Establishment of Emergency Evacuation Shelters

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Leading Community Risk Reduction

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Appendices D and E Not Included. Please visit the Learning Resource Center on the Web at http://www.lrc.dhs.gov/ to learn how to obtain this report in its entirety through Interlibrary Loan.
CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks do indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another (National Fire Academy [NFA-PP], 2003, A-1).

Signed: ___________________________________________
Abstract

The problem for the Town of Derry is that it had no independent ability to establish an approved emergency evacuation shelter when citizens were evacuated from their homes which may have resulted in life safety issues for displaced citizens of the community. The purpose of this research was to determine what is required to independently establish an approved emergency evacuation shelter within the Town of Derry. Descriptive research to include data collection through document review, questionnaires, and personal interviews were used in an attempt to answer the following questions:

a) What federal, state, and local laws or professional standards exist with regards to the establishment of an approved emergency shelter?

b) What current capabilities does the Town of Derry and surrounding communities have to establish an emergency evacuation shelter?

c) What future resources should the Town of Derry attempt to obtain to meet approved emergency shelter standards?

d) What procedures should be established by the Town of Derry to meet approved emergency evacuation shelter standards?

The results clearly showed that much work needs to be accomplished; however, the goal is achievable. The American Red Cross is the authorizing agency who sets the standards that the Town of Derry would need to meet. The Town of Derry had a good foundation for the establishment of an approved shelter, however, additional resource allocations and procedural implementations were recommended as they would enhance the Town’s ability to establish an approved evacuation shelter for displaced citizens of the community.
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Introduction

Emergency evacuation shelters are a required aspect of any recognized emergency operations plan. When an emergency arises and these shelters are needed, the citizens expect that community officials have thoroughly planned for their implementation process. To assist communities with accomplishing this goal, guidelines have been established by the American Red Cross (ARC). “The ARC independently provides mass care to all disaster victims as part of a broad program of disaster relief, as outlined in charter provisions enacted by the United States Congress, Act of January 5, 1905, and Disaster Relief Act of 1974” (Town of Derry, New Hampshire [Derry EOP], 2006, p. 6-1).

When a community must rely on an outside agency to provide sheltering services, they may become susceptible to the outside agency receiving multiple requests for this service and potential non-availability; especially if an incident affects a large geographic region of the state or country. The problem facing the Town of Derry (the Town) is that it has no independent ability to establish an approved emergency evacuation shelter when citizens are evacuated from their homes. This may result in life safety issues for displaced citizens of the community. The purpose of this research will be to determine what is required to independently establish an approved emergency evacuation shelter within the Town. Descriptive Research will be utilized to accomplish this goal through document review, questionnaires, and personal interviews. The following research questions will be answered during this research:

a) What federal, state, and local laws or professional standards exist with regards to the establishment of an approved emergency evacuation shelter?

b) What current capabilities does the Town of Derry and surrounding communities have to establish an emergency evacuation shelter?
c) What future resources should the Town of Derry attempt to obtain to meet approved emergency evacuation shelter standards?

d) What procedures should be established by the Town of Derry to meet approved emergency evacuation shelter standards?

Background and Significance

The Town of Derry is located in southeastern New Hampshire. The Town is approximately 37 square miles, with a citizen population of 35,000. The Town Council has designated the Fire Chief to be the Emergency Management Director for the Town. Several senior staff members of the Fire Department have responsibilities with regards to Emergency Management. In addition to Emergency Management responsibilities, the Derry Fire Department (The Department) provides fire suppression, fire prevention, technical rescue, and advanced life support emergency medical transport services for the community. The Department daily shift staffing consists of 18 line personnel, staffing four fire stations. Personnel work 24 hour shifts with a one day on-duty, three days off-duty rotation. The Department responded to just over 5000 fire/EMS incidents during fiscal year 2005 (Town of Derry, New Hampshire, 2005, Fire Department). The Department operates with four engine companies, two tactical companies that cross staff medic units and truck, tanker, or rescue companies, and two medic units are available and cross staffed with fire suppression personnel. The Department provides contracted advanced life support emergency medical transport services to the abutting Towns of Chester and Auburn. Derry Fire also provides communication services for Derry, as well as contracted communication services for four other New Hampshire communities including Auburn, Chester, Hampstead, and Windham.
The Town made preparations to open an emergency evacuation shelter in February 2006, due to widespread power outages in southern New Hampshire that occurred from a wind storm and below freezing temperatures. During these preparations, it was determined that the Town had no designated evacuation shelters with back-up electrical generators to power heating and ventilation utilities. This was a critical requirement during this weather related incident. No residents requested shelter services. Had residents required sheltering, they would have been directed to out of town hotels/motels where electrical power remained available. Fortunately, electrical power was resumed from the power grid the next morning. Following this incident, Town officials were questioned by citizens regarding the readiness of the Town to shelter residents should the power outage have lasted a longer period of time or have affected a larger portion of the region.

Three months later, in May 2006, the Town opened an emergency evacuation shelter, due to widespread flooding from a multi-day torrential rain storm. The ARC was asked to manage the evacuation shelter with assistance from the Derry Medical Reserve Corp (MRC) by Town officials operating in the Emergency Operations Center (EOC). The ARC was able to grant this request, as it was made prior to other area communities. Fortunately, fewer residents than had been anticipated actually required shelter services, which resulted in the Derry Bureau of Public Health and MRC decision to terminate the Derry shelter and consolidate residents with other ARC established shelters in southern New Hampshire.

Currently, the Town’s plan for establishing an emergency evacuation shelter is to transfer the responsibility over to the ARC. As a proactive measure, the Town has expressed a desire to independently staff and manage an evacuation shelter provided it can provide comparable services to the ARC. The Town’s concern regarding ARC resource availability was confirmed
during an interview with Director Daniel Pike from the Manchester Chapter of the ARC. Director Pike stated that “the local chapter serves 17 communities, with an estimated population that exceeds 300,000 people. Assuming that 10% of the population was to be affected by a disaster, we do not have the resources to mount an adequate response within the first 24 to 48 hours” (personal communication, November 20, 2006). Independent operations have a value to the community. This is further verified in the Shelter Operations Guide from the ARC, which states that communities should “identify and train enough staff to open and run shelters for a minimum of 72 hours following a disaster” (The American National Red Cross [ARC], 1996, p. 58).

Another issue that was raised during the recent weather incidents was a concern regarding where susceptible populations reside within the community. Establishing databases would assist the Town with assuring that all citizens who need assistance will receive assistance. Medically fragile populations or other functionally challenged populations, must be considered during these evacuation situations. “The medically fragile are those persons, generally living at home, who need the assistance of an electronically-powered medical assist device to help deliver life sustaining functions as oxygen, medicine or food in order to survive” (Gibney, 2005, p. 7). It should also be noted that the ARC shelters are not always capable of handling medically fragile populations (Gibney, p. 7). The Town must assure that these populations are considered as part of our sheltering plan.

The two primary emergency evacuation shelters that have been determined by Emergency Management personnel are the West Running Brook Elementary School and the Barka Elementary School. The Derry School District has agreed to allow the Town to utilize these schools as shelters and is willing to work with town officials to address any concerns the
Town may have. In an interview with school district leaders, it was confirmed that the school district is committed to assisting the Town with facility needs for evacuation shelters. School District Superintendent Mary Ellen Hannon stated that, “the schools are Town owned buildings, and the Town should be allowed to utilize them as evacuation shelters in emergency situations” (personal communication, November 20, 2006).

