

**REPORT**

**FIRE DEPARTMENT**

**ORGANIZATIONAL RISK  
ASSESSMENT**

**GREENLAND, NH**

**NOVEMBER 2017**

**Prepared by:**  
**Municipal Resources, Inc.**  
**120 Daniel Webster Highway**  
**Meredith, NH 03253**  
**603-279-0352**  
**866-501-0352 Toll Free**  
**603-279-2548 Fax**  
[all@mrigov.com](mailto:all@mrigov.com)  
[www.mrigov.com](http://www.mrigov.com)





# ***TABLE OF CONTENTS***



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## **TABLE OF CONTENTS**

### **REPORT**

Chapter 1	Project Overview.....	1
Chapter 2	Service Expectations/Level of Risk.....	4
Chapter 3	Department Organization & Staffing .....	6
	Observations .....	6
	Recommendations .....	9
Chapter 4	Department Operations.....	11
	Observations .....	11
	Insurance Service Office (ISO) Rating.....	14
	How the Fire Suppression Rating Schedule Works .....	15
	Emergency Communications .....	15
	Fire Department .....	15
	Water Supply .....	16
	Community Risk Reduction Strategies .....	16
	National Standards .....	16
	Organizational Policy and Standard Operating Procedures (SOPs) .....	17
	Recommendations .....	18
Chapter 5	Recruitment and Retention of On-Call Personnel.....	20
	Observations .....	20
	Recommendations .....	24
Chapter 6	Fire Service Facility.....	26
	Observations .....	26
	Greenland Fire Station .....	26
	Recommendations .....	34

Chapter 7	Apparatus and Capital Planning.....	35
	Observations .....	35
	Overview .....	36
	Fire Suppression Units .....	38
	Capital Planning .....	41
	Recommendations .....	41
Chapter 8	Training .....	43
	Observations .....	43
	Recommendations .....	46
Chapter 9	Service Options and Risk Management .....	48
	Overview .....	48
	Recommendations .....	48
Chapter 10	Fiscal Comparison and Analysis .....	49
	Observations .....	49
	Recommendations .....	49
Chapter 11	Organizational Communication .....	50
	Observations .....	50
	Recommendations .....	50
Chapter 12	Conclusions .....	51
Chapter 13	Summary of Recommendations.....	53
Chapter 14	The Project Team .....	59



# ***REPORT***



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## **REPORT**

### **FIRE DEPARTMENT**

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### **GREENLAND, NH**

### **NOVEMBER 2017**

## **CHAPTER 1**

### **PROJECT OVERVIEW**

Municipal Resources, Inc., of Meredith, New Hampshire, was engaged by the Town of Greenland, New Hampshire, to conduct an operational assessment of the Greenland Fire Department. This assessment included the following key elements:

1. Identify service needs based on the characteristics of the community, statutory and regulatory requirements for response and delivery, and comparison with current ability to fulfill the needs and expectations.
2. Identify the public safety risks and prioritize the level of risk that must be covered based on the data and operations of the fire and EMS operations. The type, frequency, distribution, response times, mutual aid and/or contractor provided services, staffing policies, reporting of emergency and routine responses to all services will be included.
3. Assess the current plan for deploying the required number of fire and EMS officers and supervisors, along with vehicles/apparatus used, and recommend cost effective alternatives. Evaluate whether there are recommended changes to improve efficiency and delivery of service.



4. Evaluate the response of personnel, including appropriate operational staffing, supervisors, management, and support staff to respond from the initial call for routine and emergency services through to generating the incident report and findings, and any subsequent proceedings, such as court appearances, legal action, or insurance resolution, or inspection.
5. Identify the required staffing levels to meet the needs of the community in the most cost-effective and complete manner.
6. Evaluate feasible options for fire and EMS services and delivery to determine whether services can be effectively shared with other public and/or private entities. Evaluate needs for service backups.
7. Evaluate current and planned vehicle/ apparatus configuration/ acquisition/ replacement, maintenance, and assignment practices to determine whether the existing operations are the most cost-effective implementation.
8. Evaluation of Departmental policies and procedures that impact the efficient operations of the fire/EMS Department. Review education and/or prevention training requirements, and funding allocation, in comparison to other communities and standards. Include possible recommendations that may improve the current policies, procedures, training, and delivery of services in the most cost-effective manner.
9. Review of the EMS service provided by the Town and evaluation of feasible options that would enhance revenue and public safety.
10. Review of Mutual Aid Agreements.

Assigned to this project were MRI Fire/EMS consultants Brian Duggan, as Project Manager, and Gary Lamoureux. The assessment team employed the following nine methodologies:

- A tour of the community;
- Evaluation of target hazards;
- Review of the fire facility;
- Review of mutual aid response agreements and practices;
- Review of fire apparatus and associated equipment;

- Meeting with the Greenland Police Chief;
- Interviews with key personnel; and
- Evaluation of Greenland Fire Department Standard Operating Procedures (SOPs).

In addition, we also conducted a review of a complete operational data set as generated by the Department's Records Management System (RMS) and operational data that was furnished by the Town.

In conjunction with our on-site visit, 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), 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 Greenland.



## **CHAPTER 2**

### **SERVICE EXPECTATION/LEVEL OF RISK**

Each community determines the composition of fire services that residents receive by balancing the level of risk against the cost to provide these critical services. Based on our review of the Greenland Fire Department, the community expects the timely response of at least one unit on a 24/7 basis. Moving forward, the Department should continue to focus on ensuring the timely response of at least a single unit, and to developing strategies within the following four critical areas:

- Reduction of response times;
- Recruitment and retention of on-call personnel;
- Development of a formalized training program focused on the risks facing the community; and
- Development of an operational platform (fire/EMS station) that matches the level of risk faced by the community.

The largest opportunity to enhance the performance of the organization lies within providing a well-trained initial response force of two personnel, and bolstering recruitment and retention efforts to increase the number of on-call personnel available for response. These actions will combine to produce a more reliable response and reduce the time that it takes to deploy sufficient resources to mitigate an emergency. This report will focus on assessing the Department based on the service expectation described above.

Compared to most communities of comparable size, Greenland is experiencing significant growth and the development of a strong residential, commercial, and industrial base. In addition, the presence of Interstate 95 increases the potential hazards within the community and the emergency response workload of the Department. When considering the hazards that we observed through touring the community, it is clear that the Department faces a moderate level of risk that is far greater than the experience of many comparable communities. Examples of these protection risks include.

- Increasing residential development and the use of lightweight construction methodologies;
- An increasing presence of “Over 55” residential communities;
- Increased commercial development;

- The presence of a moderate propane facility;
- The presence of an interstate interchange and truck stop;
- The presence of several big box retailers;
- The presence of light hazard industrial facilities; and
- The presence of a high volume of hazardous materials in transient tractor trailers.

Our review of target hazards indicates that Greenland has a higher presence of hazardous materials and fire load than most communities of similar size. Typically, these risks produce low frequency, high impact incidents that require a significant compliment of resources and in many cases specialized training. Chief Cresta has positioned Greenland to face these risks through the presence of ongoing training and the immediate and automatic response of mutual aid units.



## CHAPTER 3

### DEPARTMENT ORGANIZATION & STAFFING

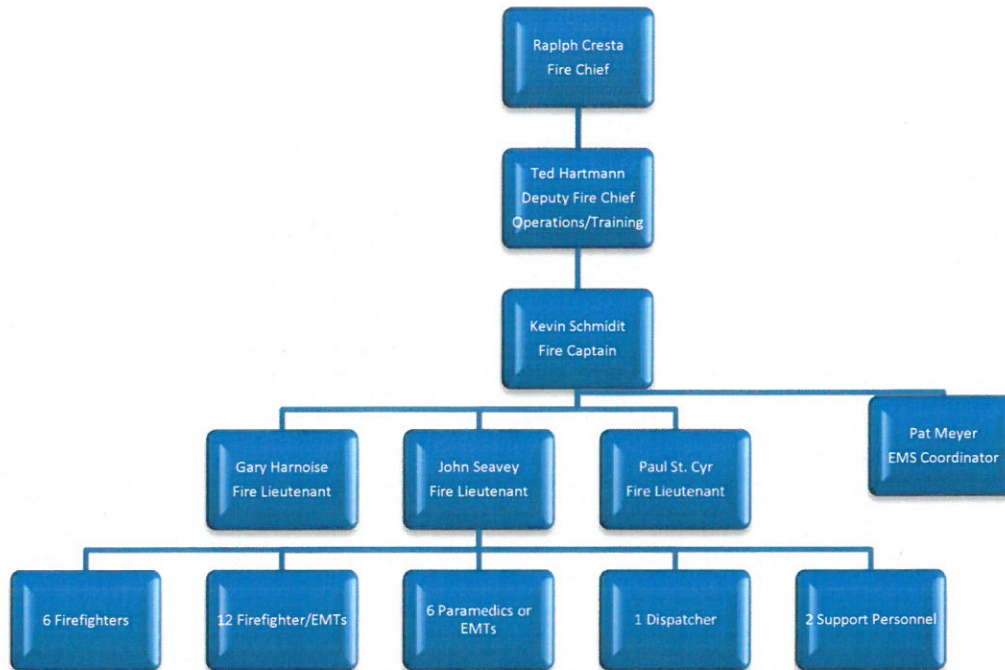
#### OBSERVATIONS

The Greenland Fire Department provides a full range of fire/rescue services, including emergency medical patient transportation, to its 3,549 residents (Google Fusion table, based on 2010 census data). The response area consists of 13.28 square miles of land area. Emergency telecommunications and dispatch services are being provided through Rockingham County Dispatch which is a Regional Emergency Communications Center (RECC).

