

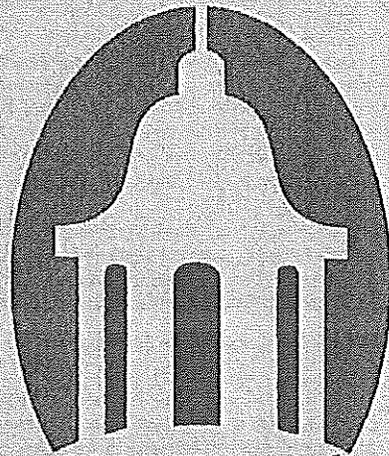
FINAL REPORT
BERWICK, ME
FIRE DEPARTMENT STUDY
AUGUST 2013

For Public Release

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INTRODUCTION AND SCOPE OF WORK

Municipal Resources, Inc. (MRI) was retained by the Town of Berwick, Maine, to perform a comprehensive survey, analysis, and assessment of operations, facilities, budget, organizational structure, management policies/rules/regulations, staffing levels, operational efficiency, and effectiveness of the Berwick Fire Department in order to identify specific recommendations, including regionalization/consolidation to improve the efficiency and effectiveness of the department.

This study provides the town with a comprehensive review of the manner in which fire and rescue services, and to a lesser extent emergency medical services are provided within the community. MRI has made recommendations for improvements that take into consideration the current and future financial ability of the community, 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 has focused on the following aspects of fire department operations:

1. Organizational structure and governance
2. Leadership and succession planning, professionalism and accountability
3. Internal communication and cross functionality
4. Organizational, managerial, and operational practices

5. Staffing levels and response times
6. Fire department apparatus, equipment, and facility
7. Delivery of Emergency Medical Services
8. Strategic and capital planning, budgeting
9. Community issues and concerns
10. Personnel issues and concerns
11. Community risk, vulnerabilities, and concerns

During this project, the MRI study team made a three-day field visit to the town and conducted the following activities:

- Interviews with key community stakeholders, including the interim town manager, chairman of the board of selectmen, the police chief, and captain.
- Several interviews and meetings with the fire chief.
- Group interview with members of the fire department leadership including the majority of the call officers. These were followed up with one on one interviews either in person, or by phone, with several officers.
- Several interviews with the career lieutenant regarding various operations and training.
- Interviews with each of the career firefighters regarding both their emergency response duties, and their ancillary duties.
- Individual Interviews with several members of the community.
- Interview with American Medical Response district supervisor in Somersworth.
- Met as a group with area mutual aid fire chiefs.
- Held an open community meeting for members of the community to provide us with their input and perspective (attended by approximately 15 people over several hours).
- A review of existing department policies, procedures, and practices.

- Inspection of all fire department facilities, apparatus, and equipment.
- Review of training and fire prevention/inspection records.
- Reviewed the fire department incident reporting system and EMS patient care reporting system.
- Review of mutual aid capabilities and agreements.
- Tour of the town to evaluate risks.

Subsequent to our field visit, members of the study team conducted the following activities:

- Conducted phone interviews with the four additional members of the board of selectmen.
- Conducted phone interviews with the two most recent former town managers.
- Conducted phone interviews with the South Berwick police chief who oversees the regional dispatch center.
- Conducted phone interviews with several current and former/retired members of the fire department.
- Conducted phone interviews with several members of the police department.
- Conducted phone interviews with nearly 30 members of the Berwick community.
- Review of numerous documents, including fire department budgets, as well as a number of other documents provided to the team by both the fire department and members of the public.
- Performed a comparative analysis of fire department capabilities of similar type and size communities in Maine and New Hampshire.
- Development, administration, and analysis of a confidential, on-line survey to receive the concerns, opinions, and ideas of fire department members.

- In depth analysis of response times, travel distances, and staffing levels for fire, rescue, and EMS incidents in the town.

The major issues that we identified as the result of our analysis of the Berwick Fire Department include:

1. The department also lacks any type of a succession plan.
2. The lack of adequate staffing to meet recommended levels within specified time frames. A significant companion issue to this one is the number of times the department fails to respond at all to dispatches for EMS/medical aid calls.
3. Extended response times that significantly exceed recommended benchmarks for the first unit on scene times. Contributing to this issue is the lack of a sufficient number of qualified/certified drivers.
4. The condition, adequacy, and location of the town's single fire station.

The recommendations that have been proposed in this report are consistent with nationally recognized standards, guidelines, and best practices, such as those that have been promulgated by the National Fire Protection Association (NFPA), Insurance Services Office (ISO), Commission on Fire Accreditation International (CFAI), Commission on Accreditation of Ambulance Services (CAAS), and the U.S. Department of Homeland Security (DHS), as well as the statutes and regulations of the State of Maine. 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 Berwick.

It is our sincere hope that this report will be used by the town, the fire department leadership, and its membership, as a road map for improving the delivery of fire, rescue, and emergency medical services in the community. The department is well managed and administered from a technical standpoint, clearly performs well on the emergency scene, and is well respected by many Berwick residents, as well as the surrounding fire departments for its capabilities. However, the perception of the department and its leadership, by at least a percentage of the residents of the community it protects, is not a positive one. An ongoing and very public feud in the community has resulted in an erosion of public trust and confidence, as well as morale within the fire department. Compounding the concerns of those who are critics of the fire department is the fact that the four most senior leadership positions in the department are all occupied by members of the same family. The MRI study team believes that the Berwick Fire Department still has untapped potential to become a more effective and motivated

organization, one that meets or exceeds nationally recognized standards for operational readiness for similar type and size fire departments. There are major challenges to achieving this goal, the most significant being the need to resolve the strife over the fire department that appears to be tearing apart the fabric of the community. Beyond that, many of the recommendations can be accomplished within existing budgetary restrictions.

The town and the fire department leadership should immediately address the issues that are dividing the community, and even to a certain extent the fire department itself. Lines of communication must be opened, grievances aired and addressed, and possibly compromises achieved. There must be strict adherence to a code of professionalism and accountability by members of the fire department at **ALL** times, both on and off duty. They should also determine a reasonable time line and plan for adopting the recommendations that have been proposed by the MRI study team.

The role of MRI is to identify immediate and/or potential problem areas and make recommendations for improvement. Our intent is not to embarrass the department or any individuals, but rather to point the way for progress to be made. The hope and expectations that come with the delivery of a report of this nature are that with time and direction, many of the recommendations will be adopted and result in a much better functioning organization, providing better service to the community. In the case of this report, restoring public confidence in the fire department, across the entire cross section of both internal and external stakeholders, will be the major challenge.

The mission performed by the fire department is one of the fundamental functions of government: to ensure the safety and protection of its residents and visitors. The expectations for the quality and quantity of fire, rescue, and EMS services must come from its residents and other taxpayers. There is no "right" amount of fire protection and EMS delivery. It is a constantly changing level based on the expressed needs of the community. It is the responsibility of elected officials to determine the level of risk that is acceptable to their respective communities. They must then translate community needs, along with that level of acceptable risk, into reality through direction, oversight, and the budgetary process. It is their unenviable task to maximize fire, EMS, and other services within the reality of the community's ability and willingness to pay, particularly in today's economic environment. It is also their responsibility to clearly articulate the vision, goals, and objectives, not only of the town as a whole, but their expectations regarding the individual departments that are components of the town government.

The report should be studied in its entirety to gain a complete picture of MRI's recommendations. Town and fire department leaders should develop their own priorities and modify our recommendations, as necessary, based on the ever-changing needs of the town and the fire department. However, it is critically important that they closely coordinate solutions with each other based on time, personnel, and fiscal realities. There must be very clear and open lines of communications between the town level of government and the fire department. It must also be emphasized that the lines

of authority regarding vision, goals, objectives, and solutions begin with the Board of Selectmen, go through the Town Manager, and finally arrive at the fire department.

In spite of the issues identified in this report, the citizens of Berwick should feel confident that the Berwick Fire Department is a professional public safety organization that is providing a critical service to the community. The members of the department, while feeling beat up because of the political infighting appear, for the most part, to be a dedicated and committed group. The issues that we identified with respect to staffing and response times are similar to challenges that face nearly every call/volunteer fire department in our nation. We commend the board of selectmen for their willingness to address these issues in an open and positive manner.

In order to address the recommendations that have been identified in this report, the town and the fire department should, cooperatively:

1. Approach them strategically and systematically.
2. Use them to develop a long-term strategic plan for change and improvement.
3. Break them down into reasonably sized components.
4. Categorize them as short-term and long-term goals, i.e., items that can be accomplished within existing resources and items that will require additional funding and/or time to accomplish in the coming years.
5. Refer to them when making recommendations, check them off as they are accomplished, and most importantly, recognize the positive achievements publically.

The MRI study team would like to thank Chairman of the Board of Selectmen Bart Haley, the entire board of selectmen, Interim Town Manager Gary Stenhouse, Fire Chief Dennis Plante, and the members of the Berwick Fire Department for their cooperation and assistance in preparing this report. It is our goal to provide the community with a road map and template for strengthening the level of fire, rescue, and emergency medical services delivered in Berwick. As with any public safety organization, there is always room for improvement, but we believe that with cooperation and coordination the Berwick Fire Department can become an exemplary model for similar types of fire departments.

SECTION I

FIRE DEPARTMENT OPERATIONS

SECTION I

CHAPTER 1

FIRE OPERATIONS AND INCIDENT ANALYSIS

OVERVIEW

The ability of a fire department to respond to, manage, and mitigate fire, rescue, and emergency medical services (EMS) incidents in a safe and effective manner is one of the most important components of the municipal public safety delivery system. The basic responsibilities of the municipal governing body include making sure that the fire department is operationally prepared; that necessary equipment is provided, tested, inspected, and maintained; and that adequate funding is allocated so that the department is able to fulfill its core mission. Utilization of an incident command system and strict adherence to safety and risk management procedures are also important pieces of the system.

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), establishes strategic objectives for the organization and operation of fire departments with primarily volunteer or on-call membership.

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 mutual aid. 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. Because firefighter safety is a primary focus during all operations, a formal component of the ICS program includes the consistent designation and use of an on-scene safety officer when appropriate.

Fire department operations and service delivery can be dramatically improved in those departments that commit resources to goal setting, master planning, risk assessment, and performance measurement. A number of tools and resources are available to guide management in these efforts.

OBSERVATIONS

The Berwick Fire Department is fortunate to have dedicated members who strive to provide the best possible services to the community given the limitations and constraints, primarily from a time commitment standpoint, of a primarily 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 the opinion of the MRI fire study team, Berwick firefighters provide services more effectively and more efficiently than many fire departments of comparable size and composition. However, as with any organization, there are areas that need improvement. For example, an insufficient number of driver/operators are available for emergency responses when career firefighters are not on duty; non-certified personnel are permitted to operate at emergency scenes; there is a lack of standardized response assignments; response times to some areas of the community exceed recommended guidelines; and the department faces a number of staffing challenges. (The staffing issues are discussed in detail in Chapter I-3 *Staffing*.)

The Berwick Fire Department faces a number of strategic and tactical challenges due to the various risks and hazards that exist in the town. These conditions should be identified and addressed by means of a community risk analysis planning and management process as recommended in paragraphs 4.2 and 4.2.1, *Community Risk Management* of NFPA 1720.

The Berwick Fire Department does have a good, computer based pre-incident planning program in place. This program, which is a component of the community risk management process mentioned above, is one of the most effective tools the fire department has to assist them with handling fires and other emergencies in major structures.

The purpose of a pre-incident 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 that includes specific tactics for handling fires or other emergencies. Information collected for pre-incident plans includes, but is 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-incident plans allows firefighters and officers to have a familiarity with the building/facility, its features, characteristics, operations, and hazards, thus enabling them to perform firefighting and other emergency operations in a safer and more effective manner. Pre-incident plans should be reviewed regularly and tested by periodic tabletop exercises and on-site drills. The department's pre-plans are available on computers in Engine 2 and the fire chief's vehicle. The Berwick Fire Department should be commended for having this program in place. They are also encouraged to continue to develop these plans for the remainder of the target hazards and commercial occupancies in the town.

The Berwick Fire Department and American Medical Response (AMR), which provides the town's primary transport EMS service, are both dispatched by a regional dispatch center operated by the South Berwick Police Department, but employing civilian dispatchers. The dispatch center is a state of the art facility that employs the latest in technology, including E-911. All dispatchers are emergency medical dispatcher (EMD) certified and the center is a licensed EMD center for the State of Maine. The York Police Department, which is the public safety answering point (PSAP) for 9-1-1 calls from Berwick, is the back-up EMD center for the area.

The South Berwick dispatch center does have standard operating guidelines (SOGs) and run cards related to Berwick Fire incidents and operations. SOGs and run cards are computer based with a hard copy back up. There is normally only one dispatcher working at a time, but additional staffing is usually provided for major incidents. Individual fire departments can assist during times of increased activity, such as during Superstorm Sandy, by dispatching their own stations and/or personnel and coordinating their own operations. Each department has access to their respective radio frequencies. However, if the department is doing their own dispatching/coordinating, the dispatch center is not assigning those incidents an incident or run number, which results in discrepancies in the statistics. When Berwick Fire is dispatched to an EMS call along with AMR, unless the fire department responds, no incident report is generated, again making it difficult to develop accurate statistics.

One thing that was noted during this study that is fairly unusual is that both the Berwick Fire and Police Departments share a common radio frequency. This also includes AMR when they are responding to an incident in Berwick. The Berwick fire personnel, as well as the South Berwick police chief who oversees the dispatch center, feel that the system makes sense and works well. Since all three agencies are frequently on the same scenes with each other, they believe that it simplifies communications. Berwick Police, on the other hand, disagree and feel that there is the potential for important police communications to be missed during major or simultaneous incidents. The MRI team agrees with this concern and recommends that fire and EMS operate on one dedicated channel (preferably a common one with other area fire and EMS agencies). The police department should be on their own channel, again perhaps one with other local police departments. It was reported to the study team during preparation of the final report that this change has been implemented. Police, fire, and EMS should

continue to have frequency “interoperability” for direct communications between units when necessary.

When a call is 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 Berwick Fire Department is the only department that is dispatched to the call. There are no standard box alarm/run cards that designate a specific compliment of apparatus that should be dispatched for the initial response, such as engines, ladders, chief officer, etc. The number of apparatus and personnel that initially respond is determined solely by whether the career staff is on duty and/or the number of call firefighters who are available at that time. The decision to request additional resources is made on a case-by-case basis by the highest-ranking officer responding, based upon information received while en-route or the conditions encountered upon arrival at the scene. Run cards are utilized for the dispatch of mutual aid units beyond the initial alarm. Berwick firefighters must wait a considerable length of time for the arrival of mutual aid units once they are finally requested. Due to the delay in mutual aid response, water supplies can be exhausted and Berwick firefighting crews can become overwhelmed by the spread of the fire. Without timely assistance from mutual aid departments, it may not be possible to perform critical fireground functions such as designation of an incident safety officer, assignment of a dedicated rapid intervention team (RIT), or deploying additional hose lines and establishing water supply capabilities.

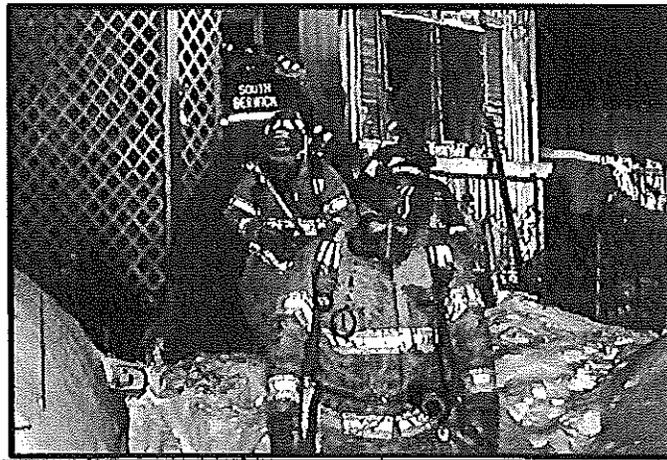


Figure I-1-1: Berwick and South Berwick firefighters operate on a trailer fire in Berwick.

