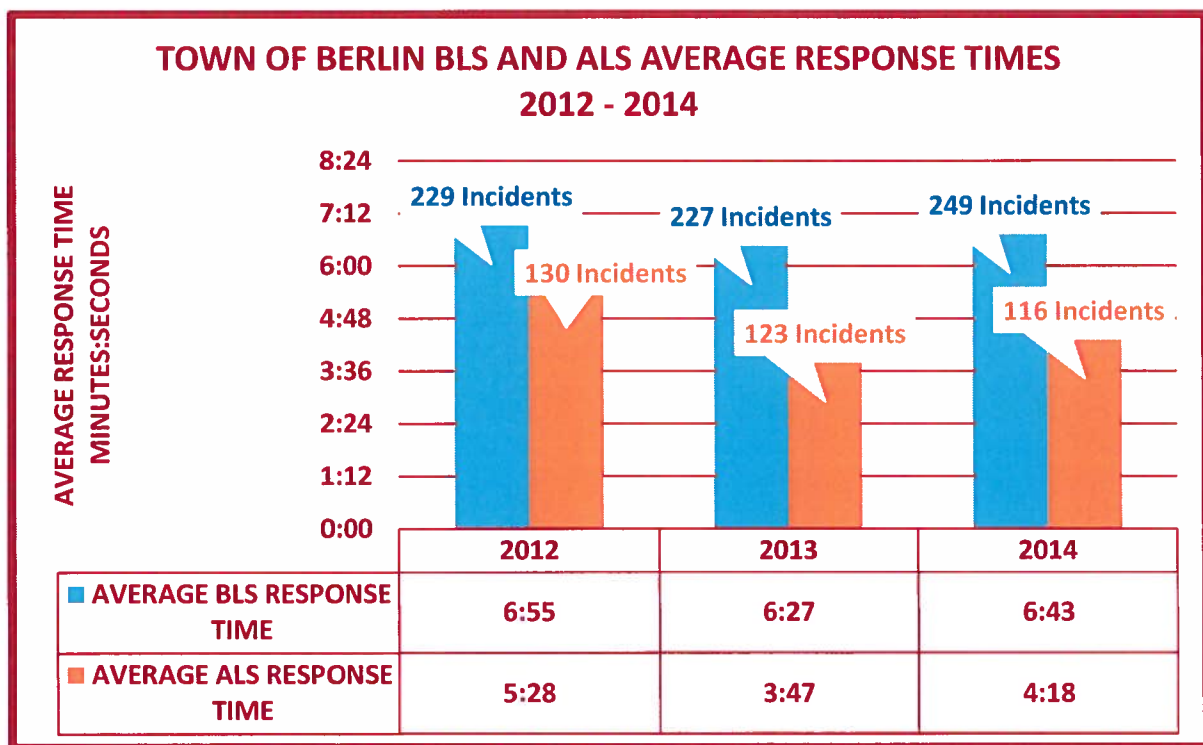


Figure 9-8

Source: Pamet database response time statistics provided by Berlin Police

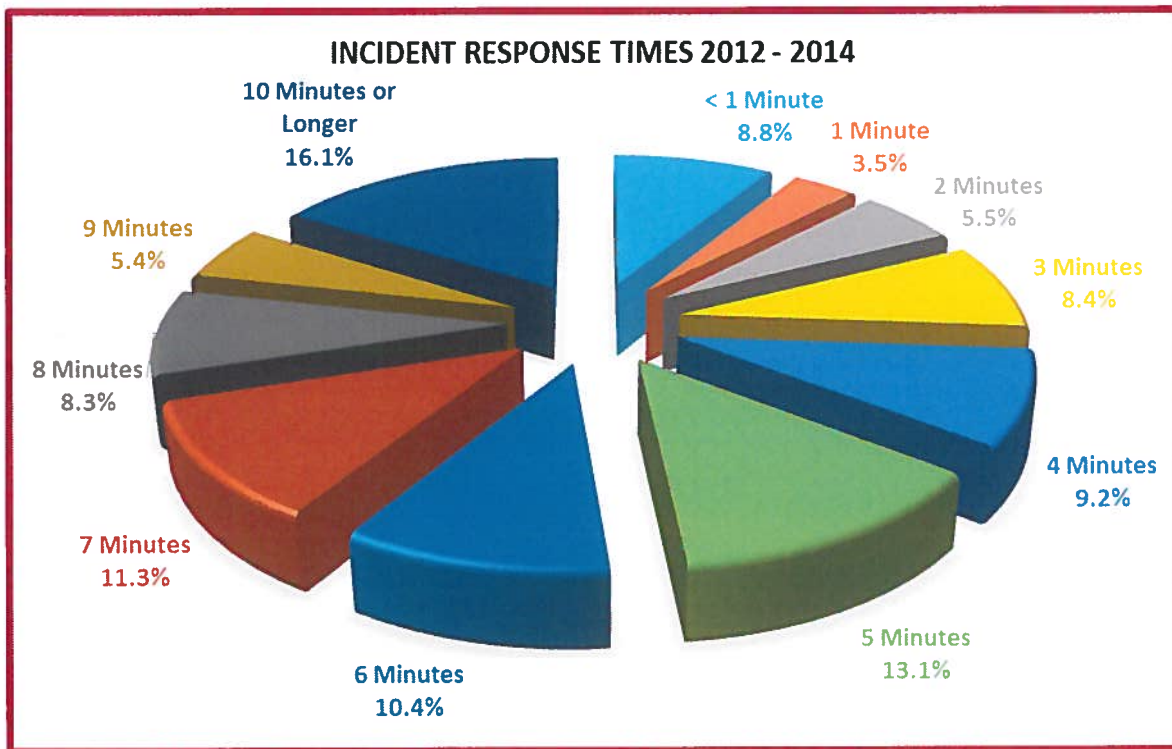


Figure 9-9

Source: Pamet database response time statistics provided by Berlin Police

There were also several extremely extended response times each year. In 2012, the longest response time was thirty-nine minutes, forty-eight seconds (39:48). There was one additional thirty minute plus response, and four response times in excess of twenty minutes. In 2013, the longest response time was fifty-six minutes, seventeen seconds (56:17). The next most extended response time was eighteen minutes, twelve seconds (18:12). In 2014, the longest response time was thirty-seven minutes, twenty-three seconds (37:23). There was one thirty minute plus response, and two in excess of twenty minutes.

**The real statistic of concern though, and perhaps the one that provides the best snap shot of the challenges facing the Berlin Rescue Squad is that on nearly 20% of the incidents they were dispatched to the squad either failed to respond, or responded with a crew that did not consist of a minimum of two EMTs as required by Massachusetts law. This situation precludes them from transporting the patient to the hospital necessitating a mutual aid response. There were twenty-four incidents where the squad did not respond at all, and an additional twenty-six where they could not muster an adequately staffed crew. This equates to 9.4% and 10.2% respectively of the 254 total incidents (Figure 9-10).**

## BERLIN RESCUE SQUAD RESPONSE STAFFING BREAKDOWN - 2014

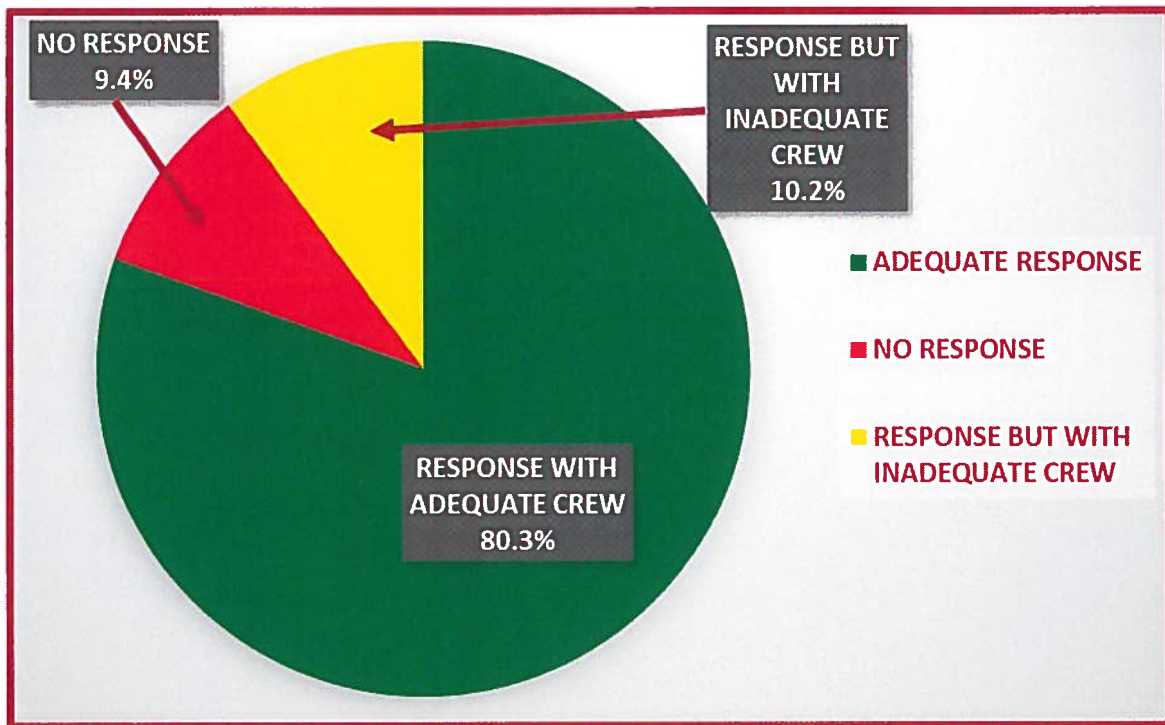


Figure 9-10  
Source: Berlin Police

There were only three times in 2014 where there were simultaneous, or overlapping, incidents necessitating mutual aid to handle the call because ambulance 6A was unavailable due to being on another call.

As with most EMS providers today, the majority of BRS revenue is derived from third party billing of insurance companies. However, Medicaid and Medicare which are responsible for a large percentage of these reimbursements is in a state of flux and reimbursements have been being reduced annually for the past several years. Private insurance companies frequently utilize these rates to set their own reimbursement levels. In addition, billing is only permitted when a transport occurs. This results in a not insignificant percentage of calls being non-billable.

BRS uses a third party to administer their billing and collections. Their current provider is Comstar Ambulance Billing Service of Rowley, MA. The company bills, and then aggressively pursues payments, from Medicare, Medicaid, private insurance companies, and the patients themselves. Comstar retains 6.5% of what they collect as commission on their services. This commission is within the average range based upon the previous experience of the study team.

The MRI study team was provided with the rescue squad's current billing rates which were most recently updated in August 2014 (Figure 9-10). The increase in rates at that time more than doubled the base rates for services. However, it also eliminated individual billing for various monitoring, interventions, and care provided to the patient. This includes things such as cardiac monitoring or defibrillation, oxygen administration, IV therapy, spinal immobilization, and applying MAST trousers. Theoretically, these types of care are now included in the base rate whether or not those services are actually provided. It is very important to note that the form authorizing the rate changes to take effect was signed by the rescue chief. However, no vote was apparently taken by the BOS to set the rates as required by Massachusetts law.

TYPE OF CHARGE	PREVIOUS BILLING RATE	CURRENT BILLING RATE
BLS EMERGENCY BASE RATE	\$ 650.00	\$1,385.00
ALS1 EMERGENCY BASE RATE	\$ 750.00	\$1,760.00
ALS2 EMERGENCY BASE RATE*	\$1,000.00	\$3,070.00
SPECIALTY CARE TRANSPORT	\$1,025.00	\$3,095.00
MILEAGE	\$ 26.00	\$ 30.00
AIRWAYS	\$ 210.00	
CARDIAC MONITOR	\$ 275.00	
DEFIBRILLATION	\$ 250.00	
EPINEPHRINE	\$ 175.00	
EXTRA ATTENDANT	\$ 225.00	
GLUCOSE MONITORING	\$ 150.00	
IMMOBILIZATION	\$ 300.00	
IV THERAPY	\$ 600.00	
MAST TROUSERS	\$ 100.00	
OXYGEN	\$ 110.00	

\* ALS2 rate applies when 2 or more ALS interventions are required.

Source: ComStar Ambulance Billing/Berlin Rescue Squad

Figure 9-11

It is the opinion of the MRI study team that the Berlin Rescue Squad's new rates are very high and disproportionate to both collections and practice throughout the commonwealth. Long-term experience has shown clearly that higher rates do not result in higher collections, or a better payer rate. Medicare payments are set by the federal government and paid based upon rates established for each state regardless of how much is billed. Private insurance companies frequently follow the Medicare rates when establishing their own payment schedules. The majority of patients the BRS transports (82%) are Berlin residents who also pay taxes to support the service and whom are unlikely to be pursued for additional payment beyond their third party carrier (known as hard billing). In short, we do not believe that the risk involved with setting rates so high does anything to significantly increase the value of the return.

Consideration should be given to revising these rates to more closely reflect standard billing rates in Massachusetts.

Over the previous three years the amount BRS has billed for services, the amount considered “allowable” has fluctuated annually, increasing one year before decreasing the following year. However, the figure that matter the most, and provides the true bottom line, the total amount collected from third party billing has declined during each of these years from \$93,606.66 in 2012 to \$76,421.51 in 2014 a decline of \$17,185.15 (18.4%). The percentage of total charges collected in 2014 is less than 1/3 of the amount billed. The percentage of allowable charges collected, which is a more accurate barometer regarding collections, declined from a high of 82.8% in 2013 to 62% 2014, a decrease of 20.8% (25.1%).

	TOTAL CHARGES	TOTAL ALLOWABLE	PERCENTAGE OF CHARGES ALLOWABLE	TOTAL COLLECTED	PERCENTAGE OF TOTAL CHARGES	PERCENTAGE OF ALLOWABLE CHARGES
2012	\$212,764.44	\$113,807.82	53.5%	\$93,606.66	43.0%	82.2%
2013	\$189,443.60	\$109,316.72	57.7%	\$90,502.84	47.8%	82.8%
2014	\$235,996.80	\$123,348.31	52.3%	\$76,421.51	32.4%	62.0%

Source: ComStar Ambulance Billing/Berlin Rescue Squad

Figure 9-12

Relationships between the Berlin Rescue Squad and the Berlin Fire Department could best be described as uneven or bumpy. It was reported to the study team that for many years relationships between the two organizations were good. However, a number of years ago the relationship began to deteriorate after a change in the fire department’s leadership. The catalyst seems to have been an attempt to combine fire, and EMS/rescue, into a single entity that at least from the perspective of the rescue squad membership was done in a backdoor manner, or as an attempt to take over rather than merge. The rescue squad fought this initiative and ultimately prevailed.

Today, relationships vary from incident to incident driven by the personnel who may be present from each organization. The tensions go all the way to the top of the organizations as the relationship between the fire chief and the rescue chief is strained and has been so for many years. While the two organizations do nominally use a unified command structure on incidents as would be appropriate under NIMS, in reality, the rescue squad reports there is really not good communications, or interaction, on emergency scenes. This is an area of great concern to the MRI team as this situation could certainly lead to situations where not all personnel are working toward the same established, and “unified”, goals and objectives. The list of potential

negative outcomes from this type of scenario is long, and could have serious implications. This is an issue that the Town of Berlin must make a top priority to address and resolve. There is reason for optimism that this can be achieved as there is a significant, and growing, overlap in membership (50% +/-) between the two organizations, and the newer members seem to work very well with each other. It is imperative that these relationships be nurtured and developed. The pending retirements of both the fire chief and rescue squad chief that will bring in new leadership will provide an additional opportunity to put past issues where they belong...in the past.

The rescue squad informed the study team that the fire department and rescue squad never train together although the squad does invite them to attend their training sessions particularly those where EMT recertification CEUs are available. Since they frequently respond simultaneously to the same incidents, and operate together on the emergency scenes, the fire department and rescue squad should train together on a regular basis. This allows personnel to become familiar with each other, as well as, familiarity with the respective organizations' operations, particularly vehicle extrication operations, which as noted previously need to be conducted jointly.

The use of technology by the Berlin Rescue Squad is extremely limited at best. The MRI study team found that the vast majority of records, and virtually all of the data and statistics, we received as part of this assessment were obtained manually, and given to us in hand written form. There appeared to be almost no use of computerized databases, or any type of comprehensive records management system. There is no analysis of any type of records being performed, on a periodic basis, to evaluate organizational performance including response times that would allow an assessment of how well the rescue squad achieves established, and recommended, operational benchmarks.

An area of significant concern to the MRI team is an attitude within the rescue squad that certain facilities and locations within the town, particularly those from which a significant number of calls for service may be generated, are not really their concern, and they would be just as happy if someone else handles those incidents. The primary example of this is the Solomon Pond Mall. Although approximately 60% of the mall is located in Berlin, the Berlin Rescue Squad does not respond at all to this location as a primary EMS provider. Primary response is provided by the City of Marlborough with Berlin serving as a back-up if Marlborough has no ambulances available. The BRS estimates that responding to Solomon Pond would increase responses by about 100 per year with only about 10% of those resulting in a patient transport. The rescue squad chief has made it very clear that he has little interest in responding either to Highland Commons, which straddles the Berlin/Hudson line. He is content to allow Hudson to handle all incidents there. The proposed Riverbridge developments are another area where there apparently have been discussions regarding letting someone else provide the service, if they are interested.

To support the current no response policy at Solomon Pond Mall, the chief provided MRI with a signed "Ambulance Agreement" from September 1999. The agreement which is on

Marlborough Fire Department letterhead was signed by the Marlborough fire chief and Berlin rescue squad chief. It stipulates that transports from the mall will be handled by the Marlborough Fire Department, and the city's EMS provider. Although we are not legal experts it is our opinion that this agreement is not valid and may, in fact, present legal liabilities to the town. Our concerns are:

1. The Marlborough fire chief and Berlin rescue chief both seem to have far overstepped their authority by entering into an agreement such as this. Any agreements between governmental entities must be negotiated, and agreed to legally, **AND** be approved by the respective governing bodies. We found no evidence this was done so it is doubtful this so-called agreement is legally binding.
2. The Marlborough Fire Department is not the primary EMS provider for the city. We question how the fire chief could speak for another entity that is primarily responsible for providing that service particularly if there are limited billable responses.
3. The above issues notwithstanding, the agreement clearly states that it is in effect from September 21, 1999 through December 31, 1999 so it expired more than 15 years ago.

While we will develop options for the future delivery of fire and EMS/rescue services to Berlin in Chapter 12, *Conclusions and Future Fire/Rescue/EMS Service Delivery Options* it is our opinion that the Town of Berlin must provide the service to all locations, and facilities, within the town, unless the town negotiates a formal, legally binding, agreement for another entity to provide that service that is then approved by the BOS.

## **RECOMMENDATIONS**

- 9-1 With a current roster of 38 members, an organizational structure that includes just one formal officer is completely inadequate from a number of different perspectives. It is our recommendation that the Board of Selectmen adopt the revised organizational structure proposed for the Berlin Rescue Squad. The creation of the position of deputy chief will provide the organization with another qualified, chief level, officer to assist the chief with the management of the organization, and delineates a formal second in command. The creation of the position of captain will provide much needed increased supervision of the members of the squad.**

We do, however, recommend that this new organizational chart, and the personnel appointed to fill the new positions, be provisional pending a final decision by the town whether to merge fire and rescue into a single entity.

- 9-2 All officer positions should be filled based upon the person's rescue/emergency medical 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.
- 9-3 All officers should have one or more administrative duties/responsibilities to assist the rescue chief with the department's overall management, in addition to, their normal emergency scene operational duties and station management responsibilities
- 9-4 The Town of Berlin, in coordination with the Berlin Rescue Squad, and Berlin Fire Department, needs to take immediate, definitive steps to reduce the number of times that the rescue squad is unable to provide sufficient staffing to handle incidents which they are dispatched to. Short-term fixes that could be considered while longer-term solutions are developed include, but would certainly not be limited to:
- Simultaneously dispatching the Berlin Fire Department to EMS incidents, particularly those that meet the criterion for immediate dispatch of an ALS unit. This will provide an additional potential pool of responders including a number of additional EMTs.
  - Consider the implementation of compensated, in station duty crews, during the daytime and evening hours.
- 9-5 In order for the Berlin Rescue Squad to continue to be able to provide service to the community if there are simultaneous or overlapping incidents, multiple patients from a single incident, or when the ambulance is out of service for maintenance or repair, a 2<sup>nd</sup> ambulance should be added to the fleet. With the current ambulance about five years old and still in very good condition, we recommend that the town include funding for the purchase of a new ambulance in the FY 2017 capital budget for town meeting. By the time this new ambulance is delivered the current vehicle will be eight years old and can be moved back into the role of a reliable second unit.
- 9-6 The MRI study team recommends that the town take advantage, if possible, of the fire apparatus and ambulance group purchasing system that is sponsored by the Fire Chiefs Association of Massachusetts (FCAM) and the Metropolitan Area Planning Council (MAPC). Municipalities may select a specific design and manufacturer from a pre-determined bid list and are not required to establish their own bid process. It is

estimated that this group purchasing system will save approximately five to ten percent of the cost of a fire truck or ambulance (see [www.mapc.org](http://www.mapc.org)).