The Greenland Fire Department is an active participant in the Seacoast Region Mutual Aid System and demonstrates this participation through responding to major incidents in other communities and receiving automatic mutual aid to emergency situations requiring resources in excess of those immediately available through the response of the Greenland Fire Department. Greenland is requested to provide mutual aid to other communities on a frequent basis which speaks positively of both the relationships that exist with adjacent communities and the overall respect for the capability of the personnel within the Greenland Fire Department.

The Greenland Fire Department is primarily an on-call organization that is supplemented by a small per-diem, daytime contingent, including the part-time fire Chief. **In the previous two years, the organization has struggled to meet the immediate response needs of the community, and the Chief has struggled to address all the administrative aspects of his position given his part-time status. It is our observation that although the Chief struggles to keep the organization moving forward, he clearly demonstrated that he needs help. His energy, passion, dedication, and organization are rare and should be recognized by the organization and the Town as a whole. During our field work and in subsequent interviews, the Chief told us that he is considering retirement. We believe that the Town should work to provide the Chief with assistance, and retain his services during the upcoming period of organizational transformation.**

The organizational structure of the Department is detailed in the chart below:



**Figure 1 - Greenland Fire Department Organizational Chart**

The on-call component of the organization consists of approximately 30 personnel who serve as the sole responders, other than during weekday, daytime, hours, when the two, per-diem staff, are on duty. We believe that the Department should set a recruitment goal of adding seven more on-call positions to the organization, over the next two years. This will require an ongoing recruitment effort as detailed within a later Chapter of this report.

In an effort to reduce response times and ensure that calls are not missed and assigned to mutual aid units, a nighttime on-call system has been instituted. This strategy has organized a response that prevents calls from being missed, and has reduced average nighttime response times two to four minutes. Continuing the on-call system, and working to further reduce response times, should be a primary goal of the Greenland Fire Department.

Availability of on-call personnel, including off-duty, per-diem staff, to provide a primary response capability, is above the average that we have observed in comparable organizations. This means that when personnel are available to respond, an average of ten personnel respond to a structure fire. A safe response to a residential structure fire requires 14-16 personnel. Given that the Greenland Fire Department does not have that resource depth, the utilization of automatic aid from adjacent communities provides Greenland with the ability to provide the resources necessary to mitigate an emergency incident. This regional effort reflects the teamwork present in the area and requires that Greenland play a reciprocal role to support other communities.



Despite the formidable capability of the Department noted above, the Town needs to recognize that as an on-call organization, response is not guaranteed (other than those on duty or those assigned to the structured on-call system) as personnel respond when they are available. The following table demonstrates why the Chief initiated an on-call system to provide a more immediate and guaranteed response, consistent with the level of service expected within the community.

Year	Total Emergency Call Volume	Missed or Scratched Calls Assigned to Mutual Aid Units	Percentage of Total Volume
2015	377	33	8.7%
2016	403	38	9.4%

**Table 1 - Call Volume and Missed Responses**

These missed calls serve as an indicator that the work load on the Department is exceeding the organization's current capability. The vast majority of emergency responses receive the response of five Greenland Fire Department personnel. This response statistic is abnormal as many peer organizations struggle to muster two or three responders, a response of five personnel to the majority of incidents reflects a strong commitment of personnel within a healthy and vibrant organization.

Overall, the Department works diligently to meet the needs of the community and projects a "can do, approachable attitude". This positive attitude translates into the organization being revered within the community. This high level of community support is complemented by a positive internal culture. It is apparent that the Greenland Fire Department is a well-organized and well-run organization.

Our team observed a number of indicators that the organization needs to be reconfigured. In short, the community needs to invest in the organization and provide the resources necessary to allow the organization to grow and continue to deliver the expected level of service to the community. We noted five symptoms that the organization is in need of a transformation. These are listed below:

- Only 60% of work assigned to per-diem personnel is getting completed
- The Department's Records Management System (RMS) lacks consistent data entry
- The Department has missed 8.7-9.4% of calls during the previous two years
- Response time averages above ten minutes

- A lack of administrative capacity exists within the organization. This includes RMS capability (records and reports), Internet/Social Media presence, and recruitment efforts.

Looking forward, it is essential that the community recognize that the workload is exceeding the current capability of the Department, and that it is time to invest in the organization and expand the organization's capabilities through the addition of a small number of full-time personnel that would complement the efforts of on-call and per-diem staff. As the Department grows and moves toward hiring a small compliment of daytime career staff, it is essential that the vibrancy of the on-call aspects of the organization be retained. As such, career and on-call staff should be integrated, train together, and maintain positive relationships. The career staff must realize that they are there to support the on-call personnel. As the organization is primarily an on-call organization, full-time staff should continue to positively compliment the on-call force.

In the long-term, care must be taken to maintain the primary response role of the on-call force. Although clearly not the case in Greenland, strained relationships can lead to organizational conflict that changes the nature of the organization. In the extreme, this can lead to reduced on-call participation. In Greenland, this is a cautionary statement so that all members of the Department recognize the need to work as a team, maintain relationships, and continue to welcome and appreciate the importance of on-call participation.

## **RECOMMENDATIONS**

- 3.1 Develop a plan to ensure that on-call and full-time staff are integrated, respond, and train together.
- 3.2 The Town should hire two full-time day shift personnel in 2018, each of these staff members should work four, twelve-hour days, on a rotating schedule (4 days on, 4 days off).
- 3.3 The organization should remain a primarily on-call agency supported by a two-member daytime career presence and per-diem staff.
- 3.4 Based on the services provided by the Department, additional career staff should not be considered in the near term.
- 3.5 Although Chief Cresta has indicated his desire to retire, the Board of Selectmen should ask Chief Cresta to remain in command of the Department during these organizational transitions.

- 3.6 Chief Cresta should develop a succession plan in which he prepares members of the organization to advance into higher command roles.



## **CHAPTER 4**

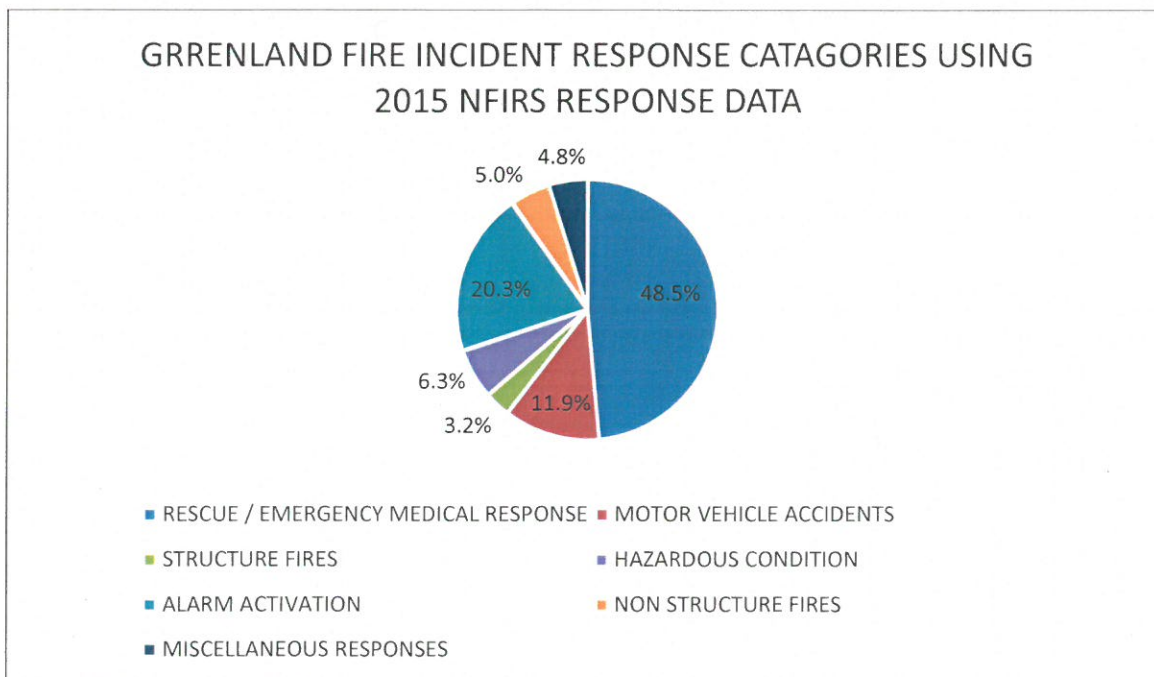
### **DEPARTMENT OPERATIONS**

#### **OBSERVATIONS**

Based on the data provided, the Department responds to approximately 403 calls for service per year. The number of requests for fire services seem to remain fairly constant from year to year. However, EMS volume has risen by 25% over the previous two years. This increase reflects ongoing development, growth and the changing demographics present within Greenland. This increase has stressed the organization and resulted in the need to transition to an on-call system that provides a guaranteed response capability.