The Berwick Fire Department's policy at the time of this assessment was to re-dispatch the incident if there was no response within four minutes. However, with the use of the "I Am Responding" system, members can notify dispatch that they are responding even if they have not arrived at the station. Usually dispatch will notify an officer who is responding and the officer will make a determination whether to re-dispatch the incident.

The operations necessary to successfully extinguish a structure fire in a safe manner require a carefully coordinated plan of action. Operations such as forcible entry, fire attack, ventilation, and rescue must be carried out with a high degree of precision and timing. If there are not enough personnel on the scene, some tasks will be delayed. This can dramatically increase the potential risk to building occupants and firefighters, and can result in increased fire damage.

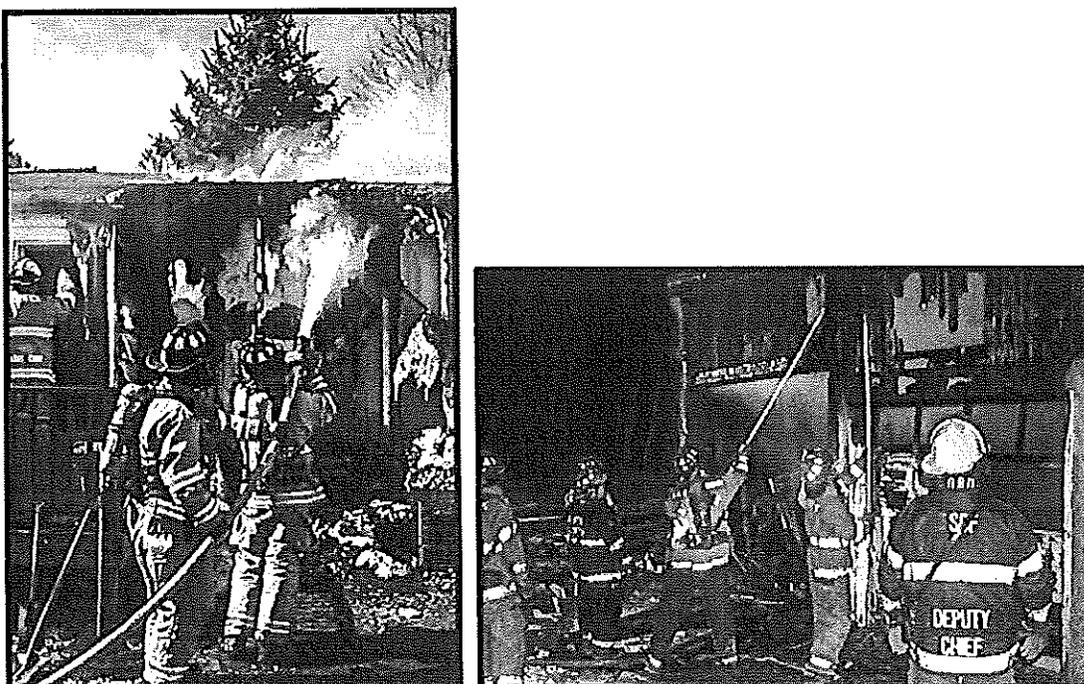


Figure I-1-2: Berwick firefighters assisted by firefighters from surrounding communities battle structure fires on Vine Street (left) and Berwick Street (right).

It is our opinion that the Berwick Fire Department will rarely be able to get sufficient apparatus or personnel to the scene of a significant incident without mutual aid assistance. The use of mutual aid is a standard practice in fire departments throughout the country and should not be viewed negatively in any way. All of the fire chiefs in communities that are contiguous to Berwick stated a willingness to enter into automatic aid agreements with Berwick for simultaneous response to fires and other emergencies. It is our opinion that Berwick should establish automatic aid agreements with

neighboring communities in order to provide the rapid availability of additional resources.

Berwick is an active member of the Community Mutual Aid Association (CMAA), which approximately ten (10) towns participate in. CMAA provides an air van and cascade system (for refilling compressed breathing air tanks) and a test machine for performing annual SCBA mask fit tests. Berwick does not belong to the larger Seacoast Fire Officers Mutual Aid District (SCFOMAD); however, Berwick can still obtain necessary resources from them when required.

The Berwick Fire Department has established an automatic aid agreement with the South Berwick Fire Department for incidents in a section of Berwick along Route 4 and also along a portion of Route 236 to New Dam Road. South Berwick's travel distance to this area is shorter and they can arrive more quickly than Berwick. However, even when South Berwick is dispatched, Berwick also responds.

The apparatus and equipment operated by a fire department is closely integrated into its operations and capabilities. A review and assessment of the Berwick 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.

The Berwick Fire Department does have an incident command system (ICS) in place, and by all accounts, it is effective and is utilized on all incidents. Use of an ICS 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 competing/dangerous strategies and tactics being employed.

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 Berwick Fire Department has not instituted a formal safety officer program. However, it was reported to the MRI study team that a safety officer is usually assigned when necessary. The department has an accountability system that appears to be effective.

It is imperative that officers lead by example in order to establish a strong safety culture in the department.

For the past three years, the Berwick Fire Department has been an annual recipient of a Safety and Health Award for Public Employers (SHAPE) designation. This program recognizes public sector employers who maintain an exemplary safety and health management system. According to the Maine Department of Labor, Bureau of Labor Standards website, acceptance into SHAPE is an achievement that distinguishes the organization as a model for workplace safety and health. The DOL looks very carefully at the fire department's safety and health practices due to the inherent risks of the business. Only 12 to 15 fire departments in the State of Maine have achieved this designation since 2005. The Department of Labor considers Berwick to be one of the best fire departments in the state from this perspective. The Berwick Fire Department should be commended for its achievement of this award for multiple consecutive years. The Town of Berwick should be proud of the fire department's receipt of this honor and their commitment to safety.

The ability to establish an adequate water supply is a critical fireground task. If an adequate water supply cannot be established quickly and maintained, effective firefighting operations will simply not be possible. Only about 10% of Berwick is protected by a municipal water supply system with 102 fire hydrants. The fire department must depend upon sources such as ponds, streams, rivers, or cisterns in areas outside the hydrant district, in addition to the limited water that is carried on fire apparatus. The establishment of a rural water supply operation requires significant personnel and equipment. At an absolute minimum, three (3) Class A rated pumpers are needed to maintain a rural water supply operation, along with an adequate number of water tankers. If a water supply is being established through the use of large diameter hose, an additional pumper will be required for every 1,000 feet of hose.

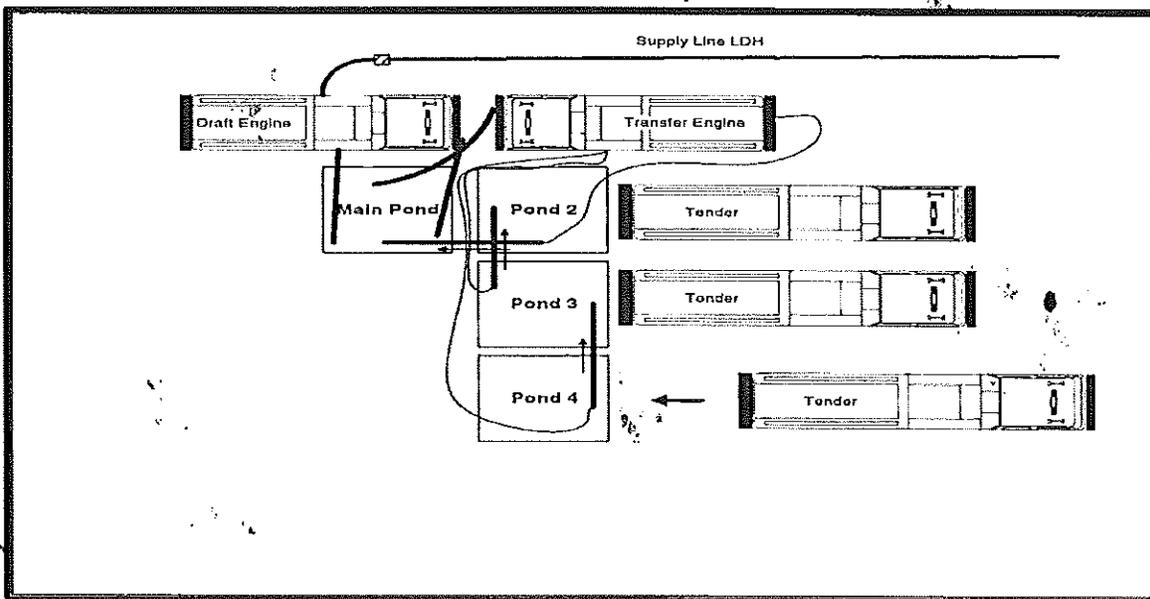


Figure I-1-3: Multiple pumpers and water tankers are required to supply the water necessary to extinguish structure fires in areas without fire hydrants.

In April 2011, the Insurance Services Office (ISO) completed a periodic evaluation of the town's fire protection capabilities. A community's ISO rating can be the basis for the fire insurance rates that are paid by commercial and residential property owners. The ISO rating system classifies communities from Class 1 to Class 9, with 1 being the most favorable and 9 being the lowest. Most communities with no municipal water supply system are a Class 9. Communities such as Berwick that have areas protected by a water system and areas that have no water can receive a split classification which is what Berwick has been awarded. ISO rates Berwick as a Class 3/8B.

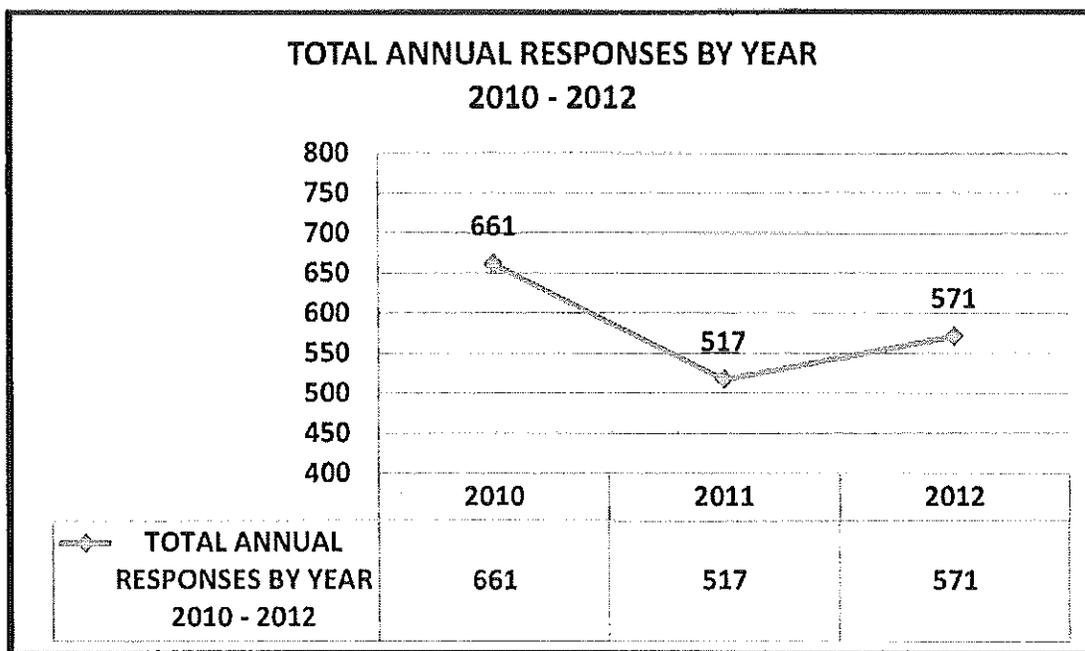
In Maine, there are only seven (7) Class 3, and eight (8) Class 8B communities, while there are 267 Class 9 communities. There are no Class 1 communities in Maine (and only 61 total in the United States) and two Class 2 communities. Berwick has been rated as one of the nine highest rated communities in Maine by ISO. ISO's report also notes that Class 8B 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 flow criteria of 250 GPM for 2 hours. The Berwick Fire Department and the town should be commended for achieving both of these excellent fire insurance rating classifications from ISO.

One of the best ways to get a broad overview picture of an emergency services provider is to analyze emergency response statistics. Statistics can be used to demonstrate the adequacy of current operations. Response trends and patterns, when combined with other data, are a useful tool when attempting to project future equipment and staffing 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 Berwick Fire Department the South Berwick Police Department communications center.

The MRI study team evaluated Berwick Fire Department incident response data for a three (3) year period covering 2010 through 2012. While we believe that the data that we analyzed is accurate as to the overall incident numbers and general classification of incident types, we feel that there is need for significant improvement in the consistency of incident data. Incidents that the Berwick Fire Department initiates without being dispatched by South Berwick, particularly during times of high activity such as storms, may not be reflected in South Berwick's numbers. Conversely, incidents that the Berwick Fire Department is dispatched to where they may not respond, particularly EMS incidents, may not result in the dispatch center generating an incident. These situations can make it difficult to get, and analyze, totally accurate incident data.

During the three (3) year period from January 1, 2010 through December 31, 2012, the Berwick Fire Department responded to a total of 1,749 emergency requests for assistance, an average of 583 per year or 1.59 per day. The actual number of incidents is in the vicinity of 2,274 when EMS incidents that the department did not respond to (or the dispatch center was not aware there was a fire department response) are factored in. This increases the average number of incidents to 758, an average of 2.07 per day. Although the data from these years did not show a definitive pattern, nationwide statistics would suggest that these incidents will continue to gradually increase from year to year.



For actual fire incidents, the statistical sample is quite small, however, that would not be unexpected in a small community such as Berwick. It is very important to note that per NFIRS protocols, the category for "Fire Incident" must be an actual fire situation, that in many situations has caused some type of damage. Many of the incidents that are classified under the third broad category of "Other Incidents" were probably 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 2010 through 2012, the department responded to a total of 116 actual fire incidents, an average of 38.6 per year, or less than one per week. Actual fires consistently accounted for seven percent (7%) of the department's total incidents during the years that were analyzed.

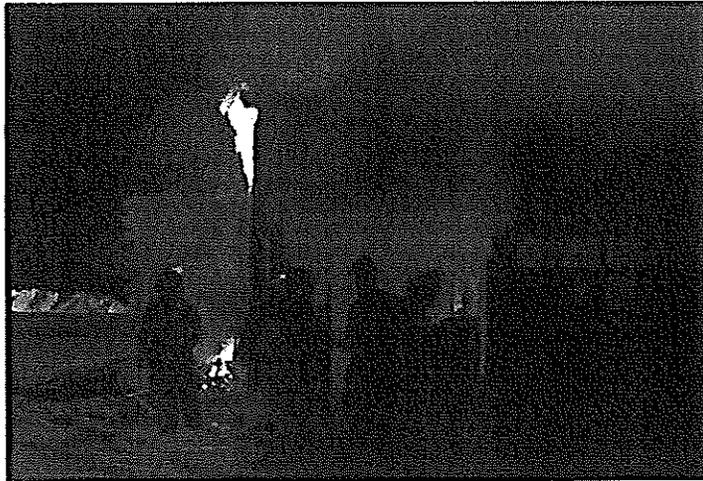


Figure I-1-4: Actual fires such as this structure fire on Berwick Street account for about 7% of Berwick Fire Department responses.

