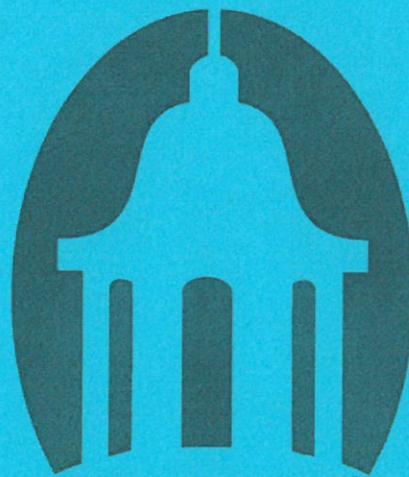


REPORT
STOWE, VERMONT
EMERGENCY MEDICAL AND FIRE SERVICES
ORGANIZATIONAL ASSESSMENT
NOVEMBER 2016

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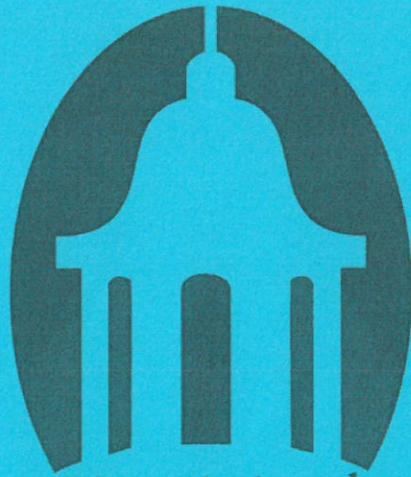
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REPORT



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REPORT

STOWE, VERMONT

EMERGENCY MEDICAL AND FIRE SERVICES
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NOVEMBER 2016

CHAPTER 1

PROJECT OVERVIEW AND CHALLENGES

Municipal Resources, Inc. of Meredith, New Hampshire, was engaged by the Town of Stowe, Vermont, to conduct an organizational and operational assessment of Stowe Emergency Medical Services and the Stowe Volunteer Fire Department (SVFD). Although co-located within the Stowe Public Safety Complex, these are two separate organizations and each function autonomously.

Recently the Town of Stowe has become concerned that the predominantly volunteer/on-call model will not continue to provide sufficient staffing to meet the needs of the community. As a result, this is a forward looking study in which developing an understanding of the options associated with volunteerism, recruitment, and retention is the predominant focus. However, as we worked with the town to define the project, we focused on the following critical organizational elements:

- Identification of the level of service expected by the community
- Volunteerism, recruitment and retention of personnel
- Operational viability and structure
- Financial resources
- Emergency medical staffing
- Strategic planning
- Staff input
- Comparative analysis

The project team assigned to this project included MRI Fire/EMS consultants Brian Duggan, Project Manager; Robert Craig; and George Klauber. The assessment involved an orientation tour of the geographical layout of the Town of Stowe, evaluation of target hazards, review of the public safety facility, review of fire/EMS apparatus and equipment, interviews with key town personnel, evaluation of a training session, and interviews with a wide variety of municipal, EMS, and fire department employees. There was also a review of relevant statistics, standard operating procedures, and operational data that was furnished by the town.

Each community determines the level of public safety services that residents receive by balancing the level of risk against the cost to provide for public safety. Based on our review of the Stowe EMS and Stowe Fire Department, it is clear that the community expects the rapid response of at least one unit from each agency on a 24/7 basis. This includes the rapid deployment of one ambulance, staffed with three personnel, and the slightly less rapid deployment of at least one fire suppression unit. This report will focus on and assess the department based on the service expectation described above.

Although this service level expectation appears to be acceptable to the town as a whole, it was noted that based on the prevalence of a high number of second homes and vacation properties, that the individual expectations often exceeds the level of service provided. This is common as the public often believes that the level of service they experience within their primary community is universal.

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

The culture of an organization defines acceptable behavior, norms, and boundaries. In essence, the organizational culture represents the comfort zone that each agency has utilized to fulfill their respective mission. Based on organizational culture, the introduction of the unfamiliar can cause concern and produce internal resistance. In Stowe, both EMS and fire service organizations have a well-defined culture that has allowed them to thrive and succeed in providing a high level of service to the community.

Many of the recommendations outlined in this report will represent organizational change and are often easily dismissed with statements such as *“we tried that and it did not work”*, or *“that idea could never work here”*. As such, the presence of organizational culture coupled with the

relative success that each agency has enjoyed will directly challenge the successful implementation of the recommendations contained in this report.

Every member that we spoke with believes that change is necessary for both Stowe EMS and the SVFD to continue to provide the current service level. One comment was that “the organization is constrained by its own perception and view”. This very insightful comment reveals what could easily be the key barrier that could prevent future success. Through this document we would like to challenge Director Brinkman, Chief Sgantas, and their staff to openly consider and attempt to implement these recommendations, and then utilize experience, rather than culture and perception, as the benchmark of success.

CHAPTER 2

PURPOSE, SCOPE, AND METHODOLOGY

Purpose

MRI (Municipal Resources, Inc.) was engaged by the Town of Stowe, Vermont, to review the operation of the Stowe EMS and the SVFD to determine how these agencies compare to contemporary emergency service practices, and to assess recruitment and retention programs. We have attempted to produce a report containing recommendations that will assist both departments and the town to set a clear course of action for future improvement.

Our Objectives

- Gaining a better understanding of overall risks facing the Town of Stowe.
- Evaluate the current service delivery system and identify areas for improvement.
- Develop long-range planning strategies to meet the current and future needs of stakeholders.
- Identify the fiscal impact of service needs on taxpayers

Scope of Work

This study will review the manner in which fire, rescue, and emergency medical services are provided within the town. Using this review as a basis, MRI will make recommendations for improvements that take into consideration the current and future financial ability of the town, appropriate modifications to the delivery systems to provide optimum response time and service to the entire town, location or expansion of physical facilities and equipment, and whether the current organization is appropriate or should be modified. Emphasis will be placed on the following:

1. An understanding of the change in volunteerism, the reasons why, and if anything can reasonably be done to reverse this trend.
2. A base level understanding of state laws, rules, standards, and best practices surrounding the provision of emergency medical and fire services in Vermont. Also, an understanding of the service levels being provided in rural resort communities in New England.

3. An evaluation of Stowe's current stand-alone service delivery model and recommendations to manage net cost, while providing surety of service. This shall include, but not be limited to, an understanding of personnel requirements and associated costs.
4. An evaluation of the willingness, feasibility, and cost of alternative services delivery models (e.g., regionalization, privatization, return to a non-profit model, and combined fire/rescue).

In addition, our study team has spent time with the key personnel to gain an understanding of the organizational, operational, management systems, and approaches currently in place, and then compare and contrast the current structures against contemporary practice and convention.

Methodology

There were sixteen major work elements involved in this review:

1. A review of compiled data regarding key operational aspects of the department.
2. A review of dispatch coordination, practices, and procedures.
3. A thorough tour of the community to gain a sense of the physical environment, the primary fire and life safety risk exposures, and the location of population and recreational centers in relation to existing facilities.
4. Interviews with key individuals including the board of selectmen, town manager, fire chief, EMS director, department members, police chief, and members of the community.
5. A review of the public safety facility and associated equipment.
6. A review of fire and EMS response statistics and National Fire Incident Reporting System (NFIRS) data.
7. A review of emergency communications practices.
8. A review of internal communications methods.
9. A review of training facilities and resources.
10. A review of Standard Operating Procedures (SOPs) and organizational policies.

11. Develop a summary comparative analysis using national norms and practices of other Vermont communities.
12. A review of response practices and response times.
13. A review of incident volume, overall workload, and EMS revenue.
14. A review of comparative data developed with other similar Vermont communities.
15. A review of the Insurance Service Office (ISO) rating schedule for Stowe, Vermont.
16. A review of emergency response operations and practices involving mutual aid from other communities.

To accomplish this, members of the study team held an initial orientation meeting with the town manager, EMS director, and fire chief. Then, in partnership with these three municipal officials, we gathered a variety of statistical information and data on the department. In addition, MRI consultants conducted three days of on-site work, interviews, and observations in Stowe.

During this process, we investigated areas such as the command structure, chain of command, span of control, recruitment, selection and training, budgeting, staff recall, service demand, the delivery of advanced life support services, the deployment of personnel, the communications, and the use of technology.

Following the on-site visits, the data collected and observations made were subjected to analysis by the project team, both individually and collectively. The information was then compared with contemporary emergency service practices in order to formulate the recommendations contained in this report.

We would be remiss in not thanking the Town of Stowe, the Board of Selectmen, the town's management staff, Director Brinkman, Chief Sgantas, and the entire staff of the Stowe Fire and Stowe EMS for being most cooperative and helpful in assisting us in carrying out our work.

CHAPTER 3

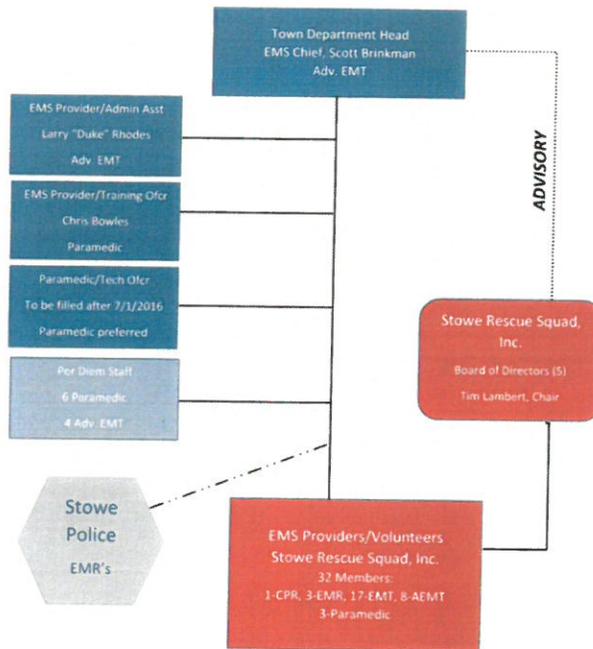
DESCRIPTION OF STOWE EMS and STOWE VOLUNTEER FIRE DEPARTMENT

OBSERVATIONS

Stowe EMS and Stowe Fire Department provide a full range of fire/rescue services to its 4,314 residents (2010 Census) and to a seasonal population that swells significantly during peak recreation periods due to the presence of second home owners and visitors. The response area for both departments consists of 73.2 square miles as defined by the municipal boundaries (the largest town in the state). In addition, as a result of mutual aid agreements, both agencies are active responders to major incidents within Lamoille County. The frequency that Stowe resources are requested to provide mutual aid speaks positively of both the relationships that exist with adjacent communities and the overall respect for the capability of the personnel in the organization.

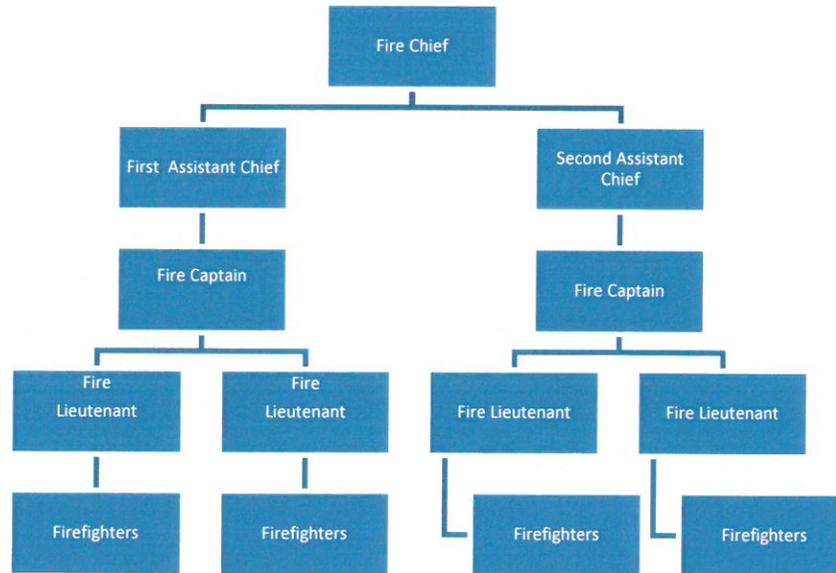
Stowe EMS is a hybrid agency consisting of 33 emergency medical responders. This includes 4 full-time staff members, 9 per diem staff members, and 20 members that volunteer to cover open shifts or staff a second unit. These volunteer members are compensated when they attend training or respond to a call.

Stowe EMS Organization Chart



Stowe EMS Organizational Chart

The SVFD is a 29 member on-call organization which has no full-time staff. These volunteer members are compensated when they attend training or respond to a call. This includes 3 chief fire officers, 2 captains, 4 lieutenants, 10 firefighters, 4 probationary firefighters, and 4 junior firefighters. The organizational structure of the department is detailed in the chart below:



Stowe Volunteer Fire Department Organizational Chart

Each of these two agencies successfully provides 24-hour service every day of the year, but has recently struggled to provide adequate service within the current organizational model. Despite this concern, it should be emphasized that both organizations are currently successful in achieving their respective missions and that the concerns found in this report are forward looking, considering emerging trends that have been observed within the community. Comparatively, we have completed several studies where emergency response agencies are routinely missing up to 10% of their calls. When a call is missed, no responders from the community respond, but mutual aid is utilized to fill the service gap. This is not the case in Stowe as we could not find an instance where the primary response was deferred to another community on the fire side. On the EMS side, current statistics indicate that an average of three calls per year are deferred to mutual aid as a crew is not available in Stowe. This represents approximately 1% of total volume and is an indicator to follow moving forward. This level of response serves as an indication of the relative health of both Stowe Fire and Stowe EMS.

Despite the success enjoyed by both agencies, a universal concern is that the current organizational models will not sustain effective operations in the future. The fundamental aspects of this concern is listed below:

- The observation of an overall decrease in the number of volunteer/on-call members.
- A decrease in the availability of those that do provide volunteer/on-call service.
- Increasing age of responders.
- A decrease in the training level of responders, this includes the fact that of a total of 18 SVFD personnel certified to perform interior operations, 50% are officers, and slightly less than 50% are age 50 or above.
- Fiscal pressure on the community caused by increasing staffing, equipment, and training needs.

As operational challenges have been observed, Stowe EMS has transitioned to more of a shift based coverage model. This adaptation has not yet been necessary within Stowe Fire, although Chief Sgantas has indicated a difficulty in finding new recruits and maintaining an acceptable level of response. This assessment was further supported as more than half of the department members already have more than 15 years of service. This ongoing reduction in human resources reflects a national trend in a cultural/generational decline in volunteerism that will be discussed in more detail in a subsequent chapter of this report.

It is clear that both the Stowe EMS and the Stowe Volunteer Fire Department are exceptional organizations that are presently meeting and often exceeding the service expectations of the community. It is also apparent that both the chief, his command staff, and the director are respected professionals and exceptional leaders that have worked with their team to develop effective and efficient organizations.

CHAPTER 4

VOLUNTEERISM, RECRUITMENT AND RETENTION OF PERSONNEL

OBSERVATIONS

Chief Sgantas and Director Brinkman independently reported that it is difficult to recruit, and in some cases retain, volunteer/on-call personnel. There is also a concern that the average age of current responders has increased and will lead to a further reduction of force and operational capability over the next decade. Over the last five years there has been a gradual reduction in both the number and availability of volunteer/on-call personnel. It is apparent that both organizations will need to enhance recruitment and retention efforts, and be open to the introduction of the new ideas necessary to retain the predominantly volunteer/on-call (SVFD) or combination model (Stowe EMS) that exists today. In fact, to retain a viable volunteer/on-call model will require both the development of new strategies and a monetary investment.

This situation is not unique to Stowe as there is a nationwide trend that demonstrates there is a reduction in volunteerism. There are various factors that are pertinent to the reduction in the number of volunteer and on-call firefighters in communities such as Stowe. Chief among them is that the current demographics do not support the type of person who is attracted to the fire or EMS service in the 21st Century; someone with time to dedicate to public service or a young person who wants to make a career of it. We have found that on average, for every five on-call firefighters recruited, two or three will remain active after a period of 48 months has elapsed.

Once an individual becomes interested in becoming a volunteer/on-call firefighter or EMT, they must achieve a level of ever increasing specialized skill that is time consuming. Often exit interviews reveal that the training commitment alone is daunting and one of the primary reasons that on-call personnel resign. To become a certified firefighter takes several hundred hours, and add to that additional hours of specialty training. In addition, there are also dozens of hours of training that are spent annually to maintain firefighter skills and certifications.

On the EMS side, a prospective volunteer would need to become certified as an emergency medical responder (EMR) or emergency medical technician (EMT). This medical training alone can take several hundred hours when considering classroom, practical, and study time. These certifications require ongoing continuing education and refresher training necessary to maintain an individual's skill proficiency.

The average citizen does not want to spend a great deal of personal time dedicated to the fire service, especially when family commitments take priority. In addition, many on-call firefighters in departments that have a career force handling the day-to-day emergencies find it hard to stay motivated if they are not being utilized frequently. Other reasons include, but are not limited to:

- An overall reduction in leisure time.
- Employment obligations and the common need to maintain more than one job.
- The virtual elimination of an employer's understanding and flexibility relating to this form of community service.
- Increased family demands.

It is easy to believe that increasing the number of volunteer/on-call firefighters or EMTs can cure staffing problems. Unfortunately, in 2016, this is a difficult solution to achieve and many organizations are hiring a small complement of career staff to ensure that the service level expected by the community is delivered. Fortunately, this is not the case in the SVFD as the department and the town are working together to develop a proactive approach to retain the predominantly volunteer/on-call service delivery model. However, this is currently the case with Stowe EMS as four full-time personnel and a cadre of part-time personnel compliment the volunteer staff to ensure that a single unit is always available to the community. In Stowe, the battle will be to recruit and retain a cadre of active, volunteer/on-call firefighters and EMR/EMTs to provide the service level expected within the community.

Many organizations struggle with the reality of a declining volunteer roster, yet most fire/EMS service organizations only formally address the issue once the lack of volunteerism results in unanswered emergency calls. In those reactive situations, it is hard to reverse this trend which often leads to the need for a small compliment of career firefighters. Fortunately, as this is a forward looking study, Stowe's proactive action could prevent or delay the transition to fire service career staffing.