In 2015, the Department responded to 31 fires (8.2%) of the overall incident volume. The number of actual fire responses included 12 structure fires (includes mutual aid responses).

The workload of most fire service agencies is typically 70% emergency medical and rescue service based. However, in Greenland, the strong community relationship translates into the fire department being visible and performing many nontraditional activities that benefit the community. In short, the community trusts that they can reach out to the Department to obtain assistance. This is a sign of organizational health that in this case creates more of a fifty percent split between fire and EMS Services.



**Figure 2 - Incident Response Breakdown (based on 2015 data)**

A critical aspect of success when a fire or significant incident occurs within the Town of Greenland is the use of automatic mutual aid. The following tables outline the use of mutual aid over the previous two years:

2015 Response Data	Mutual Aid Given	Mutual Aid Received	ALS Intercept
Fire	15	6	
EMS	10	72 (39.34%)	20

**Table 1 - 2015 Mutual Aid - Greenland Fire Department**

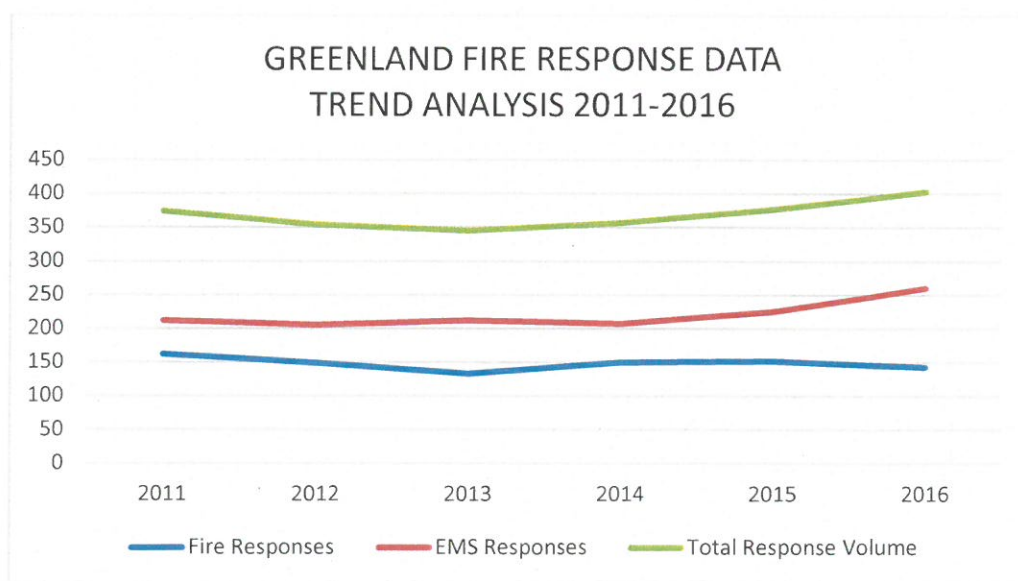
Note: EMS Mutual aid includes 39 calls for an ambulance and 33 calls to provide an ambulance crew.

2016 Response Data	Mutual Aid Given	Mutual Aid Received	ALS Intercept
Fire	21	7	
EMS	9	84 (41.37%)	20

**Table 2 - 2016 Mutual Aid - Greenland Fire Department**

Note: EMS Mutual aid includes 39 calls for an ambulance and 33 calls to provide an ambulance crew.

Automatic aid utilizes the resources of multiple communities to rapidly deploy the resources necessary to safely control an emergency incident. Although traditional mutual aid waits to call adjacent communities until a major incident is confirmed, automatic aid initiates the response of these units upon the report of an emergency. This reduces response times and produces a safer and more effective response effort. Usually, we make the recommendation to implement this practice. However, based on the proactive efforts of the Seacoast Fire Chief Association, this industry best practice is already in place.



**Figure 3 - Response Data Five Year Trend Analysis**



The chart above indicates that the Greenland Fire Department has experienced a relatively stable demand for fire services. However, the demand for EMS services has increased 25% over the previous two years. Based on our observation of growth within the community, we would expect this trend to continue. The recommendations in this report outline the necessary steps to properly prepare the Department to meet the challenges associated with this service demand increase.

Emergency responses in Greenland are evenly distributed with Sunday, Tuesday, and Wednesday experiencing a slightly higher than average volume. However, experience tells us that these small volumes differences change over time and that overall responses are dispersed evenly across the seven days of the week. When a 24-hour day is analyzed, Greenland, like most fire departments, experiences the highest call volume from the hours of 7AM until 6PM (70.12%). The period from 1AM until 6AM reflects a lower than average response volume associated with a lower level of activity within the community (9.11%).

Response times typically average between eight and twelve minutes, with the overall average at 11.5 minutes from the time that a 911 call is placed, until an emergency response unit arrives at the incident location. Based on industry best practices, a ten-minute response of an on-call/volunteer fire service agency within communities encompassing less than 20 square miles is an indicator of acceptable performance. Although we have some questions on the reliability of the data set and validation of response time reporting (RMS time recording), it appears that the Department needs to focus on the reduction in response times. This demonstrates that overall, the Department is slightly below meeting the NFPA 1720 criteria. NFPA 1720 is the standard that outlines on-call and volunteer fire service operational best practices. A contributing factor to this response delay is that apparatus must be navigated out of tight quarters and then driven around the complex to initiate a response on Portsmouth Avenue. This factor should be considered when designing and placing a new fire facility.

On average, 10 personnel respond to each structure fire, and an average of 4.5 personnel respond to each incident. This level of response is well above average. Compared to other comparable organizations, this reflects well, as a target response is typically the rapid deployment of a minimum of four personnel. The OSHA Two-In/Two-Out standard is that a minimum of four personnel are required to be on the scene to initiate offensive interior operations unless the need to rescue a victim visible from the exterior exists. Although most communities struggle to meet this standard, an average response of 10 personnel indicates that Greenland is meeting or exceeding this standard on a regular basis. This should be viewed as a major accomplishment and a tribute to the dedication of the Greenland Fire Department personnel as many communities in central New Hampshire struggle to generate a sufficient on-call response, and some regularly fail to respond to emergency incidents.

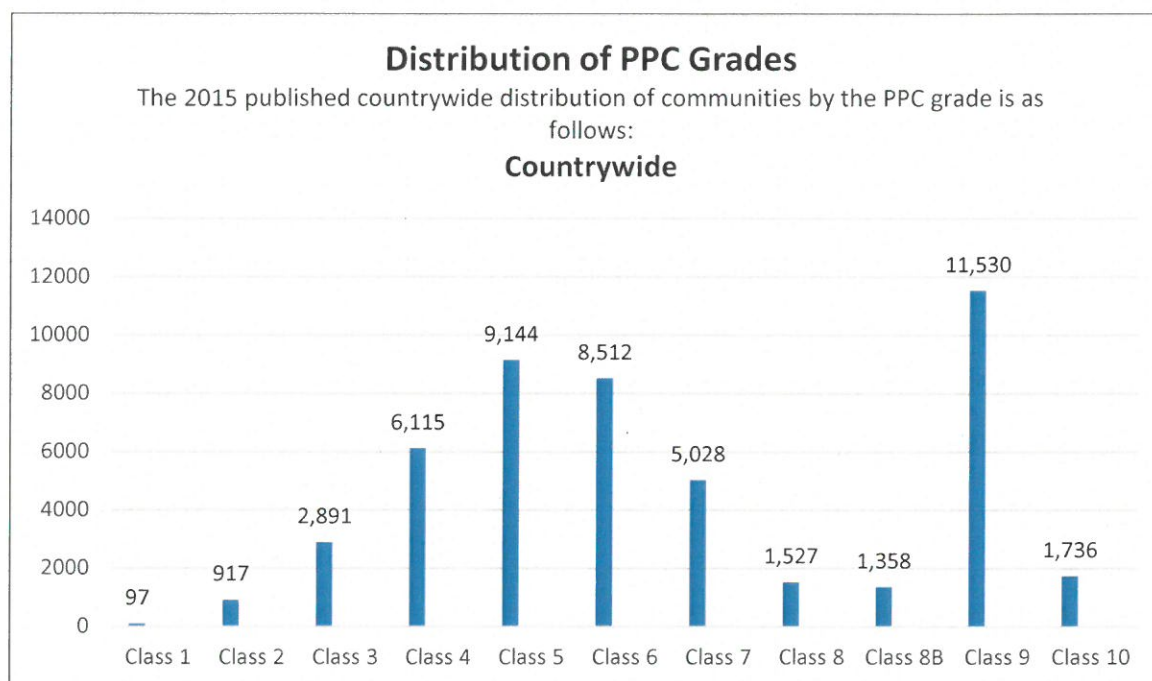
Of concern in Greenland is that in the previous two calendar years, an average of 35 responses resulted in an insufficient response, and were assigned to mutual aid resources. The majority



of these missed responses seem to be EMS calls, when one unit is already engaged, or personnel are unavailable.

### **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 6/6X rating, which places the organization in the forty-sixth percentile of fire departments across the country. This means that approximately half of the fire departments are rated better. The Greenland Fire Department is equal to 17% of fire departments and is rated higher than 33% of fire service organizations in the United States. The chart below provides a breakdown of the grading received by all fire departments within the United States.