For the purposes of this analysis, most types of fire related incidents would be classified into the broad "Other Incidents" category. This category includes many different types of emergency responses that are not actual fires or EMS incidents. Examples of incidents that would be classified in this category include, but are not limited to:

- Automatic fire alarm and/or sprinkler system activations with no fire
- Carbon monoxide alarms
- Wires down
- Hazardous materials/chemical/fuel spills
- Gas leaks
- Service calls and assistance to other agencies
- Mutual aid/cover assignments to other municipalities
- Various standbys

From 2010 through 2012, there were a total of 952 incidents broadly classified as "other", an average of 317.3 per year, or .86 per day. As a percentage of overall department operations, these incidents averaged 54.4% during those years. The busiest year for these types of incidents was 2010, with 339 responses, while the following year was considerably slower, with 282.

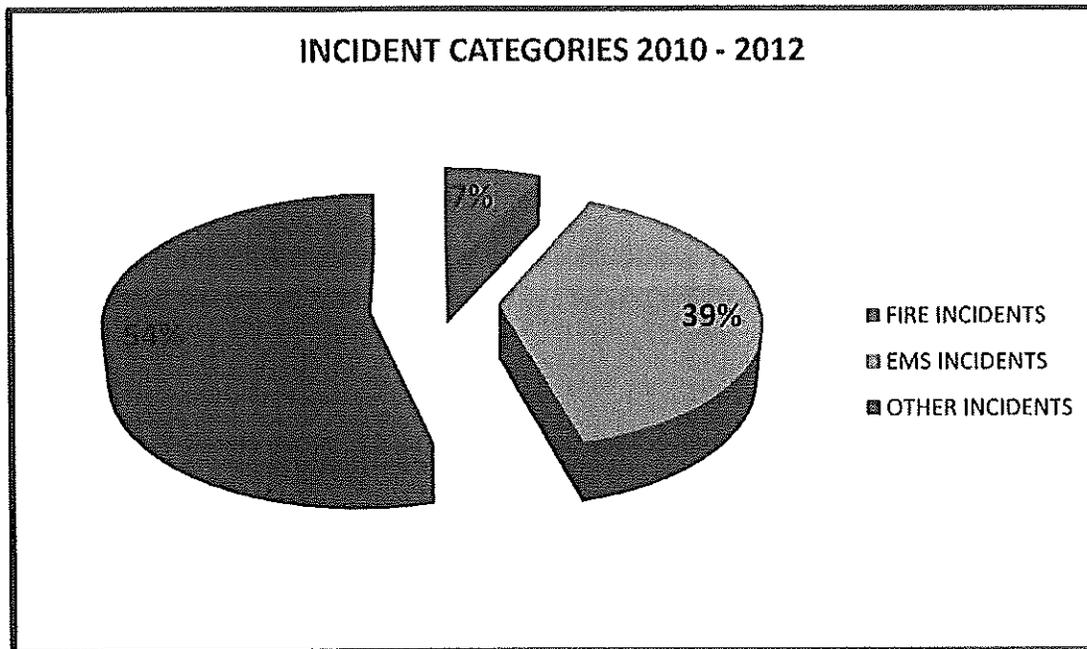
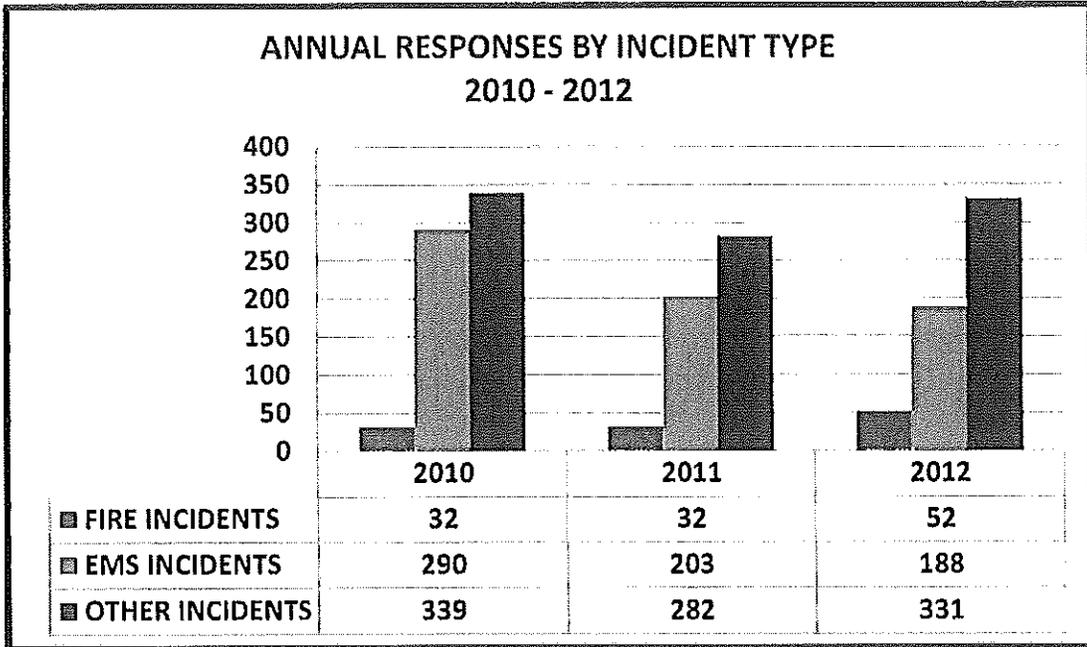


Figure I-1-5: Emergency incidents such as this propane leak being handled by Berwick firefighters would be one type of incident classified as "Other".

Although the Berwick Fire Department is not the primary EMS provider for the town, the fire department is dispatched on all medical calls, along with a Somersworth based American Medical Response (AMR) ambulance. Fire department first responders can provide potentially lifesaving care to a sick or injured person prior to the arrival of the ambulance. From 2010 through 2012, the Berwick Fire Department responded to a total of 681 EMS incidents, an average of 227 per year. Over the three-year period, these incidents accounted for 39% of the department's responses. However, these incidents are an area where there is significant discrepancy between the fire department and dispatch center records.

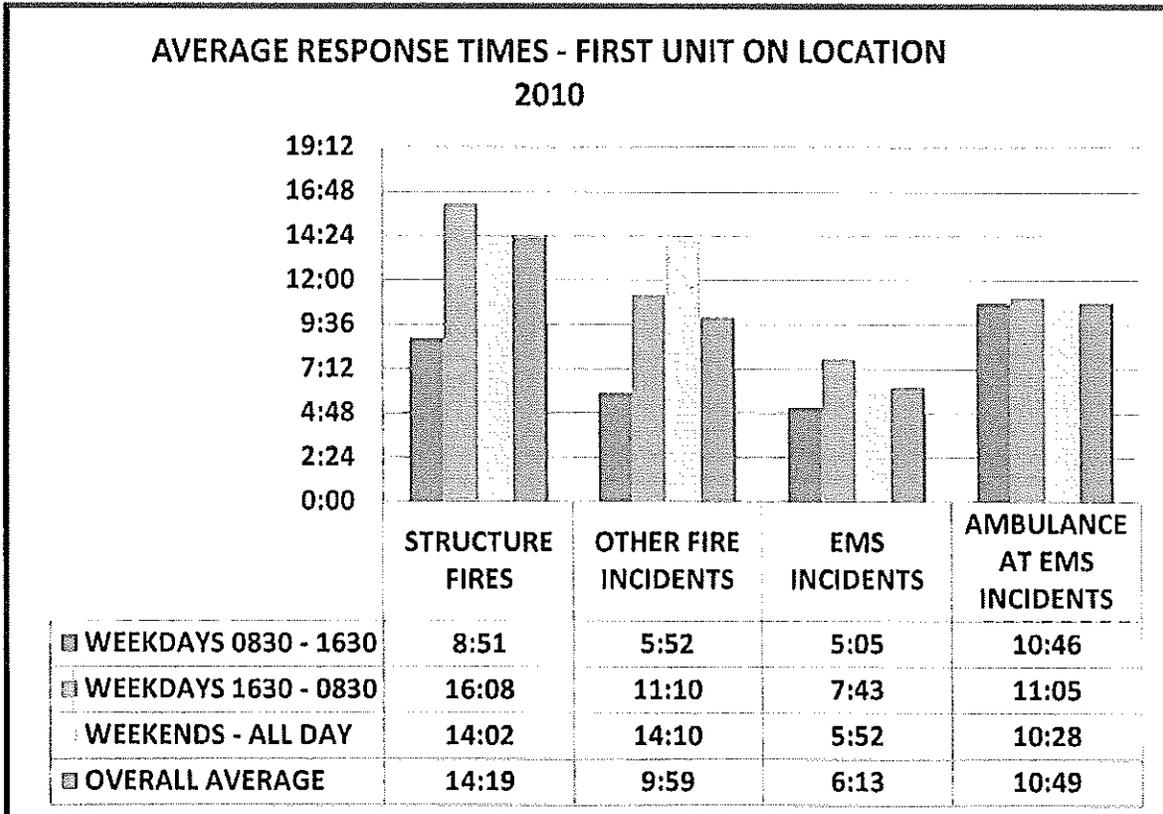
YEAR	TOTAL EMERGENCY INCIDENTS*	AVERAGE PER DAY	FIRES & OTHER INCIDENTS	AVERAGE PER DAY	EMS INCIDENTS*	AVERAGE PER DAY
2010	744	2.03	371	1.01	373	1.02
2011	721	1.97	314	.86	407	1.11
2012	809	2.21	383	1.05	426	1.16
AVERAGE	758	2.07	356	.97	402	1.10

***EMS Incidents** and **Total Emergency Incidents** include EMS calls in Berwick that the Berwick Fire Department was dispatched to by South Berwick dispatch along with AMR but they have no record the fire department responded.

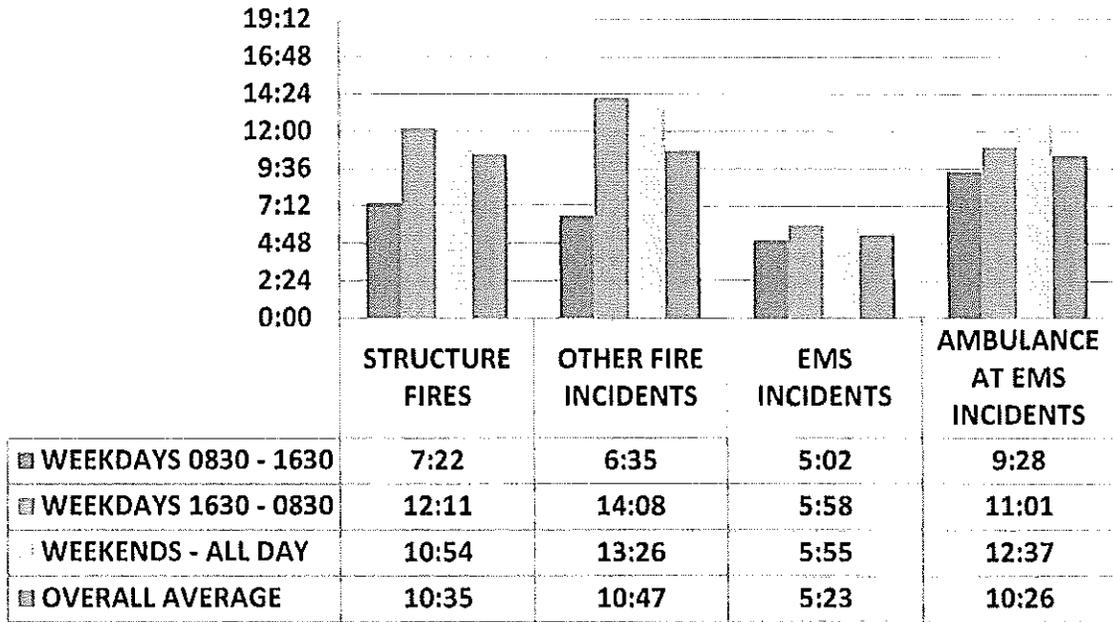


Response time is another important measuring instrument to determine how well a fire department is currently performing, to help identify response trends, and to predict future operational needs. Getting emergency assistance to the scene of a 9-1-1 caller in the quickest time possible may be critical 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.

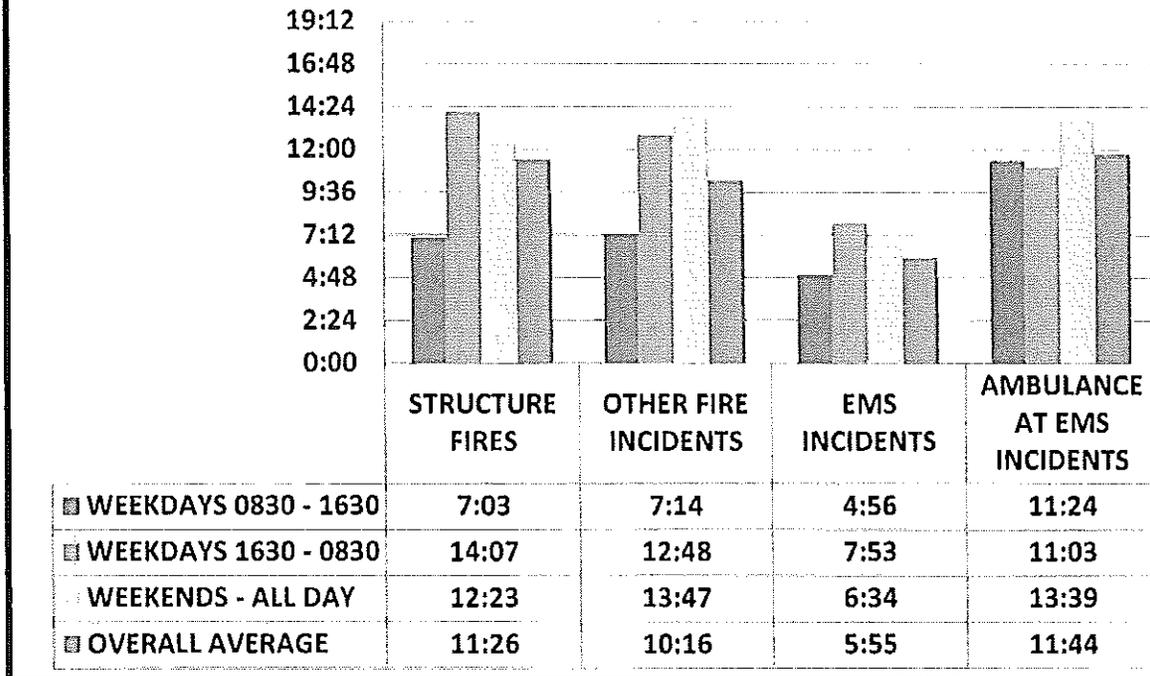
NFPA 1720 provides guidance concerning response times to incidents, and establishes a benchmark of 14 minutes as the response time to 80% of emergency incidents. Response time begins upon completion of the dispatch notification (it does not include alarm answering or alarm handling time).