It should be emphasized that both organizations are currently successful in achieving their respective missions and that the concerns found in this report are forward looking considering emerging trends that have been observed within the community. Comparatively, we have completed several studies where emergency response agencies are routinely missing up to 10% of their calls. When a call is missed, no responders from the community respond, but mutual aid is utilized to fill the service gap. This is not the case in Stowe as we could not find an instance where the primary response was deferred to another community on the fire side. On the EMS side, current statistics indicate that an average of three calls per year are deferred to mutual aid as a crew is not available in Stowe. This represents approximately 1% of total volume and is an indicator to follow moving forward. This level of response serves as an indication of the relative strength of both the SVFD and Stowe EMS.

Therefore, we do not recommend that Stowe consider hiring any additional career personnel, other than a full-time fire chief upon the retirement of Chief Sgantas. Instead, both agencies

should enhance the viability of the volunteer model through positive anticipatory action that includes the development of a part-time joint agency recruitment and retention coordinator.

The federal government has a version of the SAFER (Staffing for Adequate Fire and Emergency Response) Act that pertains strictly to volunteer and on-call firefighters. It provides competitively awarded funds to municipalities to retain and recruit on-call and volunteer firefighters. The grants provide funds for college curriculums in fire science, for EMT and paramedic training, health insurance, physical fitness, uniforms, and other incentives to offer in order to attract candidates to join fire departments.

We believe that the department should attempt to secure a SAFER grant to recruit and retain on-call members; however, this grant should note the staffing issue that currently exists is based on a lack of sufficient staff to meet the requirements of NFPA 1720 and OSHA Two-In/Two-Out. The application should indicate that the grant would be an attempt to meet the NFPA 1720 fire response standard for the first time.

In the SVFD, a target of 45 total volunteer/on-call firefighters would be advantageous, although 40 volunteer/on-call firefighters may be more realistic. The reduction in on-call participation needs to be reversed through utilizing innovation concepts and industry best practices. On the EMS side, the addition of 10 new volunteers would be a realistic target. Two research papers that address these best practices can be found in Appendix C.

When discussing staffing, it must also be noted that although many of the members of the SVFD are certified firefighters, a number of junior members and probationary firefighters are not. Therefore, only 18 SVFD members can initiate an interior fire attack (1/2 of these members are officers, and 7 of the 18 are 50 years of age or older). Personnel, who are not yet certified as firefighters and/or are not up to date in their training, even though they may still arguably be able to contribute, should not be counted toward active "firefighter" numbers, or counted towards unit staffing for incidents. The SVFD should focus on expanding the training of these newer members as quickly as possible.

It does appear to the study team that the Stowe Volunteer Fire Department is on the cusp of struggling with staffing and Stowe EMS has already initiated altered staffing patterns based on a reduction in volunteer/on-call personnel, and both departments at times, particularly during the day, have difficulty mustering sufficient qualified/certified personnel.

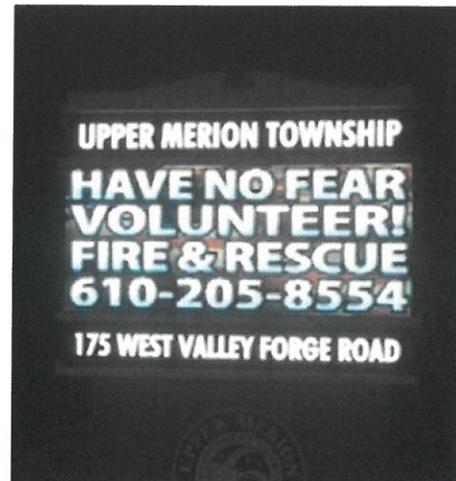
In March 2004, the International Association of Fire Chiefs (IAFC) issued a report by the Volunteer and Combination Officers Section, entitled *A Call for Action: Preserving and Improving the Future of the Volunteer Fire Service*. Among other things, the report highlighted the fact that the ranks of volunteer/call firefighters and EMS providers nationwide are declining due, at least in part, to an increasing demand for services. There are estimates that over the past four decades the number of volunteer firefighters has declined by up to 50%.

There are a number of things that the Stowe EMS and the SVFD could try as part of their marketing efforts to increase the number of active, volunteer firefighters in the department. These suggestions include, but are certainly not limited to:

- Further development of the department's website and establishing a social media footprint through Facebook, Twitter, and other similar electronic venues.
- Placing a prominent banner or link on the home page of the Stowe Volunteer Fire Department website and the website of the Town of Stowe.
- Conducting a recruitment mailing to all residential properties in the town with information about the fire department and recruiting new members.
- Working with the Mountain Corporation and local businesses in an attempt to form partnerships that would allow employees to leave work to respond to emergency incidents when needed.
- Work with the Mountain Corporation to jointly interview personnel for Summer/Winter hires and provide preference to those that are qualified as firefighter/EMTs that agree to actively participate with the SVFD and Stowe EMS as a condition of employment.
- Provide a local discount card for active volunteer firefighters, through this card, local businesses could support their firefighters by providing discounts on gas and other merchandise or services. This could be beneficial to both firefighters and businesses that are trying to build their base, while supporting the community. Businesses that participate should be given public recognition.
- Provide an on-site or community based residency program that provides free lodging to participants.
- Inform potential new members that these positions are compensated for training and response on an hourly basis. Although classified as volunteers, these on-call employees do receive compensation, and the knowledge of this compensation may allow more people to participate.



Volunteer lawn sign



Volunteer electronic message board

Upper Merion Township, in Pennsylvania, recently enacted a recruitment program that, among other ideas, included the purchase and placement of yard signs and banners in visible locations throughout the township (Volunteer lawn sign, above). There are also regular public service announcements on the township's public access television station and messages on the electronic message board outside the township building (Volunteer electronic message board, above).

Even if the recruitment obstacles can be overcome, hurdles remain before a new member is a productive member of the department. Therefore, both agencies should initiate a mentoring program where a new member is assigned to an existing member. The mentor is responsible to work with, guide, and encourage the new member as they work to develop operational proficiency.

Based on feedback provided through the member survey that was delivered as part of this study, there should be an increased focus on hosting family based social and recognition events. One comment in the survey noted the need for an increased social presence, while another stated that "a pat on the back goes a long way". We believe that these events should incorporate the Stowe EMS and the SVFD, and serve as a platform to develop relationships. There is still a small town feel to much of the area protected by Stowe EMS and the SVFD, and perhaps more importantly, still a sense of community. These are key attributes that may increase the likelihood of success for any volunteer firefighter recruitment and retention program.

The department does provide several events annually to show their appreciation to the members of the department. Each summer they should host a joint fire/EMS picnic for

members of the department and their families. A joint fire/EMS Christmas party prior to the holidays should also be considered with the primary focus of the event being on the children of department members.

The SVFD has expressed a desire to retain a strong volunteer firefighting force. We concur and believe that goal is realistic, achievable, and really financially imperative, for the foreseeable future. However, it will require the implementation of ongoing and visible program(s) to recruit and then retain personnel; a strong commitment from the participating municipalities; and strong leadership in the fire department. The member surveys completed within both agencies indicate that this is an area where not enough is being done.

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".

At a minimum, effective day time responses appear to be growing increasingly problematic for both organizations. This may be caused primarily by limited availability of the volunteer firefighters due to their commitments to their regular, full-time occupations. At times, even though a response is accomplished, it is slow, resulting in an unacceptably long delay in getting emergency assistance to the 9-1-1 caller. In still other instances, although the apparatus may respond, it is not adequately staffed with SCBA qualified firefighters, thus limiting the on-scene fire suppression tactical options, when the provisions of the Two-In/Two-Out regulation would be applicable.

We fully support the continued use of a fully volunteer/on-call fire department in the SVFD and a combination model with stronger volunteer/on-call participation in the Stowe EMS. The study team believes that these models can continue to serve the needs of both organizations and the Town of Stowe, for the foreseeable future. However, we also believe that the incident volume will most likely continue to increase each year, along with the multitude of other daily tasks which need to be performed. This will be particularly true in Stowe as the town should begin to merge fire and EMS into a single agency, operating within separate divisions. This would result in a single fire/rescue agency that would encourage cross-training of personnel, but allow personnel that did not want to be cross-trained to remain focused on a single discipline. In this case, while some personnel could perform both fire and EMS functions, others would remain focused on just fire/EMS. More than half of the respondents to both the fire and EMS survey thought that a merger should be considered.

Consideration could also be given to encouraging one volunteer/on-call SVFD member to supplement in station staffing on nights and weekends. Personnel who pull at least one duty shift per month could possibly maintain their member in good standing status with the fire department, despite being unable to participate in other areas. When in station, they could also complete their required training. One agency that currently does this supports this voluntary program by offering \$3.00 per hour as a stipend.

Under a different type of duty crew system, the department could also be divided into two or three duty crews. Each duty crew would have their own separate alert tone and would function on some type of a rotational system with the other crew(s), perhaps one week on and either one or two weeks off. Only the “duty crew” would be dispatched initially to minor incidents, often referred to as “still alarms”. The advantage of this duty crew system is two-fold. It preserves the active, primary response role that is a component of a strong volunteer force, while simultaneously reducing the constant need for personnel to respond to all incidents. Under the duty crew system, multiple stations and units would still be dispatched and respond to potentially serious incidents such as any type of reported structure fire, rescue incidents, etc., based upon the run card protocols. All personnel would be encouraged to respond to these types of incidents.

There are no easy or guaranteed solutions to the staffing quandary facing Stowe EMS, the SVFD, and many other communities throughout the country. This is particularly true in departments that provide EMS due primarily to the much higher number of requests for service these departments must respond to. It is also important to stress that what may work in one community with regards to staffing and call/volunteer recruitment and retention, may not work in another nearby community.

Each community must individually determine what programs, incentives, and motivations will work, and be most effective. It is also worth mentioning again that the challenges that are facing the Stowe EMS and the SVFD are not in any way unique to the community or in any way a reflection on either agency. The same issues are being faced by many, if not most, volunteer fire departments throughout Vermont, the northeast, and in fact, across the country.

One idea often considered in areas that attract a wide variety of young adults for either recreational or educational purposes is the development of a live in or in community residency program. Stowe could pursue this concept by providing lodging for four certified firefighter/EMTs. These firefighters would be required to attend an orientation program and then provide a set number of hours of coverage, in addition to being available anytime they were in the station. During our site work in Stowe, the study team was given the impression that developing an in station live in program would be resisted. We believe that if the stakeholders approach this idea with open minds and positive attitudes, developing a program of this nature either at the public safety complex or in the community could be accomplished.

This is an example of how culture and perception could produce barriers that would inhibit progress.

The emerging reduction of response hampers both the effectiveness of the department and the safety of firefighters. The Federal OSHA standard of Two-In/Two-Out as it pertains to firefighting, dictates that four personnel be assembled on the scene of a fire or hazardous rescue to provide for firefighter safety as emergency operations commence. The one exception to this rule is that if a visible rescue needs to occur, you can operate with fewer than four personnel to complete the task. To avoid the transition toward a career staff, and to accomplish the staffing requirements of the OSHA standard, more emphasis and investment needs to be placed upon enhancing the participation of existing members and the recruitment and retention of additional on-call personnel. The current on-call compliment stands at 29 personnel, while national averages, based on the size of the community, indicate that 40 on-call personnel would be necessary to provide a reasonable level of service to the town. We feel that this is a time to invest in a substantial recruitment and retention program in an effort to ensure sufficient resources for the future.

As most rural and suburban communities across the United States are dealing with the reduction in volunteer and on-call staff, this has become a common issue. Many communities have come to the conclusion that investing in on-call personnel is the best practice, and to that end, they have pursued some of the following strategies:

- Provide a local discount card for active on-call service;
- Provide on-call firefighters with community based benefits such as free dump stickers, beach stickers, etc.;
- Provide community based awards and recognition;
- Provide gift certificates for local restaurants, concerts, or other entertainment as a reward for attaining a high level of response;
- Adjusting the level of compensation to be more attractive to responders; and
- Providing a two-hour minimum for response during specific hours.

Appendix C provides two research papers and an article on best practices relating to the recruitment and retention on volunteer and on-call personnel.

In the public sector, many of these benefits can be controversial. After considering these strategies, we have focused on developing innovative strategies for the Town of Stowe. One example of an unconventional and innovative best practice that we feel would work in Stowe is

to provide a health insurance package for self-employed, year-round residents, provided they complete training, certification, and provide the town with a high level of immediate response. As mentioned above, a portion of this cost may be eligible to be incorporated in to a SAFER grant. Typically, this type of program attracts electricians, plumbers, mechanics, and other self-employed residents that would be beneficial to either organization.

An example of this best practice has worked successfully in the Town of Holliston, Massachusetts, for several years. Viewed as costly and unconventional, this program has retained a high level of active personnel that provide an immediate response on a 24/7 basis. This strategy to invest in the on-call force avoided the need for career personnel, and when compared to a smaller neighboring community, produced an overall cost (including health insurance) of 50% of what the neighboring community pays for fire protection. We believe a program of this nature is a good fit for Stowe and should be considered. During our research a member of the study team visited Chief Michael Cassidy in Holliston and conducted an interview pertaining to this concept. An overview of that interview has been inserted below:

Holliston is a community of approximately 14,500 residents. It has a call firefighting force of 50, with an additional call EMS force of approximately 28 persons. Chief Cassidy is the only full-time employee other than a few hourly workers who provide dispatch services. All of these folks are eligible to participate in a town's health insurance program. Chief Cassidy reports that turnout at all incidents regularly exceeds NFPA 1720 standards. For example, a structure fire that occurred midweek, at midday, resulted in a response of 32 call firefighting personnel to the incident.

Even though all call firefighters are required to be certified at least to the level of firefighter I/II, the roster is currently full at the authorized strength, and Chief Cassidy reports a waiting list of approximately 15 to 20 persons. He stated that the health insurance benefit, offered to his call firefighters, is most definitely the driving factor in his ability to maintain such a robust and adequately trained call firefighting force. Below is a breakdown of some of the numbers:

- *Chief Cassidy stated that approximately 55% of the current membership elects to take the health insurance benefit. Additional compensation is provided to the call firefighter should he or she elect not to participate in the benefit group.*
- *Chief Cassidy stated that most of the members that participated were self-employed tradesmen. Many of those who elect not to participate are young adults who might still be on their parents' health insurance. Since members can become call firefighters at age 18, and the department also has a very active Explorer post, which acts as a feeder pool for the department, a sizable number of the current call force are within the 18*

to 26-year-old category, and may still participate in their parents' health insurance program.

- *All call firefighting personnel must first successfully complete firefighter I/II training. No compensation is provided until after successful completion. If selected for employment, the call firefighter has the option of participating within the town's health insurance program.*
- *Those that elect to enroll in an HMO program have 60% of their expenses covered by the employer (family or individual plan). Members that prefer a PPO style plan have 50% of that cost paid by the employer.*
- *Holliston call firefighters also enjoy a very generous compensation program. Active members receive a base retainer, as well as hourly compensation for time actually spent working at incidents. Recently, the compensation package was expanded to provide a flat fee of \$75 per month for those who regularly attend the bimonthly training sessions.*

We asked Chief Cassidy if the rising cost of healthcare had caused local government officials any concern in providing these benefits to such a sizable number of part-time employees. Chief Cassidy responded in saying that the trade-off was considered minimal in that the community enjoyed a consistent professional response by its call firefighters and EMTs without the cost of a full-time, unionized workgroup.

Obviously health insurance is expensive and costs seem to escalate on an annual basis. However, self-employed tradesmen are also confronted with this cost. The ability to join the town's insurance in itself may reduce their cost. Furthermore, the town could develop a sliding scale that would pay a percentage of the health insurance cost equal to the level of response provided by the responding firefighter. We have suggested rate cost sharing as follows:

Proposed Health Insurance percentages

Percentage of Training and incident Response	Proposed of Health Care expense paid by the town
90% or greater participation	60%
70% - 89% participation	50%
50 – 69% participation	40%
33 – 49% participation	20%
20% - 25%% participation	Eligible to enroll at employee's cost



RECOMMENDATIONS

- 4.1 The SVFD and the Stowe EMS should jointly apply for a federal SAFER grant for volunteer recruitment and retention. This grant should be utilized to develop a marketing and recruitment program to attract new members, and provide incentives for the retention of those personnel such as tuition reimbursement, health care benefits, tax abatements, etc. This 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 fire department's and each municipality's web site**
 - **Placing recruiting messages on electronic sign board at municipal facilities**
 - **Placing signs recruiting volunteer personnel at the main entrances to the fire district, and lawn signs to be placed throughout the fire district**
 - **Placing signs/banners recruiting volunteers in local businesses in particularly high volume locations**
 - **Maintain a continued active and visible presence at the local high school**
- 4.2 The Stowe EMS and the SVFD should attempt to enter into partnerships with the Mountain Corporation to encourage their full-time employees to become volunteer/on-call emergency service personnel.**
- 4.3 The Stowe EMS and the SVFD should attempt to work with the Mountain Corporation to develop a joint selection process where summer or winter seasonal hires that are firefighter/EMTs are given preference provided that they will actively participate as emergency responders. This concept could also encompass providing lodging during their employment.**
- 4.4 In cooperation with the town, the Stowe EMS and the SVFD should explore the feasibility of utilizing, and in fact encouraging, existing town employees to perform**

“dual roles” by serving not only in their full-time positions, but also serving either agency as volunteer/on-call members.

