

Town of New London, New Hampshire Hazard Mitigation Plan



**Final FEMA Approval
February 22, 2008**

TABLE OF CONTENTS

SECTION I:	BACKGROUND	1
	PURPOSE	1
	HISTORY	1
	SCOPE OF THE PLAN	2
	METHODOLOGY	2
	HAZARD MITIGATION GOALS	6
	ACKNOWLEDGEMENTS	6
SECTION II:	COMMUNITY PROFILE	7
	INTRODUCTION	7
	DEVELOPMENT TRENDS	8
SECTION III:	HAZARD IDENTIFICATION	10
	Flooding	10
	Drought	13
	Hurricane and High Wind	14
	Tornados	16
	Severe Winter Storms	17
	Wildfire	19
	Seismic Hazards (earthquake)	21
	Other Hazards	23
	ASSESSING PROBABILITY, VULNERABILITY AND RISK	23
SECTION IV:	CRITICAL FACILITIES/LOCATIONS	25
SECTION V:	DETERMINING HOW MUCH WILL BE AFFECTED	27
	IDENTIFYING VULNERABLE FACILITIES	27
	POTENTIAL LOSS ESTIMATES	28
	CRITICAL FACILITIES ANALYSIS MAP	30
SECTION VI:	EXISTING MITIGATION STRATEGIES	31
SECTION VII:	NEWLY IDENTIFIED MITIGATION STRATEGIES	33
	POTENTIAL MITIGATION STRATEGIES	33
	SUMMARY OF CRITICAL EVALUATION	34
SECTION VIII:	PRIORITIZED IMPLEMENTATION SCHEDULE	35
SECTION IX:	ADOPTION AND IMPLEMENTATION OF THE PLAN	37
	RESOURCES	39

APPENDICES

APPENDIX A: Technical Resources

APPENDIX B: Technical And Financial Assistance

APPENDIX C: Matrix of Federal All-Hazards Grants

APPENDIX D: Meeting Documentation

APPENDIX E: Risk Assessment

APPENDIX F: Wildland/Urban Interface Map

APPENDIX G: Dam Breach Inundation Map

SECTION I: INTRODUCTION

A. BACKGROUND

The New Hampshire Bureau of Emergency Management (NHBEM) has a goal for all communities within the State of New Hampshire to establish local hazard mitigation plans as a means to reduce future losses from natural or man-made hazard events before they occur. The NHBEM has provided funding to the Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC), to prepare local Hazard Mitigation Plans with several of its communities. UVLSRPC began preparing a local Hazard Mitigation Plan for the Town of New London in June 2005. The *New London Hazard Mitigation Plan* serves as a strategic planning tool for use by the Town of New London in its efforts to reduce future losses from natural and/or man-made hazard events before they occur. This *Plan* does *not* constitute a section of the Master Plan.

The New London Emergency Management Committee prepared the *New London Hazard Mitigation Plan* with the assistance and professional services of the Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC) under contract with the New Hampshire Bureau of Emergency Management (BEM) operating under the guidance of the Federal Emergency Management Agency (FEMA). After a public hearing held in the New London Town Offices, the New London Board of Selectmen adopted the *Plan* on January 15, 2008.

B. PURPOSE

The New London Hazard Mitigation Plan is a planning tool for use by the Town of New London in its efforts to reduce future losses from natural and/or man-made hazards. This plan does not constitute a section of the Town Master Plan, nor is it adopted as part of the Zoning Ordinance.

C. HISTORY

On October 30, 2000, President Clinton signed into law the Disaster Mitigation Act of 2000 (DMA 2000). The ultimate purpose of DMA 2000 is to:

- Establish a national disaster mitigation program that will reduce loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from disasters, and
- Provide a source of pre-disaster mitigation funding that will assist States and local governments in accomplishing that purpose.

DMA 2000 amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act by, among other things, adding a new section: 322 – Mitigation Planning. This places new emphasis on local mitigation planning. It requires local governments to prepare and adopt jurisdiction-wide hazard mitigation plans as a condition to receiving Hazard

Mitigation Grant Program (HMGP) project grants. Local governments must review and if necessary, update the mitigation plan annually to continue program eligibility.

Why develop a Mitigation Plan?

The full cost of the damage resulting from the impact of natural hazards – personal suffering, loss of lives, disruption of the economy, and loss of tax base – is difficult to quantify and measure. The State of NH is vulnerable to many types of hazards, including floods, hurricanes, winter storms, wildfires, wind events, and earthquakes. All of these types of events can have significant economic and social impacts.