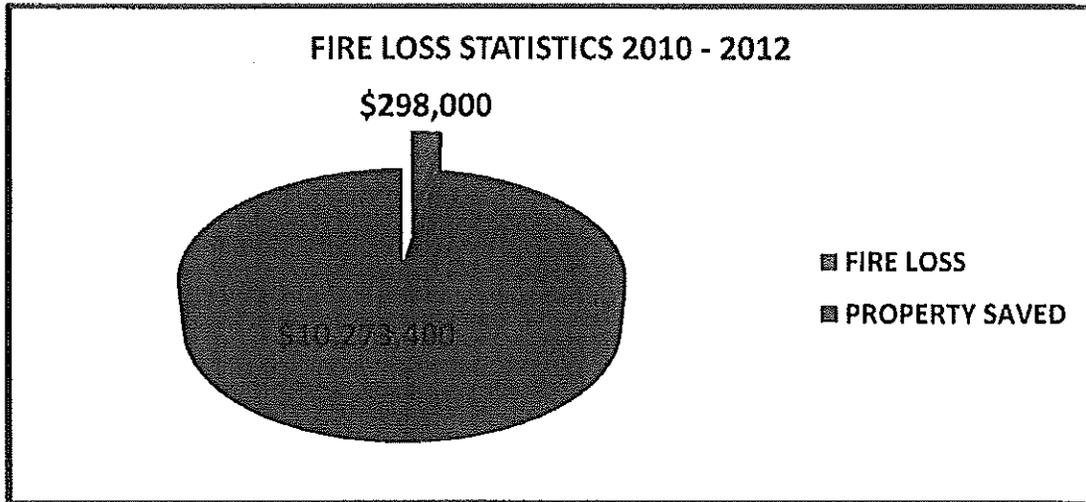
**AVERAGE RESPONSE TIMES - FIRST UNIT ON LOCATION
2011**



**AVERAGE RESPONSE TIMES - FIRST UNIT ON LOCATION
2012**



While many fire departments report their fire dollar losses as required by the National Fire Incident Reporting System (NFIRS), a much better barometer of fire department effectiveness is the amount and value of property saved. From 2010 through 2012, the Berwick Fire Department had fire losses/damage of approximately \$298,000. However, in those same structures they potentially saved \$10,273,400 worth of property and contents. The actual fire loss equals just 3% of the potential loss.



RECOMMENDATIONS

- I-1-1. The Berwick Fire Department should work with South Berwick dispatch to insure that all incidents that occur in Berwick are being recorded, and to develop consistent response time statistics to determine compliance with NFPA 1720.
- I-1-2. The Berwick Fire Department should continue its very good pre-incident planning program with the goal of having an up-to-date pre-plan for every business, commercial, and industrial occupancy (including schools, churches, etc.). Schools, day care centers, and other locations where large numbers of people assemble, such as churches, should receive a very high priority for development of pre-fire plans.
- I-1-3. In consultation and cooperation with its neighboring departments, the Berwick Fire Department should enter into automatic aid agreements and update their running card assignment system so that it specifies the number and types of resources that should be dispatched immediately on the initial standardized box alarm or response to various types of reported emergencies. These initial responses would include resources from Berwick and surrounding communities. While the recommendations contained in this report can be adjusted/revised based upon a risk management process or pre-incident plan, these processes take time. In the interim, we recommend that the following

minimum number of resources be dispatched to structural fire and emergency incidents:

- Reported structure fire (dwelling, apartment, commercial building, etc.) smoke in the building, interior gas leak, etc.
 - 3 engines
 - 1 or 2 tankers (non-hydrant areas of town)
 - 1 aerial ladder
 - 1 chief officer

- Working or “all hands” structure fire (in addition to above)
 - 1 additional engine
 - 1 additional ladder
 - 1 or 2 additional tankers (non-hydrant areas)
 - 1 or 2 additional chief officers
 - Additional specialized resources as may be required

- Second, third, fourth alarm, etc.
 - 3 engines
 - 1 ladder
 - 1 chief officer
 - Additional specialized resources as may be required (tanker task force, large diameter hose task force, etc.)

I-1-4. Although more stringent than the requirements found in Table 4.3.2 of NFPA 1720 for rural communities, through the utilization of automatic aid agreements with neighboring communities, the Berwick 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.

I-1-5. The Berwick Fire Department should attempt to significantly improve its initial unit, on scene response times, particularly during times when the career staff is not on duty.

I-1-6. Utilizing plotting and modeling technology, the Berwick Fire Department should perform a risk/benefit analysis, and evaluate any potential impacts upon response times that may result from a switch from a one (1) station to a two (2) station deployment model that would support construction of a sub-station.

I-1-7. The Berwick Fire Department should establish an 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 (1) (preferably two [2]) additional chief officer on every working/all hands incident.

- I-1-8.** The Berwick Fire Department should ensure that they have a sufficient number of properly trained and qualified driver/operators. Priority should be given to conducting a comprehensive training program to ensure that as many personnel as possible who have more than one (1) year of service with the department are trained and qualified to operate all department apparatus.

SECTION I

CHAPTER 2

EMERGENCY MEDICAL SERVICES

OBSERVATIONS

The Berwick Fire Department provides emergency medical services (EMS) to the community at the basic first responder level. The fire department is dispatched to medical emergencies 24-hours per day. On-duty fire department personnel respond to EMS incidents on their assigned apparatus. When no personnel are on duty, fire department personnel are permitted to respond directly to EMS incidents in their personal vehicles. This procedure enables first responders to get to the patient in the quickest possible time.

The town contracts with American Medical Response (AMR) for basic life support (BLS) and advanced life support (ALS) ambulance transport services. AMR units are based in Somersworth, NH. The fire department is dispatched to all medical emergencies to provide assistance to the ambulance crew with medical care, carrying equipment, lifting patients, extrication from motor vehicle crashes, technical rescue operations, and driving the ambulance to the hospital when the two-person ambulance crew is committed to the care of critically ill patients.



Figure I-2-1: Berwick firefighters assist AMR on the scene of a bicycle accident.

This response system, which began 4-5 years ago, provides for a multi-tiered-response to EMS incidents. Fire Department personnel are frequently able to respond to incidents and arrive on scene several minutes ahead of the responding ambulance unit. Fire department members stabilize and initiate emergency care prior to the ambulance

arriving. The fire department is dispatched by the South Berwick Public Safety Dispatch Center. Dispatchers also provide emergency medical dispatching (EMD) services by giving life-saving first aid instructions to callers. The dispatchers are trained to obtain as much information as possible from the caller to determine the severity of the incident.



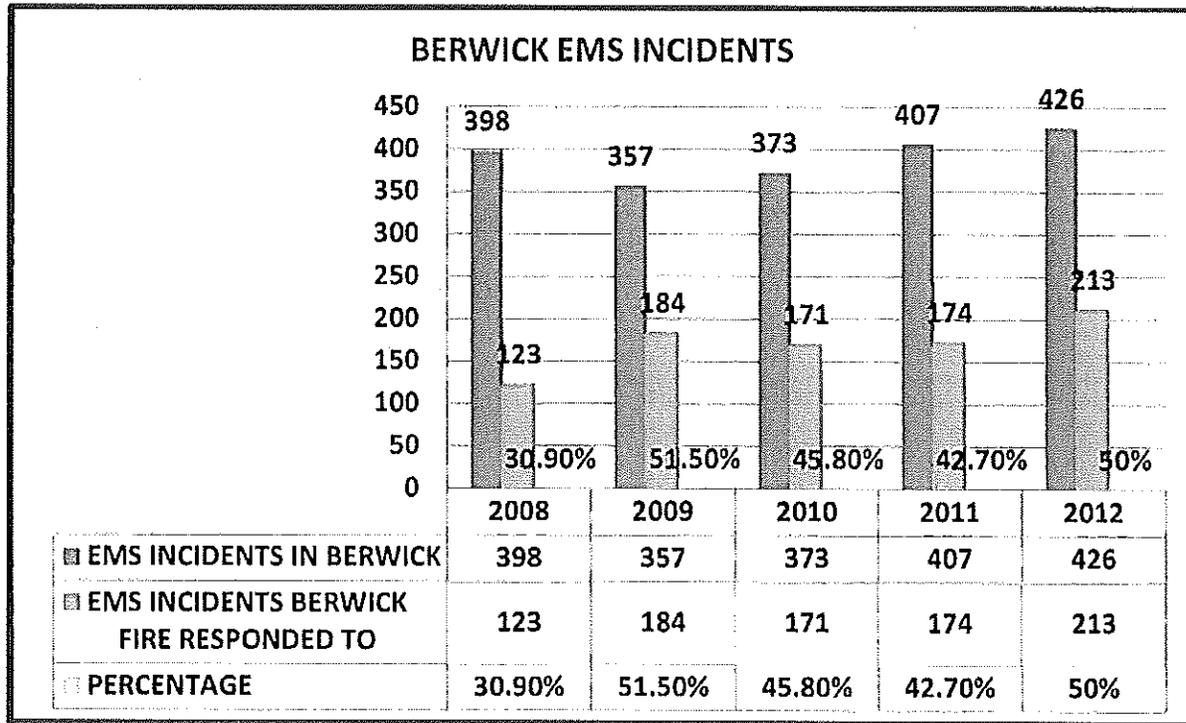
Figure 1-2-2: Berwick Fire and AMR personnel work together on the scene of a roll over motor vehicle accident.

In FY 2011, the town paid AMR \$38,000 as a subsidy for ambulance service. AMR also bills patients for ambulance transport. The ambulance rates are usually set at a percentage above established Medicare rates.

Fire department personnel reported to the MRI study team that there is widespread praise in the community for the level of care, compassion, and service that is provided by fire department EMS. It is apparent that the citizens expect a high quality level of service. Unfortunately, in many cases, these expectations are not currently being met by the fire department.

The MRI study team is concerned about the number of EMS incidents in Berwick that the fire department is dispatched to, but does not respond to during hours when the career staff is not on duty. Apparently, on-call personnel are not available or simply choose not to respond to less severe incidents. The statistics show that the average response time of an ambulance into Berwick exceeds the recommended times. This fact makes the fire department's involvement much more important and significant. However, according to the South Berwick dispatch center, over the past five (5) years, from 2008 through 2012, between 48.5% and 69.1% of the medical incidents the fire department was dispatched to went unanswered. This situation creates a false sense of security and potentially deprives town residents of a service they believe they have. If the fire department is going to continue to provide this service, they must be able to provide it 24/7 and answer all calls, not just some of them. Relying on the luck of who is available to respond is unfair to the residents of Berwick, and may result in liability for

the town. Alternatively, the department could consider establishing a procedure that requires a fire department EMS response only for critical events (e.g., cardiac, stroke, trauma, respiratory distress, etc.) as determined by the dispatch center. This would reduce the time demands and "wear and tear" on the on-call personnel.



(Statistics provided by South Berwick Regional Dispatch Center)

The Berwick Fire Department's records indicate that they respond to a higher percentage of these EMS incidents than the dispatch center does. In 2010 the fire department reported responding to 290 EMS incidents (77.7%), 203 (49.8%) in 2011, and 188 (44.1%) in 2012. This discrepancy may be the result of call personnel responding to EMS incidents in their personal vehicles, and subsequently completing a report, yet not reporting their response to the dispatch center. However, even these statistics show that the percentage of EMS incidents the fire department responds to is decreasing substantially, while the number of incidents continues to increase.

EMS services are licensed and regulated by the Maine Department of Safety - Division of Emergency Medical Services. Maine EMS regulations specify the requirements for training, certification, licensure, patient care standards, quality assurance/improvement programs, patient care reporting, equipment, and medical direction. The State of Maine EMS does not currently license the Berwick Fire Department, and although they would prefer them to do so, it does not appear that licensure is required since the department is not a transport service.

In-house fire department instructors perform EMS training, including continuing education hours for re-certification. However, at the time of this assessment, CPR was the only required medical training. There are only six certified emergency medical technicians in the department.

The fire department's EMS patient care reporting (PCR) is an electronic, stand-alone (not web-based) system that is connected to a PC hard drive at the station. The department has a policy for patient encounter documentation that members utilize.

The State of Maine EMS currently has a web-based run reporting system called Maine Emergency Medical Services Run Reporting system (MEMSRR). The MEMSRR system allows the State of Maine to collect EMS data from each of the state's licensed services to improve the quality of life and the well-being of the citizens of Maine. The system also allows services to track and report on ambulance runs for quality management and administrative purposes.

As communities similar to Berwick begin to experience increased demands for emergency medical care and transport, a decision must be made on how EMS will be structured and provided. Although no one particular method of EMS delivery is the same from one community to the next, there are 3 general methods of EMS delivery:

1. Fire - Based EMS - An EMS system that is solely operated from the community's fire department. The ambulances are operated and staffed by fire department personnel cross-trained and licensed as paramedics, or emergency medical technicians.
2. Third-service EMS - An EMS system that is operated from a separate non-profit or municipal-based organization. This may include hospital based systems and systems where a regional non-profit EMS agency services several communities.
3. Private Ambulance Provider - An EMS system that is typically operated by a for-profit ambulance provider that provides a contracted level of service to a community.

It may be difficult to determine which method of EMS delivery is optimal for a community like Berwick. In general, the chosen method is often determined by the level of service (emergency medical care) and response time desired, as well as the cost. Communities must also consider the amount of possible revenue it may receive to help recover a portion of the costs of its EMS delivery system.

It is also important to note that, subsequent to our field visits to Berwick and while we were writing this report, AMR suddenly decided to significantly downsize their Somersworth operation. This is one of the inherent risks with using a contracted, for-

profit EMS provider. While the effects of this decision are unclear at this time, the Town of Berwick should carefully monitor this situation for any erosion in service levels. It is our understanding that a new startup company may step in to fill this void, and that the town issued a request for proposals for EMS services that was subsequently rescinded, at least temporarily.

The MRI study team has learned that the Berwick Fire Department has submitted some cost and revenue estimates to the town to support the establishment of a fire department ambulance transport service. MRI has not seen these estimates and has not evaluated them. Therefore, we cannot offer an opinion concerning the feasibility of such an approach.

RECOMMENDATIONS

- I-2-1.** The MRI study team recommends the fire department immediately obtain licensure as a non-transporting EMS service pursuant to the administrative rules of the Maine Department of Public Safety. The town should consult with its legal counsel to determine if the fire department should continue to provide EMS responses while not licensed.

- I-2-2.** All members of the fire department should be required to obtain some level of EMS training and certification. All career personnel should be required to be emergency medical technicians (EMT), either at the basic or advanced level, while all on-call personnel should be a minimum of advanced first aid certified, or some other similar type of basic medical training that encompasses topics such as bleeding control, basic splinting, spinal immobilization, and oxygen administration, with EMT preferred.

- I-2-3.** The MRI study team recommends that the fire department establish a relationship with a local hospital that can serve as the medical resource hospital for training and quality assurance oversight. The most appropriate hospital is typically the facility that receives the majority of ambulance patients from Berwick (e.g., Wentworth Douglass Hospital in Dover, New Hampshire).

- I-2-4.** The MRI study team recommends that the town evaluate its EMS needs. Although interviews revealed a "good working relationship" with Berwick's current contracted ambulance service, it is always in the best interest of the community to explore other EMS methods as the number of medical emergency calls increase. Such an evaluation should include discussions with neighboring communities to determine if a regional ambulance system could provide high-quality patient care in a cost-effective manner.

- I-2-5. The fire department should evaluate its first responder EMS capabilities. Failing to respond to 50%, or possibly more, of these incidents is unacceptable and creates a false sense of security. If the department is going to be dispatched to these incidents, and provide this service, they must do so 24/7. Consideration may also be given to reducing the types and thus the numbers of calls they are dispatched to. Many departments only respond to what are known as a life threat call, such as heart attacks, unconscious persons, etc.

SECTION I

CHAPTER 3

STAFFING

OVERVIEW

The fire service has experienced tremendous technological advances in equipment, procedures, and training over the past fifty years. Better personal protective equipment (PPE), the widespread use of self-contained breathing apparatus (SCBA), large diameter hose, better and lighter hand lines and nozzles, and thermal imaging cameras are just a few of the numerous advances that have enabled firefighters to perform their duties more effectively. However, the fact still remains that emergency scenes present a dangerous, frequently unpredictable, and rapidly changing environment where conditions can deteriorate very quickly and place firefighters in extreme personal danger.