- 9-7 As required by Commonwealth of Massachusetts law, and with advice of their legal counsel, the Board of Selectmen should review the increased ambulance billing rates that took effect in August 2014, and at a minimum, take an appropriate formal vote to approve them.
- Alternately, the town should evaluate the current rate structure to determine if it is in their best interests to maintain the very high rates currently in effect.
- 9-8 In conjunction with its EMS billing contractor and the town's legal counsel, the Town of Berlin should take whatever legal actions are permitted to aggressively pursue collection of ambulance bills.
- 9-9 The Town of Berlin should consider the adoption of a bylaw that would allow the billing of patients whom an ambulance was requested for but are ultimately not transported to the hospital. A nominal fee of around \$100.00 would be appropriate to help offset the expenses associated with that response.
- 9-10 The Town of Berlin should seek the advice of its legal counsel to determine what, if any, legal liabilities the town is exposed to by virtue of the apparently unapproved "Ambulance Agreement" executed in 1999 between the rescue squad chief and the Marlborough fire chief. Even though this agreement appears to have long ago "expired" the reality is that, in practice, it is still in full force and effect.
- 9-11 The Town of Berlin should seek advice from its legal counsel regarding any potential liability to the town regarding emergency services in the community being provided through standing protocol by other agencies without formal, legally binding, agreements being negotiated by authorized representatives, and approved, by the respective governing bodies.
- 9-12 The Berlin Rescue Squad should provide the dispatch center with up to date written dispatch procedures and protocols for them to follow.
- 9-13 The Berlin Fire Department and Berlin Rescue Squad should train together on a regular, basis, particularly with regard to vehicle extrication operations.
- 9-14 The Berlin Rescue Squad, and Berlin Fire Department, should develop a joint fire/rescue matrix that focuses on developing a singular team approach to the extrication process. Emphasis should be placed on training, patient protection, and coordination of effort.

- 9-15** The officers of the Berlin Fire Department, and the Berlin Rescue Squad, should meet on a regular basis to discuss their respective operations, and ensure, that a functional unified command structure is being utilized on every incident where both agencies are operating together.
- 9-16** As primarily call organizations where personnel respond from various locations upon receipt of an emergency incident dispatch, both the Berlin Fire Department, and Berlin Rescue Squad, should purchase, and implement, a system to track members who are responding to the incident such as the *"I Am Responding"* system.
- 9-17** Working in conjunction with the police department and the town's IT provider, the fire department, and rescue squad, should explore options for replacing the current Pamet records management system with one that better serves the unique needs of the community's public safety departments. Should this occur all fire department and rescue squad operations should be transitioned to use one database system to capture, store, and analyze data currently in different systems. Working with the IT provider, they should explore a customizable, software solution that addresses all fire department and rescue squad needs.

## **CHAPTER 10**

### **BUDGETING, FISCAL MANAGEMENT, AND GRANTS**

Emergency services budgets are more than the dollar amount allocated for the operation of the various departments. The budgets are the document that reflect the goals and objectives that the fire department and rescue squad establish for delivery of services to the community. The budgets should be used as a planning tool by the departments, and their members, and should represent the needs of the departments to properly and safely serve the public.

Budget preparation and management must be an ongoing process in every aspect of the departments. In reality, before one budget cycle is completed, the next must already be in process. The fire chief, and rescue squad chief, along with their other officers, must continuously monitor their respective departments and their ongoing needs, as well as anticipate the demands that will be placed upon them in the future.

The majority of funds for the fire department budget come from property taxes and the rates charged to property owners. Some funds also come from a wide variety of fees for services, grants, and other sources. This is particularly true of the rescue squad which generates income through EMS third party billing. Some long-term capital funding may be included as part of a bond issue that will be paid back over a number of years. Some departments are using leases, and lease purchase programs, to assist with replacing undependable or unsafe apparatus and equipment. Contracting to provide shared services, such as for dispatching, has proven to assist with generating funds in some departments, or conversely, reducing expenses by joining another community.

While a comparative study can evaluate the level of effort and ability of residents' to fund services, it cannot measure residents' willingness to pay over the long run. Caution should be used if looking for hard and fast answers using statistical comparisons on their face value alone. Every emergency services provider, and every town, has developed creative methods for service delivery, and cost labeling, based on specific needs. Additionally, the information that might be obtained from various municipalities could vary to some degree as to how they report expenses such as employee benefits or vehicle maintenance.

#### **BUDGETS AND FISCAL MANAGEMENT**

Each year at the start of the budget process the BOS provides basic direction to the departments regarding their expectations for the upcoming budget year such as no increase, or an increase no greater than 1.5%, etc.

In the fire department, the chief prepares the budget in conjunction with the BOFE. The chief prepares a budget message and narrative to explain and/or defend his requests for increased

line item funding, or the need for capital equipment purchases. Once completed, the BOFE votes to accept the budget and forward it on to the BOS. The BOS meets with the chief and members of the BOFE to discuss the budget then either votes to accept the budget as submitted, or they will make revisions to it before providing their approval. The budget is then forwarded to the Finance Committee (Fin Com) who reviews it, meets with the chief and BOFE, and then makes recommendations for town meeting. In Berlin, a separate finance advisory committee, comprised of the town treasurer, accountant, assessor and clerk also reviews the proposed budget, and makes recommendations to Fin Com.

The rescue squad chief prepares his budget then submits it directly to the BOS. The remainder of the process mirrors the one described above for the fire department. Both budgets are then ultimately voted on at town meeting.

The MRI study team reviewed the budget documents provided to us by both departments, and the town accountant. Both department's budgets appear to meet the current needs of the departments in order to maintain the existing levels of service. The overall fiscal management of the fire department, and rescue squad, both appear to be good at the present time.

A review of Berlin Fire Department's annual operating budget shows that it decreased from \$186,515.00 in fiscal year 2012, to \$174,612.00 in fiscal year 2013, a decrease of \$11,903.00 (6.4%). The budget then increased significantly to \$210,366.00 in fiscal year 2014, an increase of \$35,754.00 (20.5%). It was difficult to ascertain the exact reason that the budget increased so much from FY 2013 to FY 2014 as the non-salary expense line item descriptions changed from the first year to the second. Generally speaking the salary line item increased by more than \$10,000.00 while the operating expenses increased nearly \$25,000.00. The budget continued to nudge upward to \$221,601.00 in fiscal year 2015 an increase of \$11,235.00 (5.3%).

Personnel costs account for the greatest portion of the budget costs in most fire departments that are not fully volunteer. In FY 2015, employee compensation (including the fire inspector) accounts for \$117,100.00, or 52.8%, of the Berlin fire budget.

Funding for capital projects approved each year through articles at town meeting for major purchases was \$522,000.00 in FY 12, \$40,500.00 in FY 13 and \$23,820.00 in FY 14. No capital projects are being funded in FY 2015.

A budgetary comparison along including annual per capita and per incident costs is contained in figure 10-1. A listing of major capital expenditures funded through town meeting appropriations is found in figure 10-2. All budget figures are rounded to the nearest dollar and total budget does not include residual funds from previous year capital projects.

### BERLIN FIRE DEPARTMENT BUDGET – FY 2012 – FY 2015

	FISCAL YEAR 2012	FISCAL YEAR 2013	FISCAL YEAR 2014	FISCAL YEAR 2015
OPERATING BUDGET*	\$186,515.00	\$174,612.00	\$210,366.00	\$221,601.00
PERSONNEL EXPENSES*	\$ 97,805.00	\$ 96,105.00	\$106,979.00	\$117,100.00
% OF BUDGET	52.4%	55.0%	50.8%	52.8%
OPERATING EXPENSES	\$ 88,710.00	\$ 78,507.00	\$103,387.00	\$104,501.00
CAPITAL EXPENSES	\$522,000.00	\$ 40,500.00	\$ 23,820.00	\$ - 0 -
TOTAL BUDGET	\$708,515.00	\$215,112.00	\$234,186.00	\$221,601.00
REVENUES	\$ 23,106.00	\$ 19,508.00	\$ 19,580.00	
PER CAPITA COST**	\$ 65.08	\$ 60.92	\$ 73.40	\$ 77.32
PER INCIDENT COST**	\$590.24	\$682.08	\$918.63	

\* Includes annual fire inspector salary budget of \$24,500.00

\*\* Based on operating budget only. Does not include capital.

Figure 10-1

### BERLIN FIRE DEPARTMENT CAPITAL PROJECTS FUNDED – FY 2012 – FY 2015

FISCAL YEAR	PROJECT TITLE	AMOUNT BUDGETED
<b>2012</b>		
1	Engine 1 Replacement	\$450,000.00
2	Fire Radio Pagers	\$ 12,000.00
3	Breathing Apparatus	\$ 46,000.00
4	Large Diameter Hose	\$ 14,000.00
<b>2013</b>		
1	Fire Portable Radios	\$39,000.00
2	Refurbish Chief's 2008 Vehicle	\$ 1,500.00
<b>2014</b>		
1	Personal Protective Equipment	\$23,820.00
<b>2015</b>		
	No Capital Projects Funded	

Figure 10-2

A review of Berlin Rescue Squad's annual operating budget shows that it increased from \$99,507.00 in fiscal year 2012, to \$105,314.00 in fiscal year 2013, an increase of \$5,807.00 (5.8%). The budget then decreased slightly to \$102,891.00 in fiscal year 2014, a decrease of \$2,423.00 (2.3%). It then increased significantly to \$120,121.00 in fiscal year 2015 an increase of \$17,320.00 (16.7%). It appears the majority of this increase occurred in two accounts generically identified as rescue squad expenses.

Personnel costs account for a significant portion of the budget costs in most emergency services providers that are not fully volunteer. Berlin Rescue is somewhat below average in this regard. In FY 2015, employee compensation accounts for \$52,351.00, or 43.6%, of the Berlin rescue budget.

Funding for capital projects approved each year through articles at town meeting for major purchases was \$19,000.00 in FY 13 and \$11,600.00 in FY 14. No capital projects were funded in either FY 2012 or FY 2015.

A budgetary comparison along including annual per capita and per incident costs is contained in figure 10-3. A listing of major capital expenditures funded through town meeting appropriations is found in figure 10-4. All budget figures are rounded to the nearest dollar and total budget does not include residual funds from previous year capital projects.

#### BERLIN RESCUE SQUAD BUDGET – FY 2012 – FY 2015

	FISCAL YEAR 2012	FISCAL YEAR 2013	FISCAL YEAR 2014	FISCAL YEAR 2015
<b>OPERATING BUDGET</b>	<b>\$ 99,507.00</b>	<b>\$105,314.00</b>	<b>\$102,891.00</b>	<b>\$120,121.00</b>
<b>PERSONNEL EXPENSES</b>	<b>\$ 45,137.00</b>	<b>\$ 43,039.00</b>	<b>\$ 48,342.00</b>	<b>\$ 52,351.00</b>
<b>% OF BUDGET</b>	<b>45.4%</b>	<b>40.9%</b>	<b>47.0%</b>	<b>43.6%</b>
<b>OPERATING EXPENSES</b>	<b>\$ 54,370.00</b>	<b>\$ 62,275.00</b>	<b>\$ 54,549.00</b>	<b>\$ 67,770.00</b>
<b>CAPITAL EXPENSES</b>	<b>\$ - 0 -</b>	<b>\$ 19,000.00</b>	<b>\$ 11,600.00</b>	<b>\$ - 0 -</b>
<b>TOTAL BUDGET</b>	<b>\$ 99,507.00</b>	<b>\$124,314.00</b>	<b>\$114,491.00</b>	<b>\$120,121.00</b>
<b>REVENUES</b>	<b>\$ 88,040.00</b>	<b>\$101,208.00</b>	<b>\$ 87,971.00</b>	
<b>PER CAPITA COST*</b>	<b>\$ 34.72</b>	<b>\$ 36.75</b>	<b>\$ 35.90</b>	<b>\$ 41.91</b>
<b>PER INCIDENT COST*</b>	<b>\$387.19</b>	<b>\$377.47</b>	<b>\$386.81</b>	

\* Based on operating budget only. Does not include capital.

Figure 10-3

## BERLIN RESCUE SQUAD CAPITAL PROJECTS FUNDED – FY 2012 – FY 2015

FISCAL YEAR	PROJECT TITLE	AMOUNT BUDGETED
<b>2012</b>		
	<b>No Capital Projects Funded</b>	
<b>2013</b>		
<b>1</b>	<b>Chest Compression System</b>	<b>\$15,000.00</b>
<b>2</b>	<b>Rescue Pagers</b>	<b>\$ 4,000.00</b>
<b>2014</b>		
<b>1</b>	<b>Automatic External Defibrillators</b>	<b>\$ 8,000.00</b>
<b>2</b>	<b>Rescue Safety Jackets</b>	<b>\$ 3,600.00</b>
<b>2015</b>		
	<b>No Capital Projects Funded</b>	

Figure 10-4

Both the Berlin Fire Department and Berlin Rescue Squad generate some revenue each year. For the fire department, this revenue comes almost exclusively from fire inspection and permit fees the department collects. As noted in Chapter 8, *Fire Prevention*, the department does accept both checks and cash. Although receipts are issued, any system that still allows for cash to be collected is one that should generate concern. The rescue squad generates a higher amount of revenue primarily from third party billing for EMS transports. This revenue offsets a significant percentage of the squad's operating expenses.

### CAPITAL PLANNING

It does appear that the Town of Berlin is in relatively sound financial condition. This is a result of sound financial management, as well as the continued growth and development that the town is still experiencing, particularly Highland Commons, and the proposed developments in the Riverbridge/South Berlin Rotary areas. Revenue has continued to increase every year through the addition of these ratables to the tax rolls, and the mitigation fees that the town is receiving from Highland Commons. In fiscal year 2015, the town was able to actually reduce the annual tax rate. This situation makes it imperative that the town continue to maintain their services, and appropriately fund needed capital projects in an ongoing manner.

The Town of Berlin and Berlin Fire Department provided the MRI study team with long-range capital plans. These plans appear to cover all of the town and department's major anticipated purchase over the coming years with projections actually out as far as about 17 years (FY 2032) for certain items.

After reviewing the Berlin Fire Department, and Berlin Rescue Squad, capital plans, we make a number of recommendations that make adjustments to the capital plan. These recommendations are reflected in the proposed capital planning table that is located in the recommendations section.

## **GRANTS**

There are a number of 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 are able to 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 seven or eight years 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 (AFG) Grants for equipment, the Staffing for Adequate Fire and Emergency Response (SAFER) Grants for personnel, and the Fire Prevention and Safety (FP&S) Grants for fire prevention and public fire education programs, continue to be funded, although not anywhere near their authorized levels. Both the AFG grants and the SAFER grants are available to non-affiliated EMS providers to assist them with their funding needs as well.

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.

FP&S 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 a number of other grants available to fire departments for various purposes. Some grants that may be available to the Berlin Fire Department and/or Berlin Rescue Squad 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, Berlin's has had a mixed record of success regarding grants they have applied for. They should be commended for these attempts and continue to pursue these opportunities on an annual basis. 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. This explanation is not, in any way, meant to cast a negative light on Berlin's applications. It is included to illustrate the long odds of successfully obtaining a grant even with a strong application.

### BERLIN FIRE DEPARTMENT GRANTS RECEIVED

YEAR	GRANT PROJECT DESCRIPTION	GRANT AMOUNT
<b>ASSISTANCE TO FIREFIGHTERS (AFG) GRANTS</b>		
2004	Firefighter Equipment	\$ 40,102.00
2004	Water Tender	\$ 78,300.00
2006	Firefighting Equipment and Personal Protective Equipment (PPE)	\$122,925.00
<b>VOLUNTEER FIRE ASSISTANCE – NATIONAL FIRE PLAN</b>		
2008	Wildland PPE, Fire Shelters	\$ 4,000.00
2009	S-215 Fire Ops in the Urban Interface, PMS-419 Engine Operator training class to meet the training standards of National Wildfire Coordinating Group	\$ 4,000.00
2012	Wildland PPE, GPS	\$ 4,000.00
2014	Wildland PPE	\$ 4,000.00
<b>MASSACHUSETTS FIREFIGHTING EQUIPMENT</b>		
2001	Personal Alert Safety System (PASS) Devices, Self-Contained Breathing Apparatus (SCBA), Portable Radios, Hand Tools, Firefighter Accountability System	\$ 14,844.00
2003	Thermal Imaging Camera (TIC), Hand Tools, Automatic External Defibrillators (AEDs), Bag Valve Mask (BVM), Oxygen Kits	\$ 15,000.00
2007	Hand Tools, Fixed Communications Equipment, Reciprocating Saw, Portable Water Tank	\$ 3,900.00
2009	Hand Tools, Nozzles, Rapid Intervention Team (RIT) System, Gas Meter	\$ 3,900.00

Figure 10-5

The Berlin Rescue Squad has apparently not applied for grants with any regularity. The chief could only remember receiving one grant, he believed from FEMA, for highway safety. He could not provide the study team with any additional information.

### **SOURCES OF ADDITIONAL FUNDING**

In this era of extremely tight budgets, where every governmental entity is looking for alternative revenue streams to offset declining tax receipts, there are a number of other sources of potential revenue for the fire department that the Town of Berlin may want to explore and consider implementing. Among these are increased fire prevention business

registration, inspection, and permit fees; billing insurance companies for response to motor vehicle accidents; registration fees for fire alarm systems; and the issuance of penalties for those whose systems generate repeat false alarms.

## **RECOMMENDATIONS**

Throughout this report, the MRI study team has made several recommendations that could, if adopted, increase expenditures in the Berlin Fire Department and/or Berlin Rescue Squad. We believe that these recommendations are essential for the effective, efficient, and safe operation of the fire department, the rescue squad, or a single combined agency. Other recommendations are intended to reduce overall financial risk and liability, or will have the effect of smoothing expenditure rates, and minimizing one-time spikes in the budget. Ideally, emergency services expenditures should result in programs that are well-justified and cost-effective, and that have measurable outcomes that result in an improved level of safety and protection for the citizens of Berlin and those who are visiting the town.

With its status as the host to several major regional shopping destinations the Town of Berlin will need to allocate appropriate levels of funding, more so than the typical community of similar size and population, in order to adequately protect the large commercial facilities and target hazards, and provide appropriate emergency services for the needs of those who work in and visit those locations. However, we believe that with the increased ratables these facilities bring to the tax rolls, the mitigation money from Highland Commons, and with the implementation of increased user fees and other sources of revenue, the Town of Berlin should be well positioned to fund these needs.

- 10-1 The fire department should discontinue the acceptance of cash for inspection and permit fees.**
- 10-2 The Town of Berlin should consider increasing the existing administrative penalties for repeat false fire alarm activations, and aggressively target problem systems with enforcement actions.**
- 10-3 The town should review all fees on an annual basis for possible increases in accordance with state law.**
- 10-4 The Town of Berlin should explore additional potential ways to generate revenue to offset the fire department and rescue squad's operating costs. Consideration could be given to billing insurance companies for response to motor vehicle accidents; registration fees for fire alarm systems; the aggressive pursuit of non-residents who have been billed for ambulance transportation; and the implementation of a fee for ambulance responses that do not result in a transport.**

- 10-5** The fire department (and rescue squad) should identify and prioritize its most critical equipment, training and/or operational needs, and continue to apply annually to the Assistance to Firefighters Grant (AFG) program.
- 10-6** During the 2015 AFG application period which will open later this year the fire department should apply for a grant for \$750,000.00 to purchase a “quint” that has a 75’ aerial ladder and is also configured to function as a fire pumper. The procurement of the “quint” should be funded at the fiscal year 2016 town meeting. If the AFG grant application is successful, then the FY 2016 capital project can be cancelled.
- 10-7** The Berlin Fire Department and Berlin Rescue Squad should jointly apply for a federal SAFER grant in 2015 for on call recruitment and retention. This grant should be utilized to develop a marketing program to attract new members, and provide incentives for call personnel to remain with the organizations and stay active such as tuition reimbursement, health care benefits, etc.
- 10-8** The fire department should prioritize its fire prevention and public fire education needs and apply annually to the Fire Prevention and Safety Grant (FP&SG) program.
- 10-9** The fire department, the rescue squad, and the town should actively 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.
- 10-10** The fire department and the rescue 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.
- 10-11** The Berlin Fire Department and Berlin Rescue Squad should establish a 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. As such, we have removed some of these items from the capital budget and recommend they be included in the normal annual equipment budget line item. For instance, the hose and ladders on one vehicle can be replaced in the next 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.