D. SCOPE OF THE PLAN

The scope of the *New London Hazard Mitigation Plan* includes the identification of natural hazards affecting the Town, as identified by the New London Emergency Management Committee. The hazards were reviewed under the following categories as outlined in the State of New Hampshire Hazard Mitigation Plan:

- I. Flooding (Including hurricanes, 100-year floodplain events, debris-impacted infrastructure, erosion, mudslides, rapid snow pack melt, river ice jams, dam breach and/or failure)
- II. Wind (Including hurricanes, tornadoes, “Nor’easters,” downbursts and lightning)
- III. Fire (Including forest fires and issues such as isolated homes and residential areas)
- IV. Ice & Snow Events (Including heavy snow storms, ice storms, and “Nor’easters,”)
- V. Earthquake (Including landslides and other geologic hazards related to seismic activity)
- VI. Other Events (Including hazardous materials events and terrorism)

E. METHODOLOGY

Using the *Hazard Mitigation Planning for New Hampshire Communities* handbook, as developed by the Southwest Regional Planning Commission (SWRPC), the New London Emergency Management Committee, in conjunction with the UVLSRPC, developed the content of the *New London Hazard Mitigation Plan* by following the ten-step process set forth in the handbook. The Committee held a total of five posted meetings beginning on June 21, 2005 and ending on November 8, 2005. All meetings were posted at the Town Office and open to the general public. The New London Board of Selectmen adopted the Plan, contingent upon FEMA approval, on July 24th, 2007.

By nature, natural hazards affect areas not defined by political boundaries. Additionally, response to these disasters often may rely on neighboring communities for assistance such as the mutual aid services. Because of this it is important to notify and work with adjacent communities. Notification of this plan and its meetings were publicly noticed and posted, although direct invitations were not made to neighboring municipalities of Springfield, Wilmot, Sutton and Sunapee. Future iterations and updates to this plan will

incorporate invitations to those communities to comment and participate in the planning process.

Support for mitigation strategies is important in order to carry out implementation. Although this Hazard Mitigation Plan for the Town of New London was unable to interest additional parties, every effort will be made in the future to incorporate representation in future revisions of this plan. In order to ensure in the future that opportunity to participate in the planning process is given to other interested parties, the Town will send invitations to local businesses, educational institutions and non-profit organizations. Revisions of this plan shall incorporate press releases that will notice citizens, businesses and organizations of the progress of the plan while also soliciting input that could strengthen the value of the plan. This process will enable more successful implementation actions.

Upon notification from FEMA that this plan is been conditionally approved, the Town of New London will hold a public hearing. At this public hearing, public comment and input regarding the plan shall be taken. Once public input has been heard, the Town shall adopt the plan with any improvements or recommended changes that are appropriate.

The following hazard mitigation meetings were vital to the development of this Plan:

- June 21, 2005
- July 19, 2005
- September 13, 2005
- October 11, 2005
- November 8, 2005

To complete this Plan, the Emergency Management Committee followed the following planning steps:

Step 1: Map the Hazards (June 2005)

Committee members identified areas where damage from natural disasters had previously occurred, areas of potential damage, and man-made facilities and infrastructure that were at risk for loss of life, property damage, and other risk factors. A GIS-generated base map provided by the UVLSRPC was used in the process.

Step 2: Determine Potential Damage (July 2005)

Committee members identified facilities that were considered to be of value to the Town for emergency management purposes, for provision of utilities and services, and for historic, cultural and social value. A GIS-generated map was prepared to show critical facilities identified by the New London Emergency Management Committee. A summary listing of “Critical Facilities” is presented in section IV, pp. 18-19.

Step 3: Identify Plans/Policies Already in Place (September 2005)

Using information and activities in the handbook, the Committee and UVLSRPC staff identified existing mitigation strategies which are already implemented in the Town

related to flood, wind, fire, ice and snow events and earthquakes. A summary chart and the results of this activity are presented in Section VI, p. 24.

Step 4: Identify the Gaps in Protection/Mitigation (September 2005)

Existing strategies were then reviewed for coverage, effectiveness and implementation, as well as need for improvement. Some strategies are contained in the Emergency Action Plan and were reviewed as part of this step. The result of these activities is presented in Section VI, p. 25.