- 4.5 The Town of Stowe should give additional consideration for hiring to existing EMS and fire volunteer/on-call personnel.**
- 4.6 The Town of Stowe should hire a part-time recruitment and retention coordinator that would advocate for the development of volunteer/on-call personnel for both agencies.**
- 4.7 The Stowe EMS and the SVFD should clearly project that positions do receive hourly compensation. This will ensure that members of the public understand that although positions are classified as volunteer (not their primary job), they are on-call and responders are compensated for response and training. This could attract candidates that otherwise could not afford to invest the time to serve in these positions and receive no compensation for their time.**
- 4.8 In an effort to reduce response times, the SVFD should consider encouraging volunteer personnel to stay in the station on nights and weekends. Personnel who work at least one shift per week could possibly maintain their member in good standing status with the fire department.**
- 4.9 The SVFD should consider utilizing a duty crew system that generates the response of four members to answer automatic alarms and other similar calls. Under a duty crew system, the department could be divided into two or three crews. Each duty crew would have their own separate alert tone and would function on some type of a rotational system with the other crew(s), perhaps one week on and either one or two weeks off. Only the “duty crew” would be dispatched initially to minor incidents, often referred to as “still alarms”, reducing the need for the entire department to respond.**
- 4.10 The SVFD should explore ways to incentivize the duty crew personnel and program with the goal of maximizing buy-in and participation of department members, while simultaneously reducing the emergency response burden on all members of the department.**
- 4.11 The Stowe Fire Department should consider developing an in-station or in-community four-person live-in program.**
- 4.12 The Stowe Fire and the EMS should utilize an LED computer controlled sign board at the public safety complex to ensure that all residents are aware that openings exist for volunteer/on-call personnel and that new personnel will be welcomed and trained.**

- 4.13** The chief should conduct an online survey to determine what recruitment and retention programs and incentives would be of the most value.
- 4.14** The Stowe EMS and the SVFD should expand its Internet and social media footprint by establishing an expanded social media presence designed to connect with the community and inform the community of the need for additional on-call personnel. Managing any social media efforts should be the responsibility of the recruitment and retention coordinator.
- 4.15** The Stowe EMS and the SVFD should develop a mentor program where a prospective member is assigned to a senior crew member. This mentor would be an advocate for the new member and be a resource to guide and encourage the new member as they work to develop proficient operational skills.
- 4.16** The Stowe EMS and the SVFD should recognize and provide donated incentives once per year for a high level of response. This could include working with local businesses to provide a gift certificate, gas card, or ski pass.
- 4.17** The Stowe EMS and the SVFD should jointly sponsor an emergency services explorer program that would be led by the recruitment and retention coordinator.
- 4.18** The Stowe EMS should establish an EMS internship program with the local high school to allow young people to initiate a career path and experience EMS.
- 4.19** The Stowe EMS and the SVFD should ensure that students at the University of Vermont are aware that there are paid, on-call positions available within both agencies.
- 4.20** The Stowe EMS and the SVFD should become a single agency, but maintain two separate divisions. This would allow volunteers to participate in either and not be precluded from participating in both agencies. Although this merger would create a fire/rescue department, it would maintain separate divisions and not force cross-training of personnel.
- 4.21** The Stowe EMS should develop and market an EMS observer program, thus gaining interest and visibility within the community.
- 4.22** The Stowe EMS and the SVFD should consider developing a joint agency citizen's fire/EMS academy where interested citizens could learn about different aspects of emergency services in Stowe.
- 4.23** The Town of Stowe should consider offering health care to volunteer/on-call members that demonstrate response commitment to the community. The specifics of this

program would range from allowing responders to join the town's health care program at their own cost, up to a 50% benefit level based on the responder's level of response.

- 4.24** The Stowe EMS should compensate an individual who completes EMT training for their course costs once they have attained certification. An agreement should be signed indicating that the recipient agrees to be a member for a minimum of two years in consideration for this tuition benefit.

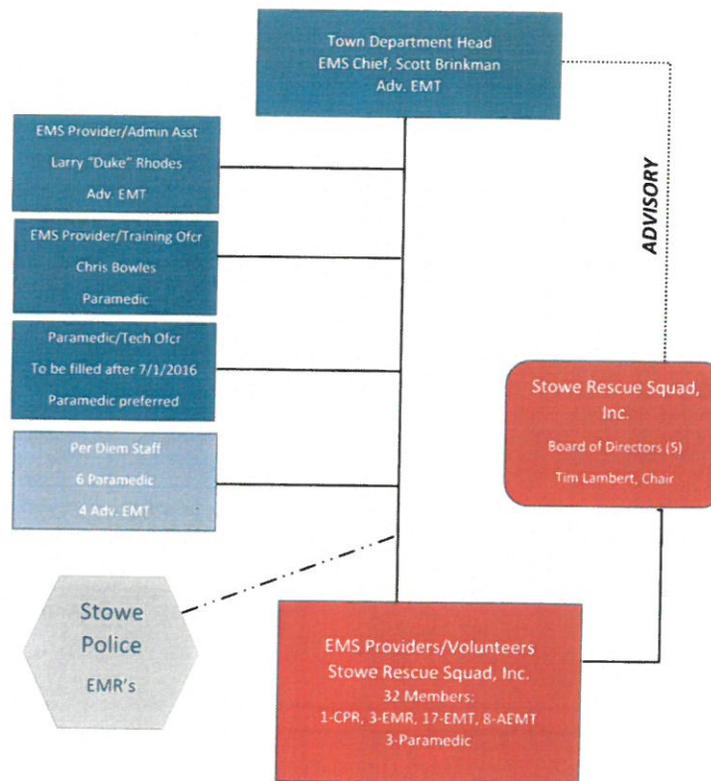
CHAPTER 5

EMERGENCY MEDICAL SERVICES

Structure and Operational Model

The Stowe EMS is a hybrid agency consisting of 33 emergency medical responders. This includes 4 full-time staff members, 9 per diem staff members, and 20 members that volunteer to cover open shifts. These volunteer members are compensated when they attend training or respond to a call.

Stowe EMS Organization Chart



Stowe EMS Organizational Chart

Stowe EMS operates from a new public safety complex located at 350 South Main Street. This is an exceptional facility where all emergency services are co-located.



Stowe Public Safety Complex

Administration

The Stowe EMS is led by Scott Brinkman who serves as the EMS Chief/Director. Scott is an exceptional leader who provides a unique level of enthusiasm and energy to the organization. Director Brinkman works a combination of administrative and operational shifts, and noted that he does not want to work in a solely administrative, five-day per week, position. The director is assisted by his full-time staff who also provide some administrative support. The study team noted that there was a high level of internal communication that is required. We also observed that the demands of the position require the director to prioritize projects, resulting in some items being deferred. An example is that bid specifications for a new ambulance approved in 2013 are just now being prepared.

EMS Staffing

Full-time staff, which are represented by a union (IBEW), work 40 hours per week, including three 12 hour shifts and 4 administrative hours. This is a complex and confusing schedule that the study team has struggled to understand. Through bargaining with the IBEW, we recommend that the town restructure and simplify shifts into either a rotating or fixed 24-hour schedule for full-time employees. As members are engaged in emergency operations on an average of 4-5 hours per shift, it should be expected that administrative tasks can be completed while on shift. Using a 42-hour work week, four personnel could cover all shifts by working a 24-hour shift, having two days off, and then working another 24-hour shift, followed by three days off. This shift would rotate through the days of the week. As one of the four full-time employees, the director should work one 24-hour shift to provide coverage, and have his remaining hours dedicated to the administrative needs of the organization. His second 24-hour shift would then be filled by a per diem paramedic. Under this schedule, there would need to

be the recognition that training and continuing education that could not be completed while on shift would result in some overtime hours.

The remaining shift necessary to provide a three-person response should be first filled with volunteer/on-call personnel and then with per diem employees. Volunteers should have the option of taking a shift of less than 12 hours. Considering the factors outlined in the recruitment chapter, it is unreasonable to assume that a volunteer/on-call member could commit 12 hours and still meet work and family obligations. A concerted effort should be made to increase volunteer/on-call participation as a means to control and reduce the fiscal burden placed on the community.

Any further hiring of per diem personnel should be limited to paramedics. The director should work with per diem personnel to maximize paramedic coverage with the goal being to provide one paramedic on each shift.

As an advanced life support service, Stowe operates far above this minimum threshold and attempts to staff each shift with either a paramedic or EMT-Advanced. Paramedic coverage is provided approximately 57% of the time. In addition, the agency attempts to provide a three-person crew, but will operate with a two-person crew if a third responder is not available. The operational model attempts to provide a crew chief, two crew members, and a driver. Observers or trainees may fill the fourth position on an ambulance. Our interviews revealed that there is not a significant effort put forth to encourage observer or trainee participation based on the boundaries of organizational culture.

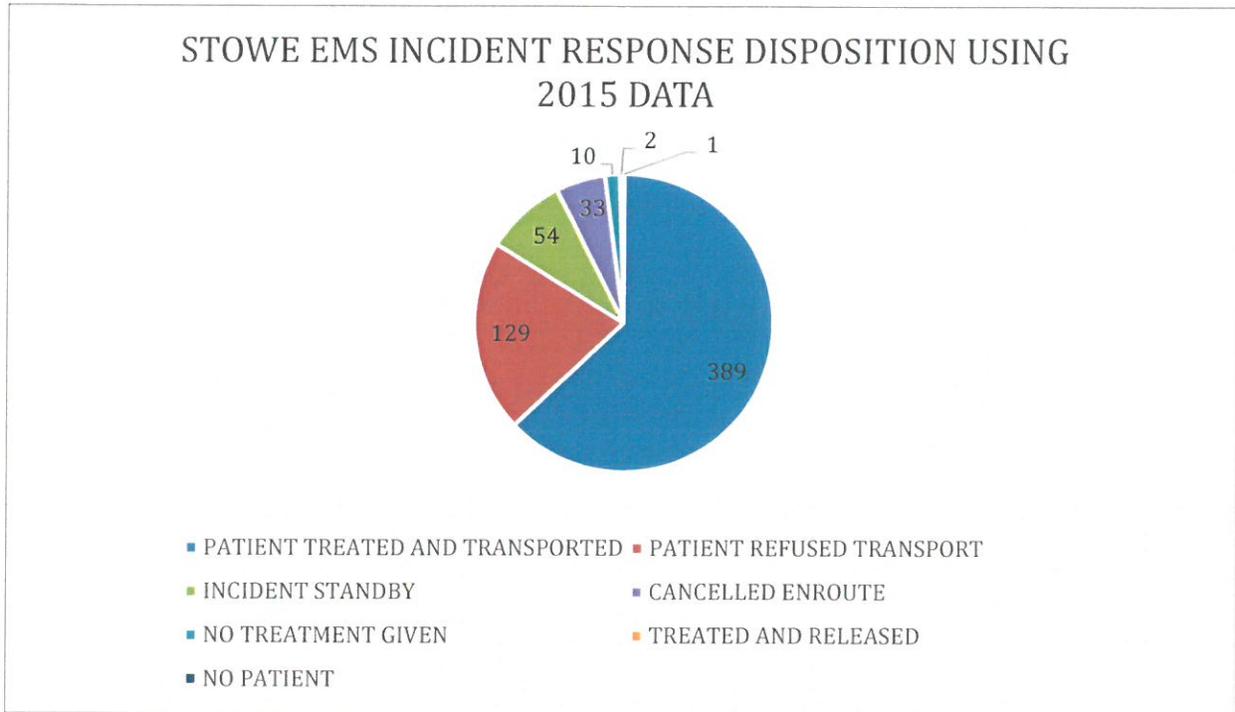
The primary focus of the agency is to staff a single unit with a crew of three personnel. In Vermont, an ambulance can be staffed and transport with two certified providers, including at least one emergency medical technician (EMT) and one emergency medical responder (EMR). Stowe EMS consistently provides a level of staffing well above the minimum required to operate an ambulance in Vermont. As an ambulance can transport a patient with two providers, the lack of a third crew member should never inhibit response and patient transportation.

As the number of volunteer/on-call personnel has waned and the ability of existing personnel to commit to 12 hours of coverage has decreased, Stowe EMS is slowly utilizing more of a paid staffing model. Therefore, the increased utilization of volunteer/on-call personnel is essential to controlling costs and maintaining the community based essence of the organization.

EMS Operations

Stowe EMS responds to approximately 635 calls for service per year. No emergency medical dispatch classification or pre-arrival instruction is provided to Stowe EMS, or the caller by the dispatch center. In addition, the seasonal nature of the community produces an increase in call

volume during holiday periods. In general, the highest call volume occurs between 9AM and 4PM, with peak call volume occurring at 12PM. This translates into 1.7 calls for service per day.



Stowe EMS Incident Response Data

The average response time from the time of the first tone is 13.9 minutes. When you factor in dispatch processing time, the time from placing a call to the arrival of the ambulance averages 14-15 minutes. The average time from the time of crew notification until the ambulance leaves the station enroute to the call is 6-7 minutes. Although urban and suburban organizations strive for a 4-6-minute response time that is not realistic in the Town of Stowe. The Commission on the Accreditation of Ambulance Services (CAAS) indicates that response times in Stowe should average 8 minutes and 59 seconds.

The average response time in Stowe currently sits well above industry best practice and the CAAS benchmark. During our field visit, we observed an ambulance with a paramedic and EMT sit on the apron of the public safety complex waiting for a volunteer to join them. To say the least, this is an unusual practice that an ambulance staffed with a legal crew would wait for additional personnel before responding, thus producing a significant delay in patient care.

The practice of waiting for volunteer/on-call members to respond to the station, which produces a 6-minute response delay, should be immediately discontinued. Volunteers should meet the ambulance at the scene of the emergency in either their privately owned vehicle or



through the response of the squad which could be taken home by the volunteer on duty. This single change would dramatically enhance response times and bring Stowe EMS into line with the response time recommendations of CAAS.

Financial Resources

As the cost of providing a single unit on a 24/7 basis with a crew of three personnel has increased, the fiscal burden on the community has escalated. Recently, this burden has been partially offset by donations to support staffing made by Stowe Rescue, Inc. Presently the Stowe EMS budget is \$447,341, which represents a figure 3% above the average of peer communities. On average, the budget has increased by 6.435% per year. However, the budget request for the next fiscal year is \$544,567, which represents a 22% requested increase.

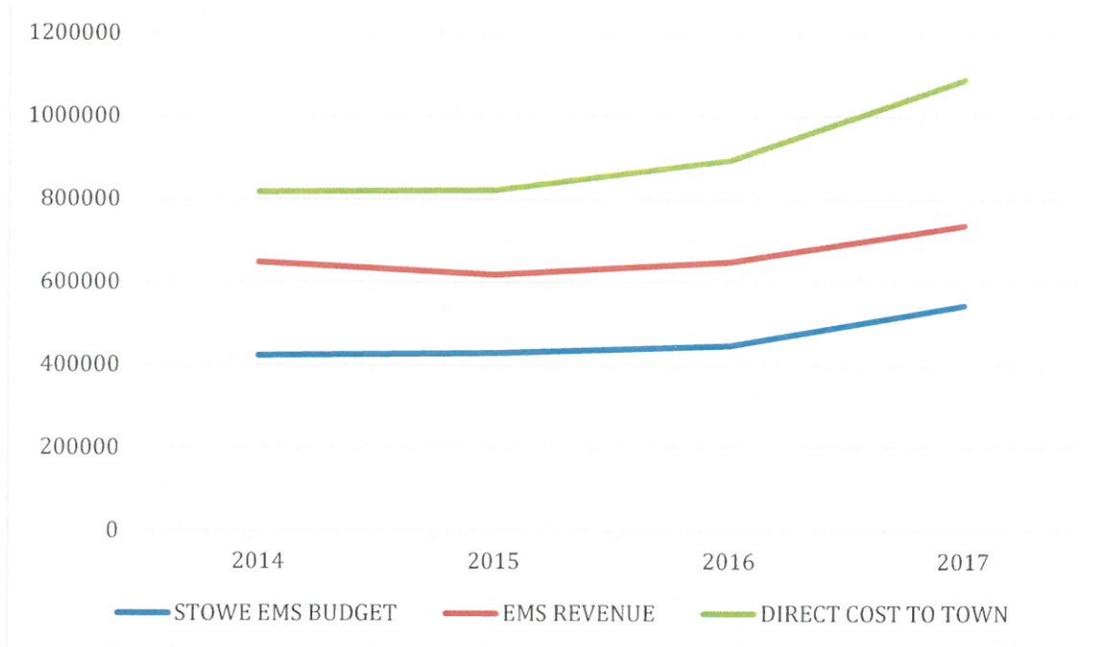
As detailed above, Stowe Rescue, Inc. has provided a series of generous donations to support staffing. Although advantageous to the town, there is no guarantee that this process will continue. It is rare that donations are used to support staffing, as it is far more common to utilize donations to purchase vehicles and equipment. The town should continue to accept these donations, but also be prepared to continue to provide the level of service acceptable to the community in the absence of these donations.

The chart below details the appropriated budget, EMS revenue, donations, and ultimately the fiscal impact, upon the Town of Stowe for EMS.

EMS Financial Comparison

Year	Budget	EMS Revenue	Per Diem Cost/Donations (not considered in appropriated budget)	Cost to Community
2014	394,113	224,683		169,429
2015	393,087	188,449		204,639
2016	465,250	203,711	22,000	258,539
2017	545,584	192,505	100,000	353,079





An analysis of five years of ambulance transport revenue yields the following information.

- \$1,655,000 billed
- \$998,000 collected (60.3%)
- \$338,000 adjusted (20%)
- \$319,000 bad debt (19.2%)

Although there is some question whether the bad debt figure includes receivables that remain outstanding, attention should be focused on strategies to reduce the level of bad debt. We suggest that the first step to resolve this issue is that those overdue accounts receive a letter from the director, and then be transferred to a collection agency if payment is not received. Stowe EMS should also develop a policy and hearing process to address debt relief in the case of demonstrated hardship.

Stowe EMS transports an average of 419 patients per year and collects an average of \$465.26 per transport. A review of ambulance rates suggests that base rates should be increased by 10% in 2017 and another 10% in 2018. Intercept rates which are charged when Stowe EMS provides advanced life support services to another ambulance service are low and should be increased to \$150 in 2017 and \$200 in 2018. Although much of these increases may be adjusted, private insurers and ambulance services will typically pay the full amount. Therefore, this rate adjustment will result in an increase in revenue.

Apparatus & Capital Planning

Stowe EMS operates three vehicles which are pictured below:



Stowe A-1 2012 Type-1 Medium Duty International Terrastar/Osage Ambulance

Stowe Ambulance 1, a Type 1 Medium Duty, International Terra-star chassis, Osage Box, 2WD. This truck is a 2012, was purchased new, and presently has 62,675 miles. This vehicle has been the primary response unit since purchased.



Stowe A-2, 2002 F450 Road Rescue

Stowe Ambulance 2, a Type 1, Ford F450 2WD. This truck is a 2002 and has 62,438 miles. Ambulance 2 was scheduled for replacement in FY15. This replacement is still funded, and the department is working on completing the RFP for its replacement.