## Recommended Emergency Services Capital Budget 2016 - 2025

FISCAL YEAR	PROJECT TITLE	YEAR IN SERVICE	REPLACEMENT AGE	PROJECTED COST
<b>2016</b>				
1	Replace Ladder 1 and Engine 2 with 75" Quint*	1991/1996	24/19 Years	\$750,000
2	Purchase Command Vehicle for Fire Chief	2008 (old police car)	7 Years	\$50,000
<b>2017</b>				
1	Purchase 2 <sup>nd</sup> Ambulance	2010	7 Years	\$200,000
<b>2018</b>				
1	Replace Mobile Radios	2006	12 Years	\$ 35,000
2	Replace fire department utility vehicle	1990	28 Years	\$ 50,000
<b>2021</b>				
1	Replace Self- Contained Breathing Apparatus	2006	15 Years	\$180,000
<b>2022</b>				
	Replace Engine 3 and Tender 1 with Combination Pumper/Tender	2004/1982	18/40 Years	\$650,000
<b>2023</b>				
1	Replace Portable Radios	2013	10 Years	\$ 75,000
<b>2024</b>				
1	Replace Breathing SCBA Air Compressor System	1999	25 Years	\$ 50,000
2	Replace Rescue Equipment	2004	20 Years	\$ 35,000
<b>2025</b>				
1	Replace Ambulance 6A	2010	15 Years	\$220,000
<b>TBD</b>				
1	Traffic Preemption Devices			Unknown
2	Replace Engine 4 – Brush Truck			Unknown

\* Certain requested capital items like replacement large diameter hose and a replacement thermal imaging camera can be included in the cost of this apparatus as they will be necessary to place it in service.

Figure 10-6

**NOTE:** The long range CIP should be reviewed on an annual basis and revised as necessary. Certain items can be removed from the budget should the fire department and/or rescue

squad obtain grant funding to purchase them. Conversely, other items may need to be added based upon the needs of the town's emergency services.

**10-12** The MRI study team recommends that the town take advantage, if possible, of the fire apparatus and ambulance group purchasing system that is sponsored by the Fire Chiefs Association of Massachusetts (FCAM) and the Metropolitan Area Planning Council (MAPC). Municipalities may select a specific design and manufacturer from a pre-determined bid list and are not required to establish their own bid process. It is estimated that this group purchasing system will save approximately five to ten percent of the cost of a fire truck or ambulance (see [www.mapc.org](http://www.mapc.org)).

## **CHAPTER 11**

### **COMMUNICATIONS AND TECHNOLOGY**

An efficient communications system is central to the full spectrum of services delivered by the fire department and rescue squad. Encompassed within the communication system are internal and external (inter-agency and public) elements. To be effective and reliable, all emergency services communications must be operational 24 hours per day, seven days per week. Redundancy must be built into the system so that the failure of one or more components will not compromise emergency operations. There must be interoperability between systems to ensure that the emergency services organizations can communicate with federal, state, regional, mutual aid, and other local agencies, during a major incident or a catastrophic event. Numerous national standards and agencies are available for referencing acceptable criteria for critical system components. Fire departments and rescue squads are increasingly dependent upon modern technology for communications, information management, incident command fire inspections, pre-fire planning, records management, third party insurance billing, patient care records, and operational effectiveness.

#### **DISPATCH AND COMMUNICATIONS**

The Berlin Fire Department, and Berlin Rescue Squad, are both dispatched through the town's centralized 9-1-1 communications center. The dispatch center is located in the town's fifteen-year-old public safety building, which also houses the fire and police departments, and the rescue squad. It is located just off the entry foyer of the building and the dispatchers serve as receptionists for visitors to the police and fire departments and rescue squad. The dispatchers also receive, and process, inspection and permit applications, and fees for the fire department, if no one else is available.

The dispatch center is new and modern, with the main operational room occupying several hundred square feet. It appears to be up-to-date regarding radios and technology. There are two fully equipped dispatch positions available. It is staffed by four full-time, and five part-time, civilian dispatchers, who work for and report to, the Berlin Police Department. Only one dispatcher is normally on duty at a time. However, an additional dispatcher will be brought in during major emergencies, or during times of extremely high call volume. The center will also increase staffing, as necessary, in anticipation of unusual events such as the pending arrival of significant weather events.

The Berlin dispatch center is the public safety answering point (PSAP) for the town and handles all E 9-1-1 calls and emergency communications, as well as all routine telephone traffic for the police, fire, and rescue agencies. Cell phone calls are routed through the state police in Framingham. Dispatchers are cross trained to perform both police and fire duties. Each has completed the state-mandated 9-1-1 and Emergency Medical Dispatcher (EMD) certification courses. Additional certifications for police dispatching include CJS.

The dispatchers do perform EMD call triaging and prioritization utilizing the Power Phone system and protocols. When necessary, they will provide nominal emergency instruction to the caller; however, the reality is that this system is less than optimal in that with only one dispatcher on duty this person must not only take the call, they are also responsible for dispatching emergency resources and communicating with them during their response. There is a potential for the single dispatcher to be overwhelmed by either a major incident that involves coordination of police, fire and EMS resources and/or during times of increased activity where multiple incidents may be occurring simultaneously. The possibility of critical life safety/threatening emergency communication being missed during one of these situations is very real and of great concern.

The fire department utilizes a standard Massachusetts 10-alarm run card system for resources. The majority of this information is entered into the Computer Aided Dispatch (CAD) system so that it is displayed automatically. Hard copy back-up books are located in the dispatch center. The department also has written dispatch procedures on file in the communications center. The rescue squad does not have any dispatch information in the CAD, and any type of written dispatch procedures or protocols are, at best, extremely limited.

Both the fire department and rescue squad operate on a common UHF radio frequency. The dispatch center does have some communications interoperability with surrounding communities many of whom are operating on different radio frequencies and bands. The City of Marlborough actually dispatches Berlin fire units to incidents at the Solomon Pond Mall and coordinates communications throughout those incidents. The center is equipped with some Fire District 8 mutual aid fire frequencies, and can communicate with the town's normal mutual aid departments. Once a fire incident reaches more than a third alarm, communications for that incident may be transferred to District 8 in Fitchburg. Berlin would still maintain some level of involvement in those communications.

For incidents that require a fire response the department is toned out a minimum of three times, each one minute apart. If there is no response, the dispatcher will continue to tone out the department until they receive further instructions from a department officer. However, they are supposed to request mutual aid after the third tone (three to four minutes) if they have not received any response from the fire department or an officer. The nature of the incident will generally dictate how quickly the dispatcher will request mutual aid if there is no response by the fire department and/or no further instructions from an officer. It was reported to the study team that while the fire department may have some delayed responses, particularly to calls that appear to be "minor" in nature, they will almost never be completely unable to respond.

One area that was mentioned a number of times to the study team as a problem is that the fire department does not have any type of a policy that allows them to be returned, or cancelled, after they have been dispatched. The dispatch center reported that "we never cancel the fire department". This situation includes incidents at the Solomon Pond Mall where the

Marlborough Fire Department has already responded, investigated, and resolved the situation, and have cleared the scene and Berlin is still responding in at emergency speed (lights and sirens in use). The lack of a reasonable recall, or cancellation, policy does not make sense, creates unnecessary hazards with responding emergency vehicles, and probably exposes the town to increased liability.

Rescue squad and emergency medical incidents are also toned out a minimum of three times, each one minute apart. If there is no response from a crew, or an officer, after three minutes then mutual aid is requested. In this case, an advanced life support (ALS) unit is usually dispatched even for a basic life support (BLS) type of incident. For life threat types of emergencies the nearest available ALS unit is also dispatched simultaneously with the Berlin ambulance. If a nearby ALS unit is not readily available, the next nearest BLS unit may also be requested on mutual aid sooner than three minutes if the incident appears particularly serious. At times trying to find an available unit if Berlin does not respond is a problem that results in extended delays in getting an ambulance to the patient. The MRI study team was informed of a recent incident where it took nearly fifty minutes for an ambulance to arrive at the scene of an incident.

Fire department and rescue squad incident dispatches are also sent out to their respective members via alpha page to their cell phones. At the time of this study, the neither organization was utilizing a system that tracks personnel responding to the station or incident such as the “*I Am Responding*” system.

The relationship between the dispatchers, and fire and rescue personnel, is reported to be good for the most part. The occasional issues that arise in any system such as this are generally caused by personnel who do not respond on a regular basis, and as a result, do not utilize the system very often. There is also an occasional problem, particularly with younger, newer members of the emergency services, doing a lot of unnecessary talking on the radio. Any issues that arise are usually resolved quickly with those involved.

The town’s emergency services utilize the Pamet public safety records management system. They are currently utilizing the CAD, police, and fire, modules. A fourth module is available for EMS; however, the rescue squad does not utilize it. This makes tracking rescue squad response data more difficult. Overall, the town is not fully satisfied with the Pamet system and is considering transitioning to a different management system.

Due to some of the limitations that were noted with the Pamet system, fully assessing the current dispatch data was difficult in some cases. The data provided to the MRI team lacked some of the more detailed information that we normally are able to have extracted from fire and rescue based systems. In fact, some of the data that we received was compiled by dispatch personnel outside of the normal records management system but ended up providing us with valuable information. Being able to better analyze statistics such incident locations, demand by hour and/or location, incident type, category, and priority for EMS calls, failure to appropriately respond, or respond at all, etc. will allow the town, and the emergency services, to more

effectively plan for the future. Data driven analysis provides more accurate information which would enable the town to make better decisions regarding both current, and future, service delivery needs and options.

It should be noted that at the time this evaluation was being conducted the town was participating in a parallel study with the Town of Bolton relative to their future communications and dispatching options. This study which was conducted by CTC, Inc.'s Public Safety Technology Center looked at the feasibility of developing regional 9-1-1 communications services for the two towns. Options being considered included the Towns of Berlin and Bolton forming their own regional emergency communications center (RECC), or both towns joining the existing Nashoba Valley Regional Dispatch District. The report from this study was issued in February 2015; however, its recommendations are not included as a part of this report.

### **MOBILE COMMUNICATIONS**

Emergency and non-emergency communications are provided by means of mobile radios in each fire department and rescue squad vehicle on the UHF 400 MHz band. Portable two-way radios are assigned to each fire department officer. Each riding position on the fire apparatus and ambulance is also assigned a UHF portable two-way radio. A number of the fire department portable radios were purchased within the last year with a \$39,000.00 allocation of funds that were approved at town meeting in fiscal year 2013.

Berlin's radio system primarily operates in the UHF 400 (453 to 483) MHz band. While this system is adequate for current needs and operations its biggest limitation is that the Federal Communications Commission (FCC) has frozen any further expansion of these systems as part of the redistribution of emergency band radio frequencies. With the availability of grant funding the pros and cons of remaining on these frequencies is something the town may want to consider should they decide to join a regional emergency communications center agreement. The emergency organizations also have the availability of operating on low band (33 MHz to 39 MHz) frequencies. Marlborough operates on the 800 MHz frequencies while other surrounding communities utilize VHF (154 MHz) frequency radios. For mutual aid operations, the fire department has low band, VHF high band and 800 MHz portable radios assigned to every piece of apparatus to communicate with neighboring jurisdictions. The rescue squad also has a variety of radios allowing them to communicate with their mutual aid partners.



**Figure 11-1: Various portable radios carried on Berlin fire apparatus to allow communications interoperability with surrounding communities.**

At the time of this assessment, the Berlin Fire Department did not have any mobile data terminals (MDTs). These rugged laptop computers enable fire officers and firefighters to access critical information about buildings from the CAD system while responding or on the emergency scene. Available CAD system information can include additional incident information, medical information, complete building pre-plan information including photos and

diagrams, hazardous materials information, and other pertinent information, all accessible on the MDTs, and in real time.



**Figure11-2: Mobile data terminal in use on fire apparatus allowing access in real time to a wide range of information including building pre-plan information.**

## **USE OF TECHNOLOGY**

The MRI study team found a mixed use of technology by the fire department and rescue squad. The fire department is fairly well equipped with computers in the station. As previously noted the department does have access to the Pamet records management system and does utilize it on a limited basis. The fire module is utilized for the completion of incident reports in conjunction with the CAD module. Fire prevention occupancy and inspection records are also entered into the system. The team was informed that one of the training officers was trying to gain access to start entering personnel training records.

The MRI study team found widespread use of standalone Excel spreadsheets by the fire department, particularly by the chief. While he was able to produce many documents requested by the study team there were challenges with obtaining certain types of statistics requested by the study team, and correlating different aspects of the data to each other, prior to analyzing it. The chief had very limited knowledge of how to retrieve data from the Pamet system.

The fire department has embraced and utilizes technology more extensively in their emergency operations. They have three thermal imaging cameras in use. The Scott Pak-tracker system is some of the latest technology available to quickly locate and rescue firefighters who become disoriented, lost, or trapped on the fireground. The department should continue to place an important emphasis on evaluating new technology for use on emergencies particularly when it pertains to firefighter safety.

The rescue squad uses technology only to a very limited extent. While they have a desktop computer in their office, virtually all of their documents and records are maintained manually, as opposed to electronically. All response time statistics had to be obtained through the police chief. They do, however, utilize electronic patient care reports (EPCR) to document their responses. They also submit the required information to their third party billing company electronically.

The MRI study team did not see any evidence or receive any information that either the fire department or the rescue squad utilize GIS technology for any aspect of their operations. The use of this rapid expanding technology has tremendous potential in many areas of emergency services planning and operations. It is unclear to what extent GIS may be available to the Town of Berlin.

Neither the fire department nor the rescue squad utilize mobile data terminals in their apparatus or vehicles.

## **RECOMMENDATIONS**

- 11-1 The Town of Berlin should continue to explore options to join a regional emergency communications center (RECC) either in partnership with Bolton or joining the Nashoba Valley Regional Dispatch District. Any joint endeavor should give serious consideration to a situation where there is more than one dispatcher on duty at a time. Not only will this increase safety for the dispatchers it will also improve the level of service available, particularly the critical ability to provide potentially lifesaving EMD instructions to the caller something that may not currently be possible. With two dispatchers on one can continue to provide lifesaving instructions while the other dispatches needed units, handles additional calls that may be coming in, and coordinates communications with responding emergency units.**
- 11-2 As part of any potential move to a RECC, the Town of Berlin should perform a cost benefit analysis of whether it would be beneficial for them to switch the current UHF system which has significant expansion and modification restrictions applied by the FCC, to another frequency band for their emergency communications.**
- 11-3 The Berlin Rescue Squad should provide the dispatch center with written dispatch procedures and protocols for them to follow.**

- 11-4** The Berlin Fire Department should establish a written policy for dispatch and response that their response can be cancelled after dispatch, but prior to their arrival on scene, by a qualified emergency responder who has evaluated the situation. Examples of situations where this may be appropriate include fire alarm responses to the Solomon Pond Mall, or a motor vehicle accident that was originally reported as involving injuries but upon arrival of the police was determined to be a minor fender bender.
- 11-5** As primarily call organizations where personnel respond from various locations upon receipt of an emergency incident dispatch, both the Berlin Fire Department and Berlin Rescue Squad should purchase and implement a system to track members who are responding to the incident such as the *"I Am Responding"* system.
- 11-6** Working in conjunction with the police department and the town's IT provider, the fire department, and rescue squad, should explore options for replacing the current Pamet records management system with one that better serves the unique needs of the community's public safety departments. Should this occur all fire department and rescue squad operations should be transitioned to use one database system to capture, store, and analyze, data currently in different systems. Working with the IT provider, they should explore a customizable, software solution that addresses all fire department and rescue squad needs.
- 11-7** The MRI study team recommends that the Berlin Fire Department and Berlin Rescue Squad develop a plan to install mobile data terminals (MDTs) in all fire apparatus and rescue vehicles. In developing the MDT plan, consideration should be given to evaluating the latest technologies and software, including the use of tablets or iPads, rather than laptop computers. At a minimum, the incident commander at a scene should have access to fire pre-plan data, building permit data (building plans and current data about renovation and construction projects), real-time weather data, and hazardous materials data.
- 11-8** In conjunction with the recommendation for the installation of MDTs the Berlin Fire Department and Berlin Rescue Squad should explore possible uses for GIS technology to enhance the operations of their respective agencies.
- 11-9** The Berlin Fire Department and Berlin Rescue Squad should continue to place an important emphasis on evaluating new technology for use on emergency incidents particularly when it pertains to firefighter/member safety or patient care.

**CHAPTER 12**  
**CONCLUSIONS**  
**AND**  
**FUTURE FIRE/RESCUE/EMS SERVICE DELIVERY OPTIONS**

**CONCLUSIONS**

The missions performed by the fire department and rescue squad 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 Berlin then, as it is for every community, is to determine an acceptable level of risk and then define an appropriate level of service for the community. There is no “right” amount of fire protection or EMS delivery. 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 town’s fiscal ability, and willingness, to pay for the desired level of service. Planned growth of the fire department and rescue squad, or a new combined fire rescue department, is essential to provide a consistent service level to the community while keeping pace with increased demands for service caused by continued development. It is the unenviable task of the Board of Selectmen to translate those needs into reality, maximize the delivery of fire, rescue, and EMS services, and do it in the most fiscally responsible manner possible.

The National Fire Protection Association (NFPA) Standards 1710 and 1720 have been referred to within this study and should be considered by the community as a foundation to determine an acceptable level of service. The recommendations in this report consider applicable NFPA standards, as well as other regulations, such as OSHA.

Based upon our analysis of the current day operations of the Berlin Fire Department, and Berlin Rescue Squad, we have found that both organizations are well equipped, and appear to be well trained. On paper, at least, both the fire department, and the rescue squad, appear to have sufficient personnel to handle the expected workload within the community. As would be expected, each of these fully call departments have a dedicated core group of members who are trying to make their respective organizations ones that provide dependable, high quality, emergency services to the Town of Berlin. From all accounts, once they arrive on the scene of an emergency, the personnel of both organizations perform their duties competently, and can be counted upon to complete assignments given to them. They should be commended for their efforts and given the support they need to continue to try to be successful.

However, although the fire department, and rescue squad, both possess a number of very definitive, positive attributes, they both are also facing serious challenges both today, and looking toward the future. With volunteerism declining, and the ranks of call emergency services personnel dwindling nationwide, the Town of Berlin faces the dual challenges of

attempting to balance a credible emergency response system staffed with call members, while simultaneously facing an increasing number of requests for service, both emergency and non-emergency, fueled by a large amount of commercial development. Unfortunately, in 2015, the chances of these efforts being fully successful are not particularly high. These challenges are mirrored in the town itself, a rural community that wants to maintain its small town feel, appeal, and way of life, struggling with some significant pockets of transformation into not only a more suburban type of town, but also a regional shopping destination that at times draws thousands of additional people to the various commercial centers.

The biggest challenges facing both the Berlin Fire Department, and Berlin Rescue Squad, are fielding sufficient personnel, consistently and in a timely manner, to respond to the emergency incidents they are called upon to mitigate. Neither does so consistently at the present time despite both having roll call sheets in excess of 30 members, and not being excessively busy. Neither agency averages even one incident per day.

The rescue squad is unable to respond with sufficient personnel to nearly 20% of the incidents they are dispatched on. That is without even taking into account the fact that they do not respond at all to Solomon Pond Mall, and would prefer not to respond to Highland Commons.

In Massachusetts, the standard of care based on stroke and cardiac arrest protocols is to have a unit on scene at a medical emergency within 6 minutes. NFPA 1710 suggests that a unit with first responder or higher level training, and equipped with an AED, should also be on scene within 6 minutes of the receipt of the emergency call. With an inability to respond at all to nearly 10% of the calls they are dispatched to, and with extended response times to a significant number of others, coupled with an additional 10% where the squad responds, but is unable to transport, there are definitive shortcomings in the town's emergency medical service delivery system. Addressing these service gaps, and assuring timely response of an EMS unit to every request for service within the town, should be a top priority of leadership both at the municipal and department levels. Looking forward, the overall benefits to the town and its citizens of having cross-trained fire and EMS personnel deployed from Berlin Fire Rescue cannot be over emphasized and should be given careful consideration.

The fire department averaged less than five members (4.9) per incident in 2014. Only one-third of the fire department's members respond to more than 25% of the incidents, and only two responded to more than 50%. Not a single department member responded to more than 75% of the incidents the department was dispatched to. This issue is probably one of the catalysts for the frequent extended response times that the department experiences even at times when the majority of the call members should be more available, such as on weekends. The recent truck fire at the lumberyard, early on a Saturday morning with a fifteen minute response time by the first Berlin apparatus, provides a troubling snapshot of this problem.