The operations necessary to efficiently and safely extinguish a structure fire require a carefully coordinated and controlled plan of action. Simultaneous operations that must be carried out with a high degree of precision and timing include forcible entry, initial fire attack, search and rescue, ventilation, and the establishment of incident command. If there are not enough personnel on the incident initially to perform all of the critical tasks, some of these tasks will be delayed. This can result in an increased risk of serious injury, or death, to building occupants and firefighters, as well as increased property damage.

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 for volunteer/call and primarily (85%) volunteer/call fire departments. 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 *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 *Staffing and Deployment* states that Table 4.3.2 (Figure I-3-1) shall be used by the authority having jurisdiction (AHJ) to determine staffing and response time objectives for structural firefighting, based on a

low hazard occupancy such as a 2,000 square foot, two-story, single family, without basement or exposures.

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

¹Berwick is a rural community by definition with an average of 196 residents per square mile.

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

Figure I-3-1: Staffing and Response Time Table from NFPA 1720

- Paragraph 4.3.3 *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 (4) 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.

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. For example, while NFPA 1720 establishes requirements for the minimum number of on-scene personnel, the standard also requires fire departments and firefighters to comply with NFPA 1500, Standard on Firefighter Occupational Health and Safety Program. Among other requirements, NFPA 1500 requires personnel to be medically evaluated and to be evaluated annually for their physical performance capabilities.

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 that does carry the weight and force of regulation, thus making compliance mandatory. This standard has been adopted as an administrative rule by the Maine Board of Occupational Safety and Health. 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. This regulation specifies that any time firefighters operate in an environment/atmosphere that is “immediately dangerous to life and health” (IDLH), whenever two (2) members enter the IDLH area together/as a team, they must maintain visual or voice communication with two (2) additional firefighters, who must remain outside of the IDLH atmosphere prepared to render immediate emergency assistance to those inside.



Figure I-3-2: NFPA recommends and OSHA requires that for initial fire attack operations a minimum of two (2) personnel remain outside the danger area prepared to render 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 (4) 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 (4) 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 final National Institute for Occupational Safety and Health (NIOSH) report on the death of a Kansas firefighter nearly 20 years ago cited a number of "preventable events" that contributed to the firefighter's death, not the least of which was an inadequate number of personnel on the initial response and the lack of additional adequate safety procedures. Among other things the report stated, "A two firefighter engine is, at minimum, 50% under-staffed and increases the work effort of the two firefighters by a factor of 3". Almost every NIOSH line of duty death report recommends that fire departments "provide adequate firefighter staffing to ensure safe operating conditions".

The United State Fire Administration, part of the Federal Emergency Management Agency in the Department of Homeland Security, recommends that a minimum of four (4) 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 (4) and often eight (8) or more firefighters under the supervision of an officer should respond to fire suppression operations". They further state, "If about sixteen (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'.

Considerable research has evaluated the impact of various staffing levels. One constant that has emerged is that fire company effectiveness decreases substantially while injuries increase when crew staffing falls below four (4) personnel. A recent, comprehensive, scientifically 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). The study concluded that the size of firefighter crews has a substantial effect on the fire department's ability to protect lives and property in residential fires and occupancies. Several key findings of the study include:

- Four (4) person firefighting crews were able to complete twenty-two (22) essential firefighting and rescue tasks in a typical residential structure thirty percent (30%) faster than two (2)-person crews and 25 percent (25%) faster than three (3) person crews.
- The four (4) person crews were able to deliver water to a similar sized fire 15 percent (15%) faster than the two (2) person crews and six percent (6%) faster than three (3) person crews, steps that help to reduce property damage and reduce danger/risks to firefighters.
- Four (4) person crews were able to complete critical search and rescue operations 30 percent (30%) faster than two (2) person crews and five percent (5%) faster than three (3) person crews.

The MRI study team examined and evaluated the current staffing practices and procedures of the Berwick Fire Department and has made recommendations for changes and enhancements.

OBSERVATIONS

The Berwick Fire Department is a combination career and on-call department. The career personnel are only on duty Monday through Friday, from 0830 hours to 1630 hours, or 23.8% of each week. The remaining 76.2% of the time the department still relies fully on its on-call staff. The on-call members are only compensated for the time they spend responding to emergencies, in training, and/or participating in other department authorized activities. In an effort to bolster responses during the hours the career staff are not on duty, personnel who are certified drivers have recently been authorized a small "standby" stipend in exchange for being available to respond to calls during a designated time period. The call officers were previously compensated with an annual stipend for their additional duties and responsibilities. However, they all waived these stipends in 2012 to allow more funding to be available for the remainder of the membership.

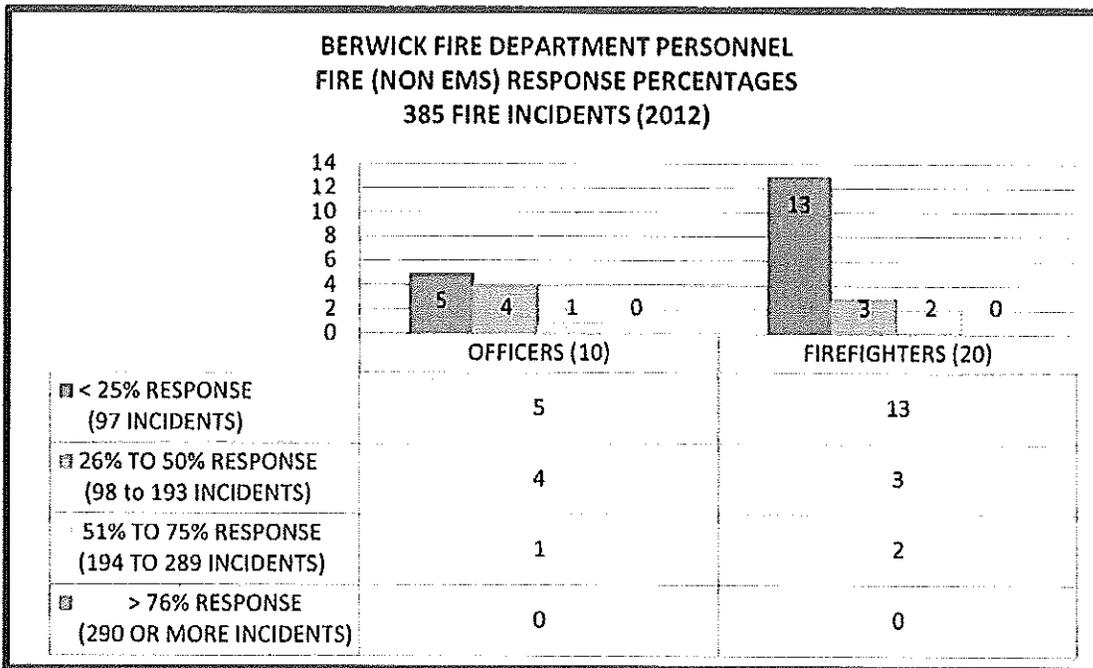
At the time this study was conducted, the department's roll call sheet showed thirty-two (32) members, of which twenty-nine (29) were considered to be active firefighters (one member is a dispatcher, one is the department's chaplain, and one is a junior member). However, not all of these personnel are certified firefighters and several serve only as drivers. The organization includes the following:

- 1 Fire Chief (full-time/career)
- 1 Assistant Fire Chief
- 3 Captains
- 1 Lieutenant (full-time/career)
- 4 Crew Chiefs
- 14 Certified Firefighters
 - 2 Career
 - 12 Call
- 4 Non Certified Firefighters
- 1 Driver

It was reported to the study team that subsequent to our field visit, one of the non-certified personnel had left the department, and that two of the others had completed an approved Firefighter I and II training program. At the time this report was finalized, one had passed the program and the other one was awaiting a retest on certain components.

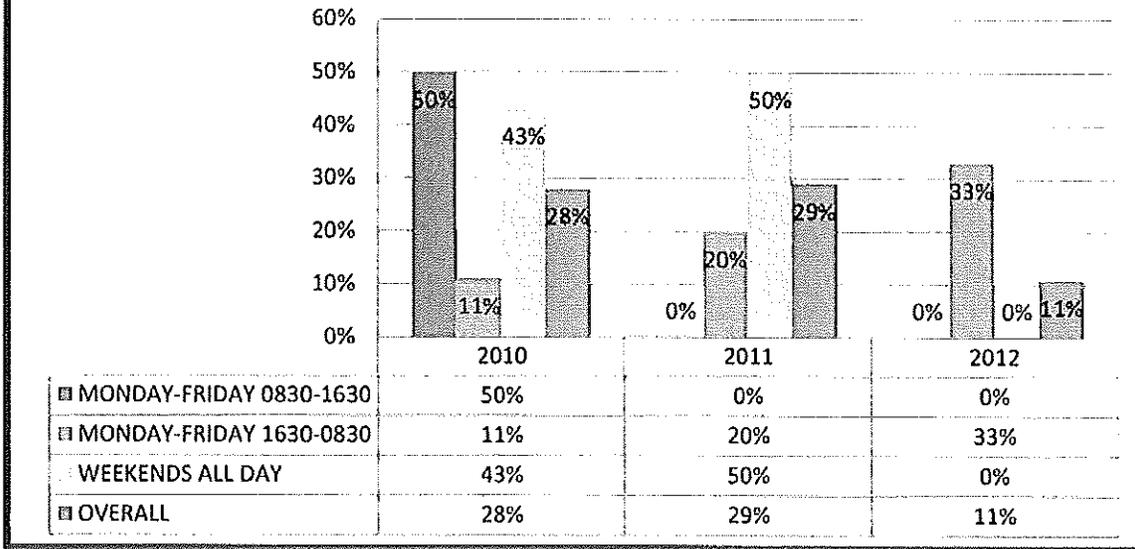
As with any on-call fire department, members have full-time jobs and other commitments that limit their ability to respond to incidents, particularly during weekday hours. It can be difficult to muster personnel for minor incidents that require a fire department response, or to participate in training activities on a regular basis. Often, a core group of individuals perform the lion's share of the work.

The study team saw evidence of this situation in Berwick (Figure I-3-3). Although the 2012 call attendance roster shows 28 active firefighting members, 18 (64.3%) of those, including many of the officers, responded to 25% (97), or less, of the 385 fire related (non EMS) fire calls in 2012. Only three members (10.7%), two of whom are career personnel, responded to at least 50% (193) of these incidents. The member with the highest response percentage, 66%, made 254 calls.



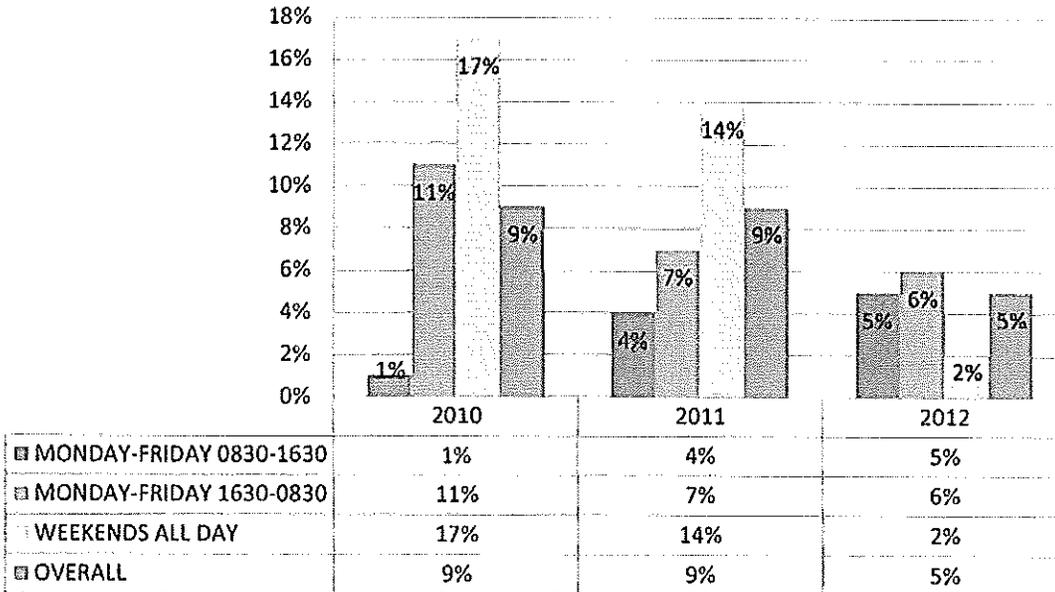
As recommended by NFPA 1720 in Table 4.3.2 (Figure I-3-1) the Berwick Fire Department should, at a minimum, be able to have 6 qualified firefighting personnel on the scene of a structure fire within 14 minutes, 80% of the time. As the chart below shows, Berwick has not come even close to meeting this standard over the past 3 years. Overall percentage of times compliance was achieved declines from 28%/29% in 2010 and 2011, to 11% in 2012. While response times and travel distances certainly play some role in this situation, the fact is that an insufficient number of personnel are responding to calls. The percentages do not change at all if non-certified members are calculated in.

**PERCENTAGE OF STRUCTURE FIRE INCIDENTS ACHIEVING
NFPA 1720 STAFFING/RESPONSE COMPLIANCE
(2010 - 2012)**

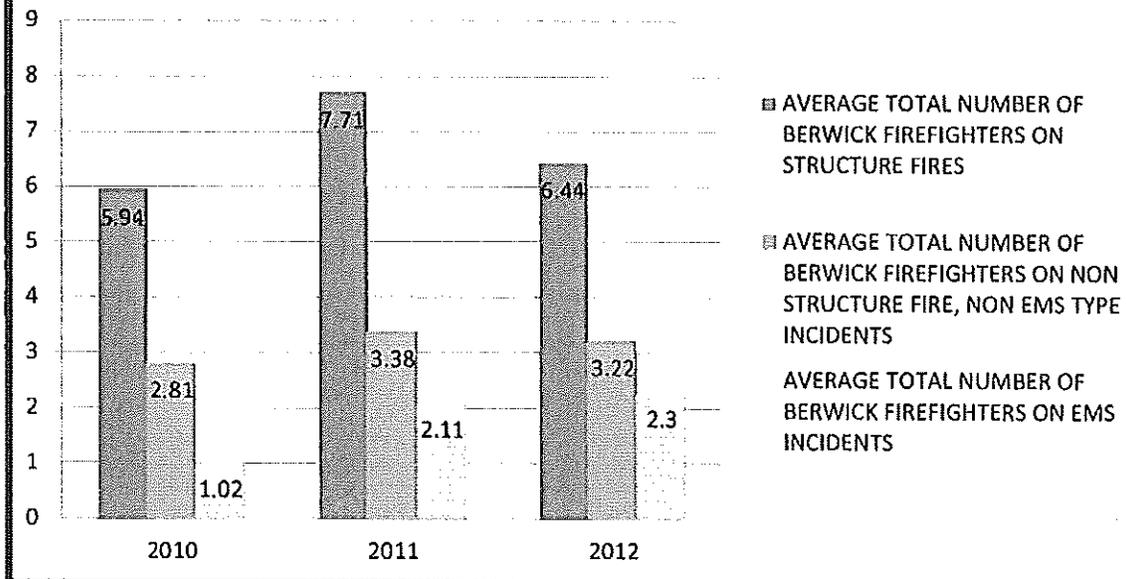


It is important to note that Berwick does not have very many structure fires. A small deviation in the number of fires in a given year can significantly skew these statistics. While not covered by the NFPA 1720 recommendations, other types of incidents (vehicles fires, brush fires, motor vehicle accidents) may still require 6 or more personnel to mitigate. For all fire related (non-EMS) incidents the statistics are not significantly better than those for structure fires. The average number of personnel who respond to various types of incidents also illustrates the staffing challenges facing the town.