Squad-1 2015 Suburban, First Response/Command

Stowe Squad-1 a 2015 Chevrolet Suburban 4x4 (approximately 10,000 miles). This vehicle is fully equipped with the same level of advanced life support (ALS) equipment as both ambulances. The vehicle is used by department staff for daily activities/errands and out-of-town department business. It also provides an excellent first response capability to be utilized by any member of the department staff or volunteer. This unit is equipped with the following radios: (1-VHF mobile, 1-UHF mobile, 1-dual band mobile).

The study team believes the following schedule should be utilized for replacing units. However, as the replacement of ambulance 2 was funded more than two years ago, the replacement of this unit should be an immediate priority.

UNIT DESIGNATION	UNIT MAKE	YEAR PURCHASED	YEAR OF SCHEDULED REPLACEMENT
Ambulance 2	Road Rescue	2002	2017
Ambulance 1	Osage	2012	2022
Squad 1	Chevrolet	2015	2028

The staff survey revealed that approximately 20% of the organization is concerned with the reliability and replacement of ambulances. The replacement of this unit would address many of the reliability issues raised in the staff survey. Specifically, a number of comments indicated that there should be a four-wheel drive unit purchased. Although a four-wheel drive ambulance could easily be justified in Stowe, it comes at a cost of providing the patient with a less comfortable ride. We believe that this is an internal decision that should be discussed given the concern expressed.

RECOMMENDATIONS

- 5.1 The specifications for a new ambulance should be prioritized, finished, and placed out to bid as soon as possible. The new ambulance should replace Ambulance 2.**
- 5.2 The Town of Stowe should bargain with the IBEW to transition to a 42-hour work week and migrate to rotating 24 hour shifts.**
- 5.3 The Town of Stowe should pay overtime for continuing education that cannot be completed on shift, but negotiate to eliminate administrative time.**
- 5.4 The director should work one 24-hour shift and the remainder of his hours should be focused on the administration of the service.**
- 5.5 Stowe EMS should reduce the requirements on volunteers to 12 hours of coverage and 50% of meetings per month. Volunteers should be allowed to commit to less than a 12 hour on-call shift.**
- 5.6 Stowe EMS should diligently work to increase the level of participation of volunteers.**
- 5.7 Stowe EMS should seek to maximize paramedic coverage with 100% coverage with a single paramedic being the goal.**
- 5.8 New per diem hires should be paramedics.**
- 5.9 Ambulance billing base rates should be increased by 10% in January 2017 and an additional 10% in January 2018.**
- 5.10 ALS Intercept rates should increase to \$150.00 in January 2017 and to \$200 in January 2018.**
- 5.11 The dispatch center should be requested in writing to provide Emergency Medical Dispatch (EMD) services inclusive of call classification and pre-arrival instructions. If**

the current dispatch center is unwilling to provide that service, Stowe EMS should determine if another center offers EMS dispatch services and negotiate accordingly.

- 5.12 Once a crew of two is confirmed by radio, the ambulance should immediately respond without delay. Volunteer/on-call personnel should meet the ambulance on the scene via either their private vehicle or through the use of Squad 1.**
- 5.13 A 8 minute, 59 second, response time target should be set and utilized as a point of evaluation.**
- 5.14 In conjunction with the Town of Stowe and the SVFD, a stakeholder group should be developed to identify the action steps, timeline, and barriers relating to an administrative merger of the Stowe EMS and the SVFD.**
- 5.15 Stowe EMS should offer to train firefighters to the level of EMRs to build a larger cadre of personnel that could drive an ambulance and meet the staffing requirements in Vermont.**
- 5.16 Current CPR only drivers should be asked and encouraged to become EMRs to provide crew flexibility.**
- 5.17 Stowe EMS should increase the amount of joint training with both the SVFD and Stowe Mountain Rescue personnel.**

CHAPTER 6

FIRE SERVICES

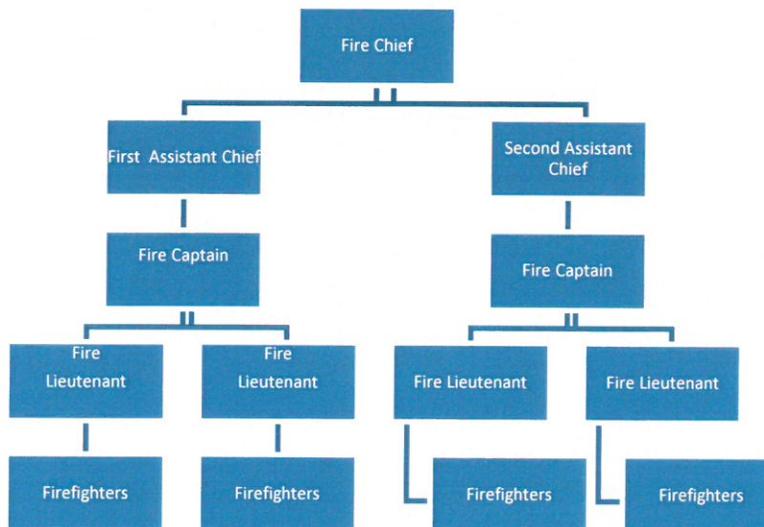
Structure and Operational model

The SVFD operates from a new public safety complex located at 350 South Main Street. This is an exceptional facility where all emergency services are co-located.



Stowe Public Safety Complex

The volunteer members of the SVFD are compensated when they attend training or respond to a call. This includes 3 chief fire officers, 2 captains, 4 lieutenants, 10 firefighters, 4 probationary firefighters, and 4 junior firefighters. The organizational structure of the department is detailed in the chart below:



Stowe Volunteer Fire Department Chain of Command/Organizational Chart

Administration

The SVFD is a volunteer/on-call organization. All administrative tasks are accomplished through a team approach where Chief Sgantas and his officer corps take action to address the needs of the organization. Overall, the feeling in the organization is that the chief currently needs administrative support, and a full-time fire chief will be needed when he decides to retire. In the interim, we believe our recommendation of a part-time recruitment and retention coordinator could address the expanding administrative issues facing the department.

Fire Operations

The fire service has experienced tremendous technological advances in equipment, procedures, and training, over that 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 in equipment and procedures that have allowed firefighters to perform their duties more effectively, efficiently, safely, and with fewer personnel. However, the fact still remains that the emergency scene in general, and the fire ground involving a structure fire in particular, is a dynamic, dangerous, frequently unpredictable, and rapidly changing environment where conditions can deteriorate very quickly placing firefighters in extreme personal danger.

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

NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments*, 2014 edition (National Fire Protection Association, Quincy, MA), outlines organization and deployment of operations by volunteer/call and primarily volunteer/call fire departments.

Paragraph 4.3.2 of NFPA 1720 on *Staffing and Deployment* states that Table 4.3.2 (below) 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.

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

- Paragraph 4.3.1 on *Staffing and Deployment* states that the fire department shall identify minimum staffing requirements to ensure that a sufficient number of members are available to operate safely and effectively.
- Paragraph 4.3.2 on *Staffing and Deployment* states that Table 4.3.2 (below) 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 residence without basement or exposures.

STAFFING AND RESPONSE TIME TABLE FROM NFPA 1720

Table 4.3.2, Staffing and Response Time				
Demand Zone	Demographics¹	Minimum Staff to Respond	Response Time² (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 distance > 8 mi.	4	Dependent upon travel distance	90 %

Stowe, overall, is a combination of a rural and remote demand zone; however, it also has specific areas that are both suburban and even urban in nature.

- Paragraph 4.3.3 on *Staffing and Deployment* states that upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attack within 2 minutes, 90 percent of the time.
- Paragraph 4.6.1 on *Initial Firefighting Operations* states that initial firefighting operations shall be organized to ensure that at least 4 members are assembled before interior fire suppression operations are initiated in a hazardous area.
- Paragraph 4.7.1 on *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.

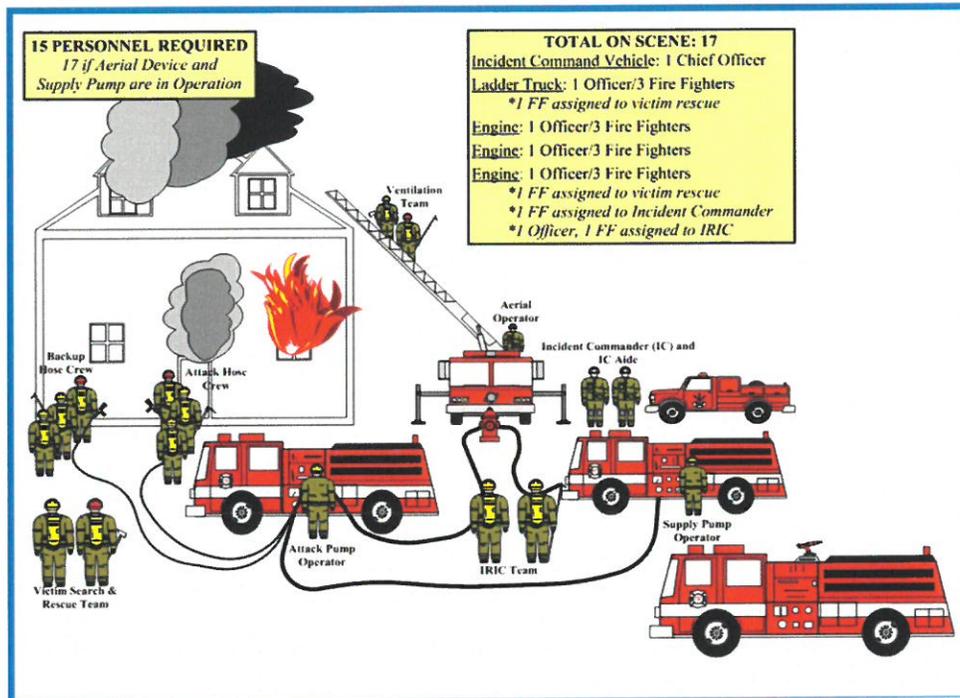
- Paragraph 4.7.2 on *Sustained Firefighting Operations* also states that the capability to sustain operations shall include sufficient personnel, equipment, and resources to effectively, efficiently, and safely conduct the appropriate operations.

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.*

Some jurisdictions add additional response resources and in some cases exceed the specifics of national benchmarking for personnel and other resources, particularly when the incident is in a larger structure where the life hazard may be higher and/or the potential fire situation much more complex. Personnel needs for fires involving large, more complex structures, such as large commercial occupancies of which Stowe has a growing number of, will require a significantly greater commitment of initial personnel, probably minimally in the area of 22 to 24 firefighters. This should include reported fire incidents in buildings that are fully sprinklered. While sprinklers are highly effective, they are not 100% so. Until such time as the extent and seriousness of the incident can be determined, a full complement of personnel and apparatus should be dispatched.

The Low to Moderate Risk Response-Interior Fire Attack illustration below shows the critical tasks and resource deployment required on low- and moderate-hazard incidents, such as residential and small commercial structure fires. Although some people advocate that these types of incidents can be handled with fewer personnel, unless it is a small fire, there is the possibility there will not be sufficient personnel available to perform all the critical tasks, necessitating that some be delayed.

LOW TO MODERATE RISK RESPONSE-INTERIOR FIRE ATTACK



Typical basic staffing needs for a single family dwelling fire.
Image credit: IAFF 266

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

- 4-person firefighting crews were able to complete 22 essential firefighting and rescue tasks in a typical residential structure 30% faster than 2-person crews and 25% faster than 3-person crews.

- The 4-person crews were able to deliver water to a similar sized fire 15% faster than the 2-person crews, and 6% faster than 3-person crews, steps that help to reduce property damage and reduce danger/risks to firefighters.
- Four-person crews were able to complete critical search and rescue operations 30% faster than 2-person crews, and 5% faster than 3-person crews.

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

Beyond the NFPA standard(s), which as standards do not carry the weight of regulation or law, is the Occupational Safety and Health Administration (OSHA) Respiratory Protection Standard, CFR 1910.134, which does carry the weight and force of regulation, thus making compliance mandatory. One key provision of the Respiratory Protection Standard that is directly applicable to fire department staffing is known as the "Two-In/Two-Out" rule. In brief, this regulation specifies that anytime firefighters operate in an environment/atmosphere that is "immediately dangerous to life and health" (IDLH), whenever 2 members enter the IDLH area together/as a team, they must maintain visual or voice communication with 2 additional firefighters who must remain outside of the IDLH atmosphere, prepared to render immediate emergency assistance to those inside. However, the OSHA rule does provide an exception 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 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 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.

OSHA TWO-IN/TWO-OUT

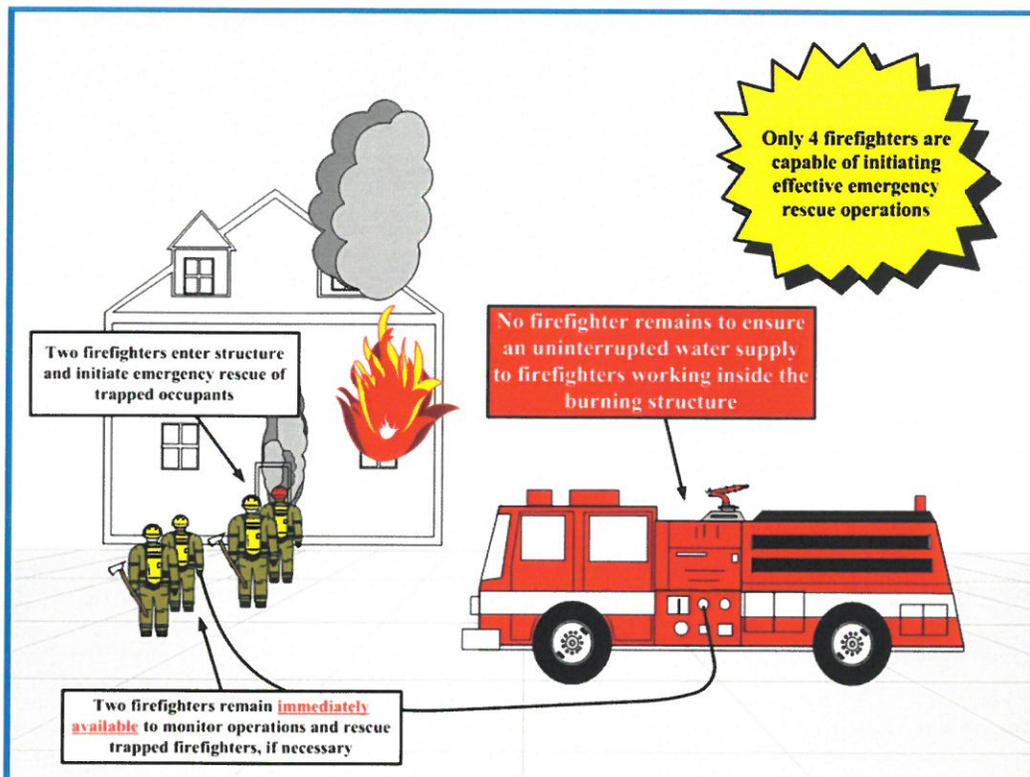


Image Credit: IAFF 266

OBSERVATIONS

By definition, the SVFD is still a volunteer/on-call organization. The necessity to provide consistent, reliable, response 24/7 was the driving factor that originated this study. Although it is our observation that the department is an exceptional organization that is presently serving the community well, declining numbers of volunteers coupled with a nationwide reduction in volunteerism threatens the viability of this operating model in the future.

At the time this study was conducted, the SVFD's volunteer/on-call staffing consisted of 29 members. The chief and members of the department that we interviewed indicated that there has been a decline in both membership and participation of the 29 members that currently staff the department. As with many call/volunteer departments today, there is a core group of older, long time, members of the department, with a second group of young, newer, firefighters. Many, but not all, of these personnel are certified firefighters. There is a dearth of personnel who would fall into the middle between the other groups both in age and years of experience.

The size of the department, personnel wise, would generally be adequate to handle the expected emergency work load in a community the size of Stowe. Some studies that have been conducted indicate that, particularly in smaller communities, the fire department can anticipate about one percent (1%) of their year round population may be expected to be members of the fire department. In Stowe, this translates into a target membership level of 40-45 personnel.

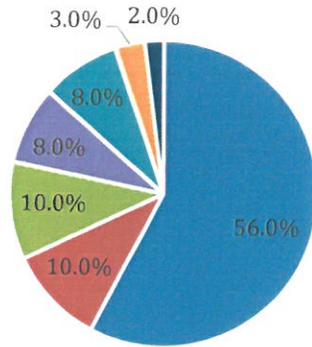
In almost any call/volunteer emergency services organization there is going to be a percentage of members whose names still appear on the "active" roster, yet they no longer truly are, or are minimally so, for a variety of reasons. Realizing that most members of the department have a primary job, other than the fire department, likely limits their availability to respond to calls mostly during normal business hours. This causes the current staffing picture to become much more of a concern. It was reported to the MRI study team that as the level of participation has waned, this is the case in Stowe. It was also reported that there is a core group of about 10 to 15 personnel who really are the backbone of the department and are the true firefighting force. Conversely, there are a number of personnel whose names still appear on the roll call sheets who show little to no response activity.

The MRI study team was informed by a number of the stakeholders that we interviewed that the department's staffing is one of its biggest challenges, one that is growing more significant as the number of incidents continues to gradually increase. Companion issues and most likely contributing factors to the staffing issues are recruiting, and then retaining, good, active, contributing members, and getting those members to respond to incidents on a regular basis. There is also a growing level of frustration relating to the response to numerous false alarms. Although a bylaw has been developed, this bylaw should be utilized to reduce the number of false alarms that occur.

It is important to keep in mind that a member responding to more than 60 calls in a year may still only be responding to a little more than one per week. Adding to the challenge is the reality that most personnel work and have many other obligations that limit the amount of time that they can devote to the fire department. This is especially true during the day. In addition, the increasing incident volume will continue to increase the pressure on the active personnel who are carrying the department.

Based on the data provided, the department responds to approximately 282 calls for service per year. The number of requests for service seems to remain fairly constant from year to year. In 2015, the department responded to 4,124 fires, 9% of the overall incident volume. The number of actual fire responses included 15 structure fires. The staff survey revealed that the largest frustration and stress within the organization is responding to false calls generated by fire alarm and carbon monoxide detection equipment. These calls represent 56% of the overall incident volume and should be addressed aggressively by the town.