NFPA standard 1720 requires a total of 6 firefighting personnel to be on scene of a reported structure fire within 14 minutes in rural communities, 80% of the time. Suburban communities

are urged to target 10 personnel on scene within 10 minutes, 80% of the time. The stricter 1710 standard requires a first alarm assignment minimally of 16 personnel on scene within 8 minutes, 90% of the time. Although based on the on-call nature of the Berlin's fire department, an 8 minute response time for all first alarm units is not realistic. A compliment of at least 16 personnel, inclusive of mutual aid units, should be immediately dispatched upon the report of a structure fire.

In terms of operational safety, we are concerned with the Department's ability to meet the Occupational Safety and Health Administration's (OSHA) *Two-In/Two-Out* rule that requires 4 firefighters on the scene of an incident prior to initiating an interior fire attack (except to perform a visible rescue). This situation is particularly acute during the day. The reality is that firefighters in almost every department almost always do what is necessary to get the job done and prevent the spread of fire with no consideration of either the federal OSHA rule or their own personal safety.

The MRI study team also noted that although there is approximately a 50% overlap in membership between the fire department, and rescue squad, there is little interaction between the two except on emergency scenes. As a result, at times incidents are not managed, or handled, as well as they could be due to the failure to establish an effective unified command structure. It is our belief, supported by numerous interviews, that a major cause of this disconnect is a personal animosity between the two agency chiefs which at times creates gaps in the leadership necessary to manage emergency service organizations, their operations, and the diverse personalities that staff them. With both chiefs nearing retirement, and heavy support for a major restructuring of the town's fire and rescue services, including dissolution of the Board of Fire Engineers, there will be a unique opportunity in the near future to lay the foundation for implementation of many of the recommendations contained in this report. In addition, the need to modify the emergency services staffing model, in all probability transitioning the departments from fully call to primarily call, supplemented by a small career staff, will be a key decision that needs to be made by the town's stakeholders.

One of the key areas of debate in the town is whether the Berlin Fire Department needs a ladder truck or not. While many, if not most, small rural communities with a population of under 2,900 residents would probably not need, nor be able to justify, a ladder truck, we do not agree that is the case with Berlin. As has been previously noted, the town has several pockets of high-density development including several large shopping areas. There are a number of additional developments in various stages of planning and approval. These buildings, and facilities, present much different firefighting challenges than those normally found in small, rural, communities. A versatile, multi-functional piece of fire apparatus with the diverse capabilities provided by a quint, provides numerous tactical options to the community's fire officers, and provides increased measures of safety for firefighting personnel.

With the need for Berlin to maintain a ladder, preferably a quint, established, we do not believe that the town requires a 100' aerial device. Although the members of the fire department will probably disagree with our assessment, and put considerable time and effort into trying to convince us otherwise, we believe that a 75' device will suffice for the needs of the town. On the rare occasions when a longer aerial may be needed, one can be special called from a neighboring community, if there is not already one responding. We also believe that the Berlin Fire Department can right size its apparatus fleet into a smaller, more versatile, set by combining several vehicles as replacements are considered. Conversely, the town should have a 2<sup>nd</sup> ambulance for times when the primary unit is out of service for maintenance or repair, incidents (primarily MVAs) where there is more than one patient, and for the occasions when there are simultaneous or overlapping incidents.

There has also been a great deal of debate, and some widely divergent opinions, on what the implications are of the development that has already occurred (Solomon Pond Mall), what is currently being built (Highland Commons), and projects that are proposed and in various stages of planning and approval (Riverbridge). Chief among the topics being debated is what role should the town's fire department and rescue squad have in the emergency responses to these locations and in a broader sense, what is the town's obligation in that regard. There is a group of the town's stakeholders who believe that since both Solomon Pond Mall, and Highland Commons, straddle the border of communities with full-time, career, emergency services providers that the provision of services throughout those complexes should be left to those municipalities. This view is the one espoused by the rescue squad which does not respond to incidents at Solomon Pond, and would just as soon do the same at Highland Commons. At the other end of the spectrum is the fire department, which is dispatched automatically along with Marlborough to incidents at the mall, only to frequently arrive after Marlborough has investigated and/or mitigated the incident and cleared the scene.

In August 2000, the Massachusetts legislature created the Assabet Public Safety District which encompasses the Solomon Pond Mall area. The primary motivation for the creation of this special district was the fact that the mall was not only located in two different municipalities, it was in two different counties as well. Primarily from a law enforcement and criminal justice standpoint this situation had the potential to create jurisdictional complications. By virtue of this legislation, the City of Marlborough was designated to be the primary and lead police, fire and rescue/EMS entity for the mall with Berlin retaining concurrent jurisdiction. Jurisdiction for all inspections, licenses, and permits, remains with the individual jurisdictions.

Current operational procedures between Marlborough and Berlin dictate that Berlin responds to fire related incidents at the mall with their quint, while Marlborough responds an engine, ladder, and rescue. The Marlborough Fire Department informed the study team that they rely on Berlin to provide the designated resource for incidents occurring at this location although concerns about the timeliness of their responses, and adequacy of their staffing, led them to add their rescue onto their response. If an actual fire was reported, Marlborough would

respond all of their on duty apparatus and personnel. Marlborough handles all EMS incidents that occur in the entire mall complex.

In April of 2011, a joint task force appointed by the selectmen to investigate persistent questions regarding the provision of fire services to the mall issued a final report on their work to the selectmen and the fire engineers (Appendix C). This report indicated that the current frequency of incidents at the mall is within normal parameters, and that the current arrangements and protocols for response are consistent with arrangements and agreements that have been in place since the mall was first built. The task force report does ask some questions regarding the process of establishing the protocols and suggests a review of the legal formalities regarding who is authorized to enter into these types of agreements. The answers to these questions are still unclear because one, or possibly both, of the boards who received the report declined to take further action on it.

It is clear to the MRI study team that a predecessor of one of the fire department's current resources, its ladder/quint was purchased with \$250,000.00 in mall mitigation money specifically targeted to that need. Berlin Fire also received an additional \$80,000.00 in mall mitigation funds to purchase 45 minute SCBA cylinders. Although the obligation of the mall to provide those funds annually to the town has expired, it would not be unreasonable to expect that the obligation to provide service remains. Even without any mitigation money, the various mall property owners are paying \$1,532,296.24 in taxes annually on property located in Berlin and assessed at \$64,086,000.00.

The MRI study team was provided with and reviewed a number of documents relating to responses at the Solomon Pond Mall including several "agreements" that were signed by various persons including the emergency services chiefs. However, as noted in the 2011 mall task force report it is unclear who has the ultimate authority to negotiate, sign, and/or authorize/approve, these agreements and arrangements. It is our recommendation that the Town of Berlin seek advice from their legal counsel regarding these agreements and whether they are in fact valid. Steps would then need to be taken to review, revise if necessary, and properly approve, these agreements.

The Highland Commons complex which is under development on the town's border with Hudson presents some similarities to the Solomon Pond Mall area, but also some significant differences. First, and perhaps most significantly, there is no special district or other type of arrangement that designates one community or the other as a "lead" agency. Second, the \$565,000.00 in annual mitigation money from this project will be paid to the town in perpetuity, in addition to, the annual property taxes they will pay which in FY 2015 total \$451,786.62 on property assessed at \$18,895,000.00. The annual tax money to the town's coffers will increase over the next several years as additional sections of the complex are completed.

It is important to note that approximately 60% of both the Solomon Pond Mall complex and Highland Commons are physically located within the town's borders. For the town to not

provide a significant portion of the responsibility for public safety services would seem to be an attempt, whether unintentional or otherwise, to reap the financial benefits of this development without assuming any of the costs that accompany it. From the Hudson standpoint, the Hudson fire chief informed the MRI team that while his department will always be ready and willing to assist Berlin in any way possible, he fully expects them to be responsible for primary fire and EMS response in the occupancies at Highland Commons that are located in Berlin. He did inform the study team that if Berlin wanted to relinquish their responsibilities at Highland Commons the town may consider negotiating an appropriate agreement, however, there would need to be appropriate financial reimbursements involved as well. The Marlborough fire chief expressed a similar sentiment regarding Solomon Pond.

Looking ahead, the next major growth area in Berlin will be the Riverbridge project and related development in the South Berlin Rotary area. Unlike the other projects, this development will have a significant residential component, and will be located fully within the town's corporate borders. An April 2009 review of the proposed project for the planning board expressed concern regarding whether the fire department would be able to remain fully call. The report authors based this concern not only on consultations with the fire chief, but also on their own observations of many other small towns in Massachusetts. They also noted that same potential issue was identified in a 2005 AER report. A 2013 fiscal impact analysis report on the proposed development stated:

*"As noted in the previous fiscal impact analysis prepared by COG in 2009, the fire department and rescue squad are severely strained in terms of providing adequate coverage for emergency calls under the current system of on call volunteers. The need to increase capacity through paid staffing, caused in part by declining availability of volunteers to respond to calls, becomes more pressing with all new residential and commercial growth. The proposed development would contribute proportionally along with other development (new and existing) in the town to the cost of providing some level of staffing with paid personnel. It would not be appropriate to attribute more than a proportionate share of the cost of restructuring fire and rescue services to a single development project, as the need for change has existed for some time."*

The report notes that in 2009 the developer had proposed providing a private ambulance service for the residents of the complex in order to ease the burden on the local rescue squad. Although the CCRC component of the project has been dropped, so has the offer of a private ambulance. However, the study notes that another proposed project could likewise severely strain the ambulance service even with a private ambulance service being employed. In acknowledgement of the town's increased public safety needs, the developer has agreed to provide the town with \$100,000.00 in mitigation money annually for five years once the project reaches a certain development threshold.

While the MRI study team members are not legal experts we believe that the Town of Berlin has a legal obligation to provide appropriate, and reliable, emergency services to the

occupancies that are situated within the borders of the community. The provision of emergency services is one of the most basic responsibilities, if not obligations, of municipal governments. While we appreciate the town's reluctance to change a system that has existed for more than 50 years, we believe very strongly that there must be fundamental changes in Berlin's fire and rescue service delivery systems if the town is going to continue to adequately provide basic, fundamental, emergency services. It certainly appears that the town has the financial means to fund needed improvements in the system; what is uncertain is whether there is a willingness to take the next steps necessary in the evolution and development of the town's emergency services. However, our recommendations for the future fire/rescue/EMS service delivery options are predicated not only on the financial ability of the community to fund the necessary changes, but also a willingness to take those next crucial steps. It is also certainly appropriate for the town to meet with their neighboring departments and develop agreements for joint responses to both Solomon Pond Mall and Highland Commons.

On the positive side, the town's public safety complex, and in particular, the fire/rescue portion of it, is clean, well maintained, complies with most recommendations found in standards for modern fire and EMS facilities, and for the most part, meets the needs of the two departments. Looking to the future, as the needs of the emergency services continue to evolve, the town should plan on making an investment in renovating and expanding the facility, within its current footprint, to increase its functionality for operations and provide better accommodations for when personnel must staff the station.

Both the fire department and rescue squad have well maintained apparatus fleets. However, we believe that the fire department's apparatus fleet is too large for the needs of the community and the department's current staffing levels. Due in large part to its burgeoning commercial base, we do believe though that Berlin does need an aerial device, albeit a smaller one than what the fire department would prefer. Conversely, with only one ambulance, the rescue squad's vehicle compliment is too small. It is our opinion that the squad should have two ambulances.

Both organizations train on a regular basis and their programs appear to be fundamentally sound and adequate to meet their basic needs. With that said, attempting to increase the frequency of training should be a goal of every emergency services provider. In addition, although they frequently operate together on emergency scenes, the fire department and rescue squad rarely, if ever, train together. The officers of the two organizations also never meet to discuss operations or issues of mutual concern.

### **FUTURE FIRE/RESCUE/EMS SERVICE DELIVERY OPTIONS**

Based upon our analysis of the current operations and capabilities of the Berlin Fire Department, and the Berlin Rescue Squad, in conjunction with projections for future growth and development in the town, along with the associated increases in requests for service, the

MRI study team believes the Town of Berlin has four possible options for the future delivery of these services. However, we believe that only one is the most viable and best option for the town, and hence, is the one we recommend.

#### **OPTION 1: MAINTAIN THE STATUS QUO**

The first option would be for the town to maintain the status quo of current operations. Pursuing this option would have the town maintaining separate, fully call, fire department and rescue squad. As is discussed throughout this report despite not yet being unreasonably busy for call or volunteer organizations, both of the Berlin Fire Department, and Berlin Rescue Squad, are struggling greatly with providing adequate staffing on a regular, and consistent, basis to handle the wide range of emergency incidents that occur in town. This equates to frequent missed responses, as well as, a significant number with excessive response times. Compliance with recommended standards of response are, at best, sporadic. These issues will only become more pronounced as the additional development progresses, the annual requests for service gradually increase, and the number of call personnel diminishes. Although the town could implement many of the recommendations contained in this report while still opting to pursue option 1, we do not believe that this course of action would be in the best interests of the town, its residents and visitors, or the other emergency services stakeholders as it would ignore the most significant challenges facing its fire and rescue services. There would also be increased hours involved in implementation due to the duplication of effort required to implement some of the recommendations in two separate organizations rather than one.

In our opinion, the reality is that maintaining the status quo will ignore the operational deficiencies and service gaps identified in this report, and will do nothing more than facilitate a false sense of security in the town that the emergency services will be able to reliably respond when needed. As noted in several areas of this report there is a growing and pronounced lack of active first responders causing an increase, particularly on the EMS side, in the number of times that an ambulance is unable to respond, or responds with a delay. This is cause for community concern as if citizens are not comfortable that help will rapidly arrive when they dial 911, the respect and credibility of a fire rescue agency can easily be lost. The study team believes it is essential that rapid action be taken to reverse this diminishing response trend.

#### **OPTION 2: MAINTAIN FIRE PROTECTION AS A TOWN FUNCTION; CONTRACT OUT RESCUE/EMS**

The second option would be for the Town of Berlin to maintain the Berlin Fire Department as a town department while contracting out the rescue squad/EMS function. Having third parties provide EMS to towns under contract has gained popularity over the last decade. This is particularly true in smaller communities, where

due to a much higher call volume, EMS services typically find the need to add career staff considerably before the fire department as the frequency of responses outpaces the ability of call personnel to keep up. Both Marlborough and Hudson contract with Patriot Ambulance to provide EMS to their respective communities. Both of these communities are happy with the high quality service they receive from Patriot.

There are a number of reasons why we do not recommend that Berlin pursue this option. First, while pursuing this option would probably address the vast majority of the rescue squad's staffing and response issues, it would do nothing to really address the fire department's. In fact, it may exacerbate them even further as this scenario would require the fire department to assume responsibility for rescue operations such as vehicle extrication. It would also probably necessitate them assuming a role as an EMS first responder to provide care until the ambulance arrived. This possibility would have the potential to significantly increase the fire department's responses stretching their staffing resources even more thinly, perhaps to the breaking point.

Although Patriot provides EMS service to Marlborough at no cost, the volume of incidents and the revenue generated through third party billing allow the arrangement to be mutually beneficial. With a small town like Berlin which presently would generate less than one EMS call per day and thus limited revenue it is unlikely that any provider would serve the town at no cost. There would probably be an annual contract fee for the service, as well as, a stipulation that the contractor keeps 100% of the revenue they collect from third party billing. This would result in a net loss in revenue to the town from the money currently generated by the EMS service. They may also insist on being able to hard bill residents of Berlin; that is aggressively pursue collection if their insurance provider does not pay. We would also question whether, given the limited call volume, if any EMS provider would be willing to station an ambulance in Berlin without charging the town an unreasonable price in comparison to the need. Conversely, if an ambulance is not stationed in town response times will be longer. Finally, unless the town's RFP for this service is extremely tightly structured and worded including expected levels of performance and response the town may lose the ability to fully control the level of service being provided to their community.

### **OPTION 3: CONTRACT OUT BOTH FIRE AND RESCUE/EMS**

The third possible option would be for the town to contract out all fire and rescue/EMS services in all probability to one or more neighboring communities. Under this scenario, in addition to negotiating agreements for other communities to provide full emergency services to the large developments that straddle the town border as some suggest is viable and should be considered, the scope of these agreements could be expanded to include the entire town. With the current, and even projected, fire and EMS emergency incident volume in Berlin not being particularly high there could be interest in a

community to enter into this type of agreement as a way to increase revenue thus offsetting some of their operating expenses without requiring a significant, if any, increase in their own resources. However, we believe that many of the same issues and concerns identified and discussed for Option 2, above, would be applicable here as well. Consequently, we do not believe that this option would be a good one for Berlin either.

### **REGIONALIZATION AND SHARED SERVICES**

Before we present and discuss the final option for the future fire/rescue/EMS delivery system options, and the one we recommend Berlin pursue, we believe we would be remiss if we did not at least mention regionalization and shared services.

For the purposes of long range planning, and seeking ways to continue to provide high quality emergency services at the lowest cost possible, Berlin should turn to its neighboring communities to explore possible opportunities for shared services. While the idea of giving up total local control is always a proposition that gives elected officials and their constituents pause, constantly escalating costs of attempting to provide the same level services is becoming a more and more difficult task. Scarce tax dollars which have been stretched to the limit are now in real danger of tearing or breaking. Smaller communities, such as Berlin, which generally have fewer resources and options than their larger neighbors may find it especially difficult going forward to cope with the limitations imposed by the new financial reality.

The reluctance of local officials to cede control is one of the primary reasons that although various good government and taxpayer advocacy groups have been recommending steps toward consolidation of services and regionalization as early as the 1990s, little progress has been made in this regard locally, and or really anywhere in the commonwealth. Yet one needs only look to the Baltimore/Washington metropolitan areas to observe a number of extremely successful countywide fire departments that provide exemplary service to their citizens.

While we certainly understand and concur, with the opinion that true consolidation and/or regionalization of services in Massachusetts is realistically probable at least 10, and maybe 15 to 20 years away, these are major decisions that will effect generations to come. The time to start discussions and exploring possible options is now, not 10 to 15 years into the future. Entering into discussions now is particularly important for Berlin as it may help to determine the correct course of action to take regarding the investments they need to make in their emergency services for the future. While there are many hurdles to overcome toward regionalization from the fire service perspective, a good snapshot of the future came from a firefighter who spoke to the MRI study team in conjunction with a different study we conducted several years ago. He stated that in many places in Massachusetts, through frequent inter-jurisdictional training and exercises, and strong automatic and mutual aid agreements and responses, we already are in reality county, or regional, fire departments, we just need to change the names

on our trucks and the patches on our sleeves. New Jersey which like Massachusetts has been wary of wide spread regionalization efforts is now home to several regional fire and police departments. It also has two county wide EMS services with more under consideration.

#### **OPTION 4 – MERGING FIRE AND RESCUE INTO A SINGLE DEPARTMENT**

The final option for the future delivery of fire and rescue services, and the one that we believe is the best and most feasible one, is to merge the Berlin Fire Department, and Berlin Rescue Squad, into a single entity. This is a concept that appears to enjoy widespread support among most of the town's emergency services stakeholders, both internal and external, including those who do not normally share the same views or agree. This includes both Chief Ricard and Chief Bartlett. However, in order for this merger to be successful it must be perceived as exactly that, a merger of equals, rather than an acquisition of the rescue squad by the fire department. **As such, we recommend that both existing departments be abolished or dissolved, at least on paper, and a new department - Berlin Fire Rescue - be established.**

Fire, rescue, and EMS operating from a single entity is a practice utilized successfully in many communities. As noted previously in this report there is almost a 50% overlap in the membership between the two organizations. Nonetheless, there will be an increase in the overall personnel resources available to the new consolidated department. However, the new department's leadership must remember that in a primarily call organization there will be a certain percentage of members who may only want to be involved in fire operations, or conversely in rescue/EMS operations, and to the extent the possible, every effort should be made to accommodate their preferences.

We fully support the continued use of a strong primarily call fire rescue department in Berlin, and believe that this model can continue to serve the needs of the town for the foreseeable future. However, we also believe that the call volume, which will most likely continue to increase each year, along with the multitude of other daily tasks which need to be performed, not the least of which is a large number of fire inspections and other fire prevention activities, indicate that the time has arrived for the town to consider the transition to a combination fire rescue department utilizing a small career staff to supplement the call force. This will be particularly true if fire and rescue/EMS are combined into a single emergency services provider.

It is our recommendation that the town make the transition to a full-time, career, fire rescue chief that is proposed to occur in July 2015 a permanent one, with an appropriate and competitive salary. This chief should be a working chief, that is, one who responds to most emergency incidents and takes an active, hands on role in incident mitigation.