The citizens of Derry and the surrounding communities expect Town officials to be prepared in the event that a shelter is required, and citizens also expect that local government will develop contingency plans for each potential situation. Following the ice storm and power outage in February, 2006; Derry Town Councilor Phyllis Katsakiores stated during a Town Council Meeting that she “had concerns for citizens who lost power during the past storm and would like information on the location of storm shelters” (Swanson, 2006, p.2). At the next Town Council meeting, citizens expressed their concerns regarding shelter options. Derry citizen Marge Bisson stated during the public forum for non-agenda items, “Why can’t we [the Town] be clearer about shelters during storms?” (Neale, 2006, p.7)

The issue of establishing emergency shelters relates to the Leading Community Risk Reduction course material because Action Plan Elements will have to be applied for the successful establishment of emergency shelters to be realized. This is a significant issue for the Town, and this researcher has direct responsibility for this operational concern within the Town. “Strategic planning is a task that many of today’s progressive fire departments embrace as a tool to prepare for the challenges presented by a society that is broadening its expectations of the traditional fire department role in the community”. (National Fire Academy [NFA-SM], 2005, SM 5-27)
This topic relates to and supports the United States Fire Administrations (USFA) operational objectives, as the establishment of emergency evacuation shelters will allow the Town to “respond appropriately in a timely manner to an emerging issue” (NFA-PP, 2003, p. II-2). The researcher will be utilizing descriptive research to review this concern. The intentions of this research project are to determine what resources need to be obtained and what procedures need to be implemented for the Town to establish an approved emergency evacuation shelter.

Literature Review

A review of material relating to emergency evacuation shelters was done in an attempt to evaluate what other communities and organizations have learned about this important subject. The primary focus was to determine what is required to establish an approved emergency evacuation shelter. The following research questions were consistently referenced during this literature review:

a) What federal, state, and local laws or professional standards exist with regards to the establishment of an approved emergency evacuation shelter?

b) What current capabilities does the Town of Derry and surrounding communities have to establish an emergency evacuation shelter?

c) What future resources should the Town of Derry attempt to obtain to meet approved emergency evacuation shelter standards?

d) What procedures should be established by the Town of Derry to meet approved emergency evacuation shelter standards?

The first research question referenced what federal, state, and local laws or professional standards exist with regards to the establishment of an approved emergency evacuation shelter.
The research found that a federal congressional charter is the primary authorization document regarding the establishment of shelters.

Authority to perform disaster services was formalized when Congress chartered the Red Cross in 1905 (36 U.S.C. 300101-300111). Among other provisions, this charter charges the Red Cross to continue and carry on a system of national and international relief in time of peace and apply the same in mitigating the sufferings caused by pestilence, famine, fire, floods, and other great national calamities, and to devise and carry on measures for preventing the same (Tallahassee Florida Chapter - American Red Cross, 2006, p. 4).

Both state and local documents refer to this federal congressional charter. The State of New Hampshire acknowledges this Congressional Charter under the scope of the Mass Care and Shelter section of the Emergency Operations Plan (State of New Hampshire [NH EOP], 2006, ESF #6). The Town of Derry, New Hampshire utilized the State of New Hampshire document as a draft in creating its own local emergency operations plan (Derry EOP, 2006, p. 6-1). The research determined that the ARC is the organization having authority in the area of evacuation shelters. The ARC establishes the standards to meet or exceed. Responses from the distributed questionnaire also identify the ARC as the authorizing agency with regard to evacuation shelters (Appendix C). However, as noted by Director Pike from the Manchester Chapter of the ARC,

The Red Cross is the only recognized non-governmental organization to have responsibilities for Mass Care in accordance with the National Response Plan. Any community has the right to refuse the services of the ARC should they decide that it is in their best interest to do so and are under no obligation to call upon the ARC for assistance (Personal Communication, November 20, 2006).
Further guidance with regards to the construction of evacuation shelters has been published by the Federal Emergency Management Agency (FEMA). This FEMA shelter construction standards document “discusses shelter location, design loads, performance criteria, and human factor criteria that should be considered for the design and construction of such shelters” (Federal Emergency Management Agency [FEMA], 2000, p. 1-2).

The second research question determined the current capabilities of the Town and surrounding communities, with regards to establishing an evacuation shelter. The Town Emergency Operations Plan addresses Mass Care and Shelter. Planning assumptions, conceptual operational plans and roles and responsibility have been determined in the plan (Derry EOP, 2006, chap. 6). This document should provide community leaders with a solid foundation to build from as emergency operational plans are enhanced. The ARC has evaluated each of the potential shelter locations in the Town and provided their findings to Emergency Management personnel for review. The ARC reviewed not only the two primary location sites, but all Town owned school buildings in the community.

As noted during an interview with George Klauber, Fire Chief and Emergency Management Director, “Our current capabilities are limited, we do not have the capability in any Town owned building or school to have a long-term shelter due to the lack of a back-up electrical generator to supply heating and ventilation utilities” (personal communication, November 21, 2006). Lieutenant Bill Gillis, the Derry Deputy Emergency Management Director of Administration, verified that the Town currently has a limited number of cots and blankets, and must rely on the ARC cache for additional supplies (personal communication, November 8, 2006).
Research obtained information from the New Hampshire Division of Public Safety, Division of Homeland Security and Office of Emergency Management (personal communication, November 29, 2006). A questionnaire was distributed to eight surrounding communities to assess their capabilities. Responses from the distributed questionnaire indicate a mixed opinion from area communities regarding their state of readiness to establish an evacuation shelter. Communities such as Londonderry and Windham are confident that they can accomplish this task, while several other communities have the same concerns as Derry and are looking to further enhance their individual capabilities (Appendix C).

The third research question reviews what future resources the Town of Derry should attempt to obtain to meet approved emergency evacuation standards. The ARC provides a list of requirements in their resource guide. Some of the items listed are registration, dormitory management, feeding, disaster health services, disaster mental health services, staffing, security, information and communications (ARC, 1996, p. 6). Lt. Gillis would like to have the Town purchase sufficient supplies to establish a long-term shelter independent of the ARC cache (personal communication, November 8, 2006). Chief Klauber indicates that Emergency Management is “currently purchasing bedding, and some basic supplies such as non-perishable food, personal items, and administrative supplies that will allow us to open a shelter as quickly as possible” (personal communication, November 21, 2006). However, the distributed questionnaire indicates that the ARC cache remains the primary agency for resource procurement.

Having a back-up electrical power supply that supplies heating and ventilation utilities is very important in areas that have the potential to have extremely cold temperatures. “Emergency power may be required for both lighting and ventilation, therefore, a back-up generator is
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recommended. Any generator relied on for emergency power should be protected with an enclosure designed to the same criteria as the shelter” (FEMA, 2000, p. 8-9). Further, the Lessons Learned Information Sharing website sponsored by the Department of Homeland Security is a secure site. Access passwords have to be requested, and only provided once proof of fire service affiliation is verified. Regarding emergency generators “emergency managers should determine the capacity and hookup requirements for the generators required at each shelter in their jurisdiction. They should also identify existing generators within their jurisdiction to power shelters and other critical facilities” (Department of Homeland Security [DHS], 2006, p. 1).