**Figure 4 - Insurance Service Office Rating Distribution Chart**

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.

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. The ISO field representatives evaluate:

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

### **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



## 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. Many areas in Greenland are outside of the municipal water district. A response to a fire in these areas requires the response and coordination of several tankers. These areas represent the 6X rating which reflects well on the coordination of regional assets to combat a fire when hydrants are not available.

## 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

## National Standards

As previously mentioned in this chapter, two national standards apply to the operations of the Greenland 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 Greenland, 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 defensive

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 Greenland Fire Department should review this standard and develop a strategic plan to meet the benchmarks identified within the standard.

The ability to provide sufficient personnel for safe operations, including the ability to meet OSHA Two-in/Two-Out, is rapidly attained in Greenland. This is abnormal and far exceeds the operational capability of most peer communities. NFPA 1720 is a document that can provide guidance relative to how the Greenland 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.

Response times in Greenland typically average between eight and twelve minutes. This demonstrates that overall the Department is barely meeting the NFPA 1720 criteria. Most on-call organizations strive to have the first unit on the scene within 10 minutes of the time of the call being received. This was one of the factors that caused Chief Cresta to create a more robust on-call system at night. This should be an area that the Department seeks to improve over time. Response times during weekday, daytime hours, are typically lower than night response time as per-diem personnel, supported by available on-call firefighters, immediately respond to incidents during normal business hours.

### **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.

Chief Cresta has developed an appropriate set of SOPs.

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 the Chief, it was stated that the Department will be reviewing their SOPs within the next twelve months. The challenge for Greenland will be to increase “buy in” relative to these procedures by establishing a participative development/update process and on-going training on these operational procedures. 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 work with the officer core to reformat and review the current SOPs to ensure that they reflect the organization’s current operations. Once the current set of SOPs have been reviewed, the officers 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 organizations culture.

## **RECOMMENDATIONS**

- 4.1 The Greenland Fire Department should conduct a deployment analysis to determine if there are any areas of potential improvement based on the ISO rating structure.
- 4.2 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.
- 4.3 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.
- 4.4 Department Standard Operating Guidelines and Policies should be 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 SOPs and Policies have been reviewed, and signed off by all personnel, stating they understand the document.
- 4.5 All SOPs should be posted on the Department’s website.
- 4.6 The Department should redevelop and expand their website. Many departments utilize a password protected member access portal in an effort to protect internal operational documents.

- 4.7 All Department SOPs 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 on-duty and off-duty.
- 4.8 The officers should work as a team to provide guidance to the Fire Chief as to updates, revisions, and new SOPs and Policies that need to be developed or addressed.
- 4.9 Once developed, SOPS should be reviewed every two years.
- 4.10 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.
- 4.12 The Department should transition to a cloud based RMS system, such as Emergency Reporting.
- 4.13 Mobile data should be provided via iPad, mounted in all first due apparatus.



## **CHAPTER 5**

### **RECRUITMENT AND RETENTION OF ON-CALL PERSONNEL**

#### **OBSERVATIONS**

Despite the success and vitality of on-call response in Greenland, Chief Cresta reported that it is difficult to recruit, and in some cases, retain, on-call personnel. There should be an ongoing effort to recruit new members, retain existing personnel, and enhance the participation of those who have become inactive. The Chief reported that he is actively looking to recruit new members.

The Department is currently adequately staffed; however, this should not translate into complacency. Looking to the future, recruitment should be a continuous effort that receives increased attention within the organization.

Presently, the number of active on-call personnel meets the needs of the Town of Greenland. Over the next five years, a significant effort will need to be put forth regarding the recruitment and retention of on-call personnel to continue this strong record of success. Although Greenland is not alone in dealing with a reduction in on-call or volunteer staff, it is essential that addressing this situation become a primary focus of the Fire Department and the Town. In fact, to attain success will require the development of new strategies and a monetary investment to retain a viable on-call component of the Department. We recommend that the Town add seven on-call firefighters over the next two years.

There are various factors that are prevalent to the reduction in the number of volunteer and on-call firefighters in communities such as Greenland. Chief among them is that the current demographics do not support the type of person who is attracted to the fire service in the 21<sup>st</sup> 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 will remain active after a period of 48 months has elapsed. Despite this less than desirable result, it is essential that recruitment efforts expand.

Once an individual becomes interested in becoming an on-call firefighter, they must achieve a level of ever increasing specialized skill that is time consuming. Often exit interviews reveal that the training commitment alone is daunting and one of the primary reasons that on-call personnel resign. To become a certified firefighter takes several hundred hours, and add to that over 200 hours to become a state-certified emergency medical technician. Then there are the dozens of hours of annual training spent maintaining firefighter and EMT skills and certifications. 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 are:

- 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 on-call firefighters can cure staffing problems. Unfortunately, in 2017, 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. As this has already happened in Greenland, it is unrealistic to expect any reduction in the current level of career staffing. In Greenland, the long-term battle will be to recruit and retain a sufficient cadre of active, on-call firefighters to provide the service level expected within the community.

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 curriculum in fire science or other approved majors, for EMT and paramedic training, health insurance, physical fitness, uniforms, and other tax incentives to attract candidates to join fire departments. The bottom line, though, is that if a community's demographics will not support an on-call firefighting force, the federal grant program will be of little assistance. We believe that Greenland can attract and support a more active on-call staff.

We believe that the Department should apply for a SAFER grant to recruit and retain on-call members; however, this grant should note the staffing crisis and lack of full response that currently exists, and indicate that the grant would be an attempt to meet the NFPA 1720 fire response standard. The demographic and societal changes driving the reduction in on-call participation needs to be reversed through utilizing innovation and best practices. We believe that the Town should endeavor to increase on-call membership to 40 personnel.

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 reduction in property tax for 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;
- Ask the fire association to provide a dinner during one training meeting per month;
- Track and post participation to responses and training sessions;
- 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;
- Providing an hourly minimum for response during specific hours. In Greenland, the current practice of providing compensation for less than one hour is of concern; and
- Implement an incentive for members that attain a level of more than 25% response. An example would be to create a new pay grade for active responders.

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 Greenland. One example of an unconventional and innovative best practice that we feel would work in Greenland 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 a SAFER Grant. Typically, this type of program attracts electricians, plumbers, mechanics, and other trades that would be beneficial to the organizations.

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 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 Greenland 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 the town's health insurance program. Chief Cassidy reports that turnout at all incidents regularly exceeds NFPA 1720 standards. A recent structure fire that occurred midweek, midday, drew a response of 32 call firefighting personnel to the incident.*

*All call firefighters are required to be certified as 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 all 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 in 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. He 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:

Percentage of Training and Incident Response	Proposed Health Care Expense Paid by the Town
80% or greater participation (326 calls)	55%
55% - 79% participation (224 calls)	40%
40 – 54% participation (162 calls)	25%
33 – 39% participation (134 calls)	10%
20% - 25%% participation (82 calls)	Eligible to enroll at employees' cost

**Table 3 - Proposed Health Insurance Percentages**

## **RECOMMENDATIONS**

- 5.1 In 2017, the Greenland Fire Department should apply for a Staffing for Adequate Fire and Emergency Response (SAFER) Grant for the recruitment and retention of on-call personnel.
- 5.2 The Greenland Fire Department should seek to develop and support a regional fire/EMS or Public Safety based Explorer program as a means to attract and support future members.
- 5.3 The Greenland Fire Department should add a sign board at the bottom of the existing Public Safety Complex sign to ensure that all residents are aware that openings exist for

on-call personnel and that new personnel will be welcomed and trained. Obviously, this computer-generated LED signboard offers a variety of benefits and can be utilized as a public safety tool to engage the community.

- 5.4 The Chief should conduct an online survey to determine what recruitment and retention programs and incentives would be of the most value to current members.
- 5.5 The Greenland Fire Department should expand its social media footprint by establishing a social media presence designed to connect with the community and inform the community of the need for additional on-call personnel.
- 5.6 The Greenland firefighters should consider adding meals to training meetings as a method to encourage participation and retain personnel.
- 5.7 Participation statistics of member's attendance at incidents and training should be posted in each station and updated by the Chief or his staff on a monthly basis.



## **CHAPTER 6**

### **FIRE SERVICE FACILITY**

#### **OBSERVATIONS**

The Greenland Fire Department operates from a single minimalistic headquarters facility, which was constructed in 1978, and is located at 575 Portsmouth Avenue. After touring this structure, it is clear that this building no longer meets the needs of the community. A fire station serves as a platform from which an organization provides service to the community. As a service platform, this structure has far outlived its useful life and currently frustrates the Department's ability to provide the most effective operations to the Town of Greenland.

A contributing factor to the response delay experienced by the Department is that apparatus has to be navigated out of tight quarters and then driven around the complex to initiate a response on Portsmouth Avenue. This factor should be considered when designing and placing a new fire facility.

#### **Greenland Fire Station**



**Figure 4**

**Rear of Greenland Fire Station, cone indicates roof hazard, rust is evident over doorway.**



**Figure 5**  
**Front of Greenland Fire Station**

The station consists of 5,200 square feet of space. This is approximately one half of the space the Department requires to operate effectively. The current station has four apparatus bays. Based on space constraints, the Special Hazards Response Trailer and spare attack hose are stored in an old salt shed or outside. The building is constructed of steel beams covered by metal sheathing. Some deterioration was noted in the structural aspects of the beams and on the metal sheathing.