At a minimum, caused primarily by limited availability of the call firefighters and rescue personnel due to their commitments to their regular, full-time occupations, effective day time responses appear to be growing increasingly problematic for the department. Many times, although made, the response is very slow resulting in an unacceptably long delay in getting emergency assistance to the 9-1-1 caller. In still other instances, although the apparatus may respond, there are insufficient crew members on board, thus limiting the on-scene fire suppression tactical options. In addition, nearly 20% of rescue squad incidents must be handled by mutual aid due to the lack of adequate staffing.

While effective, efficient, and safe, emergency scene operations, particularly initial fire attack operations and providing timely emergency medical assistance, are the overriding reasons for considering the addition of career staffing, that is not the sole justification. With more than 230 commercial occupancies in town, a number that continues to grow, coupled with a wide range of other fire prevention needs and activities, the workload for one person to perform alone on a single morning each week is probably nearing, if not already at/exceeding, its maximum. In addition, there are numerous other duties and responsibilities that full-time, career personnel could undertake when not responding to fire and rescue emergencies. Some of the other benefits having the career staff in place, particularly during the day when most of the call force are at their primary jobs, include, but would certainly not be limited to:

- quicker and more frequent compliance with the OSHA Two in-Two Out requirement for initial fire attack;
- guaranteed, and usually immediate, EMS response by the ambulance to get life-saving help to the 9-1-1 caller quicker;
- performing fire prevention inspections (possible future duty) and other fire prevention activities;
- developing pre-fire/incident plans;
- performing fire apparatus, tool, and equipment inspections, testing and maintenance;
- performing basic station maintenance;
- performing static water supply source testing, maintenance and flow testing; and
- assisting the fire/rescue chief with various day-to-day administrative duties and/or special projects.

It is our belief that initially, the town should hire two additional full-time, career, firefighter/EMTs who along with the fire rescue chief would provide a guaranteed, timely, and qualified, response to day time emergency incidents. As noted above, these personnel would also handle a wide range of other ancillary duties between emergency responses ultimately improving the department's operational preparedness/readiness, while simultaneously

lightening the work load for the call personnel to concentrate on training and emergency response.

The MRI study team believes that another option that may be viable, with or without career staff, one that has been successful in many other call and volunteer fire departments and rescue squads, is the implementation of a duty crew system. Under the duty crew system, the department could be divided into two or three duty crews. Each duty crew would have their own separate alert tone and would function on some type of a rotational system with the other crews, perhaps one week on and either one or two weeks off. Only the “duty crew” would be dispatched initially to minor incidents often referred to as “still alarms”. The advantage of the duty crew system is two-fold. It preserves the active, primary response role of what is a relatively strong call/volunteer force while simultaneously reducing the constant need for personnel to respond to all incidents. Statistical analysis of incident response data and trends, once the program is operational, would provide guidance on what adjustments to the program may be required to optimize its effectiveness.

It is important to stress that a merger of the type we are proposing would require fairly extensive cooperation and cross training between the two entities as they transition into one; however with strong and effective leadership, direction, and commitment, the dividends could be substantial. Regardless of how carefully the merger is accomplished, there is the potential of friction between personnel from the two previous organizations which could result in a loss of some call personnel. The same decline in call staff could occur if career staff are introduced.

## **COST ESTIMATE – COMBINED BERLIN FIRE RESCUE WITH CAREER STAFF**

DESCRIPTION	COST
One Full-time Career Fire Rescue Chief (Salary and Benefits)	\$125,000.00
Two Full-time Staff @ \$70,000 Each (Salary and Benefits)	\$140,000.00
One Part-time Administrative Assistant (20 Hours @ Fire Rescue/Shared with Police) (Salary and Benefits)	\$20,000.00
Call Fire/Rescue/EMS Personnel	\$125,000.00
Operational Expenses*	\$175,000.00
<b>TOTAL ESTIMATED GROSS ANNUAL COST</b>	<b>\$585,000.00</b>
Current Total Gross Fire Rescue Budget	\$341,722.00
<b>COST PER CAPITA - GROSS FIRE RESCUE BUDGET</b>	<b>\$ 119.23</b>
Third Party Reimbursements and Fees (FY 2014)	\$104,992.00
<b>CURRENT NET FIRE RESCUE BUDGET (Less Reimbursements and Fees)</b>	<b>\$236,730.00</b>
<b>COST PER CAPITA – NET FIRE RESCUE BUDGET</b>	<b>\$ 82.60</b>
<b>TOTAL ESTIMATED NET ANNUAL COST (Less Reimbursements and Fees)</b>	<b>\$460,608.00</b>
<b>COST PER CAPITA – NET ANNUAL BUDGET</b>	<b>\$ 160.72</b>
<b>TOTAL ADDITIONAL COST TO BERLIN</b>	<b>\$223,878.00</b>
<b>COST PER CAPITA - ADDITIONAL</b>	<b>\$ 78.12</b>

\* Operational expenses only. Not capital.

**NOTE:** These costs are very rough estimates and can be impacted by a number of different factors.

Figure 12-1

## **RECOMMENDATIONS**

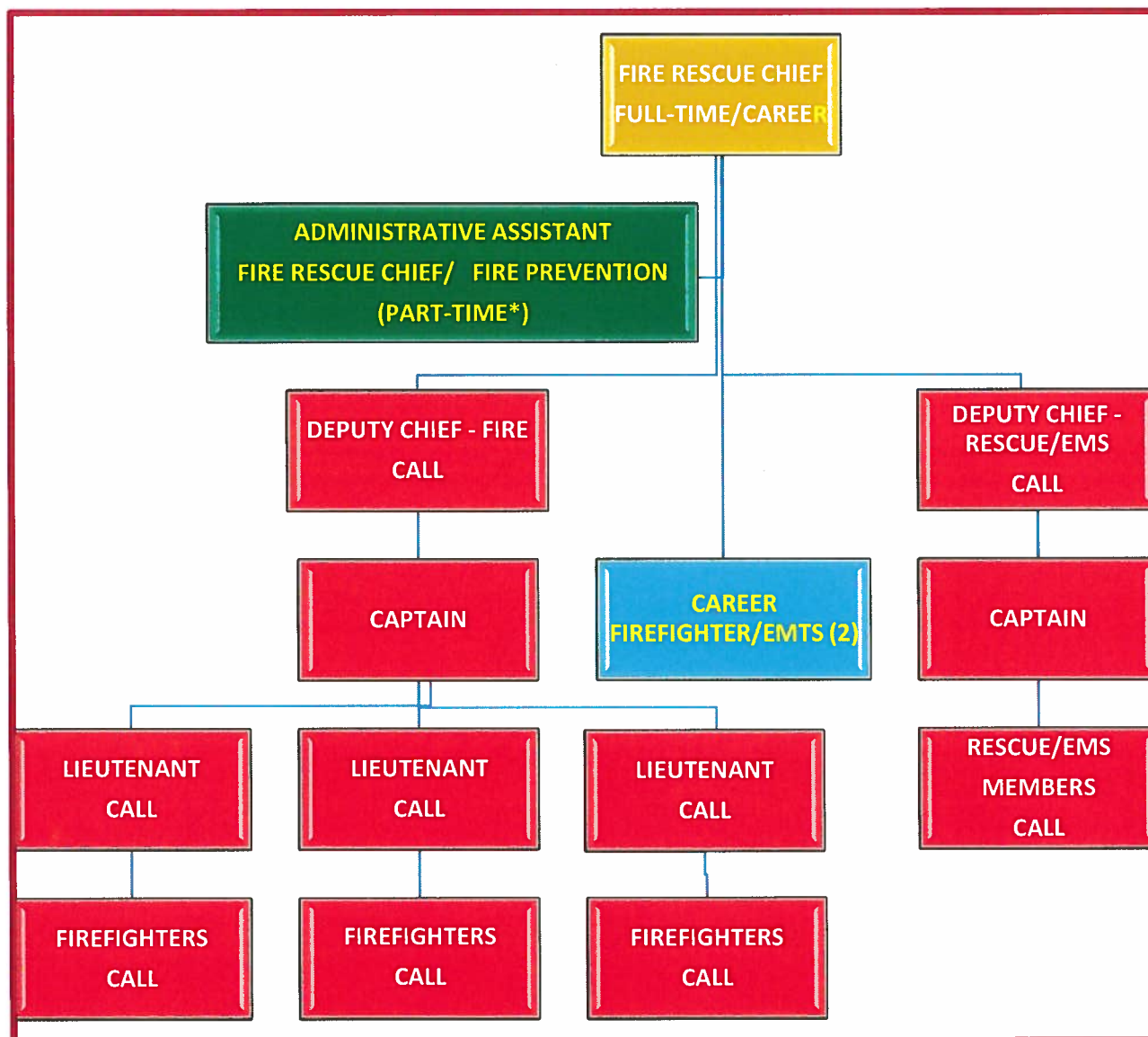
- 12-1** Berlin should enter into discussions with the municipal administrations, and fire department leaderships of the adjacent communities of Hudson, Bolton, Boylston, Clinton, and Northborough for the purposes of identifying additional opportunities for shared services, and long-term, explore the feasibility of a more regional approach to fire protection and EMS delivery systems.
- 12-2** The Town of Berlin should dissolve the existing Berlin Fire Department, and Berlin Rescue Squads, and through a merger of equals create a new Berlin Fire Rescue Department.
- 12-3** Managing, administering and leading a modern day fire department requires a complex set of knowledge, skills, abilities, training, and experience. As a result, the Town of Berlin should maintain the position of fire rescue chief as a full-time, career position as is proposed to take effect July 1, 2015. This chief should be a working chief, that is, one who responds to most emergency incidents and takes an active, hands on, role in incident mitigation. In conjunction with the current chiefs, they should begin a succession planning process to begin looking toward the future and the changes that will bring to the new department.
- 12-4** The Town of Berlin should create an overall table of organization for the new Berlin Fire Rescue Department to clearly delineate the chain of command and make it more effective.
- 12-5** In order to stress the fact that the Berlin Fire Rescue Department remains primarily a call department, possibly supplemented by a small career staff, the department's 2<sup>nd</sup> tier positions should remain call positions and be equally divided between fire and rescue/EMS.
- 12-6** The Town of Berlin should give consideration to hiring two full-time career firefighter/EMTs who along with the fire rescue chief would provide a three person crew to insure guaranteed, timely, and qualified, response to day time emergency incidents. With three personnel available for immediate response, perhaps supplemented by an available call firefighter to bring the crew size to four the department would much more frequently comply with the initial fire attack requirements recommended by NFPA, and required by OSHA.
- 12-7** The Berlin Fire Rescue Department 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.

- 12-8 The Town of Berlin and the Berlin Fire Rescue Department should attempt to enter into partnerships with local businesses to allow their personnel to respond, when needed, to emergency incidents during working hours, without any financial penalty.**
- 12-9 The Town of Berlin and Berlin Fire Rescue Department should give consideration to implementing a duty crew system whereby the department will be divided into two or three duty crews. Utilizing their own separate dispatch tone the duty crew would be dispatched to minor incidents reducing the need for the entire department to respond.**

**Under the duty crew system the entire department would be dispatched and respond to potentially serious incidents such as any type of reported fire, rescue incidents, etc.**

The following chart depicts the proposed table of organizational that includes the recommendations set forth in recommendations 12-3 through 12-6.

## PROPOSED BERLIN FIRE RESCUE TABLE OF ORGANIZATION



\* This position is proposed as part-time for the fire rescue department. However, since a similar position is recommended for the police department we believe the two departments can share one person making the position full-time.

NOTE: The two (2) career firefighter/EMTs recommended in this report would fit into the chain of command at the same level as other firefighters within the department for on scene operations. However, administratively during the day when they are working they would report directly to, and be assigned duties by, the fire chief.

Figure 12-2

## **CHAPTER 13**

### **BENCHMARKING AND COMPARATIVE ANALYSIS**

As part of the study, the team prepared a benchmarking and comparative analysis survey for distribution to a number of comparable communities. Benchmarking and comparative analysis is a process that compares specific data points within similar agencies or communities. The purpose of this process is to provide a perspective relative to the practices of other similar entities. The communities selected were derived from recommendations from town officials. This is done purposely to avoid any perception that the members of the emergency services departments being assessed selected favorable comparables.

The data provided by these communities is just one of several tools that we are providing to the Town of Berlin to assist them with understanding how their emergency services departments compare to organizations serving other similar communities in Massachusetts. This information indicates how other similar communities address the areas of interest outlined within the fire and rescue/EMS surveys. Allowing them to view their emergency services operations in comparison to other communities will allow Berlin to have some different perspectives to utilize for comparison as they make decisions for determining the future course of the town's emergency services delivery system.

This analysis was conducted utilizing the responsive peer communities of Bolton, Boylston, Harvard, Northborough, and Stow. Lancaster was also provided with the surveys but did not respond. Some assistance in obtaining this information was provided by Chief Ricard and Chief Bartlett. Additional data was gathered by the MRI study team as the initial responses were insufficient.

As the data was interpreted, the information provided by the Town of Northborough was dramatically different from the information provided by other communities that were a much closer match to Berlin. The Northborough Fire Department is essentially a career fire service agency, serving a much larger community. It has a far larger budget than any of the other comparable communities, and responds to a far greater number of requests for service. Since Northborough was specifically identified as a comparative community by Berlin their data has been included in the data tables for informational purposes, but highlighted, to ensure that the reader understands this significant divergence from the other communities. Also, based on this anomaly, and to avoid skewing the results of the data we analyzed, Northborough's information was also not utilized to determine averages, or comparative divergences.

Based upon the information contained above we have developed the following observations and recommendations:

#### **GENERAL INFORMATION**

- The average population, and in many cases land area, of the peer communities selected is significantly larger than the population, and land area, of Berlin.

- The average fire service budget is almost \$14,000.00 larger than the current budget in Berlin. The average rescue squad budget is almost double the current level of appropriation given to the Berlin Rescue Squad. Overall, the average fire/rescue budget is \$68,000.00 more than the current level of appropriation in Berlin.

### **FIRE SERVICE INFORMATION**

- The number of fire service emergency calls in Berlin is less than one-half of the calls experienced in the peer communities.
- Despite the larger populations and land area, Berlin has 48% more structure fires, than the average of the peer communities although their overall fire losses are similar.
- Despite their larger populations and land area, Berlin has a significantly larger base of commercial development. Overall, Berlin lists more than four times the commercial and/or industrial occupancies of its peers.
- 66% of fire calls in the comparable communities occur during the daytime hours of 7AM – 6PM whereas in Berlin just under 50% do. The remainder of the emergency calls are equally split between nights and weekends.
- Berlin's response times to structure fires are approximately 20% above the average response time experience present within the peer communities while the overall response times are 31% above.
- The comparable communities have an average of 15 personnel responding to a structure fire; Berlin was unable to provide an average. However, the town's overall average number of personnel responding would suggest it is well below this average.
- Although Berlin's fire prevention revenue is more than two-and-a-half times the average collected in the peer communities, annual inspections in Berlin are 18% below average.
- Berlin's apparatus set is in line with the peer communities, although three of four of the peers do not have an aerial ladder. However, these communities do not have the commercial development that would necessitate a device of this kind.
- Berlin has a somewhat higher number of personnel listed on the roster (thirty-six), an 83% lower number of personnel that respond to 50% or more of the incidents, and an 8% higher number of members that live outside of the community than the average of the comparable towns.
- Berlin is about average with regard to the number of personnel (62%) who are Firefighter I certified.

- 75% of the comparable communities have a full-time, career fire chief; as of this time, Berlin does not.

### **RESCUE SQUAD/EMS INFORMATION**

- Berlin's peer communities respond to a significantly greater call volume on average than Berlin Rescue Squad. Berlin responds to just 45% of the comparable average.
- The comparable communities have a significantly higher number of motor vehicles crashes, motor vehicle crashes that require patient extrication.
- 46% of Berlin Rescue Squad calls occur Monday – Friday 7AM – 6PM 6% higher than average. The remainder of the emergency calls are split between nights and weekends.
- 82% of patients transported by BRS live in Berlin.
- Berlin charges the highest rates for patient transportation, yet ambulance revenue, proportionate to call volume, is only 61% of the revenue generated in the peer communities.
- Berlin experiences nine times the average number of calls where personnel are unavailable, and mutual aid is required to handle the incident. Of the times that an ambulance is staffed, a mutual aid or intercept unit arrives on scene before Berlin nearly four times the average of this experience in other communities.
- The rescue squad expense budget appears to be far lower (51%) than the average budget in peer communities, although this may be reflective of the call volume variance.
- Berlin has eight personnel more than the average number listed on the roster of peer communities (+24%).
- 49% of Berlin Rescue Squad members live outside of the community which is consistent with the comparable communities. No information was available relative to the percentage of high response (50%+ of emergency incidents) personnel.
- All other peer services have some fulltime employees with the average being 3. The Berlin Rescue Squad has no fulltime personnel at the present time.
- The apparatus compliment in Berlin is just 50% of the average, again a statistic that may be linked to call volume but one that provides the town with few options should their single ambulance be out of service, or unavailable, for any reason.

## GENERAL OPERATIONAL INFORMATION

PEER ORGANIZATION	COMMUNITY POPULATION	SQUARE MILES	FIRE SERVICE BUDGET	RESCUE SQUAD BUDGET	COMBINED FIRE/RESCUE BUDGET
<b>BOLTON</b>	<b>4,897</b>	<b>20</b>	<b>\$ 156,243.00</b>	<b>\$ 183,855.00</b>	<b>\$ 340,098.00</b>
<b>BOYLSTON</b>	<b>4,700</b>	<b>19</b>	<b>\$ 169,806.00</b>	<b>\$ 169,806.00</b>	<b>\$ 339,612.00</b>
<b>HARVARD</b>	<b>6,752</b>	<b>27</b>	<b>\$ 259,000.00</b>	<b>UNCLEAR</b>	<b>\$ 259,000.00</b>
<b>NORTHBOROUGH</b>	<b>14,789</b>	<b>18.7</b>	<b>\$1,100,000.00</b>	<b>\$1,100,000.00</b>	<b>\$2,200,000.00</b>
<b>STOW</b>	<b>6,590</b>	<b>17.9</b>	<b>\$ 349,995.00</b>	<b>\$ 349,995.00</b>	<b>\$ 699,990.00</b>
<b>AVERAGE</b>	<b>5,735</b>	<b>20.98</b>	<b>\$ 233,761.00</b>	<b>\$ 234,552.00</b>	<b>\$ 409,675.00</b>
<b>BERLIN</b>	<b>2,866</b>	<b>13.18</b>	<b>\$ 220,601.00</b>	<b>\$ 120,121.00</b>	<b>\$ 341,722.00</b>
<b>DEVIATION</b>	<b>0.50</b>	<b>0.63</b>	<b>0.94</b>	<b>0.51</b>	<b>0.83</b>

## FIRE SERVICE INFORMATION

PEER ORGANIZATION	NUMBER OF EMERGENCY INCIDENTS	FIRE RELATED INCIDENTS	EMS RELATED INCIDENTS	NUMBER OF STRUCTURE FIRES 2014	INCIDENTS FROM COMMERCIAL DEVELOPMENT
<b>BOLTON</b>	<b>189</b>	<b>189</b>	<b>N/A</b>	<b>3</b>	<b>35</b>
<b>BOYLSTON</b>	<b>606</b>	<b>171</b>	<b>435</b>	<b>15</b>	<b>30</b>
<b>HARVARD</b>	<b>258</b>	<b>254</b>	<b>4</b>	<b>3</b>	<b>UNKNOWN</b>
<b>NORTHBOROUGH</b>	<b>1,963</b>	<b>889</b>	<b>1,074</b>	<b>17</b>	<b>UNKNOWN</b>
<b>STOW</b>	<b>959</b>	<b>335</b>	<b>624</b>	<b>6</b>	<b>326</b>
<b>AVERAGE</b>	<b>503</b>	<b>237</b>	<b>354</b>	<b>6.75</b>	<b>130</b>
<b>BERLIN</b>	<b>229</b>	<b>227</b>	<b>2</b>	<b>10</b>	<b>64</b>
<b>DEVIATION</b>	<b>0.46</b>	<b>0.96</b>	<b>0.01</b>	<b>1.48</b>	<b>0.49</b>