FEMA recommends that basic supplies should also be readily available at shelter sights to include communications equipment, first aid supplies, water, sanitary supplies, and infant and children supplies. See Appendix B for a detailed listing of these items (FEMA, p. 9-6). The Town must be sure to have accommodations for medically fragile patients who may need life support assistance. If possible, a medical care facility may be the best location for these citizens, providing the hospital or facility is not within the evacuation zone. “Traditional Red Cross shelters are not equipped to handle persons with medical needs” (Gibney, 2005, p. 7).

The focus of this research is to determine how to most appropriately establish and manage an evacuation shelter. The researcher has attempted to review all aspects of shelter operations with the best interest of the potential occupants in mind. However, according to the Seminole County Emergency Management Agency,

They are not fun-filled community centers with organized activities, entertainment and personalized service. They are not a vacation away from home. Shelters are not intended to make available more than minimal needs; a roof overhead, relative safety, restrooms
and some food and water (Seminole County Emergency Management [SCEM], 2006, pp. 1-2).

The fourth research question reviews what procedures the Town should establish to meet approved shelter requirements. Chief Klauber confirms that the Town of Derry must establish a comprehensive shelter plan for three to five days of operation. He also feels that regional shelters are the most efficient way to address this issue (personal communication, November 21, 2006). The concept of regional shelters was also discussed with Director Pike from the Manchester Chapter of the ARC,

As an organization, we strongly advise and advocate for the use of regional shelters. By regional, we mean several communities mutually agreeing to share shelter space in one centrally located geographic location. This formula has been successful in the past and helps control costs as well as provides for an effective use of resources (personal communication, November 20, 2006).

The ARC has determined that space is needed for a registration area, meal preparation and serving area, storage area for food and supplies, medical/behavioral health area, rest rooms, and separate sleeping areas for: families with children, elderly, single men, single women, and those who are sick (ARC, 1996, p. 66). An interview with the School District initiated a discussion regarding space availability and potential logistical issues if school were to remain in session concurrent with shelter operations. This was determined to create some potential issues, however, nothing that could not be resolved with some simple school day alterations should the need arise. Many EOP’s underestimate the affects that a disaster can have on citizens. The ARC has published a list of the potential affects of disaster-related stress (American Red Cross Disaster Services, n.d., p. 6):
Table #1. Potential affects of disaster-related stress

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<th>Psychological</th>
<th>Physical</th>
<th>Thought</th>
<th>Behavior</th>
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<tr>
<td>- Anxiety</td>
<td>- Headaches</td>
<td>- Poor concentration</td>
<td>- Outburst of anger</td>
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<tr>
<td>- Anger</td>
<td>- Chest pains</td>
<td>- Forgetfulness</td>
<td>- Withdrawal</td>
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<tr>
<td>- Depression</td>
<td>- Tremors</td>
<td>- Mental confusion</td>
<td>- Increased drug use</td>
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<tr>
<td>- Flashbacks</td>
<td>- Fatigue</td>
<td>- Poor judgment</td>
<td>- Increased alcohol use</td>
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Following Hurricane Katrina, several businesses also had to relocate. It is important for companies to create a continuity of operations plan. Some of the considerations for businesses are the amount of staff they have and space requirements; lodging for employees, cash management, clear communications with hotel, and knowing when to seek outside help (Hansen, 2006). As with private citizens, businesses also need to plan, or their post-disaster existence could be questionable.

According to FEMA, space needs are also a consideration when determining shelter procedures. It is recommended to have 20 square feet per person for short-term stay (few days) and 40 square feet for long term stay (days to weeks). Hurricane shelters should be larger than tornado shelters due to the potential length of stay during untenable outside conditions. As reviewed during research for the prior research question, procedures should be in-place to assure that back-up generator power is available at the shelter, with appropriate electrical hook-ups for the generator (FEMA, 2000). Chief Klauber stated during an interview that,

We are attempting to use federal, state and regional grants to support our endeavors. Unfortunately, the shortfalls that we have in Derry regarding sheltering and emergency management are the same in many communities. That makes the attempts to get outside
funding more difficult than ever. As such, we are relying upon local tax dollars through our operating budget to support our efforts (personal communication, November, 21, 2006).

Volunteers with the Derry unit of the Medical Reserve Corp (MRC) have been trained in shelter operations. An interview was conducted with Kerran Vigroux, who functions as the coordinator of the Derry unit of the MRC. During the flood emergency of May 2006, MRC played an active roll in staffing the evacuation shelter and staffing administrative positions in the EOC. “MRC volunteers bring much experience and willingness to participate and help out their local communities during emergencies” (personal communication, November 29, 2006).

Captain Josh Lyle of the Salvation Army was interviewed during this research process. The Derry Unit of the Salvation Army currently provides all fire service rehabilitation services during emergency incidents and assisting with shelter operations would be a natural transition for their organization. They were prepared to feed shelter occupants during the initial stages of the April shelter from the wide area flooding. They have also provided mass feeding to several emergency drills in the state, as well as 18,000 meals in 15 days during the western New Hampshire flooding in 2005 (personal communication, October 31, 2006).

Another valuable concept is publishing shelter guidelines on the Town’s website prior to an emergency situation occurring, so that citizens can be aware of shelter requirements. The City of Providence, Rhode Island has a good example of what information may be posted on the website (Providence EMA and OHS [PEMAOHS], 2006, pp. 1-2). Databases must be established ahead of time to understand where these populations are located within the community. “In a typical jurisdiction, up to 20% of the population could need extra help during a disaster” (Gibney, Reese, & Wright, 2006, p. 24).
The ARC provides procedural guidance in their shelter operations manual to include: procedures for determining when to open a shelter, facility survey, registration, security for food and citizens, human resources, health inspections, rest rooms, shower facilities, family services, kennels, emergency medical services coverage, provisions for the elderly, children, and disabled; American Disabilities Act (ADA) compliance, public information, space requirements, voucher system, and release of the facility when the need no longer exist (ARC).

In summary, the Congressional Charter makes it very clear that the ARC has authority in the area of evacuation shelters, as well as several other areas of recovery. The Town has a limited amount of supplies to open an emergency shelter, while short-term personnel requirements are adequate. The Town should secure additional material resources and establish further procedures to allow our community to meet standards as established by the ARC and FEMA.

Procedures

The initial process for this descriptive research consisted of a literature review at the Learning Resource Center (LRC) while attending the National Fire Academy (NFA). This research proved extremely valuable as the foundation for this research was established. The procedures utilized to review each of the research questions are described in detail.

The first research question evaluated if any federal, state, local laws or professional standards exist with regards to the establishment of approved emergency evacuation shelters. A questionnaire was developed by the researcher in an attempt to determine if other area emergency managers had knowledge of any laws or professional standards regarding evacuation shelters. The researcher also asked this question to assure that pertinent resources were not overlooked during the research process. This questionnaire was developed by the researcher and
sent electronically with a cover letter on September 1, 2006 to each of the communities that participate in the Southern New Hampshire Public Health Emergencies Planning Team which include: Derry, Londonderry, Windham, Salem, Danville, Atkinson, Sandown, Plaistow, and Hampstead. A total of four requests were made with all communities except Atkinson responding. This team takes a regional approach to addressing public health related issues. Population information for each community was obtained from the New Hampshire Office of Energy and Planning online database (New Hampshire Office of Energy and Planning [NHOEP], 2006, p.8). A copy of this research questionnaire will be referred to with other research questions as well. The cover letter and questionnaire utilized can be located in Appendix A.