As an operational platform, it is clear that this structure does not provide the space required for effective and efficient fire service operations. Much of the meeting space has been reconfigured into make shift sleeping quarters. Many aspects of this building do not meet industry standards and several health and safety issues exist.

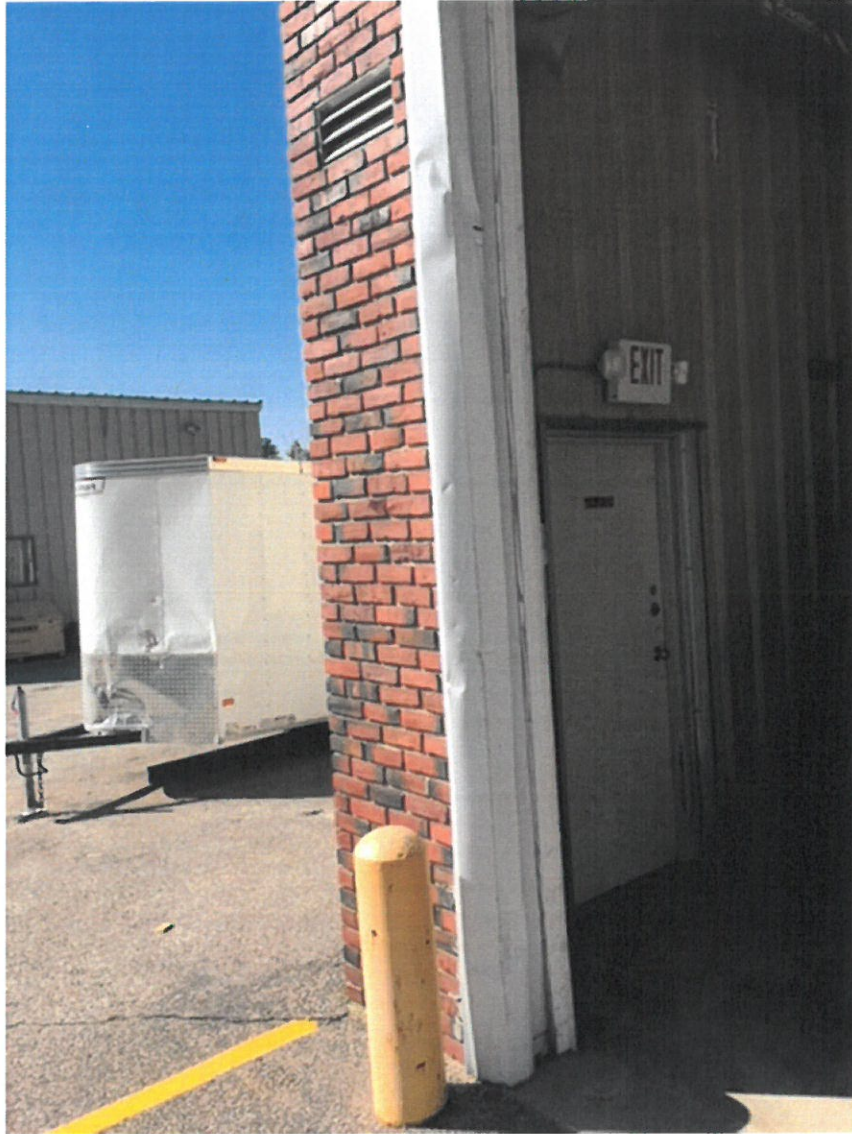
The station lacks many essential aspects of a modern fire service facility appropriate to the Town of Greenland. These shortcomings include the following:

- Appropriate life safety systems (Smoke and Carbon monoxide)
- A reliable backup generator (40 years old)
- Bay width to accommodate modern fire apparatus
- A lack of EMS storage and decontamination facilities



- A lack of a separated turnout gear locker room
- A lack of appropriate heating and ventilation
- A lack of adequate training space
- A lack of an adequate dayroom
- A lack of adequate resident quarters
- The presence of an efficient Emergency Operations Center (EOC) space
- The presence of a records storage area
- A general equipment storage area
- A lack of efficient dispatch space
- The presence of an emergency management office
- Office and small conference space

The following images depict structural, operational, or maintenance issues present at the current facility.

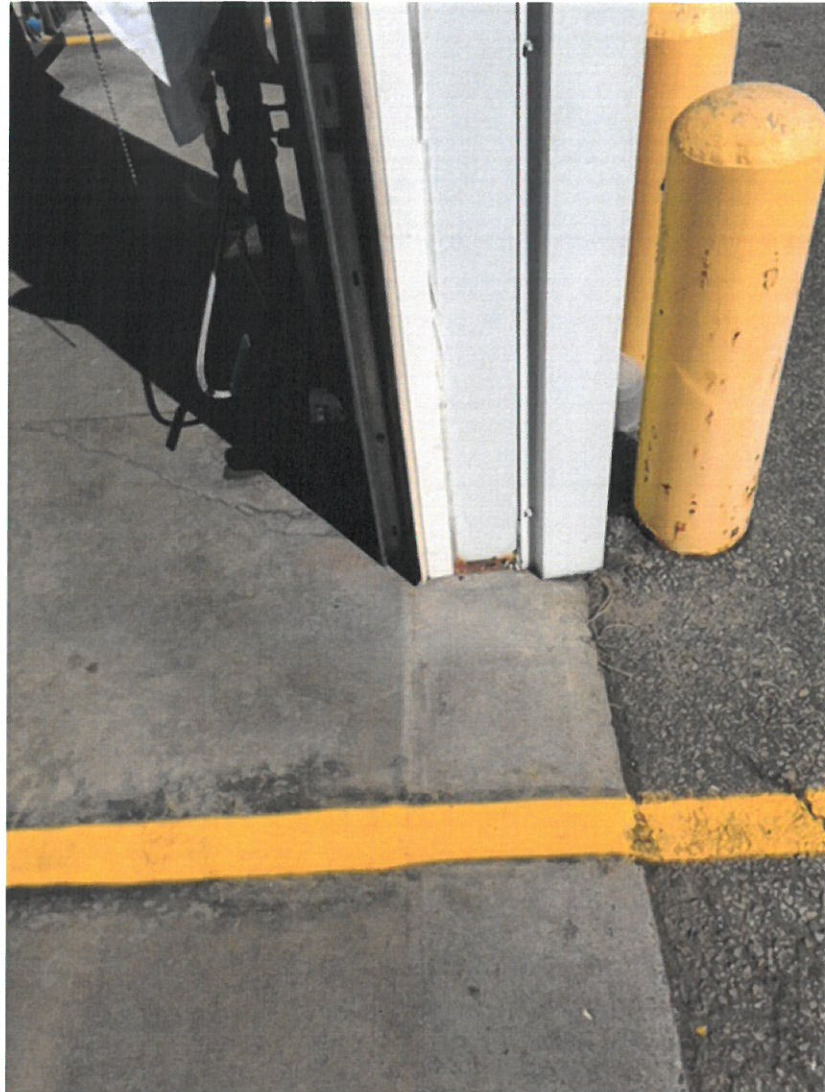


**Figure 6**  
**Damaged metal sheathing around apparatus doors**





**Figure 7**  
**Structural deterioration noted on interior beams**



**Figure 8**  
**Additional corrosion noted around apparatus bay columns**





**Figure 9**  
**40-year-old generator well beyond its useful lifespan**



**Figure 10**  
**Damage noted on exterior sheathing of living quarters**

Although the Chief and the Department have made this facility work, it lacks sufficient space and the necessary configuration to support modern fire service operations. In addition, this facility lacks appropriate smoke and carbon monoxide detection essential to protect personnel residing in the building.

As turnout gear is stored in exposed areas on the apparatus floor, all gear should be regularly washed in an industrial extractor. A plan should be developed to shield this gear from both Ultraviolet light and diesel particulates. Many fire departments construct a separate turnout gear room, others utilized enclosed lockers, or develop other innovative ways to separate their gear from the source of contamination.



We have reviewed the proposed conceptual plan and find this plan to be an adequate and cost-efficient facility. Our review found that the proposed station lacked the following:

- An emergency management office
- Physical fitness space
- A training library
- An E- learning computer space

### **RECOMMENDATIONS**

- 6.1 All turnout gear should be decontaminated after every incident, as turnout gear is stored on the apparatus floor, each set of gear should be cleaned in a washer extractor three times per year.
- 6.2 The Town of Greenland should immediately initiate a process to replace the current station.
- 6.3 An effort to place and orient the new facility to facilitate a more rapid response route should be a priority.
- 6.4 A facility of 10,000 to 12,000 square feet is appropriate and adequate for the Greenland Fire Department. The current proposed design is utilitarian, but meets the needs of the community and should be pursued as a cost-effective solution.
- 6.5 Consideration should be given to adding an emergency management office, physical fitness space, training library, and e-learning computer space to the concept design.