Step 5: Determine Actions to be Taken (September/October 2005)

During an open brainstorming session, the Emergency Management Committee developed a list of other possible hazard mitigation actions and strategies for the Town of New London. Ideas proposed included policies (*e.g. Adopt winter maintenance plan*); planning (*e.g. Develop forest management plans*) and public information (*e.g. develop a public service announcement*). A list of potential mitigation strategies can be found in Section VII, p. 26.

Step 6: Evaluate Feasible Options (October 2005)

The Emergency Management Committee selected ten mitigation strategies from their list of potential strategies, and evaluated the selected ten based on eight criteria derived from the criteria listed in the evaluation chart found on page 27 of the Hazard Mitigation Planning for New Hampshire Communities Handbook. The eight criteria used for evaluation of potential mitigation strategies are listed in Section VII, p. 27. Each strategy was rated (good (3), average (2), or poor (1)) for its effectiveness in meeting each of the eight criteria (*e.g., Does the mitigation strategy reduce disaster damage?*). Strategies were ranked by overall score for preliminary prioritization then reviewed again under step eight. The ratings of the potential mitigation strategies can be found in Section VII, p. 27.

Step 7: Coordinate with other Agencies/Entities (Ongoing)

UVLSRPC staff reviewed the New London Master Plan. This was done in order to determine if any conflicts existed or if there were any potential areas for cooperation. Town staff that was involved in preparing the updated Emergency Operations Plan participated in the hazard mitigation meetings, to avoid duplication and to share information.

Step 8: Determine Priorities (October 2005)

The Committee reviewed the preliminary prioritization list in order to make changes and determine a final prioritization for new hazard mitigation actions and existing protection strategy improvements identified in previous steps. UVLSRPC also presented recommendations for the Committee to review and prioritize.

Step 9: Develop Implementation Strategy (October 2005)

Using the chart provided under step nine of the Hazard Mitigation Planning for New Hampshire Communities Handbook, the Committee created an implementation strategy which included person(s) responsible for implementation (who), a schedule for

completion (when), and a funding source and/or technical assistance source (how) for each identified hazard mitigation actions. The prioritized implementation schedule can be found in Section VIII, p. 28.

Step 10: Adopt and Monitor the Plan

UVLSRPC staff compiled the results of steps one through nine in a draft document, as well as helpful and informative materials from the State of New Hampshire Natural Hazard Mitigation Plan, which served as a resource for the New London Hazard Mitigation Plan. The process for monitoring and updating the Plan can be found in Section IX, p. 29.

F. HAZARD MITIGATION GOALS

The Town of New London Emergency Management Committee reviewed the hazard mitigation goals for the State of New Hampshire, and revised them for New London.

They are as follows:

1. To protect the general population, the citizens of the town and guests, from all natural and man-made hazards.
2. To reduce the potential impact of natural and man-made disasters on the town's critical support services, critical facilities, and infrastructure.
3. To reduce the potential impact of natural and man-made disasters on the town's economy.
4. To reduce the potential impact of natural and man-made disasters on the town's natural environment.
5. To reduce the potential impact of natural and man-made disasters on the town's specific historic treasures and interests as well as other tangible and intangible characteristics which add to the quality of life of the citizens and guests of the town.
6. To identify, introduce and implement cost effective hazard mitigation measures so as to accomplish the town's goals (above) and to raise the awareness and acceptance of hazard mitigation.

G. ACKNOWLEDGEMENTS

The following people participated in the development of this plan:

- Jessie Levine, Town Administrator
- Peter Stanley, Fire Chief/Zoning Administrator
- Jay Lyon, Fire Captain
- Dave Seastrand, Police Chief
- Don Bent, Health Officer
- Richard Lee, Road Agent
- Bob Andrews, Recreation Director
- Nancy Erickson, New London Hospital
- Victoria Boundy, UVLSRPC

SECTION II: COMMUNITY PROFILE

A. INTRODUCTION

The Town of New London, NH is located in the Lake Sunapee region. Newbury, Sunapee, Springfield, Wilmot and Sutton border New London. Undeveloped land uses still predominate in New London, with approximately 6,000 out of 14,000 acres developed. Undeveloped land uses, including forests, agriculture, recreation uses, and water bodies accounted for almost two-thirds of the entire area of Town in 1993. All developed land uses together accounted for just under 21 percent of the total area of Town (New London Master Plan, 1998).