INCIDENT RESPONSE CATAGORIES USING 2014 DATA



- FALSE ALARM/FALSE CALLS
- GOOD INTENT
- MOTOR VEHICLE ACCIDENTS
- BRUSH FIRES
- GAS LEAK/HAZARDOUS CONDUITION
- STUCTURE FIRES
- SERVICE CALLS

Incident Response Chart (based on 2014 data)

The average response time for a fire incident in Stowe is 13.40 minutes. Although slightly above the first alarm guidelines set by NFPA 1720, this is a realistic response time statistic given that all firefighters need to first respond to the station and then navigate to the incident in a community the size of Stowe. We would encourage the chief and his officers to periodically review this data. One idea that may improve response time slightly is to encourage volunteer/on-call members to be in the station at night and during weekends. One community pays \$3.00 per hour for those that want to be on-call from the station. This could immediately provide one member of a crew and allow a firefighter to start apparatus while waiting for the remainder of his/her crew.

Response Times	Current Inventory SVFD
Under 3 minutes	5.5%
3-6 minutes	8.5%
6-10 minutes	19.49%
More than 10 minutes	66.54%
Overall average	13.40 minutes

The chart below indicates the number of times that each piece of fire apparatus responded to an emergency in the last year.

Unit	Responses per Year
Engine 1	127
Engine 2	108
Engine 3	6
Rescue 1	49
Ladder 1	19
Utility	11
Tanker 1	18
Tanker 2	98

Overall, our team was impressed with the apparatus set maintained by the town. Clearly, the SVFD members are proud of the resources that the town has provided. When considering the size of the department, call volume, and number of active responders, we believe that some apparatus should be consolidated.

The overall health and positive culture of the department reflects in the lower than average fire loss reported by the community. Although reporting fire loss represents reporting an estimate of the value of lost property, Stowe consistently reports a fire loss well below that experienced in many comparative communities. This exemplary level of loss is a reflection of the overall health and response capability offered by the department.

Insurance Service Office (ISO) Rating

The Insurance Service Office provides a rating for each community on a one to ten scale. One is the best protection, while a rating of 10 means that there is no substantive protection provided. Based on the 2015 evaluation, the department received a class 5/5Y rating, which places the organization in the top 40% of fire departments across the country. This is an exceptional rating that reflects the overall quality of the department and the systems that have been put into place.

The Fire Suppression Rating Schedule (FSRS) is a manual containing the criteria ISO uses in reviewing the fire prevention and fire suppression capabilities of individual communities or fire protection areas. The schedule measures the major elements of a community's fire protection system and develops a numerical grading called a Public Protection Classification (PPC™).

The FSRS employs nationally accepted standards developed by such organizations as the National Fire Protection Association (NFPA), the American Water Works Association (AWWA), and the Association of Public-Safety Communications Officials (APCO) International. When those organizations update their standards, the ISO evaluation changes as well. The PPC program always provides a useful benchmark that helps fire departments and other public officials measure the effectiveness of their efforts and plan improvements.

How the Fire Suppression Rating Schedule Works

The FSRS lists a large number of items (facilities and practices) that a community should have to fight fires effectively. The schedule is performance based and assigns credit points for each item. Using the credit points and various formulas, ISO calculates a total score on a scale of 0 to 105.5. In 2016, Stowe received 61.05 of the 105.5 potential points.

The FSRS considers three main areas of a community's fire suppression system: emergency communications, fire department (including operational considerations), and water supply. In addition, it includes a Community Risk Reduction section that recognizes community efforts to reduce losses through fire prevention, public fire safety education, and fire investigation.

Emergency Communications

A maximum of 10 points of a community's overall score is based on how well the fire department receives and dispatches fire alarms. ISO field representatives evaluate:

- the emergency reporting system
- the communications center, including the number of tele-communicators
- computer-aided dispatch (CAD) facilities
- the dispatch circuits and how the center notifies firefighters about the location of the emergency

In 2016, Stowe received 4.95 of the 10 potential points available for emergency communications. A review of the ISO report indicates that Stowe should work with their dispatch center to improve the number of points awarded in this category.

Fire Department

A maximum of 50 points of the overall score is based on the fire department. ISO reviews the distribution of fire companies throughout the area and checks that the fire department tests its pumps regularly and inventories each engine and ladder company's equipment according to NFPA 1901. ISO also reviews the fire company records to determine factors such as:

- type and extent of training provided to fire company personnel
- number of people who participate in training
- firefighter response to emergencies
- maintenance and testing of the fire department's equipment

In 2015, Stowe received 21.00 of the 50 potential points available for fire department capability. A review of the rating indicates that the Stowe Fire Department received little credit for training and deployment analysis. As we believe a quality training program exists, the department should examine how this information is documented. Improved documentation should be provided to ISO. The department should also conduct a deployment analysis to determine if any improvements can be made within this area of concern that the recent ISO grading raised.

Water Supply

A maximum of 40 points of the overall score is based on the community's water supply. This part of the survey focuses on whether the community has sufficient water supply for fire suppression beyond daily maximum consumption. ISO surveys all components of the water supply system. They also review fire hydrant inspections and frequency of flow testing. Finally, they count the number of fire hydrants that are no more than 1,000 feet from the representative locations. In 2015, Stowe received 28.78 of the 40 potential points available for water supply.

Community Risk Reduction Strategies

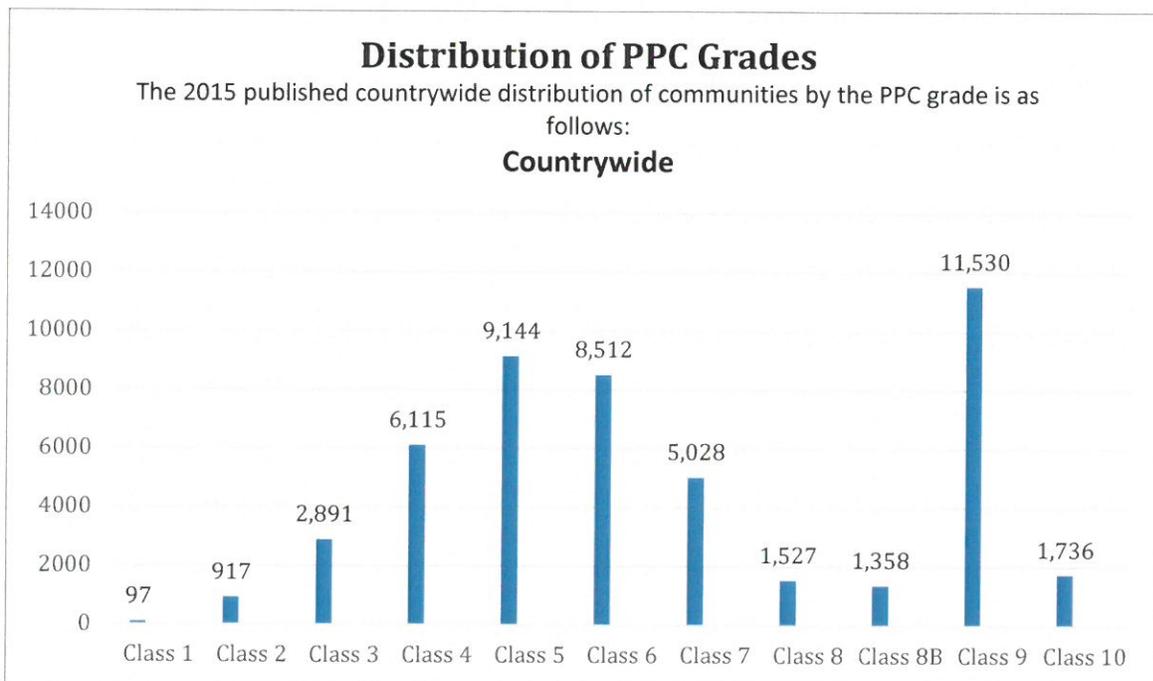
The Community Risk Reduction section of the FSRS offers a maximum of 5.5 points, resulting in 105.5 total points available in the FSRS. The inclusion of this section for "extra points" allows recognition for those communities that employ effective fire prevention practices, without unduly affecting those who have not yet adopted such measures.

The addition of Community Risk Reduction gives incentives to those communities who strive proactively to reduce fire severity through a structured program of fire prevention activities.

The areas of community risk reduction evaluated in this section include:

- fire prevention
- fire safety education
- fire investigation

In 2015, Stowe received 2.2 of the 5.50 potential points available for risk reduction. This suggests that, as indicated in other areas of this report, Stowe has a well-developed and well-managed public outreach and education program. The chart below provides a graphical representation of the rating distribution across the United States.



Insurance Service Office Rating Distribution Chart

National Standards

Two national standards apply to the operations of the Stowe Fire Department. These standards are listed below:

- **The Occupational Safety and Health Administration (OSHA) Two-In/Two-Out Rule.** This rule requires four firefighters on the scene of an emergency prior to initiating operations within a structure that is on fire (except to perform an immediate, visible rescue). In Stowe, this standard is met on a regular basis. However, operational guidance should be provided to personnel that arrive on an incident scene with less than four personnel. Operations should be conducted in a defensive mode until a crew of four personnel are assembled on the incident scene, unless the need to accomplish a visible rescue exists.
- **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.** This standard specifies requirements for effective and efficient organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by volunteer and combination fire departments to protect citizens and the occupational safety and health of fire department employees. The Stowe Fire Department should review this standard and develop a strategic plan to meet the benchmarks identified within the standard.

NFPA 1720 is a document that can provide guidance relative to how the Stowe Fire Department should operate in the future. The chief, along with the members of the department, should utilize this standard as a foundation to develop a strategic plan.

Organizational Policy and Standard Operating Procedures (SOPs)

Standard Operating Procedures document how operational tasks should be accomplished. In essence, they provide personnel guidance relative to how to accomplish operational activities safely and consistently. To be effective, SOPs should be developed by each department through a participative process. Once developed, personnel need to be trained on the SOPs and periodically refreshed as to their content.

Currently, the department has a good foundation to continue building on for organizational Standard Operating Procedures (SOPs). A few of the core fundamental topics and safety considerations during low frequency, high risk tasks should be further developed. In speaking with Chief Sgantas and personnel during the interviews, it was stated that the department will be reviewing their SOPs within the next twelve months. Interviews also revealed that current

SOPs are utilized for “show” and not utilized or relied upon at the incident scene. The challenge for Stowe will be to increase “buy-in” relative to these procedures by establishing a participative development process and on-going training. In essence, the department will need to adopt a new organizational culture that utilizes this form of operational guidance.

We recommend that the fire chief establish a committee to reformat and review the current SOPs to ensure that they reflect the organization’s current operations. A best practice SOP format has been included in Appendix D. Once the current set of SOPs have been reviewed, the committee would work with the chief to develop new SOPs that fit the needs of the organization. Once an SOP has been developed, it should be presented to department personnel, and then periodically reviewed to ensure that these practices are implemented on the incident scene. In addition, one SOP and one Policy should be reviewed by a randomly selected member at each training meeting. Once personnel get used to this expectation, the knowledge and respect for SOPs will grow within the organization and become an accepted part of the organization’s culture.

Financial Resources

Department budget is \$221,577, which is well below the budget of each peer community. In fact, the SVFD budget is more than \$100,000 below the comparative average of \$322,575. We believe that over the next five years, the SVFD budget should be increased to accommodate the following:

- Funding for ½ of a recruitment and retention coordinator
- Funding for additional masks, turnout gear, SCBA, and other loose equipment
- Funding for enhanced communications equipment
- Funding to expand the use of technology
- Funding for mobile data
- Funding for a full-time fire chief’s salary

Capital Planning

Based on national averages, the town should have the following fire suppression assets:

- 2 Class A Pumpers
- 2 Tankers

- 1 Quint/Aerial Ladder
- 1 Light or Medium Duty First Response Vehicle (mini-pumper)
- 2 Fire Stations (based on square mileage)

In addition to these assets, communities typically acquire ATVs, rescue boats, and brush units based on incident history and the specific needs of the community. In communities the size and configuration of Stowe, tankers are frequently required to provide a sustained water supply at incidents that are not in proximity to hydrants. Stowe has taken a proactive step in utilizing mutual aid tankers in conjunction with the response of two SVFD tankers to meet this need. Upon confirmation of a structure fire out of the water district, the closest available mutual aid tanker is requested to support the fire suppression efforts of the SVFD.

In Stowe, the fleet of apparatus was found to be in acceptable condition. When compared to other similar communities, the apparatus is more utilitarian and some pieces are worn more than we would expect for the age of the specific piece of apparatus. This was especially true when we looked at Engine 1 and Rescue 1. We found that overall, Engine 1 is in poor condition and not holding up to the demands of the first due attack piece, which is its current role. Although Rescue 1 is nearing the end of its expected life span, Engine 1 is not holding up and will not be a reliable piece for more than a few more years. As a result, we believe these two units should be combined into a new rescue pumper.

In addition, the fire chief currently utilizes his own private vehicle for response, and a command unit is shared with Stowe EMS. To facilitate response of the chief or another on call command officer, a four-wheel drive vehicle with appropriate lighting and command resources should be provided.

The department's inventory of apparatus slightly exceeds the needs of the community and the staffing capability of the organization. To provide perspective, an ideal apparatus set for the Town of Stowe is described within the table below.

Apparatus Description	Current Inventory SVFD	Recommended Inventory	Deviation/Recommendation
Class A Pumpers	2	2	Recommended inventory is two engines and one tanker.
Tankers	2	2	
Aerial ladder	1	1	
First Response Squad / Rescue/ Mini pumper	2	1	Rescue 1 should be consolidated into the replacement of Engine 1
Forestry - Utility Units	1	1	
Command Unit	0	1	Squad 1 shared with Stowe EMS, no vehicle for command officers.

SVFD Apparatus Set Compared to the Ideal Apparatus Set



Engine 1 - 2001 American LaFrance Pumper

Pictures of other apparatus have not been included as no clear pictures could be provided. When considering the life span of a piece of fire apparatus there are rules of thumb to consider. In Stowe, an engine should be expected to be in service for 25 years and a ladder or tanker should be expected to last 30 years.

In 2021, the current ladder tower, which is also known as a quint, will be 30 years old and should be replaced. As the cost of a new unit is currently near or in some cases over a million dollars, many smaller departments are purchasing 8-10-year-old used/refurbished units for less than half the cost of a new unit. If this strategy were pursued, Stowe could expect to pay approximately \$450,000, and obtain a unit that could be utilized for an additional 15-20 years.

UNIT DESIGNATION	YEAR PURCHASED	Current Condition	YEAR OF SCHEDULED REPLACEMENT	CURRENT REPLACEMENT COST
Engine 1	2001	Poor	2018	\$605,000 (Rescue Pumper)
Engine 2	2012	Excellent	2037	\$520,000
Engine 3	2016	Excellent	2041	\$185,000
Tanker 1	1994	Fair	2024	\$265,000
Tanker 2	2009	Good	2039	\$265,000
Ladder Tower 1	1991	Good	2021	\$949,000 New \$450,000 Used
Rescue	1996	Fair	N/A	Consolidate with Engine 1 in 2017
Utility	2003	Fair	2019	\$40,000
Trailer 1	2004	Good	N/A	\$21,400
Command Officer	N/A	N/A	2020	45,000

SVFD Capital Plan

RECOMMENDATIONS

- 6.1 The part-time recruitment and retention coordinator should provide the Stowe EMS and the SVFD with administrative assistance.**
- 6.2 As the chief has publically discussed his plans to retire in the next two to three years, the town should ask that the chief provide a one year notice to allow for the delivery of a comprehensive recruitment process. In addition, the town should provide for an**



orderly transition by recruiting a full-time fire chief to start work in Stowe 6 months prior to the retirement of Chief Sgantas.

- 6.3 The SVFD should expand the use of technology and implement resource alerting and tracking programs such as “Edispatches” and “I am Responding”. Flat screen monitors should be installed to provide responding personnel a picture of what other members are enroute.
- 6.4 The department should consider utilizing a cloud based records management system and developing pre-incident fire planning in Stowe.
- 6.5 Tablets with connectivity should be installed as mobile data platforms in each primary response piece (5 total). These tablets should be capable of accessing the cloud based RMS and other Internet resources.
- 6.6 To meet the provisions of NFPA 1720, automatic mutual aid should be requested upon the report of a structure fire.
- 6.7 Response should be optimized through the establishment of run cards that provide command officers and dispatch personnel with a clear matrix of what resources should be requested at various alarm levels.
- 6.8 The SVFD should set a goal to recruit and retain 15 new volunteer/on-call members over the next three years.
- 6.9 As the SVFD received 4.95/10 for the ISO telecommunications section, the department should work with their dispatch provider to ensure that alarms are being processed in accordance with the criteria established by NFPA 1221. Documentation of any improvements should be shared with ISO.
- 6.10 The Stowe Fire Department should enhance training documentation to provide ISO with the specific information that they require. ISO should be contacted and questioned relative to the low credit granted for training.
- 6.11 The department should review the OSHA Two-in/Two-Out rule and provide personnel with clear guidance on operations when less than four personnel have been assembled on the incident scene
- 6.12 The department should review NFPA 1720 and utilize this standard as a basis to develop an operational strategic plan that identifies actions to enhance compliance over the next five years.

- 6.13** Department Standard Operating Guidelines and Policies need to be reformatted, reviewed, and updated regularly. The department training officer should assign a member, selected at random, to review one SOP and one Policy at each training meeting. Ultimately, there should be one document that shows all SOGs and Policies have been reviewed and signed off by all personnel, stating they understand the document.
- 6.14** All SOPs should be posted on the department's website.
- 6.15** All department SOGs and Policies need to be available both in electronic format and hard copy, so they are readily available for review and/or reference by all personnel.
- 6.16** A committee should be established to provide guidance to the fire chief as to updates, revisions, and new SOGs and Policies that need to be developed or addressed.
- 6.17** Once developed, SOPs should be reviewed every two years.
- 6.18** Once implemented, these SOPs should be utilized as the basis for operations. Any deviation should be documented in the National Fire Incident Report completed for the emergency.
- 6.19** The false alarm ordinance should be reviewed and strengthened in 2018 if it has not produced the effect of reducing the number of these calls. The town could require that all systems activate or install alarm verification technology where two devices must alarm prior to an alarm of fire being transmitted. The use of this technology is popular in many communities that faced this issue.
- 6.20** The town should consider providing the Board of Selectmen with a public report listing those occupancies that have experienced five or more false alarms in a one-year period.
- 6.21** Properties that are billed for and do not pay false alarm fines should have a tax lien pursued against their property.
- 6.22** Self-Contained Breathing Apparatus (SCBA) masks should be provided to each firefighter. This will ensure a proper fit and limit the potential of transmitting an infection to others.
- 6.23** Each firefighter should be mask fit tested on an annual basis.