## **CHAPTER 7**

### **APPARATUS and CAPITAL PLANNING**

#### **OBSERVATIONS**

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

- 2 Class A Pumpers
- 1 Tanker
- 1 Light or Medium Duty First Response/Rescue Vehicle
- 1 Fire Station (based on 13.3 square miles)

**Note: An aerial ladder is available through mutual aid**

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 Greenland, tankers are frequently required to provide a sustained water supply at incidents that are not in proximity to hydrants. Greenland has taken a proactive step in utilizing mutual aid tankers in conjunction with the response of Greenland Fire equipment to meet this need. Upon the report 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 Greenland Fire Department.

The Greenland Fire Department relies on the Mutual Aid System to provide apparatus and equipment when needed to mitigate an incident. The mutual aid system is designed to ensure that sufficient resources are available to control an incident and assist each participating town with specialized equipment. This provides relief to the Town and taxpayers by not having to purchase equipment infrequently required. An example pertinent to Greenland would be the need for aerial apparatus. Obviously, the purchase of an aerial apparatus in Greenland would not be cost-effective, as this specialized equipment is readily available in adjacent communities.

In Greenland, the fleet of apparatus was found to be in good condition and maintained well. The Department's inventory of apparatus meets the needs of the community based on physical characteristics of the response area. Therefore, the current fleet is optimal to meet the needs of the community. The Fire Department has combined functions in apparatus to ensure efficiency, as well as being fiscally responsible.



To provide perspective, an ideal apparatus set for the Town of Greenland is described below.

Apparatus Description	Current Inventory GFD	Recommended Inventory	Deviation/Recommendation
<b>Class A Pumpers (Engine/Tanker)</b>	2	2	
<b>Tanker</b>	1	1	
<b>Rescue/First Response Squad</b>	1	1	Currently a combination pumper/rescue
<b>Forestry - Utility Units</b>	1	1	
<b>Rescue Boat</b>	0	1	Provided through a mutual aid response
<b>Rescue ATV</b>	0	1	Provided through a mutual aid response
<b>Command Unit</b>	0	1	

**Table 4**  
**Greenland Fire Department Optimal Apparatus inventory**  
**Note: aerial apparatus is provided through mutual aid**

## **OVERVIEW**

The resources that the fire department uses to perform its core mission and mitigate a wide range of emergency incidents are generally divided into two major categories, apparatus and tools/equipment. Apparatus generally includes the department's motorized vehicle fleet and the major emergency response apparatus, such as engines (pumpers); aerial apparatus including towers and ladders; rescue vehicles; and ambulances. Specialized apparatus includes emergency units such as lighting vehicles, brush trucks, and other off-road vehicles. They also often include trailers for specialized applications, such as technical rescue, hazardous materials response/equipment, hazardous material decontamination, structural collapse rescue equipment, breathing air/light support units, foam units/supplies, and mass casualty incident supplies. Support vehicles that are critical to fire department operations, both routine and emergency, include command post and emergency communications units, command/staff vehicles, and maintenance trucks.

The geography, infrastructure, hazards, and construction features within the community all play a major role in determining the composition of each department's unique and individualized apparatus fleet and equipment inventory. Greenland's characteristics present the fire department with a wide variety of strategic and tactical challenges related to emergency response preparedness and mitigation. This includes fire suppression operations, emergency

medical responses, and complex incidents requiring special operations capabilities, such as technical rescue and hazardous materials emergencies.

Large commercial buildings and a diverse mixture of target hazards present much different operational hazards and challenges than those required for operations in single-family dwellings. These factors, as well as projected future needs, must be taken into consideration when specifying and purchasing apparatus and equipment. Every effort should be made to make new apparatus as versatile and multi-functional/capable as is possible and practical.

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

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

A white paper developed by the Fire Apparatus Manufacturer's Association (FAMA) suggests that the frontline life span of active duty fire apparatus in a suburban setting ranges from sixteen to nineteen years, with the possibility of an additional nine to ten years in a reserve, or spare, status. The International City/County Management Association (ICMA) suggests that the life span of a fire pumper should be twenty years, and the life span of an aerial ladder should be twenty-five years.

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



An inventory of all apparatus is displayed below:

### **FIRE SUPPRESSION UNITS**



**Figure 11**

**Tanker 1 - 2008 Mack Granite/KME: 1,250 gpm pump, 3,000-gallon water capacity, redundant capabilities as other first due apparatus, second due unit to fires in Greenland. Provides mutual aid capabilities to adjacent communities.**



**Figure 12**

**Engine 3 - 2007 Smeal Rescue/Pumper: 1,500 gpm pump, 1,000-gallon tank, pre-connected lines, first due unit, rescue/extrication equipment, structural and forestry tools.**



**Figure 13**

**Engine 2 - 2016 KME Pumper: 1,500 gpm, pump, 1,000-gallon tank, 3,000 feet supply hose, primary response unit**



**Figure 14**

**Ambulance 1 - 2013 Ford F450 Ambulance: Responds to medical calls, configured for advanced level care.**





**Figure 15**

**Utility 1 – 2003 Ford F-250 Multi use vehicle: transports trailers, carries supplemental equipment**



**Figure 16**

**Emergency Response Trailer: Carries safety and lighting equipment**

## **CAPITAL PLANNING**

A capital project usually involves an asset obtained at a cost of at least \$10,000, that has a life span exceeding two years. This definition has been applied to our capital project recommendations. This table provides a capital planning perspective related to the apparatus fleet.

The Town of Greenland has established a Capital Improvement Program (CIP) for planning purposes. The planning document is reviewed annually during the annual budget process and approved at the annual meeting. The CIP establishes the current fiscal year expenditures and outlines future purchases for the following nine years. Greenland currently uses a twenty-year replacement for all fire apparatus. Prior to the scheduled replacement, the apparatus is evaluated for condition, and a decision is made whether to replace or repair to extend the life of the vehicle.

UNIT DESIGNATION	UNIT MAKE	YEAR PURCHASED	ESTIMATED ORIGINAL COST	YEAR OF SCHEDULED REPLACEMENT	CURRENT REPLACEMENT COST
Engine 2	KME	2016	\$478,000	2036	\$860,400
Engine 3	SMEAL	2007	\$347,991	2027	\$626,383
Tanker 1	KME/MACK	2008	\$302,000	2028	\$543,600
Utility 1	FORD F-250	2003	\$28,298	2018	\$35,000
Ambulance 1	Ford E-450	2013	\$176,275	2023	\$246,785
Response Trailer	CARGO EXPRESS	2008	\$6,995	2028	\$9,795

## **RECOMMENDATIONS**

- 7.1 The Fire Department capital plan should continue to be updated annually. This update should adjust the cost of replacement and adjust the replacement timeline based on the current needs of the organization and the condition of units.
- 7.2 Ambulance 1 is scheduled for a 2023 replacement. At the time of replacement, the current 2013 ambulance should be retained. This would allow for a backup ambulance during the time when the first due ambulance is out for maintenance, repairs, or responding to a call. Having two ambulances ready for response would allow for increased revenue, as well as decreasing response times while waiting for a mutual aid response.



- 7.3 Turnout gears should be replaced every ten years. Gear older than ten years of age should be replaced by utilizing a FireAct Grant.
- 7.4 The purchase of a Command Unit should be planned for in the near future to allow for a rapid response to scenes. This allows for the implementation of strategic and operational plans to provide safety to the responders, as well as ensuring safe and efficient mitigation. This unit would have accountability boards and full communication systems to ensure safety for all.
- 7.5 Apparatus should be equipped with tablet based mobile data that has connectivity into the Department's preplanning system and records management system.
- 7.6 The Department should consider transitioning the records management system into a cloud based platform that is easily accessible with an Internet connection.
- 7.7 The loose equipment on apparatus should be consistently organized by vehicle compartment, an inventory should be posted on the compartment door, equipment should be organized, mounted, and signs should be installed to indicate where equipment should be located.

## **CHAPTER 8**

### **TRAINING**

#### **OBSERVATIONS**

Training is, without question, one of the three most important functions that a fire department should be performing on a regular basis; the others being response to emergency incidents and fire prevention activities. One could even make a credible argument that training is, in some ways, more important than emergency responses because a department that is not well trained, prepared, and operationally ready, will be unable to effectively, efficiently, correctly, and safely fulfill its emergency response obligations and mission. A comprehensive, diverse, and ongoing training program is absolutely critical to the fire department's level of success. In Greenland, we found that the training program was insufficient, and in some areas, approached nonexistent.

An effective fire department training program must cover all of the essential elements of that specific department's core missions and responsibilities. The program must include an appropriate combination of technical/classroom training and manipulative or hands-on/practical evolutions. Most of the training, but particularly the practical, standardized, hands-on training evolutions, should be developed based upon the Department's own operating procedures and operations, while remaining cognizant of widely accepted practices and standards that could be used as a benchmark to judge the Department's operations for any number of reasons. Failure to use widely accepted firefighting practices was a significant conclusion in the many investigations that were conducted after the Charleston, South Carolina, Super Sofa Store fire in June 2007, that resulted in the deaths of nine firefighters. As with all other fire department operations, there must be consistency in how the training is being conducted.

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

There are a number of ways to evaluate the effectiveness of the fire department's training program. One increasingly common way is through the use of annual skills proficiency evaluations where all members of the department are required to successfully perform certain skills, and/or complete standardized evolutions, either individually, or as part of a team. Post-



course evaluations, post-incident critiques, and evaluation of incident operations and statistics can also provide important feedback regarding the training program. **It is important that all training, no matter how minor or inconsequential, be documented.** Failure to do so can expose the Department and Town to significant liability.