PEER ORGANIZATION	NUMBER OF INCIDENTS WEEKDAYS 7 AM – 6 PM	PERCENTAGE OF INCIDENTS WEEKDAYS 7 AM – 6 PM	NUMBER OF INCIDENTS WEEKNIGHTS 6 PM – 7 AM	PERCENTAGE OF INCIDENTS WEEKNIGHTS 6 PM – 7 AM
<b>BOLTON</b>	<b>92</b>	<b>49%</b>	<b>\$52</b>	<b>28%</b>
<b>BOYLSTON</b>	<b>158</b>	<b>26%</b>	<b>329</b>	<b>54%</b>
<b>HARVARD</b>	<b>182</b>	<b>71%</b>	<b>76</b>	<b>29%</b>
<b>NORTHBOROUGH</b>	<b>1,404</b>	<b>72%</b>	<b>654</b>	<b>33%</b>
<b>STOW</b>	<b>498</b>	<b>52%</b>	<b>461</b>	<b>48%</b>
<b>AVERAGE</b>	<b>233</b>	<b>49.5%</b>	<b>230</b>	<b>40%</b>
<b>BERLIN</b>	<b>152</b>	<b>66%</b>	<b>80</b>	<b>35%</b>
<b>DEVIATION</b>	<b>0.65</b>	<b>1.33</b>	<b>0.35</b>	<b>0.88</b>

PEER ORGANIZATION	NUMBER OF INCIDENTS WEEKENDS	PERCENTAGE OF INCIDENTS WEEKENDS	FIRE DOLLAR LOSS 2014	ISO RATING
<b>BOLTON</b>	<b>40</b>	<b>21%</b>	<b>\$250,000.00</b>	<b>9</b>
<b>BOYLSTON</b>	<b>119</b>	<b>20%</b>	<b>\$527,600.00</b>	<b>4</b>
<b>HARVARD</b>	<b>66</b>	<b>26%</b>	<b>\$258,600.00</b>	<b>9</b>
<b>NORTHBOROUGH</b>	<b>518</b>	<b>26%</b>	<b>\$184,400.00</b>	<b>4</b>
<b>STOW</b>	<b>258</b>	<b>27%</b>	<b>\$371,000.00</b>	<b>UNKNOWN</b>
<b>AVERAGE</b>	<b>121</b>	<b>23.5%</b>	<b>\$351,800.00</b>	<b>7</b>
<b>BERLIN</b>	<b>72</b>	<b>31%</b>	<b>\$349,000.00</b>	<b>9</b>
<b>DEVIATION</b>	<b>0.60</b>	<b>1.32</b>	<b>0.99</b>	<b>1.29</b>

PEER ORGANIZATION	AVERAGE FIRST UNIT RESPONSE TIME STRUCTURE FIRES	AVERAGE FIRST UNIT RESPONSE TIME ALL INCIDENTS	AVERAGE NUMBER OF PERSONNEL RESPONDING STRUCTURE FIRES
BOLTON	8 MINUTES	13 MINUTES	12
BOYLSTON	7 MINUTES	5 MINUTES	15
HARVARD	12 MINUTES	UNKNOWN	20
NORTHBOROUGH	8 MINUTES	5 MINUTES	11
STOW	3 MINUTES	3 MINUTES	13
AVERAGE	7.5 MINUTES	7 MINUTES	15
BERLIN	9.24 MINUTES	9.17 MINUTES	UNKNOWN
DEVIATION	1.23	1.31	

PEER ORGANIZATION	NUMBER OF VOLUNTEER/ON CALL PERSONNEL ON ROSTER	NUMBER OF VOLUNTEER/ON CALL PERSONNEL THAT RESPOND TO 50% OR MORE INCIDENTS	PERCENTAGE OF FIREFIGHTER I CERTIFIED PERSONNEL	PERCENTAGE OF MEMBERS LIVING OUTSIDE OF COMMUNITY
BOLTON	28	7	40%	60%
BOYLSTON	25	25	100%	10%
HARVARD	23	4	46%	29%
NORTHBOROUGH	8	0	99%	29%
STOW	47	10	UNKNOWN	70%
AVERAGE	31	12	62%	42%
BERLIN	36	2	63%	50%
DEVIATION	1.16	0.17	1.02	1.19

PEER ORGANIZATION	CAREER FIRE CHIEF	NUMBER OF CAREER STAFF	NUMBER OF COMMERCIAL/ INDUSTRIAL OCCUPANCIES	NUMBER OF ANNUAL INSPECTIONS
<b>BOLTON</b>	<b>NO</b>	<b>1</b>	<b>25</b>	<b>427</b>
<b>BOYLSTON</b>	<b>YES</b>	<b>3</b>	<b>20</b>	<b>193</b>
<b>HARVARD</b>	<b>YES</b>	<b>1</b>	<b>107</b>	<b>354</b>
<b>NORTHBOROUGH</b>	<b>YES</b>	<b>18</b>	<b>UNKNOWN</b>	<b>970</b>
<b>STOW</b>	<b>YES</b>	<b>2</b>	<b>65</b>	<b>256</b>
<b>AVERAGE</b>	<b>YES</b>	<b>2</b>	<b>54</b>	<b>308</b>
<b>BERLIN</b>	<b>NO</b>	<b>0</b>	<b>236</b>	<b>253</b>
<b>DEVIATION</b>			<b>4.37</b>	<b>0.82</b>

PEER ORGANIZATION	ANTICIPATED FIRE PREVENTION REVENUE	NUMBER OF AERIAL LADDERS	TOTAL APPARATUS COMPLIMENT
<b>BOLTON</b>	<b>\$ 5,530.00</b>	<b>0</b>	<b>5</b>
<b>BOYLSTON</b>	<b>\$ 5,000.00</b>	<b>1</b>	<b>9</b>
<b>HARVARD</b>	<b>\$20,000.00</b>	<b>0</b>	<b>7</b>
<b>NORTHBOROUGH</b>	<b>UNKNOWN</b>	<b>1</b>	<b>11</b>
<b>STOW</b>	<b>\$ - 0 -</b>	<b>0</b>	<b>7</b>
<b>AVERAGE</b>	<b>\$ 7,633.00</b>	<b>N/A</b>	<b>7</b>
<b>BERLIN</b>	<b>\$20,000.00</b>	<b>1</b>	<b>8</b>
<b>DEVIATION</b>	<b>2.62</b>		<b>1.14</b>

## RESCUE SQUAD/EMS INFORMATION

PEER ORGANIZATION	NUMBER OF EMERGENCY INCIDENTS	MOTOR VEHICLE CRASHES	NUMBER OF EXTRICATIONS	NUMBER OF ACTUAL TRANSPORTS 2014	NUMBER OF PATIENT REFUSALS 2014
<b>BOLTON</b>	<b>395</b>	<b>75</b>	<b>20</b>	<b>224</b>	<b>151</b>
<b>BOYLSTON</b>	<b>435</b>	<b>49</b>	<b>10</b>	<b>380</b>	<b>48</b>
<b>NORTHBOROUGH</b>	<b>1,074</b>	<b>118</b>	<b>7</b>	<b>1,074</b>	<b>174</b>
<b>STOW</b>	<b>959</b>	<b>102</b>	<b>1</b>	<b>300</b>	<b>121</b>
<b>AVERAGE</b>	<b>596</b>	<b>75</b>	<b>10</b>	<b>301</b>	<b>107</b>
<b>BERLIN</b>	<b>266</b>	<b>45</b>	<b>2</b>	<b>205</b>	<b>61</b>
<b>DEVIATION</b>	<b>0.45</b>	<b>0.60</b>	<b>0.20</b>	<b>0.68</b>	<b>0.57</b>

PEER ORGANIZATION	NUMBER OF CALLS SCRATCHED TO MUTUAL AID	NUMBER OF TIMES MUTUAL AID ARRIVED FIRST	AMBULANCE REVENUE 2014	AUTOMATIC ALS INTERCEPTS
<b>BOLTON</b>	<b>9</b>	<b>17</b>	<b>\$117,077.00</b>	<b>YES</b>
<b>BOYLSTON</b>	<b>0</b>	<b>0</b>	<b>\$ 98,839.00</b>	<b>YES</b>
<b>NORTHBOROUGH</b>	<b>0</b>	<b>0</b>	<b>\$563,709.00</b>	<b>ALS SERVICE</b>
<b>STOW</b>	<b>0</b>	<b>0</b>	<b>\$160,000.00</b>	<b>YES</b>
<b>AVERAGE</b>	<b>3</b>	<b>6</b>	<b>\$125,305.00</b>	<b>YES</b>
<b>BERLIN</b>	<b>27</b>	<b>22</b>	<b>\$ 76,421.00</b>	<b>YES</b>
<b>DEVIATION</b>	<b>9.0</b>	<b>3.67</b>	<b>0.61</b>	

PEER ORGANIZATION	NUMBER OF INCIDENTS WEEKDAYS 7 AM – 6 PM	PERCENTAGE OF INCIDENTS WEEKDAYS 7 AM – 6 PM	NUMBER OF INCIDENTS WEEKNIGHTS 6 PM – 7 AM	PERCENTAGE OF INCIDENTS WEEKNIGHTS 6 PM – 7 AM
BOLTON	176	45%	110	28%
BOYLSTON	108	25%	248	57%
NORTHBOROUGH	1,404	UNKNOWN	654	UNKNOWN
STOW	489	51%	212	22%
AVERAGE	258	40%	190	36%
BERLIN	122	46%	70	26%
DEVIATION	0.47	1.14	0.37	0.72

PEER ORGANIZATION	NUMBER OF INCIDENTS WEEKENDS	PERCENTAGE OF INCIDENTS WEEKENDS	NUMBER OF VOLUNTEER/ ON CALL PERSONNEL ON ROSTER	NUMBER OF VOLUNTEER/ON CALL PERSONNEL THAT RESPOND TO 50% OR MORE INCIDENTS
BOLTON	115	29%	21	0
BOYLSTON	79	18%	27	20
NORTHBOROUGH	518	UNKNOWN	8	0
STOW	258	27%	52	20
AVERAGE	151	25%	33	13
BERLIN	74	28%	41	0
DEVIATION	0.49	1.12	1.24	

PEER ORGANIZATION	PERCENTAGE OF MEMBERS LIVING OUTSIDE OF COMMUNITY	NUMBER OF PAID EMS EMPLOYEES	NUMBER OF FULL-TIME EMS EMPLOYEES	NUMBER OF PART-TIME EMS EMPLOYEES	TOTAL APPARATUS COMPLIMENT
BOLTON	62%	21	1	0	2
BOYLSTON	10%	27	3	24	4
NORTHBOROUGH	29%	25	17	8	5
STOW	70%	34	5	13	7
AVERAGE	47%	27	3	12	4
BERLIN	49%	38	0	38	2
DEVIATION	1.04	1.42		3.17	0.50

## **CHAPTER 14**

### **SUMMARY OF RECOMMENDATIONS**

#### **CHAPTER 2 – FIRE AND RESCUE FACILITY**

The MRI study team recognizes that the implementation of the recommendations concerning facilities is a costly proposition. However, the town needs to consider and plan for the future operational needs of the department and its personnel.

- 2-1 The entire public safety facility should be equipped with carbon monoxide alarms. These important life safety devices should be installed as soon as possible.**
- 2-2 The Town of Berlin should give consideration to investing money to renovate the existing second floor area of the fire and EMS/rescue area of the public safety building. Should they undertake this initiative, it is MRI's recommendation that the modifications and improvements to the facility include, if possible:**
  - Personnel facilities including a day room, enhanced kitchen/eating area, and sleeping quarters.**

**We would recommend that these renovations are undertaken within the next three to five years.**

#### **CHAPTER 3 – APPARATUS AND EQUIPMENT**

- 3-1 In consideration of the numerous tactical operations and firefighter safety benefits they provide, the Berlin Fire Department should continue to maintain and operate an aerial equipped apparatus.**
- 3-2 The Berlin Fire Department should transition toward the consolidation of apparatus and the local response of a 75' quint. Consolidate the replacement of the leased 1991 Pierce Arrow 100' quint and the 1996 Pierce Saber pumper into a single "quint" that has a 75' aerial ladder and is configured to also fully function as a fire pumper. The automatic response of a larger aerial from Clinton, Hudson, or Northborough should be immediately requested upon the report of a structure fire at a target hazard. Consideration could also be given to the purchase of a recent, but not current, model year "demo" unit as a potentially lower cost option.**



**Figure 3-14: A Quint such as this one recently placed in service in Springfield and equipped with a 1500 gallon per minute pump, 500 gallon water tank and 75' aerial will more than adequately meet the vast majority of the Berlin Fire Department's operational needs and provide the community with a versatile, multi-function vehicle particularly in limited staffing conditions and when responding as the first out unit and "engine" to many incidents. (Photo: Mass Fire Trucks)**

- 3-3 The procurement of the "quint" recommended in 3-2, above, should be funded at the fiscal year 2016 town meeting. A federal Assistance to Firefighters Grant (AFG or FireAct) should also be pursued during the 2015 grant period which will open later this year. If the AFG grant application is successful, then the FY 2016 capital project can be cancelled.**
- 3-4 The procurement of a replacement pumper/tanker should be considered in the fiscal year 2021 or 2022 budgets. Consideration should be given at that time to combining Engine 3 and the tender into a single unit. Should the existing Tender 1 experience a non-repairable mechanical issue prior to that time the town should consider the purchase of a good, serviceable used tender/tanker to replace it until such time as they could combine the tender and an engine into one unit with a larger water**

carrying capacity. An AFG grant for funds to purchase this vehicle should be pursued prior to money be appropriated through the town's capital budget.

- 3-5 The MRI study team recommends that the town take advantage, if possible, of the fire apparatus and ambulance group purchasing system that is sponsored by the Fire Chiefs Association of Massachusetts (FCAM) and the Metropolitan Area Planning Council (MAPC). Municipalities may select a specific design and manufacturer from a pre-determined bid list and are not required to establish their own bid process. It is estimated that this group purchasing system will save approximately five to ten percent of the cost of a fire truck or ambulance (see [www.mapc.org](http://www.mapc.org)).
- 3-6 The department should adopt a policy of purchasing new NFPA 1901 and ISO compliant equipment when new apparatus is purchased. This policy will ensure that equipment is the most technologically up-to-date and that it is safe and functional.
- 3-7 The Berlin Fire Department should acquire an SUV for use by the department's chief officers for a command vehicle to facilitate more effective, efficient, and safe incident management/command operations on all types of emergency incidents. It is recommended that this vehicle be budgeted in fiscal year 2016.
- 3-8 The department should establish a weekly (as opposed to monthly) apparatus inspection and serviceability procedure. This inspection would be the equivalent of a daily pre-trip inspection as outlined in commercial driver manuals. NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus* (2012 edition), has an appendix in the rear of the standard with suggestions for routine vehicle and component inspection and testing. The weekly inspection should also include an inventory and serviceability check of the tools, equipment, and SCBA that is carried on the apparatus.
- 3-9 The department should issue all personnel their own personal SCBA mask. The rationale for issuing individual facemasks is to minimize the chance of transmission/exposure of infectious and/or communicable diseases and other illnesses (even the common cold) between members.
- 3-10 The department should purchase a supply of spare SCBA masks in any size that is utilized by a member of the department. A minimum of one spare mask of each of these sizes should be placed on each apparatus for emergency use in the event of the failure of a mask during emergency operations.

## **CHAPTER 4 – ORGANIZATIONAL STRUCTURE/CHAIN OF COMMAND AND STAFFING**

- 4-1** The Town of Berlin should take steps to streamline the oversight and direction of the Berlin Fire Department by abolishing the Board of Fire Engineers and place control, direction, and supervision, of the fire department under the control of the Board of Selectmen the same as the other town emergency services. It is our belief that as configured the BOFE does not provide the appropriate level of checks and balances to properly and transparently oversee the operations of a 21<sup>st</sup> century fire department.
- 4-2** Managing, administering, and leading, a modern day fire department requires a complex set of knowledge, skills, abilities, training, and experience. As a result, the Town of Berlin should maintain the position of fire chief as a full-time, career position as is proposed to take effect July 1, 2015. This chief should be a working chief, that is, one who responds to most emergency incidents and takes an active, hands on role in incident mitigation. In conjunction with the current chief, they should begin a succession planning process to begin looking toward the future and the changes that will bring to the department.
- 4-3** The position of full-time, career fire chief, although reporting to the Board of Selectmen should be designated a “strong” fire chief. In order for the town to attract and retain a high quality chief he/she must have a significant level of autonomy to lead and manage the department, including at times making unpopular decisions, without undue political influence, or even meddling, as may be more inclined to occur with a “weak” chief who would be more susceptible to these pressures. The town and the chief should negotiate a strong personal services contract to ensure that the interests of both parties are properly addressed and protected.
- 4-4** As will be developed in more detail in Chapter 12, *Conclusions and Fire/Rescue/EMS Service Delivery Options*, it is our opinion that the town will need to revise the department’s overall table of organization to clearly delineate the chain of command and make it more effective particularly if the fire department and rescue squad are merged into a single department.
- 4-5** The salary for the full-time, career fire chief should be increased to make the salary competitive with other communities in the area and other similar sized communities AND to make it attractive to recruit and retain a high quality candidate to serve as the town’s next fire chief.
- 4-6** Prior to the retirement of the current chief, and possibly utilizing the services of a professional consulting firm, through a variety of evaluative and assessment measures the town should attempt to select for their next chief a leader who possesses the ideal

combination of assets they have identified as necessary to meet the unique needs of the Berlin Fire Department to lead it through this critical transition process.

- 4-7 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.**
- 4-8 All officers should have one or more administrative duties/responsibilities to assist the fire chief with the department's overall management, in addition to their normal emergency scene operational duties and station management responsibilities.**
- 4-9 As part of the succession planning process, the next fire chief should work to implement a career development program to insure that all officers can perform their superior's duties, as well as, identify the core future leaders of the department.**
- 4-10 The Berlin Fire Department 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.**
- 4-11 The Berlin Fire Department should make it a priority to develop an active on-call recruitment program led by a call chief officer. At a minimum, this program should concentrate on recruiting personnel from within Berlin and consist of:**
  - **Developing a recruitment brochure and mailing it to all residents,**
  - **Performing public outreach through the local media,**
  - **Contacting community and service groups,**
  - **Developing an eye catching banner on the town's web site,**
  - **Placing signs recruiting call/volunteer personnel at the main entrances to town,**
  - **Placing signs call/recruiting volunteer in local businesses particularly high volume locations; and**
  - **an active and visible presence at the local high school.**

Although time consuming, consideration should also be given to conducting a door-to-door recruitment campaign of every residence in the town. Increasing the number of personnel in the department should result in an enhancement of the number of personnel responding to incidents.

- 4-12 In conjunction with neighboring towns such as Bolton, Boylston, Clinton, Hudson, Northborough, and perhaps other interested local communities, the Town of Berlin**

and Berlin Fire Department should give consideration to hiring a call/volunteer “Recruitment and Retention Coordinator” to develop, implement and coordinate recruitment and retention efforts and programs for the cooperating communities.

- 4-13 The Town of Berlin and the Berlin Fire Department should attempt to enter into partnerships with local businesses to allow their personnel to respond, when needed, to emergency incidents during working hours, without any financial penalty.
- 4-14 The Town of Berlin should give consideration to hiring two full-time career firefighters who along with the fire chief would provide a three person crew to insure guaranteed, timely, and qualified, response to day time emergency incidents and augment staffing at the time when most call members are least available to respond. With three personnel available for immediate response, perhaps supplemented by an available call firefighter to bring the crew size to four the department would much more frequently comply with the initial fire attack requirements recommended by NFPA, and required by OSHA.

**NOTE:** This recommendation will be more fully developed in Chapter 12, *Conclusions and Future Fire/Rescue/EMS Service Delivery Options*.

- 4-15 The Town of Berlin and Berlin Fire Department should give consideration to implementing a duty crew system whereby the department will be divided into two or three duty crews. Utilizing their own separate dispatch tone the duty crew would be dispatched to minor incidents reducing the need for the entire department to respond.

Under the duty crew system the entire department would be dispatched and respond to potentially serious incidents such as any type of reported fire, rescue incidents, etc.

- 4-16 The Berlin Fire Department should work to develop statistics that indicate the frequency with which the department is able to comply with the requirements of NFPA 1720, and also, the average number of call personnel who respond to each incident. These statistics should be further broken down by weekday daytime (normal working hours 7:00 AM to 6:00 PM), weekday night time (6:00 PM to 7:00 AM) and weekends.
- 4-17 As primarily call organizations where personnel respond from various locations upon receipt of an emergency incident dispatch, both the Berlin Fire Department, and Berlin Rescue Squad, should purchase, and implement, a system to track members who are responding to the incident such as the “*I Am Responding*” system.