An interview was conducted with the Mr. Dan Pike, Director of Emergency Services, Manchester, New Hampshire Chapter of the ARC. Interview questions were sent electronically on October, 27, 2006 and returned electronically on November 20, 2006. To assure diligence, a face to face interview was arranged by telephone communication on December 26, 2006 and conducted on December 27, 2006 at the Manchester Red Cross Office. As a point of clarity, the researcher will refer to this interview while discussing other research questions as well. During this interview, Director Pike was asked the following questions: (personal communication, November 20, 2006).

a) Please explain the role of the ARC with regards to evacuation shelters?

b) Where does the ARC obtain its authority to perform their duties?

c) Would the ARC endorse the Town’s efforts to independently establish an approved evacuation shelter?

d) How could the ARC assist the Town with independently establishing an approved emergency evacuation shelter?
An internet search was completed, with emphasis on the ARC and Department of Homeland Security (DHS). Additional guidance with regards to the construction of evacuation shelters has been published by FEMA. This FEMA document “discusses shelter location, design loads, performance criteria, and human factor criteria that should be considered for the design and construction of such shelters” (FEMA, 2000, p. 1-2). A review of the New Hampshire Emergency Operations Plan – Mass Care and Shelter was conducted. In addition, a copy of the Town’s EOP with regards to Mass Care and Shelter was reviewed.

In an effort to evaluate what current capabilities the Town and surrounding communities have to establish emergency evacuation shelters, an interview was conducted with Fire Chief George Klauber of the Derry Fire Department; Chief Klauber also functions as the Director of Emergency Management for the Town. Chief Klauber was chosen for this interview due to his position in the community and vast experience with emergency management concepts. Interview questions were electronically mailed to Chief Klauber on November 8, 2006 and an interview was conducted on November 21, 2006. During this interview, the following questions were discussed in detail: (personal communication, November 21, 2006).

a) What are the Town’s current capabilities to establish an emergency evacuation shelter?
b) Do you feel that the Town should rely on an outside agency to provide shelter management services for the community?
c) What additional resources should the Town obtain to meet approved evacuation shelters standards?
d) What funding sources are available to assist Emergency Management with obtaining necessary resources for an evacuation shelter?
An interview was conducted with Lt. Bill Gillis, Deputy Emergency Management Director of Administration. Lt. Gillis was chosen for this interview, as he has extensive knowledge with regards to Emergency Management concepts. Since 2000, Lt. Gillis maintains responsibility for drafting the Town EOP. Lt. Gillis provided a copy of the most recent update to the Town EOP – Mass Care and Shelter. The document was reviewed during this research process. Once again, this interview will be referred to several times as other research questions are evaluated. A list of questions for the interview was e-mailed to Lt. Gillis on October 31, 2006, and an actual interview was conducted on November 8, 2006. The following questions were discussed in detail: (personal communication, November 8, 2006).

a) What is the Town’s experience with establishing evacuation shelters?

b) What are the Town’s current capabilities to establish an emergency evacuation shelter?

c) What are the areas that the Town needs to improve upon to establish an approved emergency evacuation shelter?

d) What additional resources should the Town obtain to meet approved evacuation shelter standards?

e) What procedures should the Town establish to meet approved evacuation shelter standards?

Further, the questionnaire located in Appendix A reviewed how other communities in the area feel about their abilities to establish an evacuation shelter. The particular focus with this research question was to determine if area communities have established shelters, are they comfortable with them, and do they have back-up electrical generators that are capable of supplying heating and ventilation appliances for the shelter? An electronic mailing was sent to Michael Poirier, Planning Chief for the New Hampshire Department of Safety, Division of Homeland Security and Office of Emergency Management on November 28, 2006 in an attempt
to determine what supplies NH DHSOEM keeps on hand for the establishment of evacuation shelters (personal communication, November 28, 2006).

Additionally, the ARC has evaluated all potential shelter sites in Derry. This evaluation identifies facility contact information, capacity levels for short and long term, ADA accessibility, construction materials, feeding and dormitory abilities, utility suppliers, restroom and shower capabilities. These evaluation documents provided by the ARC were reviewed for all potential shelter sites in Derry. Each of these sites is located in the Town EOP and was reviewed in an attempt to determine how the Town should approach long-term planning with regards to shelter locations and construction requirements. Interviews were also conducted with the Derry School District and Derry Salvation Army in an effort to thoroughly evaluate this research question. Further information regarding these interviews will be provided.

Research was also conducted to determine what future resources the Town should attempt to obtain to meet approved emergency evacuation shelter standards. Internet research was conducted in an attempt to evaluate the research question, as well as hard copy resources from the LRC at the NFA. The researcher focused on what material resources remain lacking in the Town to support an evacuation shelter. Several journals had information on evacuation shelters, including: International Association of Emergency Managers (IAEM) Bulletin, Homeland Protection Professional, Disaster Recovery Journal, and Homeland First Response. The material directed the researcher to the ARC as an agency that is capable of providing guidelines for evacuation shelters. The Shelter Operations guide published by the ARC details what is required to establish an evacuation shelter (ARC, 1996). Interviews conducted with Chief Klauber and Lt. Gillis assisted with evaluating this research question; further information will be provided.
In addition, the distributed questionnaire requested that area communities identify what resources they currently have available to establish a shelter in their communities. This questionnaire also focused a question relative to back-up electrical power for their shelters. This was of particular interest to the researcher due to the windstorm in February, 2006. A copy of this questionnaire is available in Appendix A. Having a back-up electrical power supply that supplies heating and ventilation utilities is very important in areas that have the potential to have extremely cold temperatures. “Emergency power may be required for both lighting and ventilation, therefore, a back-up generator is recommended. Any generator relied on for emergency power should be protected with an enclosure designed to the same criteria as the shelter” (FEMA, 2000, p. 8-9). The interview conducted with Director Dan Pike from the Manchester ARC also assisted with the research question. Director Pike was able to provide insight on what resources the Town should attempt to obtain to establish a shelter.

The final research question evaluates if any procedures should be established by the Town to meet approved emergency evacuation shelter standards. Internet research was conducted to evaluate how other cities and communities around the country are dealing with evacuation shelters in an attempt to learn how the Town can enhance its evacuation shelter procedures. Valuable information was obtained during this research, such as updating the Town internet website to include sheltering information for citizens, as well as the possible establishment of databases of our medically fragile community. Hard copy resources were also reviewed to include information from the ARC and FEMA. The distributed questionnaire (Appendix A) requested information on what area communities have regarding procedures for the establishment of evacuation shelters. The State Emergency Operations Plan and ARC shelter site review documents were also reviewed and evaluated for information during this process.
A group interview was conducted with Mary Ellen Hannon, Derry School District Superintendent; Jane Landry, School District Business Manager; Dan LaFleur, Principal of the Barka Elementary School and Leslie Saucier, Principal of the West Running Brook Elementary School in Derry. The West Running Brook Elementary School has been utilized previously by the Town as an evacuation shelter in 2006 and as a community health clinic during a public health emergency in 2004. The West Running Brook School is centrally located within the Town, which identifies it as a prime shelter location for all Town residents. Barka Elementary is the newest school in Derry, and identified as a potential sight for a community evacuation shelter by School District and Town Emergency Management personnel due to a back-up electrical generator. The following questions were mailed electronically to the Superintendent on November 8, 2006 and the interview was conducted on November 20, 2006 at the School District Offices (personal communication, November 20, 2006). The questions asked during this interview are as follows:

a) Would the School District allow the Town to utilize the Barka School as an evacuation shelter?

b) Does the Barka School have back-up generator power? If yes, exactly what is powered by the generator, in the event that the power grid fails?

c) Would the School District allow the Town to utilize the West Running Brook School as an evacuation shelter?

d) Does the West Running Brook School have back-up generator power? If yes, exactly what is powered by the generator, in the event that the power grid fails?

e) Would the School District be capable of assisting emergency management personnel with staffing various functions within the evacuation shelter?
f) Does the School District have any concerns regarding the utilization of their schools as evacuation shelters for the community?