Professional development for fire department personnel, especially officers, is also an important part of overall training. There are numerous excellent opportunities for firefighters and officers to attend training on a wide range of topics outside of Greenland, including those offered at the New Hampshire Firefighting Academy, and at the National Fire Academy in Emmitsburg, Maryland. Beyond the practical benefits to be gained from personnel participating in outside training, encouraging personnel to earn and/or maintain various specialized certifications such as Fire Instructor, or Fire Officer, increases the positive professional perception of the organization and can help to demonstrate a commitment to continued excellence.

The MRI study team looked at the Greenland Fire Department's training program. We found this program to be scheduled in advance and well documented. It was reported to the study team that a large number of Greenland firefighters had completed Firefighter I/II training, and have been certified by the NPQB (National Professional Qualifications Board). This level of training and certification is far above what many other comparable communities support. As such, the level of firefighter I/II certification should be recognized as an exceptional accomplishment.

It should be noted that the New Hampshire Firefighting Academy provides training programs that will result in both Firefighter I and Firefighter II level certifications. Typically, the completion of this six-month, e-blended, adult learning program will result in Firefighter I/II certification.

As previously noted, the Department roster lists approximately 30 department members, but only about two-thirds regularly attend training sessions. Greenland's internal training program is loosely modeled after the New Hampshire Firefighting Academy's Call/Volunteer Firefighter I/II program and the specialized operational needs of the Greenland Fire Department. The Department should aim to provide an average of 60 hours of training per year to each member. Each member should be required to attend at least 24 hours of structural firefighting training per year to remain as an active member of the Department.



**Figure 17**

**Periodic live fire training exercises at a dedicated training facility need to be conducted in order for personnel to maintain their skills proficiency.**



**Figure 18**

**EMTs conduct patient stabilization and packaging training.**

The Department's training resources, such as reference and text books, videos, DVDs, etc., are very limited. Being as the Department only has limited computer technology at the present time, access to general fire service and training web sites, and any type of internet based training, safety, and other resources is substandard. The Department should start to build a training library by purchasing texts and providing personnel access to e-learning tools.

Numerous excellent training opportunities, such as the annual Firehouse Expo in Baltimore, and the Fire Department Instructors Conference in Indianapolis, have been ignored, as have the previously mentioned New Hampshire Fire Academy and the National Fire Academy.

Based on questions that the study team asked, it appears each member has a comprehensive training record that is contained within the Department's records management system. The



only way to determine if a member attended a particular training session would be a manual, hand search of the training reports. The files do have copies of outside agency certificates of attendance for training, but only if members voluntarily provide these to the Department. There is no procedure that mandates they be provided.

If the recommendations contained within this report are enacted, there should be reason for considerable optimism that the training program will be given its appropriate level prominence in the Department's operations. There are numerous opportunities for firefighters, even call/volunteer personnel with limited time, to engage in training at least three times per month. The Greenland Fire Department should seek to maximize, support, and encourage these opportunities.

### **RECOMMENDATIONS**

- 8.1 The Greenland Fire Department should increase the number of drills that involve mutual aid companies.
- 8.2 The Greenland Fire Department should focus more of the training program on target hazard risks present within the community.
- 8.3 The Greenland Fire Department should increase the number of drills that encompass rural water supply operations.
- 8.4 The Greenland Fire Department should sponsor and support each member to attend two live fire training sessions per year.
- 8.5 The Greenland Fire Department should establish a mentoring program to guide and encourage new members as they progress through the initial training process.
- 8.6 The Greenland Fire Department should develop a basic orientation session for new members. The goal of this program would be to rapidly, but safely, train new members to participate in exterior operations, thus providing new members with a function and motivation to advance.
- 8.7 The Greenland Fire Department should expand the training resources and training library to include current editions of commonly utilized media.
- 8.8 The Greenland Fire Department should attempt to deliver a total of 2,500 hours of training per year (averaging 60 hours per member).

- 8.9 The Greenland Fire Department should require that all personnel receive at least 24 hours of structural firefighting training per year to remain an active member of the organization.
- 8.10 All external training should be documented in the department's records management system.
- 8.11 The Greenland Fire Department should investigate why ISO provided little credit for training and address that situation.



## **CHAPTER 9**

### **SERVICE OPTIONS & RISK MANAGEMENT**

#### **OVERVIEW**

We were asked to identify the feasible options for providing fire and EMS services. This aspect of the scope considers regionalization, public private partnerships, and privatization. Although this topic could be a study unto itself, we evaluated the options available to the Town of Greenland. It is our finding that an informal, but exceptionally functional level of regionalization and service backup already exists through the mutual and automatic aid agreements that are already in place and operational.

It is our finding that the Town could seek to privatize EMS services, but that would not alleviate the needs of the fire department and would most likely deteriorate response and participation. While this action could forestall the need to hire the full-time personnel recommended within this study, this strategy would impact service quality and would most likely result in the Town paying a private provider a significant stipend if a dedicated EMS unit is required to service the community. Although the Town could pay less, it would be at the expense of a dedicated unit and would require that response times from other communities become acceptable. This would be a far different service level than what the Town has come to expect and rely on. Therefore, as the fire department is cross-trained to provide both fire and EMS services it is our finding that the Greenland Fire Department provides the best overall value and service quality. We believe that in terms of managing risk, the Department should continue to participate in regional initiatives and mutual aid, and continue to be the primary fire/EMS provider for the community.

#### **RECOMMENDATIONS**

- 9.1 The Greenland Fire Department should continue to be the primary fire and EMS service provider for the Town.
- 9.2 The Greenland Fire Department should continue to participate as a mutual/automatic aid partner within the region.

## **CHAPTER 10**

### **FISCAL COMPARISON AND ANALYSIS**

#### **OBSERVATIONS**

The fire department operates with an annual budget that is closing in on \$400,000 (\$382,067) per year. This equates to 3.1% of the Town's annual \$12,166,694 budget. It should also be noted that Rockingham County Dispatch provides emergency telecommunications for the Department at no cost to the Town of Greenland. It was noted that the Department's budget has increased close to 25% within the last year. This is due in large part to an organizational realignment that include a new on-call system that ensures a consistent and rapid response. Although a formal study of peer communities was not completed as part of this engagement, a budget of \$400,000 was well below the cost of communities of equal size where we have done organizational evaluations. Overall, looking at the line items and expenditure history, we feel that the fiscal resources appropriated by the Town are well deployed and well managed by Chief Cresta. In fact, it appears the Chief has often returned funds to the Town at the close of the fiscal year. As most Fire Chiefs would find a need to expend appropriated funds, this speaks to Chief Cresta's frugality and management capability.

This report recommends that two full-time personnel be added to the organization. This transition will produce an anticipated salary cost of approximately \$120,000 per year and an anticipated benefit cost of 104,000 per year. This \$224,000 annual investment in the department is the next step to reduce response times, enhance training, and provide the Chief with the necessary operational assistance that he needs to continue to lead the Department through the organizational transition necessitated by the growth and risk faced by the community.

Overall this would increase the annual fire department appropriation to \$606,000 (4.9% of the Town's budget). When this increased cost is factored in, we believe that the revised budget of the organization will be in line with the fiscal appropriation of comparable communities as we commonly observe departments that are funded with 5% of the community's overall budget.

#### **RECOMMENDATIONS**

- 10.1 Chief Cresta should conduct a comparative analysis survey pertaining to finances, staffing, and operations every three years.
- 10.2 The community should invest in the Department and expand service capability through hiring two full-time staff members and replacing the current fire station.



## **CHAPTER 11**

### **ORGANIZATIONAL COMMUNICATION**

#### **OBSERVATIONS**

Chief Cresta is a vibrant leader who provides his personnel with a high level of communication, highlighted by a weekly update on operations and changes within the organization. Communication, especially with on-call personnel, is always a challenge. However, transitioning all communications to e-mail is an essential first step. Several members reported that they would like to have e-mail accounts supplied by the Town. Members also indicated a reluctance to utilize personal e-mail for Town business based on a perceived fear that their accounts could be access should a legal matter develop. We believe that Town supplied e-mail accounts should be reestablished as a critical organizational communications link.

#### **RECOMMENDATIONS**

- 11.1 The Town should provide e-mail accounts for all fire department personnel.
- 11.2 The Chief should ensure that all Department communication is transitioned to e-mail.
- 11.3 The Chief should assign his staff to provide all members with a periodic Department update every two weeks. This update should be known as "two weeks in review".
- 11.4 The Chief should post response and training attendance for all members in each station.
- 11.5 Flat screen monitors should be setup in the fire station and scroll important Department information.

## CHAPTER 12

### CONCLUSIONS

The Greenland Fire Department is an excellent organization that stands at an operational crossroads. The Department is led by Chief Ralph Cresta, who is a passionate advocate and energetic leader, that is clearly honored to have an exceptional staff and serve his community. Members of the Department work as a team and attempt to produce an effective and efficient response that serves the Town well.