## **CHAPTER 5 – FIRE DEPARTMENT OPERATIONS**

- 5-1** The Berlin Fire Department should work with the Berlin Police Department dispatch to insure that all incidents that occur in Berlin are being recorded so that data and statistics are consistent with regard to numbers from both entities. They should also work collaboratively to develop consistent response time statistics to determine compliance with the provisions of NFPA 1720.
- 5-2** The department should establish a formal pre-incident planning program with the goal of having an up to date pre-plan for every business and commercial occupancy (including schools, churches, etc.). The purpose of a pre-incident planning program is to develop a fire/emergency response plan for buildings in the town. A pre-fire/incident plan includes data such as the occupancy type, floor plans, construction type, hazards to firefighting, special conditions in the building, apparatus placement plan, water supply plan, and forcible entry and ventilation plan. Pre-planning will improve the firefighter knowledge of the specific tactics needed to handle a fire or other emergency at a facility and will alert them to on-site hazards and risks. Pre-fire/incident plans should be reviewed regularly and tested by periodic table-top exercises and on-site drills. It is recommended they utilize a cloud based system that utilizes iPad in apparatus and other vehicles to enhance response capability by providing the information for use enroute to an incident and while on scene.
- 5-3** When there is a report of a structure fire, or smoke in a structure, a full structural response should be automatically initiated. This would include the immediate, and automatic, response of several departments. Although cultural resistance should be expected, this is a common and successful practice employed in a number of smaller communities that have limited response capabilities.
- 5-4** In consultation and cooperation with its neighboring departments, the Berlin Fire Department should enter into automatic aid agreements that specifies the number and types of resources that should be dispatched to various types of reported emergencies. While the recommendations contained in this report can be adjusted/revised based upon a risk management process or pre-fire/incident plan, these processes take time. In the interim, we recommend that additional resources be dispatched to structural fire and emergency incidents.
- 5-5** Although more stringent than the requirements found in Table 4.3.2 of NFPA 1720 for rural communities, through the utilization of automatic mutual aid agreements with neighboring communities, the Berlin Fire Department should attempt to achieve a goal of having a minimum of 16 personnel on the scene of any reported structure fire within 14 minutes or less.

- 5-6** The Town of Berlin and Berlin Fire Department should attempt to significantly improve its initial unit on scene response times.
- 5-7** The Berlin Fire Department should enhance its excellent safety culture and emphasis through the establishment of a formal fireground/incident safety officer program. All department officers should receive safety officer training, obtain safety officer certification, and an operational procedure should be implemented that results in a guaranteed response of at least one (preferably two) additional chief officer on every working/all hands incident.
- 5-8** The Berlin Fire Department and Berlin Police Department dispatch center should work closely together to ensure that the dispatch procedure that if the department is dispatched to an emergency incident, and has not responded after three tones and/or within four minutes, that mutual aid is automatically requested. Berlin should continue to be dispatched again, simultaneously; however, mutual aid resources will be on their way to the incident.
- 5-9** In acknowledgement of the fact that they frequently operate in a minimal staffing mode, the Berlin Fire Department should equip all of their apparatus, and develop standardized tactical operations that will enable them to quickly develop, and place in service, high volume fire flows of at least 1200 to 1500 gallons per minute (if the water supply will permit this), utilizing multiple lines/devices. This flow should be able to be developed within three to five minutes after arrival of an engine, or quint, staffed with three or four personnel.
- 5-10** The Berlin Fire Department should acquire an SUV for use by the department's chief officers as a command vehicle to facilitate more effective, efficient, and safe, incident management/command operations on all types of emergency incidents, and allow the establishment of formal command posts on the scene.



Figure 5-12: ICS command module in rear of vehicle to assist the chief with properly managing the incident.

- 5-11** The Town of Berlin is encouraged to fully enforce its bylaw requiring the installation of residential sprinkler systems, or a fire water supply cistern, in any new development consisting of three or more homes. We also encourage the town to seek any and all legal and practical remedies to retroactively require compliance for developments which were approved/ completed subsequent to the effective date but have still been occupied without the installation of these approved fire and life safety systems.
- 5-12** Once a number of the key recommendations found in this report are implemented, Berlin should request that ISO conduct an updated evaluation of the town, and its fire department, for the purpose of lowering the rating resulting in lowered insurance premiums for certain residents and businesses.

## **CHAPTER 6 – ORGANIZATIONAL COMMUNICATIONS**

**6-1 The Berlin Fire Department should form a committee to perform a review and update of the department's rules and regulations. This document, which could be further enhanced as suggested below, should then be submitted for approval by the Board of Selectmen, and then be distributed to, and signed for by each member of the department. It could then provide an orientation overview, and indoctrination to the department's behavioral expectations for new personnel. Some additional suggested sections for the Rules and Regulations could include, but are by no means limited to:**

- **A preamble**
- **The department's mission statement**
- **Objectives of the department**
- **Purpose of the rules and regulations**
- **Organization**
- **Conflicts between department documents (state statutes, town policy, rules and regulations, operational procedures, general orders)**

**6-2 The Berlin Fire Department should form a committee to begin development of a comprehensive department standard operations procedures or guidelines (SOP/SOG) manual starting with mission critical procedures such as, but not limited to, basic engine company and truck company operations, dwelling fires, commercial structures, rapid intervention team operations, rural water supply/tender operations, personnel accountability, gas leaks, hazardous materials incidents, ice rescue, vehicle extrication operations, and thermal imaging camera and automatic external defibrillator use.**

**If necessary, outside professional assistance is available to assist with facilitating this endeavor.**

**The first operational procedure should identify and explain the components of the written communications system, including the use and organization of the SOP manual, and other components of the system such as standardized forms. This procedure should also contain a provision that the entire SOP manual will be reviewed on at least an annual basis and that updates and revisions can/will be made at any time, as necessary. All procedures/revisions should be approved and issued after being signed by the fire chief.**

**6-3 The Berlin Fire Department should adopt a standardized SOP/SOG form that includes the following information:**

- **Title of the SOP/SOG**
- **Number of the SOP/SOG**

- Category of the SOP/SOG (EMS, Operations, Training, Administration, etc.)
- Page number and total number of pages
- Effective date
- Revision date (if applicable)
- Approval/signature of the fire chief

If a procedure is re-issued with only minor to moderate revisions, it can carry the original issue date with the revision date also noted. Revisions from the previous version should be identified by some means within the revised document. Full-scale revisions to a procedure should result in it being reissued with a new issue date.

Each SOP/SOG should, at a minimum, contain the following sections:

- Purpose
- Scope (If necessary and/or appropriate)
- Definitions of terms (If necessary and/or appropriate)
- Procedure(s)/Main body
- References (If necessary and/or appropriate)

- 6-4** The Berlin Fire Department should institute a process for issuing general orders, which are directives and/or special instructions that cover various facets of department operations, but can be quickly issued as needed. They may cover a particular period of time regarding a special situation, or may provide a temporary procedure pending development and issue of a full operational procedure.

Also included in the system should be training bulletins that would be issued to serve as reference with regard to tested and approved methods of performing tasks; safety bulletins, that are issued to serve as references with regard to general and specific safety and health issues; and informational bulletins, or memorandums, that are published for the general knowledge of recipients such as temporary street closures, hydrants out of service, community events, etc. A numbering system should be implemented to keep track of these documents for indexing and future reference purposes.

- 6-5** The Berlin Fire Department should develop an effective system for ensuring that any new standard operating procedures, general orders, training bulletins, safety bulletins, and informational bulletins are distributed to all personnel and stations. Electronic communications is highly recommended as the method of choice for distributing departmental communications and documents. All department policies and procedures should be posted on the department intranet, and all personnel

should be required to review this information. All revisions should be e-mailed to each member and then posted on the intranet.

- 6-6 In order to improve overall intra-departmental communications, the Town of Berlin should provide all members of the Berlin Fire Department with a town e-mail account. This e-mail account should be considered the department's only official form of communications.
- 6-7 The Berlin Fire Department should develop, and implement, a procedure that provides for the documented review of policies, procedures, general orders, training and/or safety bulletins, etc. that includes a provision requiring each member of the department to sign that they received the document, have read it, and understand it.
- 6-8 The Berlin Fire Department should develop a comprehensive respiratory protection plan in accordance with 29 CFR 1910.134, and a blood borne pathogens/exposure control plan in accordance with 29 CFR 1910.1030. Appropriate SOPs that implement various components of these plans should also be developed. Annual training as required should be provided to all personnel.
- 6-9 In order to facilitate improved intra-departmental communications the Berlin Fire Department should hold periodic department meetings. At a minimum these meetings should be held twice per year (quarterly would probably be better) to provide members with a forum to be provided with departmental updates, discuss pertinent issues, provide suggestions and feedback to the officers, and assist with the formulation of organizational goals and objectives.

## **CHAPTER 7 – TRAINING AND PROFESSIONAL DEVELOPMENT**

- 7-1 The Berlin Fire Department should continue to periodically conduct formal training needs evaluations and assessments for the purpose of determining training program priorities, and to ensure that the current program continues to meet the department's operational needs.
- 7-2 To the extent possible, training should be delivered and/or conducted utilizing formal, standardized lesson plans that include objectives and performance criterion. However, when this is not possible, or practical (a frequent occurrence in the fire service), a detailed description of the training should be included in the narrative section of the training report.

- 7-3 The Berlin Fire Department should give consideration to developing an annual schedule of training that increases the monthly training schedule from two drills per month to three in order to further enhance an already very good program. The Town of Berlin should make it a fiscal priority to provide sufficient incentive funding stipends for personnel to participate in additional monthly training.
- 7-4 Additional, high intensity training on various subjects, including periodic live fire training, should be conducted on a quarterly, or semi-annual, basis at a formal fire academy where appropriate training facilities, structures, and props are available.
- 7-5 The Berlin Fire Department should implement periodic basic skills proficiency evaluations for ALL personnel. These proficiency evaluations, consisting of standardized evolutions, can be based upon recognized standards and benchmarks, in conjunction with performance criterion, and benchmarks, established through evaluation of, and based upon, Berlin Fire Department operations and procedures.
- 7-6 In order to assist with the large amount of training that needs to be done, and in recognition of their important role in the delivery of training and the success of the program, the Berlin Fire Department should provide fire instructor training for any additional members of the department, who wish to take it. All officers should be formally certified at a minimum of Fire Instructor Level I.
- 7-7 The Berlin Fire Department should insure that all department members are trained/certified to the minimal NIMS level required for their duties/responsibilities and ranks. The department should also further enhance the level of incident management training provided to the members of the department. In addition to the basic I-100/I-700 training mandated, it is our recommendation that all personnel be trained to the ICS-200 level. All officers should be trained to the ICS-300 level. All chief level officers should be trained to the ICS-400 level.

**NOTE:** While outside the scope of this study, the Town of Berlin should conduct an internal, town wide assessment to determine current compliance with NIMS training requirements for all town employees and elected officials.

- 7-8 The Berlin Fire Department should strongly encourage its officers to obtain a certain level of fire officer certification as a position requirement such as Fire Officer I for lieutenant, Fire Officer II for captain, Fire Officer III for deputy/assistant fire chief, and Fire Officer Level IV for fire chief.
- 7-9 The department should require that all officers be certified as Incident Safety Officers. Additional personnel who may be interested should be encouraged to take this training and obtain this important firefighter safety certification.

- 7-10 The Berlin Fire Department should continue to encourage personnel to seek additional training on their own, and to the financial and practical extent possible, send personnel to outside training opportunities such as the Firehouse Expo in Baltimore, and the Fire Department Instructors Conference in Indianapolis. Information gained at this training can then be brought back and delivered to other members of the department.
- 7-11 The Berlin Fire Department should make an effort to send some of its officers to the National Fire Academy, particularly the Volunteer Incentive Program (VIP). The training officer should be enrolled in the Academy's *Management of Training Programs* course. The fire prevention officer should attend courses on fire prevention. As with any and all outside training, training reports should be completed and copies of certificates placed in the personnel and training files.
- 7-12 The Berlin Fire Department should seek annual funding in the training budget to enhance, and upgrade as necessary, its training resources such as manuals, DVDs, and subscriptions to other available training resources.
- 7-13 The Berlin Fire Department should, as part of its written communications system, should develop Training Bulletins, which would be issued to serve as reference with regard to tested and approved methods of performing various tasks, and Safety Bulletins, which should be issued to serve as references with regard to general and specific safety and health issues.

## **CHAPTER 8 – FIRE PREVENTION**

- 8-1 The Town of Berlin and Berlin Fire Department's emphasis on fire inspection and code compliance should be increased. This is supported based on the abnormally high incidence, and loss, from structure fires, and the relatively low number of inspections performed by the fire department.
- 8-2 The Berlin Fire Department should consult with the Massachusetts Department of Fire Services to analyze the town's incident history and trends, and obtain assistance with identifying occupancies that are most at risk.
- 8-3 The Berlin Fire Department should utilize the resources and assistance of the Code Compliance Division in the Massachusetts Department of Fire Services to assist in increasing the level of community interaction and code compliance activities related to fire prevention.

- 8-4 The Town of Berlin and Berlin Fire Department should provide a sufficient number of personnel who are dedicated to fire prevention activities in order to insure that all necessary fire prevention activities including mandated inspections are completed at the required intervals, and allow the operation of a comprehensive, multi-faceted fire prevention program that includes periodic inspections (preferably on an annual basis) of all commercial/business occupancies, and ongoing public fire education activities throughout the year. Increasing the number of inspections conducted should bring increased revenue to offset expenses.
- 8-5 The Town of Berlin should revise the fire inspector's compensation system and/or agreement, as soon as possible, from the current one where he receives 95% of permit revenue to a standard salary, or hourly rate, predicated upon the number of hours that he works each week.
- 8-6 The department should continue to support and promote training and professional development activities for the any personnel who are interested and can actively participate in the fire prevention and fire inspection areas. This can includes, among other endeavors, attendance at the Fire Prevention Association of Massachusetts, and Massachusetts Firefighting Academy. Certification at the Fire Inspector I and Fire Inspector II levels should be required for the fire prevention personnel, and the career fire chief, should the town decide to create that position. Any additional full-time personnel should be required to possess/obtain a Fire Inspector I and II certification as a condition of employment. Call personnel should be encouraged to obtain this training/certification as well. If the chief is full-time, he/she should also be required to attend fire prevention and management courses at the National Fire Academy.
- 8-7 The department should hire a clerical person that is assigned at least part-time (approximately 15 to 20 hours per week) to the fire prevention program. The person filling this position would be responsible for among other duties, administering a permit management system, scheduling fire inspections, filing, and other related duties, such as performing hazardous materials response and false fire alarm billing.

*NOTE: While this person should be dedicated part-time to assist with the fire prevention program and general fire department duties, in conjunction with other recommendations made in police report, we ultimately recommend that the clerical position be a full-time position shared by the police and fire departments.*

- 8-8 Should the Town of Berlin decide to hire additional full-time, career personnel, the department should establish a formal in-service fire safety inspection program. The on-duty personnel can be assigned with the responsibility for "in-service" inspections to identify and mitigate fire hazards in buildings, and to familiarize firefighters with the layout of buildings, identify risks that may be encountered during firefighting

operations, and to develop pre-fire plans. On-duty personnel in many departments are assigned responsibility for permit inspections and public fire safety education activities.

**8-9 The department should develop, and maintain, statistics concerning fire prevention and inspection activities and produce an annual report that includes the following:**

- **Number of inspections by occupancy type**
- **Number of permits by type**
- **Revenues**
- **Number of plan reviews by occupancy type**
- **Number of acceptance tests observed/monitored by type of inspection**
- **Number of in-service inspections by occupancy type**
- **Public fire education activities**

**8-10 The Berlin Fire Department should acquire some type of mobile computers (laptops, tablets, etc.) along with printers, for use by all personnel conducting field inspections. In this way once the inspection is completed the inspection report can be completed on the computer, an inspection report and/or other appropriate documentation, certificates, etc. can be printed out and given to the facility/building representative. Once personnel return to the station, the inspection reports can be uploaded into the main database. The inspection system and associated data base(s) should be cloud based systems that integrate with the rest of the department's records management system.**

**8-11 The Berlin Fire Department should continue to update its website on a regular basis to provide its customers, and other interested parties, as much information as possible on fire safety, fire prevention, and the department as a whole. The department should also work actively to make on-line permitting, inspection scheduling, etc. a reality.**

**8-12 The Berlin Fire Department should continue to maintain and enhance its library of fire prevention reference materials, including continuing to maintain its online subscriptions such as NFPA and its professional subscriptions.**

**8-13 The Berlin Fire Department should continue its year round public fire safety education programs, in the schools, and throughout the community. Personnel should be encouraged to obtain the Fire and Life Safety Educator certification issued by the state fire marshal's office.**

## **CHAPTER 9 – RESCUE SQUAD OPERATIONS**

**9-1 With a current roster of 38 members, an organizational structure that includes just one formal officer is completely inadequate from a number of different perspectives. It is our recommendation that the Board of Selectmen adopt the revised organizational structure proposed for the Berlin Rescue Squad. The creation of the position of deputy chief will provide the organization with another qualified, chief level, officer to assist the chief with the management of the organization, and delineates a formal second in command. The creation of the position of captain will provide much needed increased supervision of the members of the squad.**

**We do, however, recommend that this new organizational chart, and the personnel appointed to fill the new positions, be provisional pending a final decision by the town whether to merge fire and rescue into a single entity.**

**9-2 All officer positions should be filled based upon the person's rescue/emergency medical 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.**

**9-3 All officers should have one or more administrative duties/responsibilities to assist the rescue chief with the department's overall management, in addition to, their normal emergency scene operational duties and station management responsibilities**

**9-4 The Town of Berlin, in coordination with the Berlin Rescue Squad, and Berlin Fire Department, needs to take immediate, definitive steps to reduce the number of times that the rescue squad is unable to provide sufficient staffing to handle incidents which they are dispatched to. Short-term fixes that could be considered while longer-term solutions are developed include, but would certainly not be limited to:**

- Simultaneously dispatching the Berlin Fire Department to EMS incidents, particularly those that meet the criterion for immediate dispatch of an ALS unit. This will provide an additional potential pool of responders including a number of additional EMTs.**
- Consider the implementation of compensated, in station duty crews, during the daytime and evening hours.**

**9-5 In order for the Berlin Rescue Squad to continue to be able to provide service to the community if there are simultaneous or overlapping incidents, multiple patients from a single incident, or when the ambulance is out of service for maintenance or repair, a 2<sup>nd</sup> ambulance should be added to the fleet. With the current ambulance about five**

years old and still in very good condition, we recommend that the town include funding for the purchase of a new ambulance in the FY 2017 capital budget for town meeting. By the time this new ambulance is delivered the current vehicle will be eight years old and can be moved back into the role of a reliable second unit.

**9-6** The MRI study team recommends that the town take advantage, if possible, of the fire apparatus and ambulance group purchasing system that is sponsored by the Fire Chiefs Association of Massachusetts (FCAM) and the Metropolitan Area Planning Council (MAPC). Municipalities may select a specific design and manufacturer from a pre-determined bid list and are not required to establish their own bid process. It is estimated that this group purchasing system will save approximately five to ten percent of the cost of a fire truck or ambulance (see [www.mapc.org](http://www.mapc.org)).

**9-7** As required by Commonwealth of Massachusetts law, and with advice of their legal counsel, the Board of Selectmen should review the increased ambulance billing rates that took effect in August 2014, and at a minimum, take an appropriate formal vote to approve them.

Alternately, the town should evaluate the current rate structure to determine if it is in their best interests to maintain the very high rates currently in effect.

**9-8** In conjunction with its EMS billing contractor and the town's legal counsel, the Town of Berlin should take whatever legal actions are permitted to aggressively pursue collection of ambulance bills.

**9-9** The Town of Berlin should consider the adoption of a bylaw that would allow the billing of patients whom an ambulance was requested for but are ultimately not transported to the hospital. A nominal fee of around \$100.00 would be appropriate to help offset the expenses associated with that response.

**9-10** The Town of Berlin should seek the advice of its legal counsel to determine what, if any, legal liabilities the town is exposed to by virtue of the apparently unapproved "Ambulance Agreement" executed in 1999 between the rescue squad chief and the Marlborough fire chief. Even though this agreement appears to have long ago "expired" the reality is that, in practice, it is still in full force and effect.

**9-11** The Town of Berlin should seek advice from its legal counsel regarding any potential liability to the town regarding emergency services in the community being provided through standing protocol by other agencies without formal, legally binding, agreements being negotiated by authorized representatives, and approved, by the respective governing bodies.