- 6.24 The SVFD should provide an annual fire extinguisher training session to Mountain Corporation employees and provide instruction relative to evacuation and limiting fire spread prior to the arrival of the department.**

CHAPTER 7

COMMUNITY OUTREACH & RISK MANAGEMENT

OVERVIEW

Community education, outreach, and public prevention programs continue to be a critical component for communities struggling with limited resources and increasing financial constraints given the funding sources for many of the communities in New England. Engaging the community with such programs minimizes the potential for emergencies requiring the response of these resources and during any response, the probability of having bystanders assist exponentially increases, thereby improving the chance of a positive outcome for the customers.

There are numerous other community outreach, preventative programs, and initiatives that should be considered to help enhance any emergency response and/or minimize the deployment of limited critical resources and personnel. Many of these need to be prioritized based on a cost/benefit analysis, time constraints, and whether or not some could be completed by on-duty personnel.

OBSERVATIONS

The SVFD should expand the positive relationships the organization has built within the community. During our interviews, compliments relative to the positive relationships developed by the fire chief and the department as a whole were numerous. However, both SVFD and citizens agree that the department could do more to be visible and provide a resource for the public.

Examples of programs that could be implemented include the Student Awareness of Fire Education (SAFE) in the schools, fire extinguisher training, smoke detector installation programs, and hosting a community event such as a bon fire. All of these programs take a proactive approach to life safety and education, and begin to develop a culture of teamwork, cooperation, and collaboration for public safety throughout the community.

Although these programs are a solid foundation, it is our observation that the department has the opportunity to harness social media and other emerging technologies to develop a more effective set of community outreach programs. As an example, a department sponsored Facebook page has the potential to provide a direct link to interested residents. We have been surprised how this particular technology has been embraced by the residents of smaller communities. When queried, many residents see a well-run Facebook page as a source of immediate information on the community. As technology expands and citizens expect more

immediate information, the list of potential public outreach programs outlined below have been well received in other Vermont communities.

Communities will continue to struggle with balancing the need for services and availability of resources. Engaging and enlisting the support and assistance from community bystanders, educating the public on preventative measures to minimize the potential from fire and increasing the public's safety through community outreach programs will continue to enhance the quality of life of the citizens, while minimizing the ongoing strain of limited resources and personnel within the fire department.

RECOMMENDATIONS

Consideration should be given to developing the following public education and community outreach programs. Many of these programs could be delivered jointly by Stowe EMS and the SVFD.

- 7.1 Blood pressure clinic: Hypertension continues to be one of the leading risk factors contributing to strokes and heart attacks. Providing the ability for the community and particularly the elderly to come into the station or during another community event and obtain their blood pressure will provide for networking opportunities between community and staff, while at the same time provide valuable medical information critical for the individuals.**
- 7.2 File of Life Program: During medical emergencies, particularly with limited staffing, having a written document readily accessible will expedite and improve patient care and assessment for the patients. Files of Life are used to document pertinent past medical history, allergies, and medications the individual is on, and assist the emergency responders in making an informed decision based on the medical emergency at the time.**
- 7.3 Smoke detector/carbon monoxide detector inspection program: Every 20 seconds, a fire department responds to a fire somewhere in the United States, according to the National Fire Protection Association (NFPA). The American Red Cross is partnering with fire departments across the state in a planned, five-year, program to help reduce deaths and injuries due to home fires by 25%. During the visit, homeowners will get smoke detectors installed if no working alarms are present, guidance in the development of a Family Disaster Plan, and valuable emergency preparedness tips and information on increasing the safety in your home.**
- 7.4 Pulse Point: During a cardiac arrest, time is muscle. Specifically, cardiac muscle. The American Heart Association continues to recognize the chain of survival by early**

recognition, early CPR, early defibrillation, and rapid transport. Pulse Point is an app on an iPhone that can be downloaded from anyone in the community who wants to participate in this program to be notified when someone is having a cardiac arrest in their vicinity. Fifty-seven percent of US adults say they've had CPR training. Utilizing this type of technology, bystander performance, and active citizenship enhances the care provided to the community.

- 7.5 Swimming pool safety:** Opportunities to educate the public, particularly in a recreational community such as Stowe, on the preventative measures to take around the water and pools can be valuable. Topics to reinforce include the use of life jackets, swimming pools with fences, latches on gates and ladders, and never leave children alone by the water.
- 7.6 Bike helmet program:** More children ages 5 to 14 are seen in emergency rooms for injuries related to biking than any other sport. Helmets can reduce the risk of severe brain injuries by 88%; yet only 45% of children 14 and under usually wear a bike helmet. Providing bike helmets throughout the community will help minimize this potential from happening in Stowe.
- 7.7 Prom demonstrations:** As a component of the SAFE program, conducting a mock accident for the junior and senior classes at the high school, focusing on the dangers of drinking and driving, texting while driving, and not wearing seat belts will reinforce the dangers associated with this type of behavior. This activity would be enhanced with the cooperation of the police department and local hospital, as well as others who may directly speak on losing a loved one or dealing with a loss related to these types of behaviors.
- 7.8 Airway obstruction training for staff in restaurants:** An airway obstruction can lead to unconsciousness if not expelled or cleared in a timely manner. Collaboration with staff personnel in restaurants can assist public safety personnel in these types of medical conditions.
- 7.9 Social Media:** The department needs to have an updated and active department website and Facebook account. This can be used for community engagement, updates with ongoing activities, signing up for programs to minimize any additional administrative time, and engaging the younger generations who are more tech savvy.
- 7.10 MASS Alerts:** Enlisting the use of technology for mass notifications, such as the Code Red alert already used and administered by Stowe. MASS Alerts allow public safety agencies to provide emergency notifications and information about critical events and disasters, enabling individuals to better prepare and stay informed on such topics. Utilizing this technology, personnel can get real time information on severe weather,

alerts on missing children, evacuation and shelter-in-place information, information about power outages, and tips to stay safe during such disasters.



CHAPTER 8

STAFF SURVEY

EMS Survey

A survey was developed that allowed all personnel to provide input into this organizational analysis. The survey was made available on-line and could be accessed by the staff of Stowe EMS. The survey was completed by 16 respondents. This included the response of 3 paramedics, 7 Advanced EMTs, 4 basic EMTs, 1 EMR, and 1 CPR trained first responder.

Observations

The survey revealed the following pertinent data points:

- 87.5% of respondents agree that the organization is well managed; this is far higher than the average response to this type of survey.
- 81% believe that the current stand-alone model works well.
- 64% of respondents were open to a EMS/Fire agency merger.
- 87% of respondents believe that a high level of mutual respect exists among personnel in the organization. This is far above the average response.
- 94% of respondents believe that they receive the support and encouragement that they need to be successful within the organization.
- 88% of respondents believe that expectations are made clear, and that they receive adequate training. Survey comments indicate that a high level of positive internal communication is present within the organization and the reason why they feel expectations are made clear.
- All agreed that training opportunities were distributed fairly within the organization.
- 94% of respondents receive personal and professional satisfaction from their employment with Stowe EMS.
- 88% of respondents believe that they receive timely feedback.

- The majority of respondents believe that equipment is adequate; 20% do not believe that equipment is adequate and they believe that the age and reliability of ambulances are a problem.
- All respondents believe that the organization is keeping pace with technology.
- 94% of respondents believe that the administration of Stowe EMS is open to and welcomes input from personnel.
- 94% of respondents are proud to be members of Stowe EMS.
- 94% of respondents believe that the residents of Stowe value the services that Stowe EMS provides.
- Internal frustration centers on vehicle reliability/capability and staffing. These two issues were also identified as the largest challenges facing the organization.
- 88% of respondents believe that safety practices within the organization are adequate.
- 63% of respondents believe that Stowe Fire and Stowe EMS work well together. Some indicate that different organizational cultures exist and many commented on the need for more joint training.
- 81% of respondents believe that Stowe EMS personnel work well together.
- 88% of respondents believe that the service they provide to the community is acceptable in terms of patient care and response.
- Respondents gave higher than average ratings to the quality of training, personnel protective equipment, dispatching, and morale. They rated the support from the town as average to slightly below average.
- 88% of respondents would recommend that other community members they know should join Stowe EMS.
- 88% of respondents believe that Stowe EMS is well regarded by the public.
- 56% of respondents believe that compensation is important; 47% of respondents indicate that an increase in compensation would allow them to improve their availability.

- 94% of respondents do not believe that the current level of membership is sufficient to meet the needs of the organization over the next five years.
- 69% of respondents believe that the organization should be more visible and engaged in the community.
- 88% of respondents believe that the administration of the organization helps to build team spirit.
- 93% of respondents believe that the administration of the organization will stand with them and support them. This is well above the average response.
- 87% of respondents believe that individual initiative is supported in the organization.
- 94% of respondents believe that the feedback they receive is constructive.
- All respondents believe that improvement and skill development is acknowledged within the organization.
- 27% of respondents believe that recruitment efforts are adequate, some indicate a need to decrease requirements to attract a larger pool of volunteers.
- 62% of respondents believe that the town provides adequate fiscal support.
- 73% of respondents support increasing ambulance billing rates and enhancing the collection process.

Fire Survey

A survey was also developed that allowed all personnel to provide input into this organizational analysis. The survey was made available on-line and could be accessed by the staff of Stowe EMS. The survey was completed by 17 respondents. This included the response of 3 Chief Fire Officers, 7 fire officers, and 7 firefighters.

Observations

The survey revealed the following pertinent data points:

- 83% of respondents agree that the organization is well managed, this is slightly higher than the average response to this type of survey.

- All respondents believe that the current stand-alone model works well.
- 53% of respondents were open to a EMS/Fire agency merger.
- 65% of respondents believe that a high level of mutual respect exists among personnel in the organization. 12% do not believe that a high level of mutual respect exists within the organization.
- 89% of respondents believe that they receive the support and encouragement that they need to be successful within the organization.
- 65% of respondents believe that expectations are made clear.
- 77% of respondents believe that they receive an adequate level of training.
- 82% of respondents agreed that training opportunities were distributed fairly within the organization.
- 88% of respondents receive personal and professional satisfaction from their employment with the Stowe Volunteer Fire Department (SVFD).
- 53% of respondents believe that they receive timely feedback.
- 94% of respondents believe that fire apparatus is adequate and well maintained.
- 76% of respondents believe that the appointment of officers is conducted through a fair process.
- 94% of respondents believe that the organization is keeping pace with technology.
- 82% of respondents believe that the administration of Stowe EMS is open to and welcomes input from personnel.
- 59% of respondents believe that SVFD will need a full-time Fire Chief in the near future.
- All of the respondents are proud to be members of the SVFD.
- 94% of respondents believe that the residents of Stowe value the services that the SVFD provides.

- Internal frustration centers on membership recruitment, retention, and the recognition of members.
- All of the respondents believe that safety practices within the organization are adequate.
- 92% of respondents believe that Stowe Fire and Stowe EMS work well together.
- All of the respondents believe that SVFD personnel work well together.
- All of the respondents believe that the service they provide to the community is within an acceptable level of fire protection.
- 69% of respondents did not believe that the SVFD had significant weaknesses. 31% of respondents believe that organizational weaknesses do exist and their comments focused on membership and mutual aid practices.
- Respondents gave higher than average ratings to the quality of training, personnel protective equipment, apparatus, dispatching, and morale.
- 88% of respondents would recommend that other community members they know should join the SVFD.
- 88% of respondents believe that Stowe EMS is well regarded by the public.
- 53% of respondents believe that compensation is important, 17% of respondents indicate that an increase in compensation would allow them to improve their availability.
- 94% of respondents believe that the organization is well regarded by the public.
- 82% of respondents do not believe that the current level of membership is sufficient to meet the needs of the community over the next five years.
- 53% of respondents believe that the organization should be more visible and engaged in the community.
- 33% of respondents indicate that they could be motivated to increase their availability.
- 71% of respondents believe that the administration of the organization helps to build team spirit.

- 83% of respondents believe that the administration of the organization will stand with them and support them.
- 85% of respondents believe that individual initiative is supported in the organization.
- 59% of respondents believe that the feedback they receive is constructive.
- 76% of respondents believe that improvement and skill development is acknowledged within the organization.
- 29% of respondents believe that recruitment efforts are ongoing and adequate.
- All of the respondents believe that the town provides adequate fiscal support.

Overall, both surveys indicate that both the Stowe EMS and the SVFD are healthy and vibrant. Clearly the Stowe EMS survey produced several results that are well above the average response we observe when compared to surveys of other departments. This is in large part due to the passion, energy, and exceptional leadership that Scott Brinkman has brought to the organization. The lack of internal conflict was striking and is reflective of strong leadership. However, positively directed internal conflict can often challenge the status quo and assist the organization in moving forward. In that light, conflict should be directed to produce meaningful internal conversations.

The SVFD survey results are extremely positive and above average compared to the majority of fire service surveys that we review. We expected to find some level of discord based on the size and configuration of the organization. It is apparent that Chief Sgantas is an excellent leader, who is strong believer in his officers and the chain of command. We believe that many of the responses provide a unique look into the inner working of the organization and produce opportunities for “tweaking” to what we believe is already an exceptional organization.

The most interesting comment that was reflected in both surveys was that although there was strong agreement that the membership needs to grow, most members do not believe that an active recruitment effort exists. If members do not perceive that their organization is open to new members or actively engaging the community in this quest, it is doubtful that recruitment efforts are known within the community. We believe that this reflects a cultural parameter of each organization, in that the organization believes they need more members, yet they are not actively adapting to this challenge.

In many cases we observe emergency service organizations that filter out new members based on organizational culture, past practice, experiences of the current membership, or collectively

held perceptions of how a new member should look, act, and what level of commitment they should make to the organization. Often this is justified as organizational standards and backed up based on past experience and what the current membership had to accomplish to become accepted within the group. In Stowe it is essential that both the Stowe EMS and the SVFD consider and shatter barriers that could frustrate new member participation. This indicates that both organizations will need to intensify their recruitment efforts and remove any internal cultural barriers that frustrate these efforts.

RECOMMENDATIONS

- 8.1 The town should establish a working group composed of stakeholders to provide a report relative to the steps, timeline, and barriers to a potential merger of the Stowe EMS and the SVFD into the Stowe Fire Rescue.**
- 8.2 Stowe EMS should address the internal perception of the less than adequate reliability of ambulances by sharing a revised capital plan with all personnel.**
- 8.3 Stowe EMS and the SVFD should train together and conduct joint operations at least six times per year.**
- 8.4 Members of both organizations should be asked to recruit, sponsor, and mentor a new member. If after one year the new member has joined the organization and actively participates in response, the sponsoring member should be awarded a recruitment incentive of \$500.00.**
- 8.5 As responders indicated they could become more available, the town should annually provide internal and public recognition for the top five volunteer responders from each organization.**
- 8.6 Stowe EMS and the SVFD should work together to develop an expanded recruitment and retention strategy that harnesses the new ideas and concepts contained within this report.**
- 8.7 Each organization should seek through its members to become more visible and engaged in the community.**
- 8.8 The recognition of personnel for response and accomplishment should be expanded.**
- 8.9 A joint Stowe EMS and SVFD awards ceremony should be conducted annually.**

CHAPTER 9

COMPARATIVE ANALYSIS

Overview

Several similar Vermont communities were asked to provide community, fire service, and EMS data for the purpose of comparing these data points with Town of Stowe. The communities of Manchester, Middlebury, Morristown, Shelburne, and Waterbury responded to this request and have provide data that is included within this chapter. It is noted that Middlebury and Shelburne did not provide data relating to emergency medical services.

Following our field work in Stowe, a survey was developed and distributed to the five respondents. Reflecting the scope of this study, this comparative survey focused on community statistics, revenue, budgets, staffing, service demand, budgeting, response times, and recruitment of personnel. Once the survey data was compiled, responses were averaged and then compared to the current operations present within Stowe. The purpose of this benchmarking exercise is to provide the Town of Stowe with a perspective on how their fire and EMS services compare to the averaged responses of five similar Vermont communities. The benchmarking data provided by the communities selected is detailed within the tables on the following pages.

Observations

Community Information

- The base population of the Town of Stowe is 24% below the average of the peer communities surveyed.
- In Stowe, the land area covered and road miles are both well above average.
- The Grand List total in Stowe is well above average. Stowe is above all of the surveyed communities.
- The Tax rate in Stowe is below average.
- Budgets in Stowe are well above average.

EMS Information

- Stowe EMS has more per diem personnel than average and is slightly below the average in terms of the number of volunteers.

- Staffing units with three personnel is above the standard of care in most peer communities.
- The number of units staffed reflects the average.
- None of the agencies listed in the survey provide non-emergency transport services to their residents.
- The majority of volunteers receive a stipend, not an hourly wage.
- Call volume in Stowe is below average.
- The number of calls missed by Stowe EMS is 90% below the overall average.
- The number of mutual aid requests where Stowe EMS is requested to respond to other communities is above average.
- The Stowe EMS operating budget is 3% above average.
- Transport revenue is well below average (\$87,000).
- Ambulance rates other than mileage are below average.
- The collection rate for ambulance bills is above average.
- The percent paid to Revenue Solutions is below the average.

Fire Service Information

- The fire service budget in Stowe was significantly below average (\$100,000).
- The number of volunteer/on-call members in Stowe is well below average (15 members).
- The response times of the first due piece of fire apparatus was above average.
- There was no response missed by the SVFD. This is well below average and a mutual aid unit was never first due in Stowe.
- The number of tankers in Stowe is slightly above average.

- The total size of the SVFD fleet was above average.

Data Tables

The following data was obtained through this comparative survey.