PERCENTAGE OF NON STRUCTURE FIRE, NON EMS INCIDENTS WITH SIX PERSONNEL ON SCENE IN 14 MINUTES (2010 - 2012)

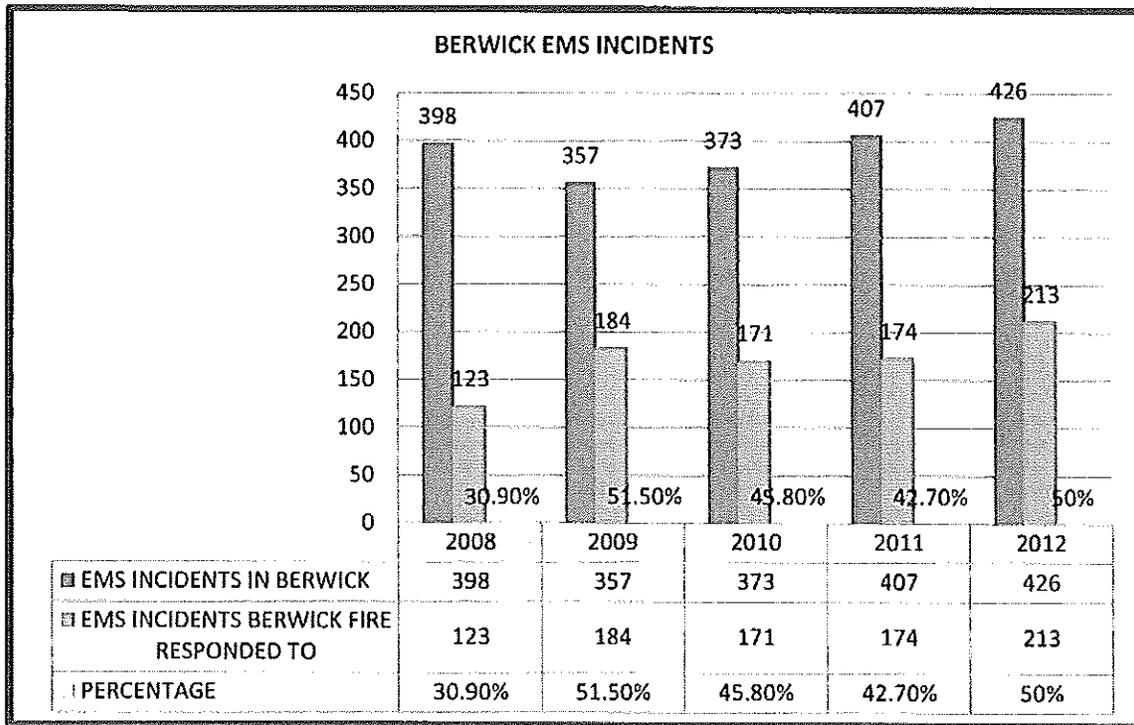


AVERAGE TOTAL NUMBER OF BERWICK FIREFIGHTERS BY INCIDENT TYPE 2010 - 2012 ALL TIME PERIODS



A significant percentage of EMS incidents result in no response by the fire department. While members may have responded to some of these calls in their personal vehicles, the dispatch center may not be aware of this fact and a report is not always completed.

As shown in the table below, Berwick is currently operating a two tier level service that results in basically a role of the dice as to whether the fire department will respond to an EMS call when the career staff is not on duty.



**Figure I-3-4: EMS Emergencies in Berwick versus EMS Responses Berwick Fire Responded To
(Provided by South Berwick Regional Dispatch Center)**

It is very clear to the study team that Berwick is struggling with its fire department staffing, and with or without EMS responses included, the department frequently does not muster sufficient qualified personnel to effectively handle many incidents. This is not a situation that is limited to Berwick; volunteer and on-call fire departments throughout the U.S. have been struggling with membership recruitment and retention for the past few decades. The chief has previously provided the town with benchmarking comparisons for a few other Maine communities that demonstrate this trend.

The fire department report, prepared in 2003 for the Town of Berwick by Maine Fire Training and Education, noted the issues that the Berwick Fire Department has with staffing and recommended possible actions that could be taken to address this shortfall. This report noted that most call and volunteer fire departments serving small to medium sized communities throughout Maine anticipate that about one percent of its year round

population will be members of the fire department. This would equate to about 72 members in Berwick. While we believe this figure is overly optimistic, given the 10 years that have elapsed since its release, if we cut it in half and said one half of one percent, the department could still anticipate a membership of 36 residents of the town, 6 more than the current call contingent. This number is even more significant when one considers that 10 members of the Berwick Fire Department do not even live in Berwick. While admittedly several of those who live in Somersworth, New Hampshire, are closer to the station than some people who live in Berwick, there are others who live a considerable distance away, making their timely contribution to emergency operations questionable.

The 2003 report made recommendations to the town on steps they could take to revive the local volunteer/call fire service in Berwick. These suggestions include:

- 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 was recommended as a regional endeavor.
- Nurture the volunteer/call fire department.
- Provide a tax abatement incentive for volunteer firefighters modeled after a Connecticut program.
- Implement a "standby" pay system to encourage personnel to make themselves available for response to emergencies.

The Berwick Fire Department has instituted recruitment programs for new call members from time to time and has recently implemented a "standby" pay system in an attempt to increasing staffing availability, particularly certified drivers. This program, implemented in October 2012, attempts to fill coverage gaps when the career staff is off duty by providing a "standby" stipend of \$1.00 per hour for a driver who agrees to be available to provide coverage. This program is commendable and has been somewhat successful during the week, but weekends remain problematic. The department has requested funding in the 2013/2014 budget to increase the standby stipend to include one (1) driver and one (1) firefighter.

The department's policy allows personnel who are on standby 10 minutes to respond to the station (if they are not somewhere in town). While an extended response time is better than no response at all, our concern is that ten minutes for an emergency response unit to respond, particularly if it is the first one, is not an acceptable response time. The lack of an adequate number of trained/certified drivers has also been cited as an ongoing problem in the department.

The department does have an ongoing advertisement for new call members on its website. The chief reported to the MRI study team he had recently received four (4) applications for membership in the department. Unfortunately, three (3) members have left the department for various reasons, for a net gain of one (1) member. We believe that the department can do more to recruit and retain additional call personnel. Some of our recommendations mirror those previously made in the 2003 report.

Even if the recruitment obstacles can be overcome, hurdles remain before a new person 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, dozens of hours of annual training are required to maintain firefighter and EMT (if required) skills and certifications. Unfortunately, many people do not want to spend a great deal of personal time dedicated to the fire and emergency services, especially when family commitments take priority. Other reasons for the difficulty recruiting and retaining members include:

- An overall reduction in leisure time
- Employment obligations and the common need to maintain more than one job
- The virtual elimination of employers understanding and flexibility relating to this form of community service
- The closing of the Prime Tanning plant is cited repeatedly as the single most significant event to impact the department in a negative way as it meant the loss of 10 to 15 reliable daytime on-call firefighters
- Increased family demands

It is easy to assume that an increase in the number of on-call firefighters can cure staffing and response problems. In today's society, this is an increasingly difficult problem to overcome. However, we continue to hear that there is a small town feel to Berwick, and perhaps more importantly, a strong sense of community. These are key attributes that will probably increase the likelihood of success for any call firefighter recruitment and retention program.

The Town of Berwick 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 programs 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 expenses as tuition for college curriculums in fire science, EMT and paramedic training, health insurance for call members, physical fitness programs, uniforms, and various tax incentives offered to attract new candidates to join the fire department, then stay for an extended period of time. Berwick has initiated a Length of Service Awards Program (LOSAP) as an incentive for longevity in the fire department.

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. A target of 12 to 15 on-call firefighters would be reasonable, and if successful, would significantly boost the department's staffing, and improve its operational readiness and capabilities. We believe that the town should strive to maintain a call force of around 40 - 45 fully trained/certified and capable firefighting personnel.



Figure I-3-5: Applying for a SAFER grant for call firefighter recruitment and retention will hopefully provide additional personnel to handle the increasing number of emergency incidents in Berwick.

We fully support the continued use of a strong primarily call fire department in Berwick, and believe that this model can continue to serve the needs of the town for the foreseeable future. The town should also retain its career staff to supplement the call force and to provide emergency response coverage during daytime hours. When on-duty, the career firefighting force provides the following benefits:

- Quicker and guaranteed compliance with the OSHA Two in-Two Out requirement for initial fire attack
- Guaranteed EMS first responder to get lifesaving help to the 9-1-1 caller quicker, prior to arrival of the ambulance
- Performing fire prevention inspections (possible future duty) and other fire prevention activities
- Developing pre-incident plans
- Performing fire apparatus, tool, and equipment inspections, testing and maintenance
- Performing basic station maintenance, performing fire hydrant testing, maintenance, and flow testing
- Assisting the fire chief with various day-to-day administrative duties and/or special projects

The fire chief has assigned ancillary duties to each of the career firefighters, which reduces the workload on the call force and enables them to focus their limited time on training and emergency incident response.

One suggestion that was made to the study team was the possibility of splitting up the career staff to expand their hours of coverage. While this scenario may provide a driver to take the first piece of apparatus to the scene, a single responder is not effective. For that reason and a multitude of other safety reasons, we do not advocate a single firefighter working alone. We also have concerns that splitting up the career personnel and providing significantly longer periods of coverage by them may serve to further the perception that the call force is being marginalized. This would be counter-productive and could result in the loss of call personnel. However, consideration could be given to extending the hours of the career staff somewhat beyond when they are currently deployed, based on incident patterns and the response capabilities of the call force.

Consideration should also be given to assigning call personnel to provide in-station staffing from the time the career staff go off duty (currently 4:30pm) until perhaps 11pm or midnight when emergency response activity diminishes significantly. Consideration could also be given to having in-station coverage by call personnel on weekends. Once such a program is operational, statistical analysis of incident response data and trends would provide guidance on what adjustments to the program may be required to optimize its effectiveness.

The chief acknowledges that the transition from a fully call fire department to a combination one has been difficult one. Once again, this situation is not unique to Berwick. 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*. 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". These "indicators" of change include:

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

Community Aging: maintaining appropriate level of service depends on the fire department's ability to recruit new and younger members.

Missed Calls: a critical issue because 1) it is a failure that is highly visible to the public, and 2) there is an over-reliance on mutual aid for coverage.

Extended Response Times: a reliability problem, as the public is not provided the appropriate service.

Reduced Staffing: a serious problem as citizen's and responder's safety are at a greater risk.

Most of these issues appear to have growing applicability to Berwick and its fire department. The possible exception is the community growth aspect, as Berwick is not currently experiencing any significant growth. These warning indicators are not an indictment of anything wrong in Berwick; the same problems are facing call and volunteer fire department across the country.

When call or volunteer personnel are suffering from poor morale, they simply do not show up for calls, training, or other department activities. Moving forward, we believe just as strongly that if the town and the fire department commit themselves together to implementing the recommendations found in that chapter that it will have a measurable positive impact on the department's staffing, independent of the recommendations found in this chapter.

RECOMMENDATIONS

I-3-1. The Berwick 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.

I-3-2. The Berwick Fire Department should make it a priority to develop an active on-call recruitment program led by the call assistant fire chief. At a minimum, this program should 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 website
- Placing signs recruiting call/volunteer personnel at the main entrances to town
- Placing signs call/recruiting volunteer in local businesses particularly high volume locations
- Establishing 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.

I-3-3. In collaboration with neighboring communities, the town 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.

I-3-4. The Berwick Fire Department should set a realistic goal of recruiting at least 12 to 15 new members over the next three (3) years and, simultaneously, set a goal of increasing the overall call member force to around 40 - 45 active, qualified personnel.

I-3-5. The Town of Berwick and the Berwick Fire Department should attempt to enter into partnerships with local businesses to allow their personnel to respond to emergency incidents during working hours without any financial penalty. The Maine Department of Labor has developed a model policy for such purposes (see Appendix A).

I-3-6. The Town of Berwick should explore the feasibility of encouraging and allowing town employees to serve as call firefighters.

- I-3-7.** The Town of Berwick should give consideration to lengthening the hours of coverage provided by the career staff. We recommend that the workday start at 8:00am rather than the current 8:30am and change the end-of-shift time from 4:30pm to 6:00pm. By this time of the day, many of the call personnel should be home from work and more available for response.

As an alternative, the town could consider having two personnel report for duty at 8:00am hours and go off duty at 4:00pm. The other two personnel could report at 10:00am and go off duty at 6:00pm. This option would keep at least two personnel on duty, but would not result in an increase in hours.

- I-3-8.** The Town of Berwick and the Berwick Fire Department should give consideration to utilizing call personnel to provide in station staffing evenings from 6:00pm until perhaps 11:00pm or midnight and during daytime hours on the weekends. Personnel who serve at least one duty shift per week, for which they should be compensated, would maintain their member in good standing status with the department. When on duty they could also complete their required training, participate in various department/station projects, pre-fire planning, etc., and possibly even recruitment activities.

While they could have the option of going home at the conclusion of their in-station duty time, the on duty crew should be responsible for response to any incidents that are dispatched from 2300/2400 hours until a pre-determined time the next morning, typically either 0600 hours, or 0700 hours.

- I-3-9.** The Berwick Fire Department needs to insure that it has a sufficient number of properly trained and qualified driver/operators. Priority should be given to conducting a comprehensive training program to ensure that as many personnel as possible who have more than one (1) year of service with the department are trained and qualified to operate as many of the department's apparatus as possible. Priority training should be for Engine 2, Engine 3, and Squad 5, as these units will respond most often.

- I-3-10.** The Berwick Fire Department should attempt to comply with the initial fire attack requirements recommended by NFPA and required by OSHA, within a reasonable time frame, 24 hours per day, 7 days per week.

- I-3-11.** Although requiring significantly more personnel than the requirements found in Table 4.3.2 of NFPA 1720 for rural communities, through the utilization of automatic aid agreements with neighboring communities, the Berwick 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. While we would like to see these personnel on scene quicker, the realities of long travel distances, which translates to longer response times in rural communities, makes that goal unrealistic.

I-3-12. In consultation with whichever organization will be providing the primary EMS transport service for the Town of Berwick, the level of EMS first responder service that is provided by the Berwick Fire and/or Police Department, along with appropriate personnel needs, should be determined. However, whatever level of service is determined that the town will provide (and we believe this service should be provided primarily by the fire department), it should be provided 24/7, not just when personnel may be available.

I-3-13. The Berwick Fire Department should establish a training and certification goal for personnel that includes the following:

- Firefighter I certified
- SCBA qualified with up-to-date fit test and proficiency evaluation
- Medically qualified (required by OSHA for SCBA certification)
- Hazardous materials operations certified
- Completed Incident Management System I-100, I-200, I-700, and I-800 training
- Completed all mandatory annual training requirements including Blood Borne Pathogens and Exposure Control
- Be CPR certified and possess an appropriate level of emergency medical training or certification

SECTION I

CHAPTER 4

TRAINING

OVERVIEW

Training is, without question, one of the three most important functions that a fire department should be performing on a regular basis; the others being fire prevention and response to emergency incidents. A department that is not well trained and operationally ready will be unable to effectively, efficiently, and safely fulfill its emergency response obligations and mission. A comprehensive, diverse, and on-going training program is absolutely critical to the fire department's level of success. Firefighting is a team-based activity, and training provides the foundation to build a well-coordinated emergency response team. Firefighters have a thirst for knowledge and will be more confident and will perform in a safer manner if they are well trained. When training is increased, injuries decrease.

An effective fire department training program must include all of the essential elements of a fire department's specific core missions and responsibilities. The program must include an appropriate combination of technical classroom training and manipulative or hands-on/practical evolutions that meet the needs of the adult learner. Most of the training, including the hands-on training evolutions, should be developed based upon accepted best practices and standard operating guidelines (SOGs), or standard operating procedures (SOPs), that have been adapted to the operational environment in Berwick.