An interview was also conducted with Kerran Vigroux, Director of the Town of Derry Bureau of Public Health. Ms. Vigroux is also the coordinator of the Derry Unit of the MRC; representing 10 local communities, with a population of more than 138,000 citizens. The MRC located in the Derry region is a collaborative network of first responders, health care professionals, EMS and hospital personnel, public health professionals, and community representatives who are working together to lay the foundation for a volunteer public health emergency response team for the region. The Derry Unit of the MRC currently has over 100 volunteers. The following questions were mailed electronically to the Ms. Vigroux on October 27, 2006, and the interview was conducted on November 29, 2006 at the Derry Municipal Center (personal communication, November 29, 2006) Questions asked during this interview are as follows:

a) How could MRC personnel assist Emergency Management personnel during the establishment of an emergency evacuation shelter?

b) What types of training have the MRC personnel participated in?

An interview was also conducted with Captain Josh Lyle of the Derry Salvation Army on October 31, 2006 at the Central Fire Station. During this interview, the following questions were asked (personal communication, October 31, 2006):

a) How could Salvation Army personnel assist Emergency Management personnel during the establishment of an emergency evacuation shelter?

b) What types of training have the Salvation Army personnel participated in?
Limitations:

Questionnaires were sent to all area communities that participate in the Southern New Hampshire Public Health Emergencies Planning Team. However, other communities may have had information that would have been beneficial as part of this research project and were not evaluated. The Town of Atkinson did not respond to the questionnaire information request despite several attempts. A vast amount of material in available on the topic of emergency evacuation shelters, this researcher may have unintentionally overlooked some sources of information.

Definitions:

Approved Shelter - A shelter that meets the requirements of the New Hampshire Department of Safety, Division of Homeland Security and Office of Emergency Management and the American Red Cross.

ARC Congressional Act - The ARC independently provides mass care to all disaster victims as part of a broad program of disaster relief, as outlined in charter provisions enacted by the United States Congress, Act of January 5, 1905, and the Disaster Relief Act of 1974. (Derry EOP, 2006, 6-1)

DHS – Department of Homeland Security

Long term stay – Utilizing shelter services for days to weeks.

Mass Care and Shelter - Emergency Operations Plans are broken down into several Emergency Support Functions (ESF). Section #6 of this document reviews all aspects of caring for and sheltering victims of a disaster.

Medically fragile – Sick, elderly, handicapped people of the community that have specific needs during shelter operations.
Emergency Evacuation Shelters

MRC – United States Medical Reserve Corps was born out of the experience of September 11, 2001. The volunteer response to that emergency quickly overwhelmed Emergency Managers on-scene as they were unable to verify credentials or properly train volunteers as to their roles in emergency response.

Short term stay – Utilizing shelter services for hours to days.

Results

Descriptive research produced valuable information relative to emergency evacuation shelters. A large majority of the data referred the researcher to the ARC and DHS for information. The distributed questionnaire identified the current status of area communities relative to evacuation shelters which will be discussed further. Answers to each of the four research questions were derived from document review, internet research, questionnaire response, and personal interviews.

The first research question was evaluated with a combination of a questionnaire, interviews, and document review. The responses to the questionnaire from area communities focused on the ARC as their information source for establishing evacuation shelters. As noted in the Questionnaire Response Quick Reference Guide (Appendix C), many communities simply turn the responsibility for establishing a shelter in their communities over to the ARC. An interview with Director Pike confirmed that the ARC has responsibility in the area from a Congressional Charter in 1905. However as noted by Director Pike;

The Red Cross is the only recognized non-governmental organization to have responsibilities for Mass Care in accordance with the National Response Plan. Any community has the right to refuse the services of the ARC should they decide that it is in
their best interest to do so and are under no obligation to call upon the ARC for assistance (personal communication, November 20, 2006).

Internet research also directed the researcher to the ARC for information on this subject matter.

Authority to perform disaster services was formalized when Congress chartered the Red Cross in 1905 (36 U.S.C. 300101-300111). Among other provisions, this charter charges the Red Cross …to continue and carry on a system of national and international relief in time of peace and apply the same in mitigating the sufferings caused by pestilence, famine, fire, floods, and other great national calamities, and to devise and carry on measures for preventing the same (Tallahassee Florida Chapter - American Red Cross, 2006, p. 4).

The State of New Hampshire EOP and the Town EOP both make reference to this Congressional Charter within their respective Mass Care and Shelters sections of their EOP’s.

The ARC, an independent, non-governmental organization works in collaboration with public, private and governmental service providers to provide mass care services to all victims as part of a broad program of disaster relief as outlined in charter provisions enacted by the US Congress, Act of January 5, 1905 (NH EOP, 6-1).

The Town EOP has mirror language under the Scope section of ESF #6 – Mass Care and Shelter. Further guidance with regards to the construction of evacuation shelters has been published by FEMA. This FEMA document “discusses shelter location, design loads, performance criteria, and human factor criteria that should be considered for the design and construction of such shelters” (FEMA, 2000, p. 1-2).
Fire Chief George Klauber provided some valuable insight regarding the current level of preparedness for the Town with regards to establishing an emergency evacuation shelter. “We do not have the capability in any Town owned building or school to have a long-term shelter; due to the lack of a back-up electrical generator to supply heating and ventilation utilities” (personal communication, November 21, 2006). Michael Poirier, Planning Chief for the New Hampshire Department of Safety, Division of Homeland Security and Office of Emergency Management forwarded my electronic mail information request to Planning Officer Richard Verville of the New Hampshire Department of Safety, Division of Homeland Security and Emergency Management. Mr. Verville replied, “The State has no shelter supplies on hand. We use the ARC to set up and equip shelters as needed. If additional resources are needed, we would procure them from vendors on the State Contract List” (personal communication, November 28, 2006). Lt. Gillis, who functions as the Deputy Emergency Management Director of Administration verified that the Town currently has only a limited number of cots and blankets, and must rely on the ARC cache for additional supplies (personal communication, November 8, 2006).