GENERAL OPERATIONAL INFORMATION	MANCHESTER	MIDDLEBURY	MORRISTOWN	SHELBURNE	WATERBURY	AVERAGE	STOWE
Population:	4,391	10,000	5,226	7,736	5,064	6,483	4,900
Square miles:	42.24	39.23	51.6	44.9	46.69	44.93	77
Road miles:	64.931		106.591		67.6		94.953
FY 16 grand list total:	\$11,682,146.05	\$7,910,730.00	\$6,232,211.04	\$15,058,000.00	\$7,319,360.00	\$10,492,559.01	\$21,241,675.00
FY 16 tax rate:							
Municipal:	0.242	0.982	0.8233	0.3731	0.4064	0.5654	0.4097
Non-Residential:			1.4753	1.5971	1.994/2.149		
Homestead:	1.47	1.8431	1.3906	1.5385	2.1036/ 2.258	1.767	1.5242
FY16 budget totals:							
Municipal:	\$4,934,151.00		\$6,056,040.00		\$4,221,295.00		\$11,372,193.00
School:	\$11,675,289.00						\$12,363,600.00
Total:	\$16,609,440.00	\$9,949,155.00		\$20,739,000.00			\$23,735,793.00

EMS/RESCUE SQUAD INFORMATION	MANCHESTER	MORRISTOWN/ MORRISVILLE	WATERBURY/ DUXBURY/PART OF MORETOWN & BOLTON	AVERAGE	STOWE
Population of area covered:	9,500	5,226	8,000	7,575	4,600
Seasonal population:	20,000	N/A			20,000
Type of Department:	Private	Municipal	Private		Municipal
Number of full-time staff:	6	3	2	3.67	4
Part-time:	15	4	0	6.33	10 per diem
Volunteers:	6	21	38	21.67	20
Typical unit staffing:	Paramedic & EMT or AEMT	ALS	3		1 ALS; 1-2 BLS
Units staffed during the daytime:	2	1	1	1.33	1
Night:	1	1	1	1	1
Cost of fundraising/subscription drive:		N/A	\$3,050		\$0
% of households that subscribe:		N/A	20%		0
Non-Emergency transfers offered:	No	No	No		No
Training to other agencies offered:	Yes	Yes	Yes		Yes
Revenue from training:	\$0	\$0	\$0	\$0	\$0
Volunteers paid:		Stipend	Stipend (some)		Hourly Wage
Best recruitment method utilized:			Word of mouth		Word of Mouth
Best retention method utilized:					
Number of emergency incidents in 2015:	1,169	588	662	806.33	645
Number of transports in 2015:	758	397	450	535	390
Average weekday calls (7am-6pm):	2.2	3			1
Average weekend calls (7am-6pm):	1.8	2			1.5
Average weekday calls (6pm-7am):	1.2	5			0.54
Average weekend calls (6pm-7am):	1.4	1			0.8
Number of calls missed in 2015:	43	60	0	34.33	4
Number of mutual aid requests in 2015:	53	1	35	29.67	42
Current operating budget:	\$823,261.00	\$505,926.00	\$244,000.00	\$451,195.67	\$465,250.00
Annual transport revenue:	\$545,000.00	\$120,601.00	\$205,100.00	\$290,233.00	\$203,711.00
ALS base rate:	\$785.50	\$700.00	\$725.00	\$736.83	\$675.00
BLS base rate:	\$650.00	\$625.00	\$625.00	\$633.33	\$525.00
Transport mileage rate:	\$15.00	\$16.00	\$16.00	\$15.67	\$18.00
Overall collection rate:	98% of allowables; 68% billed	70%	85%	79.33%	83.4%
% paid to billing company:	11%	N/A	7%	9%	7%
Billing company used:	New England Ambulance Billing	N/A	Revenue Solutions		Revenue Solutions



FIRE SERVICE INFORMATION	MANCHESTER	MIDDLEBURY	MORRISTOWN	SHELBURNE	WATERBURY	AVERAGE	STOWE
Current fire budget:	\$172,850.00	\$288,154.00	\$248,500.00	\$238,670.00	\$714,705.00	\$332,575.80	\$221,577.00
Population of area covered:	4,391 (mutual aid)	10,000	5,226	7,736	8,000	7,070	4,900
Seasonal population:	10,000-15,000	10,000	5,226	N/A			5,000-12,000
Type of Department:	Volunteer	Combination	Volunteer	Volunteer	Volunteer		On-Call
Number of full-time staff:	0	0	0	0	0	0	0
Part-time:	0	1	0	0	0	0.2	0
Volunteers:	38	28	24	36	52	35.6	21
Number of emergency incidents:	200	250	174	251	250	225	267
Average response time to a structure fire:	8 min.	Less than 7 min.	12 min 32 sec	8 min.	8 min 55 sec		12-15 min
Number of times that NO personnel were available to respond in 2015:	0	0	0	4	0	0.8	0
Number of times in 2015 that a mutual aid unit arrived on-scene first:	0	6-10	0	7	0	3.75	0
Number of active volunteers:	38	25	24	36	51	34.8	21
Active volunteers that respond 33% or greater:	15	65%		17	?		
Volunteers are paid:	Stipend	Officers- Stipend; Members- Hourly	Hourly	Quarterly Stipend	Hourly		Hourly
Number of..							
Pumpers:	38	3	2	2	4	9.8	3
Tankers:	1	1	2	1	2	1.4	2
Aerial Ladders:	1	1	1	0	1	0.8	1
Brush Units:	2	1	1	0	1	1	1
Support Vehicles:	3	2	1	4	2	2.4	2
Total vehicles operated:	7	8	7	7	10	7.8	9
Best recruitment method utilized:		Word of mouth		Advertising in local papers, inviting the public to an informal Q & A at the Station	Word of mouth		Word of mouth
Best retention method utilized:		Service to community		Clothing, equipment and training provided at no cost	Quality training; right # of calls; family atmosphere		Not sure

RECOMMENDATIONS

- 9.1 The budget of the SVFD should be incrementally adjusted to invest in communications, technology, equipment, and updating the apparatus fleet with additional lighting and reflective striping.**
- 9.2 The SVFD should periodically review response time and take action to reduce current response times. The average response time target should be 10 minutes.**
- 9.3 Two pieces of fire apparatus should be consolidated and replaced with a new rescue/pumper.**

CHAPTER 10

STRATEGIC IMPLEMENTATION PLAN

Overview

THE STRATEGIC PLANNING PROCESS

Strategic planning is an organization's process of defining its direction and making decisions relative to the optimization of limited resources. A strategic plan also contains tools that can guide the implementation of the strategy. Strategic planning became prominent in corporations during the 1960s, and remains an important aspect of organizational planning. In this case, Stowe will need to consider approximately 88 recommendations that were defined within the recently completed EMS/fire service organizational analysis and involve as many stakeholders as possible in developing paced action that will lead toward successful implementation of these recommendations.

Strategy has many definitions, but generally involves setting goals, determining actions to achieve the goals, and mobilizing resources to execute the actions. A strategy describes how the ends (goals) will be achieved by the means (resources). In Stowe, the Board of Selectmen is tasked with determining strategy. Strategy can be planned (intended) or can be observed as a pattern of activity (emergent) as the organization adapts to its environment or competes.

It is our observation that the strategy currently in place in Stowe is moving from emergent toward intended. In the past, resource management been reactive to the perceived needs of the two entities that provide fire and Emergency Medical Services (EMS) to the town. Through this study, the town is moving forward to produce a proactive planned or intended strategy for service delivery.

Strategic implementation is analytical in nature and involves identifying how to best reach a goal or desired outcome. The recommendations contained in this document, and in the recently completed organizational analysis, form the framework for action and indicate where change is necessary. This document provides guidance relative to how to pace and implement those recommendations. The strategic implementation process considers the intricacies of the organizational environment including the following:

- Inputs – information utilized to formulate recommendations
- Outputs – development of a plan of implementation
- Outcomes – that require evaluation

Inputs

Data is gathered from a variety of sources, such as interviews with key fire service personnel, review of pertinent data and documents on the community, service demand, desired service level, standard of cover selected, organizational performance, and observations gathered through field visits. Inputs are then collected to help support an understanding of the environment and its opportunities and risks. Other inputs include an understanding of the values of stakeholders. These values may be captured in an organization's mission statement, and in the observed organizational culture which provides an emergent perspective on the actual values present within an organization. The inputs gathered during the organizational analysis form the basis for each of the recommendations that have been developed.

Outputs

The output of strategic planning includes documentation and communication describing the organization's strategy and how it should be implemented, sometimes referred to as the strategic plan. The strategy may include a diagnosis of the competitive situation, a guiding policy for achieving the organization's goals, and specific action plans to be undertaken for the implementation of the recommendations listed. A strategic plan may cover multiple years and is a flexible document that should be updated periodically.

Outcomes

The strategic planning process produces outputs, as described above; the implementation of the strategic plan produces outcomes. Ultimately, the implementation of the recommendations contained in this report will produce significant change and place the organization on an intended path. Change within a public sector organization typically produces some level of initial skepticism, discomfort, and places personnel in a situation that is unfamiliar. As the process of implementing change moves forward, each action often elicits a reaction. Therefore, the team working to implement desired organizational change should be ready to address unanticipated outcomes, which often manifest themselves as barriers to continued change. The process of implementing change should be considered a learning process.

In an effort to assist Stowe, we have developed 11 task groups to allow the organization to take prioritized and paced doses of change. Perhaps the best analogy is to consider each recommendation as a small wave that will reverberate through the organization. If all of the recommendations were pursued at one time, they would amount to a tidal wave of change that would create a significant level of chaos. Instead, we suggest that change be monitored and paced by the teams or task groups that are charged with implementation of a manageable set of recommendations.

STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS (SWOT) ANALYSIS

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

- **Strengths**: characteristics of the organization that allow it to meet its mission or provide exceptional service to a community.
- **Weaknesses**: characteristics of the organization that create internal conflict, dysfunctional, and frustrate organizational performance, thus creating a disadvantage to the organization in its efforts to meet the goals established by its mission statement.
- **Opportunities**: elements that the organization could pursue or develop to its advantage.
- **Threats**: elements in the environment that could create organizational instability or reduce the ability of an agency to meet its mission.

Users of SWOT analysis must ask and answer questions that generate meaningful information for each category (strengths, weaknesses, opportunities, and threats) to make the analysis useful and find their competitive advantage.

Internal and External Factors

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

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

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

Use

A SWOT analysis was originally developed as a reflective tool for profit seeking companies. However, the usefulness of SWOT analysis can apply to all types of organizations, and is particularly applicable to public sector functions. A SWOT analysis may also be used in pre-crisis planning and preventive crisis management. SWOT analysis may also be used in creating a series of recommendations in the context of an organizational study.

A SWOT analysis can be used effectively to build or focus an organization's intended strategy. The steps necessary to execute strategy-oriented analysis involve: identification of internal and external factors, selection and evaluation of the most important factors, and identification of relations existing between internal and external features.

When To Use SWOT

The use of a SWOT analysis by a community organization are as follows: to organize data, enhance communications between divergent groups, provide insight into barriers that may be present while engaging in social change processes, and identifying strengths available that can be activated to counteract these barriers.

A SWOT analysis can be used to:

- Explore new solutions to problems
- Identify barriers that will limit goals/objectives
- Decide on direction that will be most effective
- Reveal possibilities and limitations for change
- Revise plans to refocus on an organization's mission statement
- Brainstorm and as a recording device as a means of communication

Benefits

The SWOT analysis in public safety framework is beneficial because it helps organizations decide whether or not an objective is obtainable, and therefore, enables organizations to set achievable goals, objectives, and steps to further the change or organizational development. It enables organizers to take visions and produce practical and efficient outcomes that effect long-lasting change, and it helps organizations gather meaningful information to maximize their potential. Completing a SWOT analysis is a useful process regarding the consideration of key

organizational priorities. We believe that the Stowe EMS and the SVFD should conduct an internal SWOT analysis and share the results of this process with the other agency.

Task Group Assignments

In an effort to assist Stowe in the prioritization and implementation of the recommendations contained in this report, task groups of stakeholders are developed to evaluate objectives, and increase involvement and buy-in as recommendations are considered. We have identified eleven task groups and assigned recommendations to each task group. The town will need to assign appropriate personnel to each task group. These assignments are detailed in the table below:

<i>Task Group</i>	<i>Assigned Recommendations</i>
<i>Apparatus, Facilities and Communications</i>	<i>5.1, 5.11, 6.26, 8.2</i>
<i>Emergency Medical Services</i>	<i>5.1 – 5.17</i>
<i>Technology</i>	<i>6.3 – 6.5</i>
<i>Health & Safety</i>	<i>6.22, 6.23</i>
<i>Leadership & Governance</i>	<i>5.2 – 5.4, 5.9 – 5.10, 5.145, 6.2, 6.19 – 6.21, 8.1, 9.1</i>
<i>Operations</i>	<i>5.7 – 5.8, 5.12, 5.15 – 5.17, 6.7, 9.3</i>
<i>Policy Development</i>	<i>6.9, 6.11 - 6.18</i>
<i>Recruitment and Retention of Personnel</i>	<i>4.1 – 4.24, 5.5 – 5.6, 6.1, 6.8, 8.4 – 8.8.6, 8.8, 8.9</i>
<i>Performance Analysis, Training and Professional Development</i>	<i>5.13, 6.6, 6.10, 6.24, 7.1 – 7.10, 8.3, 8.7, 9.2</i>



Strategic Implementation Timeline

Six Months

4.6 – 4.7, 4.14, 4.24, 5.1, 5.5 – 5.10, 5.12 - 5.13, 5.16, 6.1, 6.6 – 6.7, 6.11, 7.9, 8.2, 8.5

One Year

4.1, 4.4, 4.8 – 4.9, 4.13, 4.15, 4.18 – 4.19, 4.21, 5.14, 5.17, 6.3, 6.5, 6.16, 6.22 – 6.23, 8.1, 8.3 – 8.4, 8.6

Eighteen Months

4.2 – 4.3, 4.5, 4.11 – 4.12, 4.16, 4.17, 4.22 – 4.23, 5.2 – 5.4, 5.11, 5.15, 6.2, 6.4, 6.8, 6.13 – 6.15, 6.19 – 6.21, 6.24, 7.1 – 7.8, 7.10, 8.7 – 8.9, 9.1, 9.3

Two years or more

4.10, 4.20, 6.9 – 6.10, 6.12, 6.17 – 6.18, 9.2

CHAPTER 11

CONCLUSIONS

The Stowe EMS and the SVFD are both excellent organizations that more than meet the needs of the community. It is clear that members of both organizations work as a team to produce an effective and efficient response that serves the town well. We believe that both organizations should administratively merge into a single fire/rescue agency. This merger should encourage and facilitate cross-training, but maintain separate divisions. Utilizing this concept of two divisions, a volunteer could choose to participate as a firefighter, EMS provider, or as both.

A 30 hour per week recruitment and retention coordinator should be hired to work with both agencies in an effort to expand the number of volunteer/on-call personnel. This person would also coordinate a social media presence and develop retention programs. Through these efforts, we believe the SVFD can sustain the volunteer/on-call model with the exception of filling the full-time position of fire chief when Chief Sgantas retires.

Stowe EMS needs to expand paramedic coverage to provide one crew member that is a paramedic 100% of the time. The study team feels that through recruitment and retention efforts, and increasing ambulance revenue, Stowe EMS can control costs and curtail the significant increase that is proposed for the next fiscal year. The current workweek and schedule are confusing at best. We recommend that the town negotiate with the IBEW to develop a rotating 24-hour schedule.

Often we hear that the ideas presented in a study could have been developed locally. Through this document we provide the town with a perspective and a number of ideas. While not all of these ideas will work in Stowe, we believe that many of these concepts will enhance Stowe EMS and SVFD operations. In fact, the largest threat to moving these organizations forward is self-imposed cultural parameters that will result in the development of barriers or the assumption that an idea presented will not work in Stowe. We would ask that members open their minds, set priorities, and not frustrate progress by assuming that an idea will not work in Stowe.

CHAPTER 12

COMPILATION OF RECOMMENDATIONS

CHAPTER 4 – VOLUNTEERISM, RECRUITMENT, AND RETENTION OF PERSONNEL

- 4.1 The SVFD and the Stowe EMS should jointly apply for a federal SAFER grant for volunteer recruitment and retention. This grant should be utilized to develop a marketing and recruitment program to attract new members, and provide incentives for the retention of those personnel such as tuition reimbursement, health care benefits, tax abatements, etc. This 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 fire department’s and each municipality’s web site**
 - **Placing recruiting messages on electronic sign board at municipal facilities**
 - **Placing signs recruiting volunteer personnel at the main entrances to the fire district, and lawn signs to be placed throughout the fire district**
 - **Placing signs/banners recruiting volunteers in local businesses in particularly high volume locations**
 - **Maintain a continued active and visible presence at the local high school**
- 4.2 The Stowe EMS and the SVFD should attempt to enter into partnerships with the Mountain Corporation to encourage their full-time employees to become volunteer/on-call emergency service personnel.**
- 4.3 The Stowe EMS and the SVFD should attempt to work with the Mountain Corporation to develop a joint selection process where summer or winter seasonal hires that are firefighter/EMTs are given preference provided that they will actively participate as**

emergency responders. This concept could also encompass providing lodging during their employment.

- 4.4 In cooperation with the town, the Stowe EMS and the SVFD should explore the feasibility of utilizing, and in fact encouraging, existing town employees to perform “dual roles” by serving not only in their full-time positions, but also serving either agency as volunteer/on-call members.
- 4.5 The Town of Stowe should give additional consideration for hiring to existing EMS and fire volunteer/on-call personnel.
- 4.6 The Town of Stowe should hire a part-time recruitment and retention coordinator that would advocate for the development of volunteer/on-call personnel for both agencies.
- 4.7 The Stowe EMS and the SVFD should clearly project that positions do receive hourly compensation. This will ensure that members of the public understand that although positions are classified as volunteer (not their primary job), they are on-call and responders are compensated for response and training. This could attract candidates that otherwise could not afford to invest the time to serve in these positions and receive no compensation for their time.
- 4.8 In an effort to reduce response times, the SVFD should consider encouraging volunteer personnel to stay in the station on nights and weekends. Personnel who work at least one shift per week could possibly maintain their member in good standing status with the fire department.
- 4.9 The SVFD should consider utilizing a duty crew system that generates the response of four members to answer automatic alarms and other similar calls. Under a duty crew system, the department could be divided into two or three crews. Each duty crew would have their own separate alert tone and would function on some type of a rotational system with the other crew(s), perhaps one week on and either one or two weeks off. Only the “duty crew” would be dispatched initially to minor incidents, often referred to as “still alarms”, reducing the need for the entire department to respond.
- 4.10 The SVFD should explore ways to incentivize the duty crew personnel and program with the goal of maximizing buy-in and participation of department members, while simultaneously reducing the emergency response burden on all members of the department.
- 4.11 The Stowe Fire Department should consider developing an in-station or in-community four-person live-in program.