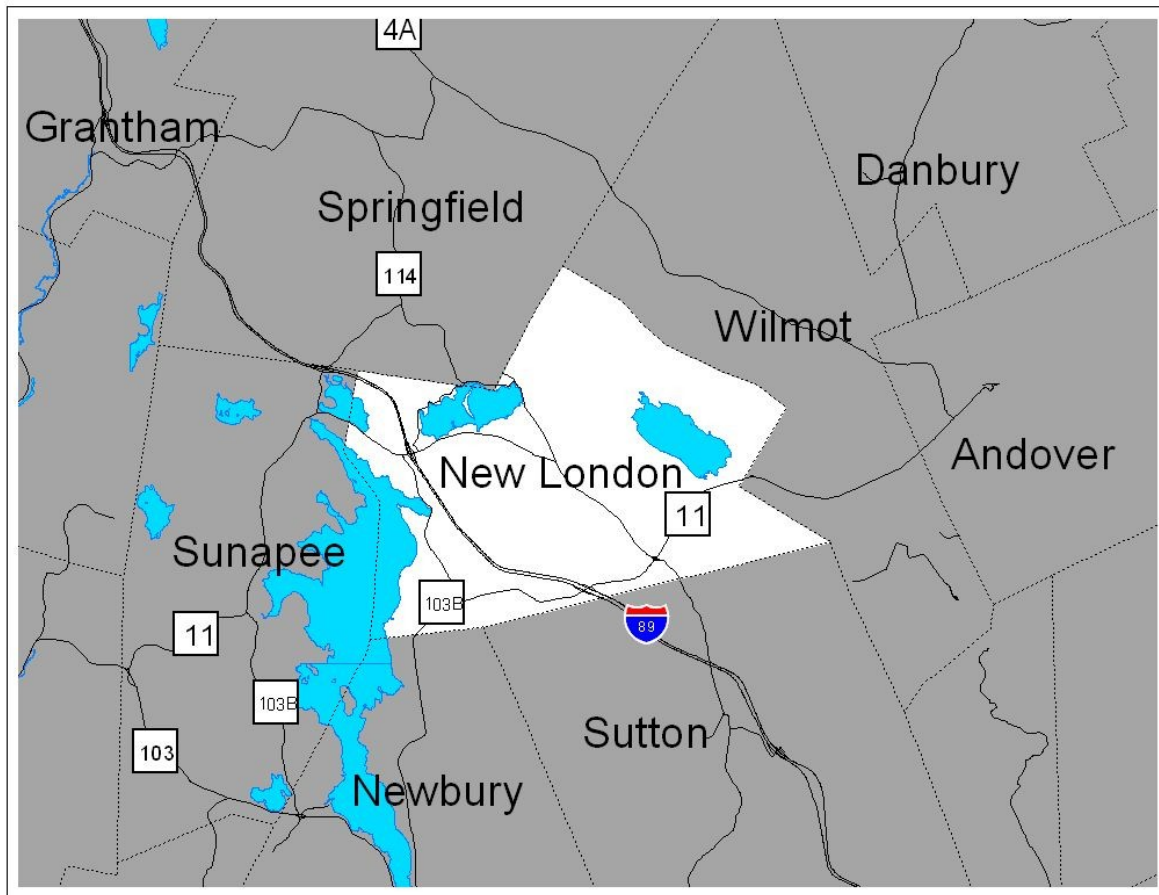


Figure 1: Locus Map of New London

New London straddles the major watershed divide between the Connecticut River to the west and the Merrimack River to the east. There are three major watersheds in the Town of New London: Sunapee Lake, Lyon Brook, and Pleasant Lake. In New London, floodplain areas occur in the lowlands associated with major waterbodies throughout town. Table 1 presents the acreage of flood hazard area by watershed in the Town.

Table 1: Floodplains in New London

Watershed	Floodplain Area (Acres)
Watershed #1 Lake Sunapee	143
#2 Lyon Brook	87
#3 Pleasant Lake	87
TOTAL	317

As part of the National Flood Insurance Program (NFIP), Flood Hazard Boundary Maps were prepared for the Town in September 1970. These maps identified those areas in town that fall within Zone A, which are Special Flood Hazard Areas inundated by the 100-year flood, with base flood elevations *not* determined. Examination of the floodplain maps indicates that there are relatively few areas that would be inundated by a 100-year flood. The main areas that would be affected by this magnitude of flooding include the inlet to Messer Pond, the area between Messer and Clark Ponds, the outlet of Pleasant Lake, and along Cascade Brook. According to state records, there are no repetitive loss properties in the Town of New London.