The questionnaire quick reference guide (Appendix C) shows that communities such as Windham and Londonderry are comfortable with their ability to establish appropriate evacuation shelters for citizens of their communities. While Plaistow, Salem, Danville, Hampstead, and Derry have some concern regarding this area. The Town has a comprehensive EOP for all areas of Emergency Management. This researcher focused on ESF #6 – Mass Care and Shelter. The Town EOP specifies who will authorize the activation of an evacuation shelter, and when shelter services will be terminated. The roles and responsibilities of each agency within the Town are also detailed in this plan.
It is important to note that the activation of the EOC requires representation and assistance from all Town leaders, Town agencies and the School District. School District Superintendent Hannon stated that “the schools are Town owned buildings, and the Town should be allowed to utilize them as evacuation shelters in emergency situations” (personal communication, November 20, 2006). See Memorandum of Understanding regarding the utilization of Derry Schools as evacuation shelters (Appendix D). Also supplied is a sample ARC facility use permit (Appendix E).

The Salvation Army is prepared to provide feeding for several days should their services be required. This was confirmed during an interview with Captain Josh Lyle. The Salvation Army has already performed this function at different training events and actual events around the state (personal communication, October 31, 2006). The MRC personnel have been certified by the ARC for shelter operations. In addition, the MRC personnel have training in the National Incident Management System (NIMS), Disaster Life Support, First-Aid and Cardiopulmonary Resuscitation. “The Derry MRC consists of 10 teams of 10 - 13 members lead by a team leader and co-leaders. The MRC administration has created an activation call tree using the team leaders, as well as activation through the Town reverse 911 capability” (personal communication, November 29, 2006).

The ARC has evaluated all potential shelter sites in Derry. This evaluation identifies facility contact information, capacity levels for short and long term, ADA accessibility, construction materials, feeding and dormitory abilities, utility suppliers, and restroom and shower capabilities. The following shelter sites and capacity ratings have been determined by the ARC for Derry:
Table #2. Current shelter capacities

<table>
<thead>
<tr>
<th>Location</th>
<th>Short-Term Capacity (20 sq. ft / person)</th>
<th>Long-Term Capacity (40 sq. ft / person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Running Brook</td>
<td>482</td>
<td>241</td>
</tr>
<tr>
<td>Barka Elementary</td>
<td>302</td>
<td>151</td>
</tr>
<tr>
<td>Boys &amp; Girls Club of Derry</td>
<td>470</td>
<td>235</td>
</tr>
<tr>
<td>Hood Elementary School</td>
<td>224</td>
<td>112</td>
</tr>
<tr>
<td>Derry Village Elementary</td>
<td>308</td>
<td>153</td>
</tr>
<tr>
<td>East Derry Memorial School</td>
<td>156</td>
<td>78</td>
</tr>
<tr>
<td>Grinnell Elementary School</td>
<td>312</td>
<td>156</td>
</tr>
<tr>
<td>South Range Elementary</td>
<td>306</td>
<td>153</td>
</tr>
<tr>
<td><strong>Capacity Totals</strong></td>
<td><strong>2560</strong></td>
<td><strong>1279</strong></td>
</tr>
</tbody>
</table>

The third research question focused on what resources the Town should procure for shelter operations. Director Pike notes that the local chapter will deploy whatever resources they have available to Derry in support of a disaster within our community. The Greater Manchester Chapter will provide training on all aspects of shelter operations to any interested organization that we deem suitable. Other than the cost of materials, this training has and will continue to be offered at no charge to the Town (personal communication, November 20, 2006).

As accentuated by Chief Klauber during the interview, an emergency generator capable providing for heating and ventilation utilities and initial set-up supplies must be purchased to assure independent capabilities (personal communication, November 21, 2006). Emergency
back-up generators are an extremely important aspect of an evacuation shelter. As directed in
the Department of Justice ADA guide,

> Ensure that a reasonable number of emergency shelters have back-up generators and a
way to keep medications refrigerated. These shelters should be made available on a
priority basis to people whose disabilities require access to electricity and refrigeration,
for example, for using life-sustaining medical devices, providing power to motorized
wheelchairs, and preserving certain medications, such as insulin, that require refrigeration
(United States Department of Justice [USDoJ], 2004, p. 4).

The Federal Emergency Management Agency (FEMA) also speaks to the need for back-up
electrical generators in their text regarding construction of emergency shelters. FEMA identifies
that “shelters designed for both tornadoes and hurricanes will have different emergency back-up
power needs. These needs are based upon the length of time that people will stay in the shelters”
(FEMA, 2000, p. 8-9). Tornado shelters have a requirement of lighting, where hurricane shelters
require both lighting and HVAC.

The Lessons Learned Information Sharing website sponsored by the Department of
Homeland Security is a secure site. Access passwords have to be requested, and only provided
once proof of fire service affiliation is verified. Regarding emergency generators “emergency
managers should determine the capacity and hookup requirements for the generators required at
each shelter in their jurisdiction. They should also identify existing generators within their
jurisdiction to power shelters and other critical facilities” (Department of Homeland Security
[DHS], 2006, p. 1).

Area communities have mobile response trailers with appropriate supplies for short and
long term events (Appendix C). According to Fire Chief Tom McPherson from Windham, New
Hampshire, the primary supplies maintained in these trailers are cots, blankets, flashlights, and registration material (personal communication, November 28, 2006). Research discovered that some areas of the country realized that even though they felt they were fully capable to establish a shelter, they learned from real-life events that they were not prepared for the medically fragile community. This was evident in Cedar Rapids, Iowa in 2003, after a tornado struck that community; “we learned that the traditional Red Cross Shelters are not equipped to handle persons with medical needs. We had nowhere for persons with medical needs to go except our local hospitals” (Gibney, 2005, p. 7).

The registration of shelter residents can become an extremely difficult task for shelter managers. An organized system to track residents while receiving the services of the evacuation shelter is extremely important. Several computer based and hard copy systems exist for this purpose. A functional system with appropriate supplies should be available (ARC, 1996, p. 9). In addition, a confidential database of medically fragile citizens who may need assistance getting to the shelter should be maintained at all times. This database should be available to emergency managers when shelters are opened and appropriate assistance provided (USDoJ, 2004, p. 4).

Procedures should be established by the Town to meet approved emergency evacuation shelter standards. Research indicates that use of the internet and public access television to keep citizens up to date with regards to potential shelters and required supplies to bring to the shelter is an asset. However, the information needs to be updated regularly so that citizens can have ample time to review that material and prepare prior to the emergency in the event that the electrical power grid is effected. Seminole County Florida maintains a webpage for this purpose. General shelter information, required supplies, and contact information is continuously available to the citizens (SCEM, 2006, pp. 1-4).
A confidential database of medically fragile citizens who may need assistance getting to the shelter should be maintained at all times. This database should be available to emergency managers when shelters are opened and appropriate assistance provided (USDoJ, 2004, p. 4). A thorough understanding of community demographics will be beneficial to emergency managers during emergency sheltering situations. The ARC recommends that procedures need to be established for the pre-incident survey of potential evacuation shelters, registration policies, public notification, dormitory and feeding, bathroom/shower facilities, emergency medical care, mental health, critical incident stress debriefing (CISD), shelter security, communications, and ADA compliance must be addressed (ARC, 1996).