- 4.12** The Stowe Fire and the EMS should utilize an LED computer controlled sign board at the public safety complex to ensure that all residents are aware that openings exist for volunteer/on-call personnel and that new personnel will be welcomed and trained.
- 4.13** The chief should conduct an online survey to determine what recruitment and retention programs and incentives would be of the most value.
- 4.14** The Stowe EMS and the SVFD should expand its Internet and social media footprint by establishing an expanded social media presence designed to connect with the community and inform the community of the need for additional on-call personnel. Managing any social media efforts should be the responsibility of the recruitment and retention coordinator.
- 4.15** The Stowe EMS and the SVFD should develop a mentor program where a prospective member is assigned to a senior crew member. This mentor would be an advocate for the new member and be a resource to guide and encourage the new member as they work to develop proficient operational skills.
- 4.16** The Stowe EMS and the SVFD should recognize and provide donated incentives once per year for a high level of response. This could include working with local businesses to provide a gift certificate, gas card, or ski pass.
- 4.17** The Stowe EMS and the SVFD should jointly sponsor an emergency services explorer program that would be led by the recruitment and retention coordinator.
- 4.18** The Stowe EMS should establish an EMS internship program with the local high school to allow young people to initiate a career path and experience EMS.
- 4.19** The Stowe EMS and the SVFD should ensure that students at the University of Vermont are aware that there are paid, on-call positions available within both agencies.
- 4.20** The Stowe EMS and the SVFD should become a single agency, but maintain two separate divisions. This would allow volunteers to participate in either and not be precluded from participating in both agencies. Although this merger would create a fire/rescue department, it would maintain separate divisions and not force cross-training of personnel.
- 4.21** The Stowe EMS should develop and market an EMS observer program, thus gaining interest and visibility within the community.

- 4.22** The Stowe EMS and the SVFD should consider developing a joint agency citizen's fire/EMS academy where interested citizens could learn about different aspects of emergency services in Stowe.
- 4.23** The Town of Stowe should consider offering health care to volunteer/on-call members that demonstrate response commitment to the community. The specifics of this program would range from allowing responders to join the town's health care program at their own cost, up to a 50% benefit level based on the responder's level of response.
- 4.24** The Stowe EMS should compensate an individual who completes EMT training for their course costs once they have attained certification. An agreement should be signed indicating that the recipient agrees to be a member for a minimum of two years in consideration for this tuition benefit.

CHAPTER 5 – EMERGENCY MEDICAL SERVICES

- 5.1** The specifications for a new ambulance should be prioritized, finished, and placed out to bid as soon as possible. The new ambulance should replace Ambulance 2.
- 5.2** The Town of Stowe should bargain with the IBEW to transition to a 42-hour work week and migrate to rotating 24 hour shifts.
- 5.3** The Town of Stowe should pay overtime for continuing education that cannot be completed on shift, but negotiate to eliminate administrative time.
- 5.4** The director should work one 24-hour shift and the remainder of his hours should be focused on the administration of the service.
- 5.5** Stowe EMS should reduce the requirements on volunteers to 12 hours of coverage and 50% of meetings per month. Volunteers should be allowed to commit to less than a 12 hour on-call shift.
- 5.6** Stowe EMS should diligently work to increase the level of participation of volunteers.
- 5.7** Stowe EMS should seek to maximize paramedic coverage with 100% coverage with a single paramedic being the goal.
- 5.8** New per diem hires should be paramedics.

- 5.9** Ambulance billing base rates should be increased by 10% in January 2017 and an additional 10% in January 2018.
- 5.10** ALS Intercept rates should increase to \$150.00 in January 2017 and to \$200 in January 2018.
- 5.11** The dispatch center should be requested in writing to provide Emergency Medical Dispatch (EMD) services inclusive of call classification and pre-arrival instructions. If the current dispatch center is unwilling to provide that service, Stowe EMS should determine if another center offers EMS dispatch services and negotiate accordingly.
- 5.12** Once a crew of two is confirmed by radio, the ambulance should immediately respond without delay. Volunteer/on-call personnel should meet the ambulance on the scene via either their private vehicle or through the use of Squad 1.
- 5.13** A 8 minute, 59 second, response time target should be set and utilized as a point of evaluation.
- 5.14** In conjunction with the Town of Stowe and the SVFD, a stakeholder group should be developed to identify the action steps, timeline, and barriers relating to an administrative merger of the Stowe EMS and the SVFD.
- 5.15** Stowe EMS should offer to train firefighters to the level of EMRs to build a larger cadre of personnel that could drive an ambulance and meet the staffing requirements in Vermont.
- 5.16** Current CPR only drivers should be asked and encouraged to become EMRs to provide crew flexibility.
- 5.17** Stowe EMS should increase the amount of joint training with both the SVFD and Stowe Mountain Rescue personnel.

CHAPTER 6 – FIRE SERVICES

- 6.1** The part-time recruitment and retention coordinator should provide the Stowe EMS and the SVFD with administrative assistance.
- 6.2** As the chief has publically discussed his plans to retire in the next two to three years, the town should ask that the chief provide a one year notice to allow for the delivery of a comprehensive recruitment process. In addition, the town should provide for an

orderly transition by recruiting a full-time fire chief to start work in Stowe 6 months prior to the retirement of Chief Sgantas.

- 6.3 The SVFD should expand the use of technology and implement resource alerting and tracking programs such as “Edispatches” and “I am Responding”. Flat screen monitors should be installed to provide responding personnel a picture of what other members are enroute.
- 6.4 The department should consider utilizing a cloud based records management system and developing pre-incident fire planning in Stowe.
- 6.5 Tablets with connectivity should be installed as mobile data platforms in each primary response piece (5 total). These tablets should be capable of accessing the cloud based RMS and other Internet resources.
- 6.6 To meet the provisions of NFPA 1720, automatic mutual aid should be requested upon the report of a structure fire.
- 6.7 Response should be optimized through the establishment of run cards that provide command officers and dispatch personnel with a clear matrix of what resources should be requested at various alarm levels.
- 6.8 The SVFD should set a goal to recruit and retain 15 new volunteer/on-call members over the next three years.
- 6.9 As the SVFD received 4.95/10 for the ISO telecommunications section, the department should work with their dispatch provider to ensure that alarms are being processed in accordance with the criteria established by NFPA 1221. Documentation of any improvements should be shared with ISO.
- 6.10 The Stowe Fire Department should enhance training documentation to provide ISO with the specific information that they require. ISO should be contacted and questioned relative to the low credit granted for training.
- 6.11 The department should review the OSHA Two-in/Two-Out rule and provide personnel with clear guidance on operations when less than four personnel have been assembled on the incident scene
- 6.12 The department should review NFPA 1720 and utilize this standard as a basis to develop an operational strategic plan that identifies actions to enhance compliance over the next five years.

- 6.13** Department Standard Operating Guidelines and Policies need to be reformatted, reviewed, and updated regularly. The department training officer should assign a member, selected at random, to review one SOP and one Policy at each training meeting. Ultimately, there should be one document that shows all SOGs and Policies have been reviewed and signed off by all personnel, stating they understand the document.
- 6.14** All SOPs should be posted on the department's website.
- 6.15** All department SOGs and Policies need to be available both in electronic format and hard copy, so they are readily available for review and/or reference by all personnel.
- 6.16** A committee should be established to provide guidance to the fire chief as to updates, revisions, and new SOGs and Policies that need to be developed or addressed.
- 6.17** Once developed, SOPS should be reviewed every two years.
- 6.18** Once implemented, these SOPs should be utilized as the basis for operations. Any deviation should be documented in the National Fire Incident Report completed for the emergency.
- 6.19** The false alarm ordinance should be reviewed and strengthened in 2018 if it has not produced the effect of reducing the number of these calls. The town could require that all systems activate or install alarm verification technology where two devices must alarm prior to an alarm of fire being transmitted. The use of this technology is popular in many communities that faced this issue.
- 6.20** The town should consider providing the Board of Selectmen with a public report listing those occupancies that have experienced five or more false alarms in a one-year period.
- 6.21** Properties that are billed for and do not pay false alarm fines should have a tax lien pursued against their property.
- 6.22** Self-Contained Breathing Apparatus (SCBA) masks should be provided to each firefighter. This will ensure a proper fit and limit the potential of transmitting an infection to others.
- 6.23** Each firefighter should be mask fit tested on an annual basis.

- 6.24** The SVFD should provide an annual fire extinguisher training session to Mountain Corporation employees and provide instruction relative to evacuation and limiting fire spread prior to the arrival of the department.

CHAPTER 7 – COMMUNITY OUTREACH & RISK MANAGEMENT

Consideration should be given to developing the following public education and community outreach programs. Many of these programs could be delivered jointly by Stowe EMS and the SVFD.

- 7.1** **Blood pressure clinic:** Hypertension continues to be one of the leading risk factors contributing to strokes and heart attacks. Providing the ability for the community and particularly the elderly to come into the station or during another community event and obtain their blood pressure will provide for networking opportunities between community and staff, while at the same time provide valuable medical information critical for the individuals.
- 7.2** **File of Life Program:** During medical emergencies, particularly with limited staffing, having a written document readily accessible will expedite and improve patient care and assessment for the patients. Files of Life are used to document pertinent past medical history, allergies, and medications the individual is on, and assist the emergency responders in making an informed decision based on the medical emergency at the time.
- 7.3** **Smoke detector/carbon monoxide detector inspection program:** Every 20 seconds, a fire department responds to a fire somewhere in the United States, according to the National Fire Protection Association (NFPA). The American Red Cross is partnering with fire departments across the state in a planned, five-year, program to help reduce deaths and injuries due to home fires by 25%. During the visit, homeowners will get smoke detectors installed if no working alarms are present, guidance in the development of a Family Disaster Plan, and valuable emergency preparedness tips and information on increasing the safety in your home.
- 7.4** **Pulse Point:** During a cardiac arrest, time is muscle. Specifically, cardiac muscle. The American Heart Association continues to recognize the chain of survival by early recognition, early CPR, early defibrillation, and rapid transport. Pulse Point is an app on an iPhone that can be downloaded from anyone in the community who wants to participate in this program to be notified when someone is having a cardiac arrest in their vicinity. Fifty-seven percent of US adults say they've had CPR training. Utilizing this type of technology, bystander performance, and active citizenship enhances the care provided to the community.

- 7.5 Swimming pool safety:** Opportunities to educate the public, particularly in a recreational community such as Stowe, on the preventative measures to take around the water and pools can be valuable. Topics to reinforce include the use of life jackets, swimming pools with fences, latches on gates and ladders, and never leave children alone by the water.
- 7.6 Bike helmet program:** More children ages 5 to 14 are seen in emergency rooms for injuries related to biking than any other sport. Helmets can reduce the risk of severe brain injuries by 88%; yet only 45% of children 14 and under usually wear a bike helmet. Providing bike helmets throughout the community will help minimize this potential from happening in Stowe.
- 7.7 Prom demonstrations:** As a component of the SAFE program, conducting a mock accident for the junior and senior classes at the high school, focusing on the dangers of drinking and driving, texting while driving, and not wearing seat belts will reinforce the dangers associated with this type of behavior. This activity would be enhanced with the cooperation of the police department and local hospital, as well as others who may directly speak on losing a loved one or dealing with a loss related to these types of behaviors.
- 7.8 Airway obstruction training for staff in restaurants:** An airway obstruction can lead to unconsciousness if not expelled or cleared in a timely manner. Collaboration with staff personnel in restaurants can assist public safety personnel in these types of medical conditions.
- 7.9 Social Media:** The department needs to have an updated and active department website and Facebook account. This can be used for community engagement, updates with ongoing activities, signing up for programs to minimize any additional administrative time, and engaging the younger generations who are more tech savvy.
- 7.10 MASS Alerts:** Enlisting the use of technology for mass notifications, such as the Code Red alert already used and administered by Stowe. MASS Alerts allow public safety agencies to provide emergency notifications and information about critical events and disasters, enabling individuals to better prepare and stay informed on such topics. Utilizing this technology, personnel can get real time information on severe weather, alerts on missing children, evacuation and shelter-in-place information, information about power outages, and tips to stay safe during such disasters.

CHAPTER 8 – STAFF SURVEY

- 8.1 The town should establish a working group composed of stakeholders to provide a report relative to the steps, timeline, and barriers to a potential merger of the Stowe EMS and the SVFD into the Stowe Fire Rescue.**
- 8.2 Stowe EMS should address the internal perception of the less than adequate reliability of ambulances by sharing a revised capital plan with all personnel.**
- 8.3 Stowe EMS and the SVFD should train together and conduct joint operations at least six times per year.**
- 8.4 Members of both organizations should be asked to recruit, sponsor, and mentor a new member. If after one year the new member has joined the organization and actively participates in response, the sponsoring member should be awarded a recruitment incentive of \$500.00.**
- 8.5 As responders indicated they could become more available, the town should annually provide internal and public recognition for the top five volunteer responders from each organization.**
- 8.6 Stowe EMS and the SVFD should work together to develop an expanded recruitment and retention strategy that harnesses the new ideas and concepts contained within this report.**
- 8.7 Each organization should seek through its members to become more visible and engaged in the community.**
- 8.8 The recognition of personnel for response and accomplishment should be expanded.**
- 8.9 A joint Stowe EMS and SVFD awards ceremony should be conducted annually.**

CHAPTER 9 – COMPARATIVE ANALYSIS

- 9.1 The budget of the SVFD should be incrementally adjusted to invest in communications, technology, equipment, and updating the apparatus fleet with additional lighting and reflective striping.**
- 9.2 The SVFD should periodically review response time and take action to reduce current response times. The average response time target should be 10 minutes.**

9.3 Two pieces of fire apparatus should be consolidated and replaced with a new rescue/pumper.

CHAPTER 13

THE PROJECT TEAM

The following MRI personnel participated in the study:

PRINCIPAL-IN-CHARGE

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

PROJECT MANAGER

Brian P. Duggan recently retired from the Fire Department in the City of Northampton, Massachusetts, where he has instituted substantial changes to modernize the entire department including equipment, facilities, personnel, training and organizational structure. He formerly commanded the Northborough, Massachusetts Fire Department, and has significant experience with the Massachusetts Department of Fire Services where he held several key positions. He also developed and directed the Graduate and Undergraduate Fire Science

Programs at Anna Maria College in Paxton, Massachusetts, from 1995 - 2003. Chief Duggan has a Business Management/Fire Science degree from Providence College, and a Master's Degree of Business Administration (MBA) from Nichols College in Dudley, Massachusetts. He is also a graduate of the National Fire Academy's Executive Fire Officer Program, and is one of only a few fire service professionals to be designated as a Chief Fire Officer by the Commission on Fire Accreditation International. Chief Duggan also leads the Massachusetts fire service through his affiliation as Chairman of the Fire Chief Association of Massachusetts Technology Committee and as a Regional Director on the Massachusetts State Fire Mobilization Committee. In addition, he has authored several publications inclusive of writing Section 7, Chapter 3, "*Fire Department Information Systems*" in the Nineteenth Edition of the National Fire Protection Association's Fire Protection Handbook.

PROJECT TEAM:

George Klauber is a Senior Public Safety Consultant with MRI; he graduated from Charter Oaks State College with a BS in Fire Science and Technology, and has taken numerous courses at the National Fire Academy. Chief Klauber retired as the Fire Chief in Derry, New Hampshire, where he served since 2003. His retirement capped a career of almost 40 years in the Fire Service. George began his career in the Waterbury CT Fire Department where he served with distinction and rose through the ranks to become Chief of the Department, a position he held for 3 years before accepting the position of Chief in Derry NH. Chief Klauber is a Certified Fire Officer in accordance with NFPA 1021; a Certified Fire Service Instructor in accordance with NFPA 1501; and a Certified Safety Officer in accordance with NFPA 1521. Chief Klauber is a member of the International Association of Fire Chiefs; the New England Association of Fire Chiefs, the New Hampshire Fire Chiefs Association; the National Fire Protection Association, and the International Association of Emergency Managers. Chief Klauber has served as a subject expert and consulting advisor to MRI clients since 2001.

Robert C. Craig most recently served as Interim Director of Fire and Emergency Medical Services for the Town of Acton, Massachusetts. Immediately prior to this he had served the Town of Acton during his entire career of almost 44 years of service as a member of the Acton Fire Department which included his last 22 years as Fire Chief. The Town of Acton Fire Department is staffed by 42 career personnel, housed in three Fire/EMS stations and provides full fire, rescue and emergency services including EMS for approximately 23,000 residents. During his career Bob administered an annual fire department budget of approximately 3 million dollars. Together with the Acton Police Chief, he also managed a joint Public Safety Dispatch Center. Bob holds an Associate Degree in Fire Science and Technology as well as a Bachelor of Arts Degree and is a graduate of the Executive Fire Officer Program of the National Fire Academy. He is a member of the International Association of Fire Chiefs; the New England Association of Fire Chiefs; the Fire Chief's Association of Massachusetts and the National Fire

Protection Association. Bob has served for over twenty (20) years as a member of the Massachusetts Fire Training Council as one of the representatives of the Fire Chiefs Association of Massachusetts and now continues to serve as appointed by the Governor to represent the Citizens of the Commonwealth. He has attained professional status and recognition as a credentialed Fire Chief in Massachusetts. Bob has a diverse background and expertise in Firefighting, EMS, Dispatch, Fire Prevention and Investigation, Emergency Planning and Operations, Municipal Finance and Government and Labor/Management relations. During his career he has also participated in the study of and /or implementation of a number of regional programs including Fire Investigation, Dispatch, and EMS to include ALS services. In addition, he has been instrumental with the planning and construction of a public safety facility which included a joint dispatch center and Fire/EMS station construction and renovations. He has also participated in a number of Fire/EMS management studies.