Training should be consistent with nationally recognized standards that could be used as a benchmark to evaluate the department's operations. The failure to implement currently accepted firefighting practices was a significant conclusion of the investigations that were conducted after the Charleston, South Carolina, Super Sofa Store fire in June 2007, that resulted in the deaths of nine firefighters (see *Fire Fighter Fatality Investigation Report F2007-18*, Centers for Disease Control/National Institute for Occupational Safety and Health, 2007). As with all other fire department operations, there must be consistency in how the training is being conducted.

The U.S. Occupational Safety and Health Administration (OSHA) has established requirements for minimum training that 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, SCBA fit testing (29 CFR 1910.134)
- Bloodborne Pathogens Training (29 CFR 1910.1030)
- Hazardous Materials Training (29 CFR 1910.120)
- Confined Space Training (29 CFR 1910.146)
- Structural Firefighting Training (29 CFR 1910.156)

The Maine Board of Occupational Safety and Health has adopted these OSHA regulations as administrative rules that are enforceable in public fire departments.

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 a 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, be documented. Failure to do so may expose the department and town to significant risk.

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 and educational programs on a wide range of topics both in Maine and at venues such as the National Fire Academy in Emmitsburg, Maryland. Numerous, free, on-line courses and training programs are also available. Encouraging or requiring personnel to earn and/or maintain specialized certifications, such as fire instructor or fire officer, increases the positive professional perception of the organization, and can help to demonstrate a commitment to continued excellence.

The MRI study team examined the Berwick Fire Department's training program. Through personnel interviews and an evaluation of the current training program, the team reached the conclusion that the training program is a high priority for the department and is supported by the department's leadership. Overall, the Berwick Fire Department should be commended for its training program. Comparatively speaking it is much better than the programs that we have encountered in many other fire departments that we have evaluated. Implementation of our recommendations will further enhance the program.

OBSERVATIONS

The career lieutenant is the department's training officer and handles coordination of the training program among numerous other duties. He possesses an associate in applied science degree in fire science and has completed instructor training conducted by the Maine Fire Service Institute and Southern Maine Community College. He is a certified municipal instructor (CMI) and is certified as a Fire Instructor Level II by the National Board on Fire Service Professional Qualifications (NBFSPQ) and State of Maine Fire Service Institute in accordance with National Fire Protection Association (NFPA) Standard 1041, *Standard for Fire Service Instructor Professional Qualifications*. He is also a certified emergency vehicle operator course (EVOC) instructor and is certified to teach both CPR and Basic First Aid. He does not yet possess an EMS instructor/coordinator certification.

Based upon our analysis and interviews, the department's training has improved significantly over the past three to four years. Until about mid-2009, the department conducted one department wide training drill per month. The training generally did not follow any specific outline, format, or lesson plan. Many of the drills, particularly those that involved hands on types of training or evolutions, proved to be less than optimally beneficial because of the large number of personnel in attendance who needed to participate.

The department now operates under a company training program. Each member of the department is assigned to one of three loosely defined "companies". Company 1 trains on the first Tuesday evening of each month, Company 2 on the second Tuesday evening, and Company 3 on the third Thursday. These drills generally consist of hands-on type training activities such as equipment and tool use, and basic evolutions such as stretching lines, raising ladders, and making hose and hydrant connections.

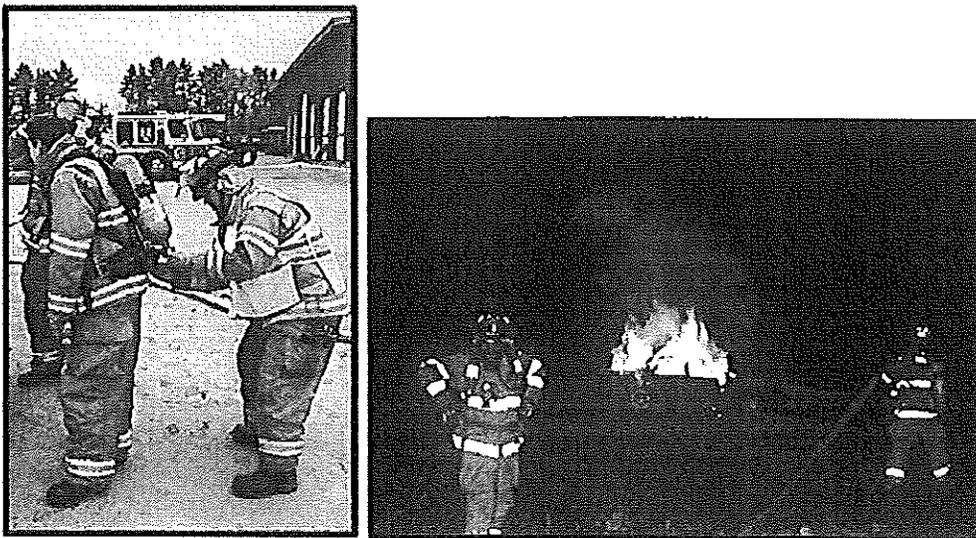


Figure I-4-1: (left) Berwick firefighters have their Personal Protective Equipment inspected during a training session and (right) train on fighting car fires.

On the third Tuesday of each month, a department-wide training session is held. A make-up session is held on the following Sunday morning. The department wide-training sessions generally encompass classroom activities such as the mandatory annual blood borne pathogens refresher, sexual harassment prevention, and hazardous materials awareness training. The department-wide training sessions can also include larger scale, complex drills, and exercises.



Figure I-4-2: Berwick firefighters train on handling propane fires.

The department is very careful to ensure that all personnel annually (or as required) complete mandatory training that is required by/for emergency responders by the Maine Department of Labor's *BLS Compliance Directives* and *Public Sector Safety and Health Directives* (See Appendix B). Topics included in the former include respiratory protection plans, ladder safety for fire departments and traffic control at emergency scenes. The latter directives include, but are not limited to, required fire department training, hazardous materials training, chain saw operations, and fire apparatus minimum driver training requirements.

All members present at training sessions must participate in hands-on evolutions. The company training system keeps classes at a workable size so that all personnel have the opportunity to improve their skills. The department does not currently utilize skill proficiency check sheets as part of these drills. An annual performance review is conducted for all career personnel, which includes a limited, informal skills proficiency evaluation. No proficiency evaluations of any type are required for the call members.

Most training is conducted utilizing a formal training outline or lesson plan. As of the time of this assessment, the training officer had developed between 75 and 100 training outlines for use by the department. A random review of these outlines indicated that they are well written, thorough and comprehensive, and consistent with fire service best practices. When training is conducted without a formal outline or lesson plan, the training report is supposed to include a detailed narrative of the details of that training.

The minimum training requirement for members of the department to remain active is participation in ten (10) training sessions every six months. At least 50% of this training must be obtained internally through Berwick Fire Department training and drills. The other 50% can be obtained from a wide variety of sources outside of the department. This includes training such as various fire attack schools, courses held at regional or state fire academies, courses held at the National Fire Academy, on line/web based training resources, and training they may receive/participate in through affiliation with other fire departments. The training officer will conduct one-on-one training for personnel who cannot attend normal training sessions or who require additional assistance.

Personnel who fail to maintain their training percentage are suspended from active service for a minimum of 30 days. A review of the department's training records indicate that from January 1, 2012, through December 31, 2012, 24 of 30 active members (80%) of the department either fully achieved, or came within one or two drills of meeting the training requirements. Of the members who did not participate in the required number of training sessions, their attendance ranged from just one drill to 10 drills. Some of the members with low attendance were newer members of the department who were not present for the entire year.

New members of the department are put through a formal orientation and indoctrination training process with the training officer. Part one of this orientation and indoctrination must be completed within three months of the new member's hire date. Components of this part of the training include introducing the member to the department's SOGs, explaining the training policy, and conducting basic sexual harassment awareness, and traffic safety training. Part two of the orientation must be completed within nine months of hire and includes the completion of mandatory incident management (NIMS) training and instruction on the operation of various pieces of equipment (not fire apparatus).

Due to its close proximity to New Hampshire, most of the formal training that members of the Berwick Fire Department have received outside of the department has occurred at the New Hampshire Fire Academy in Concord. This includes most Firefighter I certification training. Both Maine and New Hampshire are known as "Pro Board" states, which means their fire service training programs have been approved by the NBFSPQ and are therefore reciprocal between states. More recently, the York County Fire Chiefs Association has been sponsoring Firefighter I and Firefighter II training courses, which provides Berwick firefighters with another option for obtaining this training. Training a new member to the Firefighter I and II level costs the department approximately \$750. The York County Fire Chiefs Association has also recently introduced fire instructor and fire officer training programs.

active firefighting members on the roster in November 2012 (there are actually 32 but one is a dispatcher only, one is the department chaplain with no firefighting duties, and one is an underage junior firefighter, none of whom participate in emergency scene activities), five (17% of the membership) are not certified to the Firefighter I level. However, subsequent to our field visit, one of these members left the department and two completed a Firefighter I training program.

The department has a thorough and comprehensive driver-training program that appears to exceed the minimum requirements for fire apparatus driver training as specified in Maine Department of Labor's *Public Sector Safety and Health Directives*. All personnel are required to complete a 16-hour Emergency Vehicle Operator Course (EVOC) provided by the Volunteer Fireman's Insurance Service (VFIS). Beyond that, personnel who are seeking to become certified to drive and operate any of the department's apparatus must complete a minimum of a 16-hour pump training class that includes both classroom and practical pump evolutions.

In order to be certified on each individual piece of apparatus, a member must complete a minimum of five hours of drive time on that apparatus. He/she must also successfully pass a test that includes driving, pumping and equipment operations, and vehicle maintenance. In addition, personnel who are seeking to be certified on the department's ladder truck must successfully complete a 16-hour aerial operations course. They must then also complete a minimum of five field set-ups of the aerial device, and successfully pass an aerial operations test. All of these requirements are minimums. Final certification approval rests with the training officer and/or the chief.

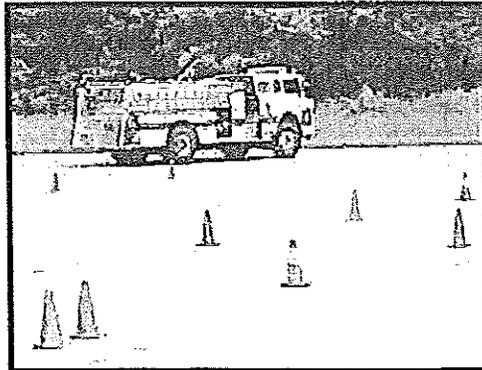


Figure I-4-3: Driver training is a critically important part of any fire department training program. Berwick has an excellent program, but needs to train additional drivers.

Fourteen (14) of thirty (30) active firefighters (47%) on the roster are not listed as being certified to drive or operate any of the department's major pieces of apparatus. This would seem to present a major operational limitation to the department. Because all of

the department's officers are certified apparatus operators, it was reported that they frequently end up driving, which takes them away from their primary responsibility of supervising on scene operations.

A training report is required to be completed for any and all training that is conducted. These reports are completed electronically and compiled into a comprehensive training database. A hard copy of each training report is generated and signed by all members in attendance. A copy of the training outline or lesson plan utilized is then attached and the report is filed in a training file that is broken down by year and month. The training records are also linked to each member's personnel record in the computer and can be cross-referenced by each specific member and/or by a wide range of other queries such as certifications. A review of a randomly selected number of training reports indicated that they were completed thoroughly and in appropriate detail, and did include the required signatures. The training database was comprehensive and allowed requested information to be easily extracted and/or cross-referenced.

Each member of the department has their own training file (separate from their personnel file). The training files contain all records pertaining to the member's training history with the department. This includes copies of certificates for any fire/rescue/EMS related schools or training they have completed, or certifications they have achieved; copies of their current certification(s) for things such as CPR and EMT; and an annual list of all training they have completed, both internally and externally. A review of a number of files selected at random indicated that they are complete and well maintained. Records regarding annual self-contained breathing apparatus (SCBA) fit tests and the related medical clearance records are maintained in each member's personnel file that is kept in a locked file in the chief's office. The training officer is responsible for coordinating continuing education requirements, such as EMT recertification, and insuring that all personnel's certifications are maintained up-to-date.

Maine requires that certified instructors teach Firefighter I and II, Emergency Vehicle Operator (EVOC), and Highway Safety. However, utilizing personnel who are properly trained and certified as fire instructors for all training will generally result in a better, more professional training program. In addition to the obvious positive perspectives gained by using certified instructors, doing so would seem to provide a diminished issue of liability to the department and the town associated with the training and its operational impacts. In addition to the career lieutenant, a total of seven other personnel, which includes five officers, are certified as Fire Instructors. Of these, four are certified at Fire Instructor Level I, and three are certified as Fire Instructor Level II. In addition, one of the officers is also certified to teach Hazardous Materials Awareness. One firefighter is certified as an EVOC instructor (not as a Fire Instructor).

As promulgated in response to Homeland Security Presidential Directive 5, federal regulations require that all emergency response personnel (as well as virtually all other municipal officials and employees) be trained at, and certified in, incident management operations commensurate with their duties, responsibilities, and rank. At an absolute

minimum, all personnel must have completed FEMA IS-700: *NIMS - An Introduction* and ICS-100: *Introduction to ICS*. Adoption of NIMS and compliance with the appropriate training and procedure requirements, not just in the fire department, but town wide, is mandatory for the receipt of a wide range of federal preparedness funding and grants.

A review of the Berwick Fire Department records indicates that most personnel are trained to the appropriate NIMS levels. Of 30 personnel on the roles as firefighters, there are five (16.7%) whose records do not indicate what level of training/certification, if any, they possess. As duties and responsibilities increase, the level of required NIMS training increases. Fire department supervisors should have received either ICS-200: *Basic ICS*, or even better, ICS-300: *Intermediate ICS* training, in addition to a number of other NIMS related courses. Command or chief level officers should be trained to the ICS-400: *Advanced ICS* level. Both of the department's chief officers and two of the three captains are trained to the ICS-400 level. All of the department's other officers, except one, are certified to either the ICS-200 or ICS-300 levels.

Professional development for fire department personnel, even call personnel and 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 Berwick. It was reported to the study team that two personnel from the department attended Maine weekend at the National Fire Academy in Emmitsburg, Maryland, in 2012, and they are planning on doing so again. However, there are a tremendous number of additional opportunities available including the Volunteer Incentive Program (VIP) at the National Fire Academy, the Firehouse Expo in Baltimore, the Fire Department Instructor's Conference (FDIC) in Indianapolis, as well as regional opportunities. Beyond the practical benefits to be gained from personnel participating in outside training, encouraging them to obtain additional training and/or certifications increases the positive professional perception of the organization and can help to demonstrate a commitment to continued excellence.

A total of eight fire department personnel are certified as fire officers in accordance with National Fire Protection Association (NFPA) Standard 1021, *Standard for Fire Officer Professional Qualifications*. Of these, six are officers and two are firefighters. Two of these personnel are certified at the Fire Officer I level, while the other six are certified as Fire Officer Level II. Three personnel, two officers, and one firefighter are certified as Incident Safety Officers. One officer possesses a basic Public Information Officer (PIO) certification. Finally, three officers have completed Leadership Level I or II training.

Two newer members of the department are currently enrolled in Fire Science Associates Degree programs at local community colleges.

The department's overall training function is accomplished with a minimal budget. During the study team's field visit it was noted that the current training library consisted of a limited assortment of text books and audio visual types of training aids and programs. While the department's inventory is much better than a lot of departments in

this regard, there are still things the department needs that funding should be provided for.