Emergency Management professionals from around the country are recognizing that common terminology and organization structure in multi-discipline responses are extremely important with managing any size incident. “The National Incident Management System (NIMS) is providing a good framework for a national communication system” (Messier, 2004, p. 30). Lt. Gillis confirms that the Town must establish a comprehensive shelter plan for three to five days of operation. He also concurs with Chief Klauber that regional shelters are the most efficient way to address this issue (personal communication, November 8, 2006). The concept of regional shelters was also discussed with Director Pike;

As an organization, we strongly advise and advocate for the use of regional shelters. By regional, we mean several communities mutually agreeing to share shelter space in one centrally located geographic location. This formula has been successful in the past and helps control costs as well as provides for an effective use of resources (personal communication, November 20, 2006).
The School District confirmed that it would be capable of providing personnel for oversight within the kitchen facilities, maintenance personnel, school nursing staff, and administrative assistance to assist with school information technology issues such as phone systems and computer networks (personal communication, November 20, 2006).

The Salvation Army is willing to continue assisting the Town with feeding and rehabilitation services for employees and citizens of the community. They have training from fire service personnel, as well as other entities. Salvation Army personnel understand the needs of evacuation victims and have real life experience operating in federally declared disaster zones (personal communication, October 31, 2006). As stated by Ms. Vigroux of the Derry MRC, MRC volunteers bring much experience and willingness to participate and help out their local communities during emergencies. They understand their support function to first responders and are trained appropriately. In a large scale emergency, the first responder community can be overwhelmed and the Derry region is fortunate to be able to call upon its MRC volunteers to respond efficiently and effectively (personal communication, November 29, 2006).

In summary, the results clearly show that much work needs to be accomplished, but the goal is achievable. The American Red Cross is the authorizing agency who sets the standards that the Town would have to meet. The Town has a good foundation for the establishment of an approved shelter, however, additional resource allocations and procedural implementations are necessary as they would enhance the Town’s ability to establish an approved evacuation shelter for displaced citizens of the community.
Discussion

The research clearly indicates that the ARC has authority with regards to the establishment of emergency evacuation shelters, as well as, several other areas of victim assistance following disasters. The State of New Hampshire and the Town undoubtedly recognize this fact as indicated within their respective Mass Care and Shelter EOP documents.

Authority of perform disaster services was formalized when Congress chartered the Red Cross in 1905 (36 U.S.C. 300101-300111). Among other provisions, this charter charges the Red Cross ….to continue and carry on a system of national and international relief in time of peace and apply the same in mitigating the sufferings caused by pestilence, famine, fire, floods, and other great national calamities, and to devise and carry on measures for preventing the same (Tallahassee Florida Chapter - American Red Cross, 2006, p. 4).

The FEMA document regarding the construction of shelters is very detailed; however, the researcher was unable to locate any communities in this area that utilize this document when constructing a potential shelter. The Town utilizes the schools as shelters within the Town EOP, however, the Derry Schools were not constructed to standards as outlined within the FEMA document. As stated by Mary Ellen Hannon “The Derry Cooperative School District planned Barka School with the intent of using the facility as an evacuation shelter” (personal communication, November 20, 2006). It is clear that the School District had the best of intentions; however, FEMA shelter construction standards were not utilized. The Town has no procedures in place to assist architectural engineers or contractors with assuring that newly constructed buildings, with the potential to be utilized as shelters, are constructed to FEMA
shelter standards. Whether or not this will affect the occupants of the shelter would depend on the type and severity of the event, as well as the length of stay.

The current capabilities of the Town and surrounding communities to establish an emergency evacuation shelter have been sufficient during past localized emergencies (Appendix C). However, the ARC has always been responsible for staffing the shelter. The ability for Derry and area communities to function independently for an extended period of time is questionable. Research found that other areas of the Country are making information regarding shelters available to the public on their websites on a continuous basis.

The Seminole County Florida Emergency Management site identifies three types of shelters to include (SCEM, 2006, p. 2):

<table>
<thead>
<tr>
<th>Shelter Types</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Population Shelters</td>
<td>Public shelters; routinely inspected and evaluated by ARC; sufficient kitchen, dormitory, and restroom facilities. Extended use anticipated.</td>
</tr>
<tr>
<td>Special Needs Shelters</td>
<td>Medically fragile populations. Citizens with medical, physical, or mental conditions.</td>
</tr>
<tr>
<td>Shelters of Last Resort</td>
<td>No ARC inspection; limited kitchen and restroom facilities; used for hours – not days</td>
</tr>
</tbody>
</table>

Having the ability to provide back-up electrical power to established shelters would be an extremely valuable addition to the Town’s EOP, especially for the medically fragile community,
or general population during the winter months. As noted in previous interviews; this is one area that the Town is insufficient. Chief Klauber states that “we do not have the capability in any Town owned building or school to have a long-term shelter; due to the lack of a back-up electrical generator to supply heating and ventilation utilities” (personal communication, November 21, 2006). This has also been noted in several professional texts regarding evacuation shelters. “Emergency power may be required for both lighting and ventilation….Therefore, a back-up generator is recommended. Any generator relied on for emergency power should be protected with an enclosure designed to the same criteria as the shelter” (FEMA, 2000, p. 8-9).

An interesting concept from the Town of Windham, New Hampshire is the ability to place all shelter supplies on a portable trailer for travel to any established shelter. Communities can’t place all their supplies in one shelter for storage, and then have that shelter be part of the disaster and no longer capable of functioning as a community shelter (Appendix C).

Several procedures were identified during this research, which are briefly addressed in the Town EOP; however, they require additional attention. Functioning independently from the ARC, and rising to their standards may prove extremely challenging for local emergency managers. Director Pike from the ARC identifies three avenues for the ARC to assist the Town with shelter operations (personal communication, November 20, 2006):

Table #4: ARC assistance options

| First | Have a shelter that is established at the request of the community, totally run and managed by the Red Cross. All shelter supplies, shelter staff, security, physical and mental health is 100% delivered and managed by the Red Cross. Under this scenario, the local chapter, or national organization assumes all care, feeding, tracking of shelter occupants, financial, and legal responsibilities for the shelter. |
Shelter management, staffing, feeding, security, resident tracking, and medically fragile databases are all personnel and time intensive (ARC, 1996). Chief Klauber has concerns regarding sufficient staff to support an extended shelter operation. However, he states that the citizens of Derry and MRC would rise to this challenge, providing that they are given the appropriate leadership (personal communication, November 21, 2006).

It was the intention of this researcher to determine if the Town could independently establish an emergency evacuation shelter to acceptable standards as established by the ARC, who has the authority to establish these standards. As stated by Director Pike, “we would respect any decision that the Town of Derry makes concerning evacuation shelters. We are willing to work with any plan that works best for the Town of Derry and any surrounding communities” (personal communication, November 20, 2006).

The Town has limited supplies and resources to open an emergency shelter; while short-term personnel requirements are sufficient. However, the Town still needs to secure additional
resources and establish further procedures to allow the community to meet standards as established by the ARC and FEMA. When a community has to rely on an outside agency to provide sheltering services, they may become susceptible to multiple requests for this service and potential non-availability, especially if an incident effects are a large geographic region of the state or country.