Greenland has come to expect the rapid response of a single unit on a 24/7 basis. Four symptoms exist that indicate an investment in the organization and an organizational transformation is necessary. These symptoms are listed below:

1. Missed calls
2. Lack of completion of assigned tasks
3. Response times averaging above ten minutes
4. Lack of administrative capability
  - Records and report accuracy/completion
  - Recruitment and retention of on-call personnel
  - Internet/social media presence

An opportunity exists for the community to invest in the Department and ensure that the ongoing response meets expectations. The following six actions stand as the foundation of action that is required to move the organization forward.

1. Hire two full-time personnel to support operations and the on-call department.
2. Assign full-time personnel to assist the Chief and expand administrative capacity.
3. One full-time member should be assigned to manage recruitment and retention efforts, and the second full-time member should manage the Department's Internet and social media footprint.
4. The community needs to recognize that the current station is not adequate as an effective operational platform and initiate a process to replace the station with a



modern 10,000 – 12,000 square foot facility that facilitate a more rapid response.

5. The community should recognize the value and leadership that the Chief offers in his current part-time position. The Town should ask the Chief to stay and lead the transformation that we have outlined in this document.
6. The Chief should develop a succession plan over the next three years.

## **CHAPTER 13**

### **SUMMARY OF RECOMMENDATIONS**

This report has produced recommendations to guide the Town of Greenland and the Greenland Fire Department. These recommendations are listed below:

#### **CHAPTER 3: DEPARTMENT ORGANIZATION & STAFFING**

- 3.1 Develop a plan to ensure that on-call and full-time staff are integrated, respond, and train together.
- 3.2 The Town should hire two full-time day shift personnel in 2018, each of these staff members should work four, twelve-hour days, on a rotating schedule (4 days on, 4 days off).
- 3.3 The organization should remain a primarily on-call agency supported by a two-member daytime career presence and per-diem staff.
- 3.4 Based on the services provided by the Department, additional career staff should not be considered in the near term.
- 3.5 Although Chief Cresta has indicated his desire to retire, the Board of Selectmen should ask Chief Cresta to remain in command of the Department during these organizational transitions.
- 3.6 Chief Cresta should develop a succession plan in which he prepares members of the organization to advance into higher command roles.

#### **CHAPTER 4: DEPARTMENT OPERATIONS**

- 4.1 The Greenland Fire Department should conduct a deployment analysis to determine if there are any areas of potential improvement based on the ISO rating structure.
- 4.2 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.



- 4.3 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.
- 4.4 Department Standard Operating Guidelines and Policies should be 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 SOPs and Policies have been reviewed, and signed off by all personnel, stating they understand the document.
- 4.5 All SOPs should be posted on the Department's website.
- 4.6 The Department should redevelop and expand their website. Many departments utilize a password protected member access portal in an effort to protect internal operational documents.
- 4.7 All Department SOPs 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 on-duty and off-duty.
- 4.8 The officers should work as a team to provide guidance to the Fire Chief as to updates, revisions, and new SOPs and Policies that need to be developed or addressed.
- 4.9 Once developed, SOPS should be reviewed every two years.
- 4.10 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.
- 4.12 The Department should transition to a cloud based RMS system, such as Emergency Reporting.
- 4.13 Mobile data should be provided via iPad, mounted in all first due apparatus.

## **CHAPTER 5: RECRUITMENT AND RETENTION OF ON-CALL PERSONNEL**

- 5.1 In 2017, the Greenland Fire Department should apply for a Staffing for Adequate Fire and Emergency Response (SAFER) Grant for the recruitment and retention of on-call personnel.

- 5.2 The Greenland Fire Department should seek to develop and support a regional fire/EMS or Public Safety based Explorer program as a means to attract and support future members.
- 5.3 The Greenland Fire Department should add a sign board at the bottom of the existing Public Safety Complex sign to ensure that all residents are aware that openings exist for on-call personnel and that new personnel will be welcomed and trained. Obviously, this computer-generated LED signboard offers a variety of benefits and can be utilized as a public safety tool to engage the community.
- 5.4 The Chief should conduct an online survey to determine what recruitment and retention programs and incentives would be of the most value to current members.
- 5.5 The Greenland Fire Department should expand its social media footprint by establishing a social media presence designed to connect with the community and inform the community of the need for additional on-call personnel.
- 5.6 The Greenland firefighters should consider adding meals to training meetings as a method to encourage participation and retain personnel.
- 5.7 Participation statistics of member's attendance at incidents and training should be posted in each station and updated by the Chief or his staff on a monthly basis.

## **CHAPTER 6: FIRE SERVICE FACILITY**

- 6.1 All turnout gear should be decontaminated after every incident, as turnout gear is stored on the apparatus floor, each set of gear should be cleaned in a washer extractor three times per year.
- 6.2 The Town of Greenland should immediately initiate a process to replace the current station.
- 6.3 An effort to place and orient the new facility to facilitate a more rapid response route should be a priority.
- 6.4 A facility of 10,000 to 12,000 square feet is appropriate and adequate for the Greenland Fire Department. The current proposed design is utilitarian, but meets the needs of the community and should be pursued as a cost-effective solution.
- 6.5 Consideration should be given to adding an emergency management office, physical fitness pace, training library, and e-learning computer space to the concept design.



## **CHAPTER 7: APPARATUS and CAPITAL PLANNING**

- 7.1 The Fire Department capital plan should continue to be updated annually. This update should adjust the cost of replacement and adjust the replacement timeline based on the current needs of the organization and the condition of units.
- 7.2 Ambulance 1 is scheduled for a 2023 replacement. At the time of replacement, the current 2013 ambulance should be retained. This would allow for a backup ambulance during the time when the first due ambulance is out for maintenance, repairs, or responding to a call. Having two ambulances ready for response would allow for increased revenue, as well as decreasing response times while waiting for a mutual aid response.
- 7.3 Turnout gears should be replaced every ten years. Gear older than ten years of age should be replaced by utilizing a FireAct Grant.
- 7.4 The purchase of a Command Unit should be planned for in the near future to allow for a rapid response to scenes. This allows for the implementation of strategic and operational plans to provide safety to the responders, as well as ensuring safe and efficient mitigation. This unit would have accountability boards and full communication systems to ensure safety for all.
- 7.5 Apparatus should be equipped with tablet based mobile data that has connectivity into the Department's preplanning system and records management system.
- 7.6 The Department should consider transitioning the records management system into a cloud based platform that is easily accessible with an Internet connection.
- 7.7 The loose equipment on apparatus should be consistently organized by vehicle compartment, an inventory should be posted on the compartment door, equipment should be organized, mounted, and signs should be installed to indicate where equipment should be located.

## **CHAPTER 8: TRAINING**

- 8.1 The Greenland Fire Department should increase the number of drills that involve mutual aid companies.
- 8.2 The Greenland Fire Department should focus more of the training program on target hazard risks present within the community.

- 8.3 The Greenland Fire Department should increase the number of drills that encompass rural water supply operations.
- 8.4 The Greenland Fire Department should sponsor and support each member to attend two live fire training sessions per year.
- 8.5 The Greenland Fire Department should establish a mentoring program to guide and encourage new members as they progress through the initial training process.
- 8.6 The Greenland Fire Department should develop a basic orientation session for new members. The goal of this program would be to rapidly, but safely, train new members to participate in exterior operations, thus providing new members with a function and motivation to advance.
- 8.7 The Greenland Fire Department should expand the training resources and training library to include current editions of commonly utilized media.
- 8.8 The Greenland Fire Department should attempt to deliver a total of 2,500 hours of training per year (averaging 60 hours per member).
- 8.9 The Greenland Fire Department should require that all personnel receive at least 24 hours of structural firefighting training per year to remain an active member of the organization.
- 8.10 All external training should be documented in the department's records management system.
- 8.11 The Greenland Fire Department should investigate why ISO provided little credit for training and address that situation.

## **CHAPTER 9: SERVICE OPTIONS & RISK MANAGEMENT**

- 9.1 The Greenland Fire Department should continue to be the primary fire and EMS service provider for the Town.
- 9.2 The Greenland Fire Department should continue to participate as a mutual/automatic aid partner within the region.



## **CHAPTER 10: FISCAL COMPARISON AND ANALYSIS**

- 10.1 Chief Cresta should conduct a comparative analysis survey pertaining to finances, staffing, and operations every three years.
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## **CHAPTER 14**

### **THE PROJECT TEAM**

#### **Project Manger**

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

#### **Project Team Members**

**Gary P. Lamoureux** retired from the City of Keene, New Hampshire, in May of 2013. Gary retired as the Fire Chief, Emergency Management Director, and Assistant City Manager (Community Service portfolio) after 35 years of dedicated service. The City of Keene Fire Department is staffed with 45 career and 12 on-call firefighters, for a population of 24,000 residents. Gary graduated from Lakes Region Community College – Laconia with an Associate's Degree in Fire Science and attended numerous National Fire Academy courses. While in command as Fire Chief and Emergency Management Director, he was responsible for Fire Operation, Emergency Medical– Paramedic Transport Service, Hazardous Materials Team, Special Operations Teams, developing emergency response plans, as well as commanding and



coordinating city wide responses for large events. Gary was project manager for the placement and construction of a new Central Fire Station and on the project teams for the new Public Works and Police facilities. Gary has a diverse background in the Fire Service and Municipal Government.