The training officer tries to keep department personnel informed of various training opportunities that are available. He posts announcements and information on a bulletin board in the station. He also sends e-mails to members of the department regarding training. The latter system of notification is less than optimal though as the members of the department use only their personal e-mails. They are not issued town or fire department e-mail addresses.

One area of concern for the MRI study team is in the area of EMS training. The Berwick Fire Department provides first responder EMS service to the community, a valuable service that can put trained personnel on the scene of a medical/cardiac/respiratory emergency five minutes or more before the ambulance. However, at the time of this assessment, the only mandatory EMS training for department members was CPR. Only six members of the department are certified as Emergency Medical Technicians (EMT). The team was advised that the town's police officers are also only trained in CPR.

RECOMMENDATIONS

- I-4-1.** The Berwick Fire Department should periodically conduct a formal training needs evaluation and assessment for the purpose of determining training program priorities and to ensure that the current program continues to meet the department's operational needs.
- I-4-2.** The Berwick Fire Department should establish a goal for all personnel to possess a minimum of a Firefighter I certification.
- I-4-3.** The Berwick Fire Department should establish a goal for all members of the department to be certified to drive and operate at least the department's most important apparatus (Engines 2 and 3 and Squad 5).
- I-4-4.** 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.
- I-4-5.** The Berwick 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, Berwick Fire Department operations and procedures.

- I-4-6. The Berwick Fire Department should facilitate fire instructor training for any experienced, qualified members of the department who wish to take it. All officers should be formally certified at a minimum of Fire Instructor Level I.
- I-4-7. The Berwick Fire Department should insure that all department members are trained/certified to the minimal NIMS level required for their duties/responsibilities and ranks. The Berwick Fire 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 (several already exceed this level). All chief level officers should be trained to the ICS-400 level (both chiefs and two of three captains already have completed this training).

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

- I-4-8. The Department should strongly encourage its officers to obtain a certain level of fire officer certification as a job requirement such as Fire Officer I for lieutenant and captain, and Fire Officer Level II for assistant fire chief and fire chief.
- I-4-9. 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.
- I-4-10. In recognition of the fact that a majority of the Berwick Fire Department's dispatches are for medical type incidents, the department should encourage as many members as possible to become certified Emergency Medical Technicians (EMT). At a minimum, all members should be certified at some appropriate EMS first responder or advanced first aid level of training. All career personnel should be required to obtain an EMT certification and maintain it for the duration of their employment.

It may be possible to collaborate with the town's ambulance contractor to provide EMS training for fire and police personnel.

- I-4-11. The Berwick 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.

- I-4-12. The Berwick 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. As with any outside training, training reports should be completed and copies of certificates placed in the personnel and training files.
- I-4-13. The Berwick 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.
- I-4-14. The Berwick Fire Department should, as part of its written communications system, 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.

SECTION I

CHAPTER 5

FIRE PREVENTION

OVERVIEW

Fire prevention activities are one of the most important missions that the modern day fire department is involved in. A comprehensive fire protection system should include, at a minimum, the key functions of fire prevention, code enforcement, inspections, and public education. 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.

Fire prevention is a key responsibility of every member of the fire department, and fire prevention activities should include all personnel. 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 also assigned responsibility for permit inspections and public fire safety education activities.

Since fire prevention should truly be approached in a systematic manner and various community stakeholders have a vested interest and/or responsibility in this endeavor, activities such as plan reviews, permits, and inspections, should be coordinated with similar activities in the municipal building inspection department and the planning department. Inspection and code enforcement procedures and policies must conform to applicable state and local statutes, ordinances, codes, and regulations.

OBSERVATIONS

Berwick is a primarily rural town, and as is our usual experience in these types of communities, it is almost totally residential and has little in the way of commercial occupancies and/or businesses. At the time of this assessment, there were just eighty (80) commercial and industrial type occupancies located within the town limits. Three (3) of these are schools and approximately fifteen (15) are day care centers, all of which present a significant potential life hazard. Routine fire prevention and life safety inspections of these facilities, and other public buildings, are handled by the Maine State Fire Marshal's Office. The largest commercial occupancy in the town is the Prime Tanning complex located on the square in downtown Berwick. This facility has been vacant for a number of years and appears to be in poor condition.

The town's code enforcement officer is responsible for administering various codes and ordinances including, as of January 1, 2013, the Maine Uniform Building and Energy Code, which specifies the minimum requirements for new construction. This code uses the International Building Code (IBC) and International Residential Code (IRC) as its foundation. Prior to January 2013, the Town of Berwick had an exemption from using this code that had been in effect for several years.

While the basic IRC adopted by the State of Maine to regulate construction of new residential occupancies does contain provisions requiring the installation of sprinklers in all new residential construction, the state opted to remove this mandate when they adopted the code. Individual municipalities in Maine are permitted to make local revisions to the code including adopting the sprinkler requirement. Berwick does have a local ordinance in place that may require the installation of sprinklers and/or a cistern or other type of static water supply source to be used for firefighting purposes in new developments/construction depending upon a variety of factors. At the time of this assessment, the provisions of this ordinance had not been required for any project.

While most fire departments target the majority of their fire prevention resources and activities towards fire inspections and code enforcement, that is not the case in Berwick. At the time of this assessment, other than initial wood stove installation inspections required by code, the Berwick Fire Department performed few, if any, periodic fire prevention inspections. As will be discussed later in this chapter, virtually all of the department's fire prevention efforts are directed towards public fire education activities. Maine has adopted the provisions of NFPA 101 *The Life Safety Code* as the fire prevention and life safety code to be followed for existing occupancies. As previously noted, the state fire marshal's office performs routine inspections in schools, day care centers, and other public buildings. They can also be requested to address complaints. It does not appear that the other commercial occupancies in town receive any type of periodic and/or cyclical fire inspections to determine their current compliance with the fire code.

The department has established a fire pre-planning program. The purpose of a fire pre-planning program is to develop a fire response plan for buildings in the town. A pre-fire 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-fire plans should be reviewed regularly and tested by tabletop exercises and on-site drills. The MRI study team reviewed several very thorough and well done fire pre-plans for buildings/facilities located in Berwick, including one for the largest target hazard, the vacant Prime Tanning complex. The pre-plans are available on mobile data terminals (notebook/laptop computers) located in the chief's command vehicle and on Engine 2.

The Berwick Fire Department places emphasis on conducting public fire education activities. This effort is very commendable and results in time and resources well spent. Nearly 75% of all fires, fire deaths, and injuries occur in the home, an area where code enforcement and inspection programs have little to no jurisdiction. Public education is the area where the fire service will make the greatest impact on preventing fires and subsequently reducing the accompanying loss of life, injuries, and property damage through adjusting people's attitudes and behaviors with regard to fires and fire safety. Two members of the Berwick Fire Department, one career and one call, have taken the lead on coordinating the department's public education programs and presenting the majority of the programs.

Since October is Fire Prevention Month, the Berwick Fire Department visits every K-5 classroom in town during the month to teach the designated lesson plan for that year. They try to visit the schools on a regular basis throughout the school year. In conjunction with ongoing instruction by their teachers, students in pre-school and kindergarten are presented with basic fire safety lessons such as Stop, Drop, and Roll, using 9-1-1, having a meeting place, and the importance of smoke detectors. They are allowed to gain familiarity and comfort with a fully geared up firefighter. Grades 1 through 3 are instructed in either the Fire Prevention Week theme for that year, or some component of the NFPA's Risk Watch Program depending upon lessons taught in previous years. Students in grades 4 and 5 participate in various interactive fire prevention games which alternate every other year. The 2012 game was Fire Jeopardy. The department also brings the fire safety house/smoke trailer, which it borrows from the Sanford Fire Department, to the schools for a week in May, after the students have had eight months of fire safety education and lessons. In 2012, the department reached approximately 675 students in grades K through 5.

Approximately fifteen (15) pre-school programs are located in Berwick. Although the number of facilities and students enrolled tends to fluctuate, the department does make a concerted effort to visit these schools on a regular basis, although not with the frequency that they do with the other schools. They send each pre-school a letter every year informing them of the department's fire prevention programs. Any that request the fire department to put on a program are visited during September or October. The public education personnel normally end up interacting with 100 to 150 children between the ages of 1 ½ and 5 each year.

The department has developed a lesson plan for presenting fire safety information and programs to senior citizens. This program is presented on an as needed basis, or when specifically requested. The department also holds a public safety day each year at the fire station and on the grounds of the adjacent church. It is held in October of each year on the Saturday that closes Fire Prevention Week. Participants include the town's EMS provider, Maine Forest Fire Service, Maine State Fire Marshal's Office investigators, York County OEM, and others. It also includes a barbeque for residents.

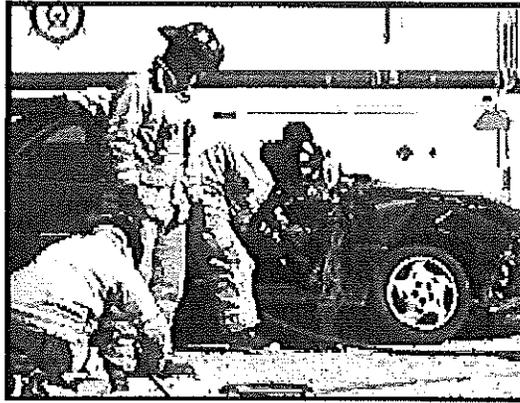


Figure I-5-1: Berwick firefighters perform a vehicle extrication demonstration during the annual Public Safety Day held in October.

The department uses either primarily self-contained programs such as Risk Watch and Fire Jeopardy, or it uses written NFPA themed lesson plans that have been developed in house. These lesson plans are kept in a binder located in the station. A review of the lesson plans found that although they are thorough, they are in need of revision and updating to reflect more current curriculums.

Up until 2012, no reports were completed for any public education program. Starting in 2012, a fire report is created and entered for each program presented that provides necessary documentation and is a significant improvement over no report being completed at all. This particular reporting area also includes code enforcement issues, wood stove inspections, etc. Although these "fire reports" are not reflected in the emergency incident totals reported by the department, so there should be no suggestion whatsoever that the response numbers are being inflated, the MRI study team has concerns regarding whether this is the best way to document these or any other type of routine, non-emergency activities. However, the Berwick Fire Department informed the team they include them in their reporting program because it allows them to determine staffing, costs associated, and other statistical information very easily and effectively. They reported that it also significantly simplifies their filing and record retention system and their ability to recall that information readily if needed. This database is also backed up on multiple servers so they do not have to worry about loss of information. According to the Maine State Fire Marshal's Office, while not a highly common practice in the state, it is acceptable and is used in other departments in Maine. Perhaps if it can be done, it might help with clarification if non-emergency activities were classified as "tasks" rather than "incidents", or a separate report module was developed.

The Berwick Fire Department participates in a juvenile fire setter's intervention program that is part of a joint, cooperative effort between fire departments known as the York County Juvenile Fire Safety & Intervention Collaborative.

When a referral to the program is made, a member of the fire department, along with a police officer, conducts the intake interview. Based upon that interview, the juvenile and/or his/her family are provided with appropriate additional referrals, counseling, and resources. The department refers an average of two or three juveniles per year to the program.

Initial cause and origin fire investigations in Berwick are handled by the Berwick Fire Department. If the cause of the fire is obvious, any of the department's officers can conduct a basic investigation. For more in depth investigations, or where the cause of the fire is not obvious, the assistant chief performs the initial investigation. Performing these investigations is part of his designated job duties and he has received a significant amount of training in this area, commencing in 1986 with attendance at the National Fire Academy's Fire and Arson Investigations Program. Since then he has completed a significant amount of additional training on various aspects of fire investigations. He is a member of the International Association of Arson Investigators, and the Fire Investigators Association of York County. If the fire is determined to be suspicious in nature, or if it involves a fatality, the investigation is turned over to the Maine State Fire Marshal's Office. The fire marshal's office can also be requested to assist with complex investigations, or where additional resources of any type are required. The York County Fire Investigators Association can also provide additional resources and assistance to the local department. It should be noted that it has been more than 10 years since Berwick has experienced a fire fatality.

RECOMMENDATIONS

- I-5-1.** Fire prevention, particularly public fire education, should continue to be promoted as a key component of the vision of the Berwick Fire Department and should remain 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, fire deaths, and fire injuries in the community. Every member of the department should be responsible for fire prevention.

- I-5-2.** In conjunction with the Maine State Fire Marshal's Office, the Berwick Fire 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 continue the development and/or updating/revising of pre-incident plans. These personnel can also be assigned responsibility for permit inspections. Optimally, each commercial and industrial occupancy in the town should be inspected on an annual basis. The authority to conduct these inspections, and enforce a formal fire code, would need to be established by the town thru the adoption of an ordinance.

In order to establish an in-service inspection program, it will be necessary to:

- Train personnel on proper procedures (all career personnel should be Fire Inspector I certified and/or as required by the Maine State Fire Marshal)
- Develop standard operating procedures/guidelines for in-service inspections
- Establish inspection schedules
- Establish a system for documenting inspections and notifying property owners of fire hazards
- Establish a follow-up inspection system to ensure that hazards have been mitigated

I-5-3. The Town of Berwick should give serious consideration to adopting a local ordinance to require the installation of automatic fire suppression (sprinkler) systems in all new construction, including residential occupancies.

While the United States has made tremendous progress at reducing fire injuries and deaths through the wide spread use of smoke detectors, these devices provide only passive fire protection. In other words, they alert the occupants to a fire and hopefully allow them to escape safely; however, they do nothing to either extinguish or, at a minimum, contain/control a fire until the arrival of the fire department. Sprinkler systems on the other hand provide active fire protection; that is they will hopefully either extinguish or, at a minimum, contain/control the fire until the fire department arrives. Study after study has shown sprinklers to be effective more than 95% of the time at reducing deaths, injuries, and property damage. A number of studies have shown that when installed at the time of construction, residential sprinkler systems add only 1% to 2% to the overall cost of construction, less than the installation of granite counter tops or a number of other cosmetic upgrades.

Over the long-term, the installation of residential sprinkler systems will not only save lives and property, but can potentially level off, or eventually even reduce, the costs associated with funding for manual fire suppression services (the local fire department) as the impact and demand for their services increases as the community grows. This consideration is particularly important in a rural community such as Berwick where response times will, by nature, be longer and staffing will be much more limited. In addition, the town will be hard pressed to increase the number stations, apparatus, and personnel due to the high costs associated with each of them. The installation of residential sprinklers are the most cost effective way to try to keep those costs in check, while over time improving fire protection community wide.

- I-5-4. The department should continue its year round public fire safety education programs, in the schools, and throughout the community. Additional personnel should be encouraged to participate in this program. If possible, personnel presenting the programs should seek to obtain formal training and even certification as Fire and Life Safety Educators.
- I-5-5. The Berwick Fire Department should revise and update its lesson plans for conducting public fire education programs. These lesson plans should be reviewed on a periodic basis, and then revised/updated as necessary in order to ensure that they are current with the most up-to-date information, skills, and techniques.
- I-5-6. The department should develop an additional module to its record keeping/management database to allow for the completion of public education reports (and possibly eventually fire inspection reports) rather than create a fire/incident report, as is the current practice. These activities could be classified as such, or as "tasks" rather than "incidents".
- I-5-7. The Berwick 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. Should the town and department implement a more proactive fire prevention inspection/code enforcement program, the department should then work actively to make on line permitting, inspection scheduling, etc. a reality.
- I-5-8. The department should continue with its excellent pre-incident planning program. These plans are an excellent resource for firefighters when they are dealing with an emergency. The department should strive to eventually have a pre-incident plan for every commercial occupancy in the town including all schools, day care centers, and public buildings. Once developed, updating and revising the pre-plan as necessary can be done in conjunction with an annual inspection and/or tour of each premises.