Recommendations

The problem for the Town is that it has no independent ability to establish an approved emergency evacuation shelter when citizens are evacuated from their homes, which may result in life safety issues for displaced citizens of the community. The purpose of this research was to determine what is required to independently establish an approved emergency evacuation shelter within the Town. In an effort to assist with prioritizing community needs with regard to the independent establishment of an evacuation shelter, the following recommendations are presented by the researcher:

Table #5: Recommendations

<table>
<thead>
<tr>
<th>Short-Term Goal</th>
<th>Purchase portable electrical generator of sufficient size to supply heating and ventilation utilities at the two primary shelters. Also provide for the installation of electrical hook-ups to support the generator.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-Term Goal</td>
<td>Train additional volunteers to assure adequate staffing at shelter</td>
</tr>
<tr>
<td>Short-Term Goal</td>
<td>Purchase enclosed trailer and sufficient cots, blankets, registration material to support initial operations of an evacuation shelter</td>
</tr>
<tr>
<td>Short-Term Goal</td>
<td>Provide information for the public on the Town website, cable access TV, and local newspapers regarding shelter locations, and appropriate supplies to bring to the shelter.</td>
</tr>
<tr>
<td>Short-Term Goal</td>
<td>Formalize memorandums of understanding with MRC, Salvation Army and ARC.</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Short-Term Goal</td>
<td>Establish evacuation shelter activation procedures and protocols</td>
</tr>
<tr>
<td>Short-Term Goal</td>
<td>Develop a comprehensive Mass Care and Shelter plan</td>
</tr>
<tr>
<td>Long-Term Goal</td>
<td>Evaluate other facilities in Town which may be utilized as evacuation shelters, such as Pinkerton Academy, Sportszone, etc.</td>
</tr>
<tr>
<td>Long-Term Goal</td>
<td>Establish database of the medically fragile community that may require special services or transportation to the established shelter location</td>
</tr>
<tr>
<td>Long-Term Goal</td>
<td>Evaluate the potential for the establishment of appropriately located regional shelters with surrounding communities</td>
</tr>
<tr>
<td>Long-Term Goal</td>
<td>Purchase tracking software and hardware to assist with shelter registration efforts</td>
</tr>
<tr>
<td>Long-Term Goal</td>
<td>Establish procedures to assure the facilities constructed in the future that may be utilized as a shelter; are constructed to FEMA shelter standards</td>
</tr>
<tr>
<td>Long-Term Goal</td>
<td>Enhance mental health assistance capabilities for shelter occupants</td>
</tr>
</tbody>
</table>

Further research must be conducted regarding process changes during the approval process of new construction, to allow potential future shelter sites to be identified during development and constructed to FEMA standards as appropriate. Future readers of this research should attempt to evaluate the financial impact of total project cost when future potential shelters are constructed to FEMA standards during the initial construction versus post construction remodels and upgrades.
No community can rely on federal assistance within 72 hours of a large scale emergency. The Town must be independently capable of handling life safety issues during this time.

As stated by Chief Klauber,

The Town of Derry has some tremendously talented people within the Town Departments, as well as local citizenry. I am confident that the Town can establish an evacuation shelter to house our displaced residents and take care of many of their needs with the highest standards of excellence (personal communication, November 21, 2006).
References


Appendix A

Questionnaire to Area Communities
Date

Fire Department Name
Fire Department Chief
Address
Town, State, Zip Code

Subject: Emergency Evacuation Shelters

Dear Chief,

I am currently working on an Applied Research Project for the Executive Fire Officer Program at the National Fire Academy. The Applied Research Project is on the establishment of Emergency Evacuation Shelters for displaced citizens of the community during emergency situations. The specific focus of the project is to determine what is required to independently establish an approved emergency evacuation shelter within the Town of Derry.

Attached to this letter, is a questionnaire regarding the establishment of emergency evacuation shelters within your community. I am requesting that the questionnaire be completed, and any relevant procedures that your community has, be forwarded as well. I will share the results of my research with all interested communities.

Once again, my intention with the project is to determine what is required to independently establish an approved emergency evacuation shelter; failure to establish these shelters may result in life safety issues for displaced citizens of the community.

Thank you for your assistance with this Applied Research Project. Please return questionnaire and associated existing procedures by September 15, 2006. Information may also be forwarded electronically to the e-mail address listed below.

Sincerely,

Michael J. Gagnon, Battalion Chief
Derry Fire Department
14 Manning Street
Derry, New Hampshire 03038
(603) 234-9272
mikegagnon@ci.derry.nh.us
Community Name: ________________________________
Name of person completing questionnaire: ________________________
Title of person completing questionnaire: _________________________
Date questionnaire completed: ________________________________

1. How does your community address the issue of establishing emergency evacuation shelters?

2. Where are the emergency evacuation shelters located within your community?

3. Do your emergency evacuation shelters have back-up generator power? If yes, does the generator power HVAC utilities?

4. What resources does your community currently have to independently establish an emergency evacuation shelter?

5. Does your community currently have established procedures with regards to emergency evacuation shelters?

6. Who is responsible for managing an emergency evacuation shelter in your community?

7. Are you aware of any laws or professional standards with regards to the establishment of emergency evacuation shelters?

8. Are you confident that your community is prepared to shelter a large number of citizens should they be displaced from their homes?

**Please attach copies of all pertinent procedures utilized by your community with regards to emergency shelters**

**Please utilize the back of this questionnaire for additional comments.**

Thank you for taking the time to complete this questionnaire!
Appendix B

General Shelter Supplies
## Appendix B: General Shelter Supplies (FEMA, 2000, 9-6)

<table>
<thead>
<tr>
<th>Type</th>
<th>Equipment/Supplies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
<td>NOAA weather radios, ham radios, battery powered radio transmitters, portable generators, portable computers with internet capabilities, public address system</td>
</tr>
<tr>
<td>Emergency Equipment</td>
<td>EOP, flashlights and batteries, fire extinguishers, blankets, pry bars, trash receptacles and liners, took kits, heaters</td>
</tr>
<tr>
<td>First-Aid Supplies</td>
<td>Bandages, tape latex gloves, hepa masks, antiseptic solutions, antibiotic ointments, non-prescription medications (headache or pain medications, anti-diarrhea medications, antacids, laxatives, syrup of ipecac), folding cots, splints, towels, thermometers</td>
</tr>
<tr>
<td>Water</td>
<td>Adequate supplies based on length of event and number of residents</td>
</tr>
<tr>
<td>Sanitary Supplies</td>
<td>Toilet paper, paper towels, moistened towelettes, disinfectants, chlorine bleach, plastic bags, portable chemical toilets (when regular toilets are not available), personal hygiene items</td>
</tr>
<tr>
<td>Infant and Children Supplies</td>
<td>Disposable diapers, powders and ointments, moistened towelettes, pacifiers, blankets</td>
</tr>
</tbody>
</table>
Appendix C

Questionnaire Response Quick Reference Guide
## Appendix C: Questionnaire Response Quick Reference

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Windham</td>
<td>10,709</td>
<td>5</td>
<td>1</td>
<td>EM trailer</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Londonderry</td>
<td>23,236</td>
<td>3</td>
<td>3</td>
<td>ARC, CERT</td>
<td>ARC</td>
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</tr>
<tr>
<td>Plaistow</td>
<td>7,747</td>
<td>4</td>
<td>1</td>
<td>ARC</td>
<td>Town EOP</td>
<td>Depends on size of event and staffing abilities</td>
</tr>
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<td>Hampstead</td>
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<td>EM trailer</td>
<td>NFPA codes as applicable</td>
<td>No – Can only shelter 400 -500</td>
</tr>
<tr>
<td>Sandown</td>
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<td>Derry</td>
<td>34,021</td>
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<td>None</td>
<td>Cots, ARC, MRC</td>
<td>ARC</td>
<td>Short-term Yes</td>
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<td>Atkinson</td>
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<tr>
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<td>Limited</td>
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