- 9-12 The Berlin Rescue Squad should provide the dispatch center with up to date written dispatch procedures and protocols for them to follow.
- 9-13 The Berlin Fire Department and Berlin Rescue Squad should train together on a regular, basis, particularly with regard to vehicle extrication operations.
- 9-14 The Berlin Rescue Squad, and Berlin Fire Department, should develop a joint fire/rescue matrix that focuses on developing a singular team approach to the extrication process. Emphasis should be placed on training, patient protection, and coordination of effort.
- 9-15 The officers of the Berlin Fire Department, and the Berlin Rescue Squad, should meet on a regular basis to discuss their respective operations, and ensure, that a functional unified command structure is being utilized on every incident where both agencies are operating together.
- 9-16 As primarily call organizations where personnel respond from various locations upon receipt of an emergency incident dispatch, both the Berlin Fire Department, and Berlin Rescue Squad, should purchase, and implement, a system to track members who are responding to the incident such as the *"I Am Responding"* system.
- 9-17 Working in conjunction with the police department and the town's IT provider, the fire department, and rescue squad, should explore options for replacing the current Pamet records management system with one that better serves the unique needs of the community's public safety departments. Should this occur all fire department and rescue squad operations should be transitioned to use one database system to capture, store, and analyze data currently in different systems. Working with the IT provider, they should explore a customizable, software solution that addresses all fire department and rescue squad needs.

## **CHAPTER 10 – BUDGETING, FISCAL MANAGEMENT, AND GRANTS**

- 10-1 The fire department should discontinue the acceptance of cash for inspection and permit fees.
- 10-2 The Town of Berlin should consider increasing the existing administrative penalties for repeat false fire alarm activations, and aggressively target problem systems with enforcement actions.
- 10-3 The town should review all fees on an annual basis for possible increases in accordance with state law.
- 10-4 The Town of Berlin should explore additional potential ways to generate revenue to offset the fire department and rescue squad's operating costs. Consideration could be

given to billing insurance companies for response to motor vehicle accidents; registration fees for fire alarm systems; the aggressive pursuit of non-residents who have been billed for ambulance transportation; and the implementation of a fee for ambulance responses that do not result in a transport.

- 10-13** The fire department (and rescue squad) should identify and prioritize its most critical equipment, training and/or operational needs, and continue to apply annually to the Assistance to Firefighters Grant (AFG) program.
- 10-14** During the 2015 AFG application period which will open later this year the fire department should apply for a grant for \$750,000.00 to purchase a “quint” that has a 75’ aerial ladder and is also configured to function as a fire pumper. The procurement of the “quint” should be funded at the fiscal year 2016 town meeting. If the AFG grant application is successful, then the FY 2016 capital project can be cancelled.
- 10-15** The Berlin Fire Department and Berlin Rescue Squad should jointly apply for a federal SAFER grant in 2015 for on call recruitment and retention. This grant should be utilized to develop a marketing program to attract new members, and provide incentives for call personnel to remain with the organizations and stay active such as tuition reimbursement, health care benefits, etc.
- 10-16** The fire department should prioritize its fire prevention and public fire education needs and apply annually to the Fire Prevention and Safety Grant (FP&SG) program.
- 10-17** The fire department, the rescue squad, and the town should actively 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.
- 10-18** The fire department and the rescue 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.
- 10-19** The Berlin Fire Department and Berlin Rescue Squad should establish a 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. As such, we have removed some of these items from the capital budget and recommend they be included in the normal annual equipment budget line item. For instance, the hose and ladders on one vehicle can be replaced in the next 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.

## **CHAPTER 11 – COMMUNICATIONS AND TECHNOLOGY**

- 11-1** The Town of Berlin should continue to explore options to join a regional emergency communications center (RECC) either in partnership with Bolton or joining the Nashoba Valley Regional Dispatch District. Any joint endeavor should give serious consideration to a situation where there is more than one dispatcher on duty at a time. Not only will this increase safety for the dispatchers it will also improve the level of service available, particularly the critical ability to provide potentially lifesaving EMD instructions to the caller something that may not currently be possible. With two dispatchers on one can continue to provide lifesaving instructions while the other dispatches needed units, handles additional calls that may be coming in, and coordinates communications with responding emergency units.
- 11-2** As part of any potential move to a RECC, the Town of Berlin should perform a cost benefit analysis of whether it would be beneficial for them to switch the current UHF system which has significant expansion and modification restrictions applied by the FCC, to another frequency band for their emergency communications.
- 11-3** The Berlin Rescue Squad should provide the dispatch center with written dispatch procedures and protocols for them to follow.
- 11-4** The Berlin Fire Department should establish a written policy for dispatch and response that their response can be cancelled after dispatch, but prior to their arrival on scene, by a qualified emergency responder who has evaluated the situation. Examples of situations where this may be appropriate include fire alarm responses to the Solomon Pond Mall, or a motor vehicle accident that was originally reported as involving injuries but upon arrival of the police was determined to be a minor fender bender.
- 11-5** As primarily call organizations where personnel respond from various locations upon receipt of an emergency incident dispatch, both the Berlin Fire Department and Berlin Rescue Squad should purchase and implement a system to track members who are responding to the incident such as the *"I Am Responding"* system.
- 11-6** Working in conjunction with the police department and the town's IT provider, the fire department, and rescue squad, should explore options for replacing the current Pamet records management system with one that better serves the unique needs of the community's public safety departments. Should this occur all fire department and rescue squad operations should be transitioned to use one database system to capture, store, and analyze, data currently in different systems. Working with the IT

provider, they should explore a customizable, software solution that addresses all fire department and rescue squad needs.

- 11-7** The MRI study team recommends that the Berlin Fire Department and Berlin Rescue Squad develop a plan to install mobile data terminals (MDTs) in all fire apparatus and rescue vehicles. In developing the MDT plan, consideration should be given to evaluating the latest technologies and software, including the use of tablets or iPads, rather than laptop computers. At a minimum, the incident commander at a scene should have access to fire pre-plan data, building permit data (building plans and current data about renovation and construction projects), real-time weather data, and hazardous materials data.
- 11-8** In conjunction with the recommendation for the installation of MDTs the Berlin Fire Department and Berlin Rescue Squad should explore possible uses for GIS technology to enhance the operations of their respective agencies.
- 11-9** The Berlin Fire Department and Berlin Rescue Squad should continue to place an important emphasis on evaluating new technology for use on emergency incidents particularly when it pertains to firefighter/member safety or patient care.

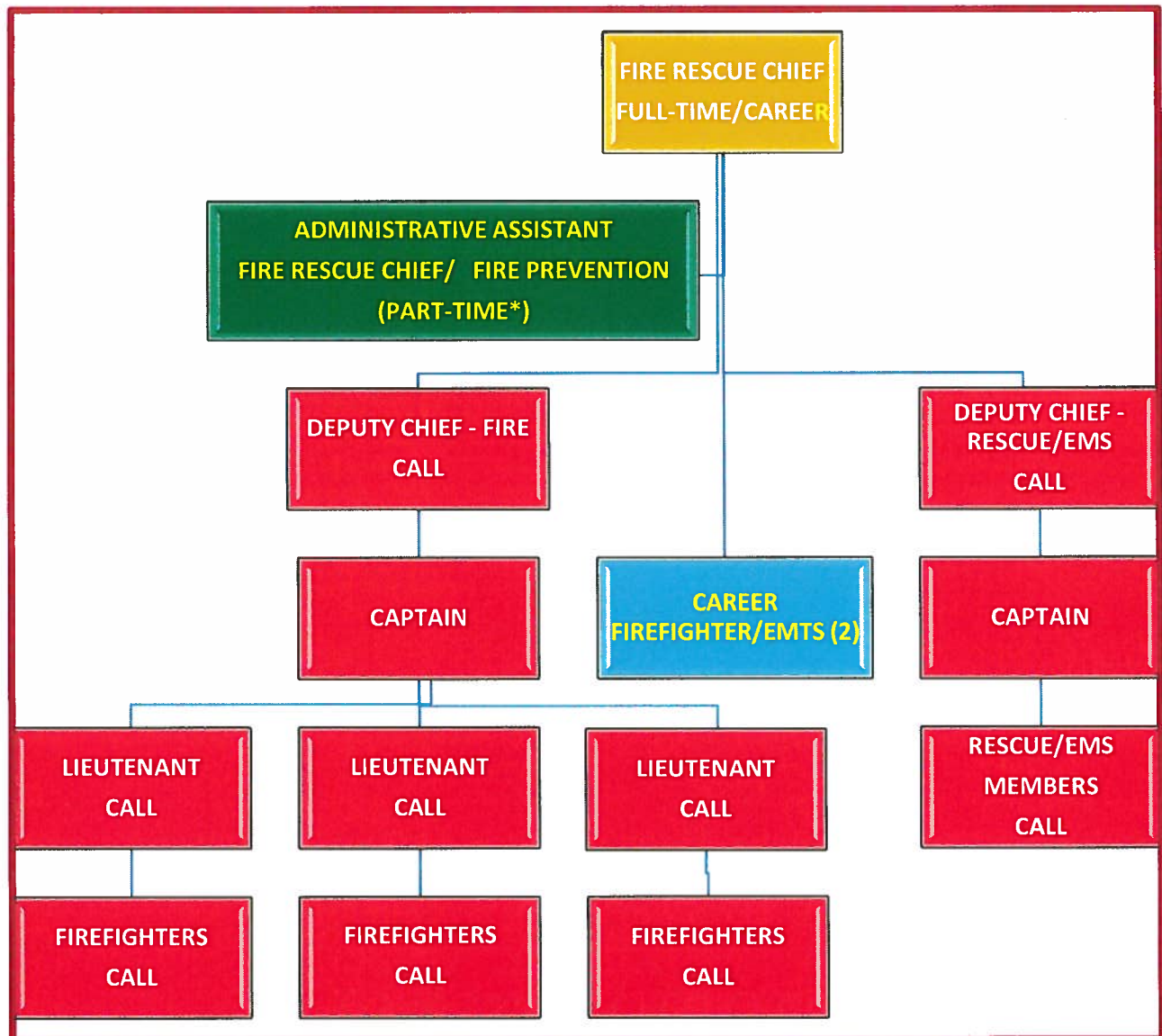
## **CHAPTER 12 – CONCLUSIONS AND FUTURE FIRE/RESCUE/EMS SERVICE DELIVERY OPTIONS**

- 12-1** Berlin should enter into discussions with the municipal administrations, and fire department leaderships of the adjacent communities of Hudson, Bolton, Boylston, Clinton, and Northborough for the purposes of identifying additional opportunities for shared services, and long-term, explore the feasibility of a more regional approach to fire protection and EMS delivery systems.
- 12-2** The Town of Berlin should dissolve the existing Berlin Fire Department, and Berlin Rescue Squads, and through a merger of equals create a new Berlin Fire Rescue Department.
- 12-3** Managing, administering and leading a modern day fire department requires a complex set of knowledge, skills, abilities, training, and experience. As a result, the Town of Berlin should maintain the position of fire rescue chief as a full-time, career position as is proposed to take effect July 1, 2015. This chief should be a working chief, that is, one who responds to most emergency incidents and takes an active, hands on, role in incident mitigation. In conjunction with the current chiefs, they should begin a succession planning process to begin looking toward the future and the changes that will bring to the new department.

- 12-4** The Town of Berlin should create an overall table of organization for the new Berlin Fire Rescue Department to clearly delineate the chain of command and make it more effective.
- 12-5** In order to stress the fact that the Berlin Fire Rescue Department remains primarily a call department, possibly supplemented by a small career staff, the department's 2<sup>nd</sup> tier positions should remain call positions and be equally divided between fire and rescue/EMS.
- 12-6** The Town of Berlin should give consideration to hiring two full-time career firefighter/EMTs who along with the fire rescue chief would provide a three person crew to insure guaranteed, timely, and qualified, response to day time emergency incidents. With three personnel available for immediate response, perhaps supplemented by an available call firefighter to bring the crew size to four the department would much more frequently comply with the initial fire attack requirements recommended by NFPA, and required by OSHA.
- 12-7** The Berlin Fire Rescue Department 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.
- 12-8** The Town of Berlin and the Berlin Fire Rescue Department should attempt to enter into partnerships with local businesses to allow their personnel to respond, when needed, to emergency incidents during working hours, without any financial penalty.
- 12-9** The Town of Berlin and Berlin Fire Rescue Department should give consideration to implementing a duty crew system whereby the department will be divided into two or three duty crews. Utilizing their own separate dispatch tone the duty crew would be dispatched to minor incidents reducing the need for the entire department to respond.
- Under the duty crew system the entire department would be dispatched and respond to potentially serious incidents such as any type of reported fire, rescue incidents, etc.

The following chart depicts the proposed table of organizational that includes the recommendations set forth in recommendations 12-3 through 12-6.

## PROPOSED BERLIN FIRE RESCUE TABLE OF ORGANIZATION



\* This position is proposed as part-time for the fire rescue department. However, since a similar position is recommended for the police department we believe the two departments can share one person making the position full-time.

NOTE: The two (2) career firefighter/EMTs recommended in this report would fit into the chain of command at the same level as other firefighters within the department for on scene operations. However, administratively during the day when they are working they would report directly to, and be assigned duties by, the fire chief.

Figure 12-2

## **CHAPTER 15**

### **THE PROJECT TEAM**

#### **PROJECT MANAGER**

**Alan S. Gould, Vice President and Chief Operating Officer**, is a graduate of Saint Anselm College with a BS degree in Criminal Justice. He is certified as a Public Manager by the American Academy of Certified Public Managers and has completed numerous management and leadership programs including the Babson Command Training Institute and the FBI's LEEDS program. He is recognized for his creativity in community policing and his leadership in promoting ethics in the law enforcement community. Mr. Gould began his public sector career with the Salem, NH, Police Department where, during 21 years, he served at all ranks of the Department. He served as Chief of Police in Rye, NH, where, upon retirement from law enforcement, he was appointed and served as Town Administrator until joining MRI in 2008. Mr. Gould served as the Ethics Instructor at the New Hampshire Police Academy for 15 years and has been an instructor of college courses in Criminal Code, Criminal Investigation, Report Writing, Constitutional Law, and Juvenile Delinquency. Among his many community involvements, Alan served as an initial incorporator of two non-profit organizations; one addressing family violence and visitation issues, and the other established to help seniors remain in their homes as they age. He continues to serve as Deputy Emergency Management Director in the coastal community of Rye, NH, located within the Seabrook Nuclear Power Plant's Emergency Planning Zone. In addition to his responsibilities as MRI's Chief Operating Officer, Mr. Gould manages most of the company's public safety projects including operational studies and "internal" investigations. Mr. Gould also specializes in recruitment/selection processes for executive level municipal positions and has completed dozens of processes for top management positions throughout New England.

#### **TEAM MEMBERS**

**Peter J. Finley, Jr.** most recently served as Chief of the Winslow Township Fire Department in New Jersey, where he was responsible for the planning, establishment, and initial deployment of the career component of the department. He previously served for 4 ½ years as the Chief of Department for the City of Vineland, New Jersey Fire Department where he initiated significant changes within the department including updating and modernizing equipment, providing the department's first ever formal officer training, and significantly increasing the capabilities of the regional hazardous materials response team. During his tenure, the department received more than one million dollars in various grants. He formerly commanded the Vineland Rescue Squad gaining significant EMS operations and command experience, as well as completing an overhaul of that organization's operations. Chief Finley serves as an Adjunct Professor in the Fire Science Program at Camden County College. Chief Finley received his Associate in Applied Science

degree from Atlantic Community College in New Jersey, and earned his Bachelor of Science degree in Fire Science/Administration from the University of Maryland. He is a graduate of the National Fire Academy's Executive Fire Officer Program, earning perfect scores on three of his four Applied Research Projects. He was awarded an Outstanding Research Award for his 2002 paper titled, "Residential Fire Alarm Systems: The Verification and Response Dilemma". Chief Finley holds nearly two dozen state and national certifications and is a member of a number of fire service organizations, including achieving the prestigious Chief Fire Officer designation from the Commission on Fire Accreditation International (formerly the Center for Public Safety Excellence). He is a member of a number of fire service organizations and is currently serving as President of the New Jersey Career Fire Chiefs Association where he has been involved in the development and administration of fire service promotional examinations. From 2003–2005 he served on the Training and Education Committee of the Governor's Fire Service and Safety Task Force. He also previously served on the state committee that developed New Jersey's first Firefighter I Instructor Manual.

**Brian P. Duggan** now commands the Fire Department in Northampton, Massachusetts, where he has instituted substantial changes to modernize and restructure the entire department including equipment, facilities, personnel, and training. In conjunction with his staff, Brian has created a regional Advanced Life Support Program that currently serves eighteen communities within the Northampton Area. He formerly commanded the Northborough, Massachusetts, Fire Department, and has significant experience with the Massachusetts Department of Fire Services where he held several key positions. Mr. Duggan developed and directed the Graduate and Undergraduate Fire Science Programs at Anna Maria College in Paxton Massachusetts from 1995 - 2003. Mr. Duggan has a Business Management/Fire Science degree from Providence College and a Master's Degree of Business Administration (MBA) from Nichols College in Dudley, Massachusetts. He is also a graduate of the National Fire Academy Executive Fire Officer Program and the Senior Executive Program for State and Local Leaders at Harvard University. In December 2012, Mr. Duggan received a Master's Degree in Homeland Security through the Naval Post Graduate School based in Monterey, California, where his thesis entitled *"Enhancing Decision-making during the First Operational Period of Surge Events"* was selected as an outstanding thesis. He is one of only a few fire service professionals to be designated as a Chief Fire Officer by the Commission on Fire Accreditation International. He leads the Massachusetts fire service through his affiliation as Chairman of the Fire Chief Association of Massachusetts Technology Committee and as a Regional Director on the Massachusetts State Fire Mobilization Committee. Mr. Duggan has authored several publications, inclusive of writing Section 7, Chapter 3, Fire Department Information Systems, in the Nineteenth and Twentieth Editions of the National Fire Protection Association's Fire Protection Handbook. Chief Duggan has served as a subject advisor to MRI since 2002 and will occasionally work on a project team.

**Robert F. Loomer** has enjoyed a successful career as a fire service leader, state instructor, and mentor, and still remains active in each of those fields with over 40 years of real-world

experience. In 2012, Bob retired as Chief of the Wayland, Massachusetts Fire Department culminating his 38 years as a career fire service professional. As chief, he successfully commanded a combination fire department with an annual operating budget of \$2.5 million which provided a full array of fire, rescue, emergency medical, and emergency management services to a community of 15,000 residents. During his tenure, Chief Loomer successfully advanced that department's emergency medical services delivery model to the paramedic level and also successfully implemented a fire service based, regional approach to providing advanced life-support services. During his fire service career, Bob has been extremely active in all aspects of fire service training. Today, Bob remains active as a program coordinator and senior fire instructor with the Massachusetts Department of Fire Services. Recently, Chief Loomer was chosen to coordinate that state's Chief Fire Officer Training Program. Chief Loomer remains a credentialed Fire Chief and Fire Prevention Officer for the Commonwealth of Massachusetts. He obtained his AS in Fire Protection Technology from Oklahoma State University in 1973, and is a 1996 graduate of the University of Massachusetts/Donahue Institute Chief Fire Officer Program. Mr. Loomer is nationally certified as a fire officer level IV, a certified fire inspector, and a nationally certified fire instructor. Since joining Municipal Resources as a subject expert in 2012, Chief Loomer has served as an Interim Fire Chief for a Massachusetts client, as well as, provided coaching and mentoring services to a New Hampshire fire department during a period of leadership transition in that organization. Bob also serves on recruitment and project teams.

**Robert C. Craig** most recently served as Interim Director of Fire and Emergency Medical Services for the Town of Acton, Massachusetts. Immediately prior to this he had served the Town of Acton during his entire career of almost 44 years of service as a member of the Acton Fire Department which included his last 22 years as Fire Chief. The Town of Acton Fire Department is staffed by 42 career personnel, housed in three Fire/EMS stations and provides full fire, rescue and emergency services including EMS for approximately 23,000 residents. During his career Bob administered an annual fire department budget of approximately 3 million dollars. Together with the Acton Police Chief, he also managed a joint Public Safety Dispatch Center. Bob holds an Associate Degree in Fire Science and Technology as well as a Bachelor of Arts Degree and is a graduate of the Executive Fire Officer Program of the National Fire Academy. He is a member of the International Association of Fire Chiefs; the New England Association of Fire Chiefs; the Fire Chief's Association of Massachusetts and the National Fire Protection Association. Bob has served for over twenty (20) years as a member of the Massachusetts Fire Training Council as one of the representatives of the Fire Chiefs Association of Massachusetts and now continues to serve as appointed by the Governor to represent the Citizens of the Commonwealth. He has attained professional status and recognition as a credentialed Fire Chief in Massachusetts. Bob has a diverse background and expertise in Firefighting, EMS, Dispatch, Fire Prevention and Investigation, Emergency Planning and Operations, Municipal Finance and Government and Labor/Management relations. During his career he has also participated in the study of and /or implementation of a number of regional programs including Fire Investigation, Dispatch, and EMS to include ALS services. In addition he

has been instrumental with the planning and construction of a public safety facility which included a joint dispatch center and Fire/EMS station construction and renovations. He has also participated in a number of Fire/EMS management studies.