B. DEVELOPMENT TRENDS

New London's population grew close to three times larger over the last five decades. Decennial growth rates ranged from an eight percent increase between 1980-1990 to a 31 percent increase between 1970-1980. Over fifty years, the population in New London increased by a total of 2,632 residents, going from 1,484 in 1950 to 4,116 residents in 2000. The 2003 Census estimate for New London was 4,289 residents, which ranked 84th among New Hampshire's incorporated cities and towns. New London's convenient location, natural beauty and excellent school district are all reasons that this area has grown so much. Table 2 on page 8 summarizes the population trends, 1960-2000.

Increasingly, available sites for development are constrained by steep slopes, exposed ledge, wetlands and other natural features. These sites are more expensive to develop and increase the community's vulnerability to natural hazards such as flooding, landslide, forest fire, and other events. These developments also challenge the capabilities and efficiency of emergency response services in town, as they are often more remote and difficult to access.

Since the adoption of the 1986 Master Plan, however, the Town has implemented many regulations to deal with growth and its impacts, including:

- Wetlands Conservation Overlay District
- Steep Slopes Conservation Overlay District
- Cluster and Planned Unit Development Ordinances
- Floodplain Overlay District
- Shoreland Overlay District

Table 2: Population Trends, 1960-2000

Year	New London	Percent Change	Merrimack County	Percent Change	State of NH	Percent Change
1960	1,738	17.1%	67,785	7.6%	606,921	13.8%
1970	2,236	28.7%	80,925	19.4%	737,578	21.5%
1980	2,935	31.3%	98,302	21.5%	920,475	24.8%
1990	3,180	8.3%	120,005	22.1%	1,109,252	20.5%
2000	4,116	29.4%	136,225	13.5%	1,235,786	11.4%

Source: US Census

SECTION III: HAZARD IDENTIFICATION

The New London Emergency Management Committee reviewed the list of hazards provided in the State of New Hampshire Hazard Mitigation Plan, and some hazard history for the State of New Hampshire and Merrimack County in particular. A list of past hazard events in New London can be found in Section III, pp. 13-15. Past natural hazard events affecting all of Merrimack County, the Merrimack River Basin, and the state of New Hampshire can be found in Table 3, p. 16. Armed with this information, and a Risk Assessment in the recently updated Emergency Operations Plan, the Committee conducted a Risk Assessment, located in Table 4, p. 17.

WHAT ARE THE HAZARDS?

New London is prone to a variety of natural hazards. These include: Flooding, ice storms and severe winter storms, severe wind events (hurricane residuals and tornadic activity), wildfire, and drought.

PROFILE OF NATURAL HAZARDS

Flooding

Overview

Flooding is the temporary overflow of water onto lands that are not normally covered by water. Flooding results from the overflow of major rivers and tributaries, storm surges, and inadequate local drainage. Floods can cause loss of life, property damage, crop/livestock damage, and water supply contamination, and can disrupt travel routes on roads and bridges.

Floods in the New London area are most likely to occur in the spring due to the increase in rainfall and snowmelt; however, floods can occur at any time of the year. A sudden winter thaw or a major summer downpour can cause flooding.

100-Year Floods

The term “100-year flood” does not mean that flooding will occur once every 100 years, but is a statement of probability to describe how one flood compares to others that are likely to occur. What it actually means is that there is a one percent chance of a flood in any given year.

River Ice Jams

“Ice forming in riverbeds and against structures presents significant hazardous conditions [...] ... storm waters encounter these ice formations which may create temporary dams. These dams may create flooding conditions where none previously existed (i.e., as a consequence of elevation in relation to normal floodplains). Additionally, there is the impact of the ice itself on structures such as highway and railroad bridges. Large masses

of ice may push on structures laterally and/or may lift structures not designed for such impacts” (This and all subsequent cited statements in this section are from NH State Hazard Mitigation Plan, page 16).

Rapid Snow Pack Melt.

Warm temperatures and heavy rains cause rapid snowmelt. Quickly melting snow coupled with moderate to heavy rains are prime conditions for flooding.

Bank Erosion and Failure

As development increases, changes occur that increase the rate and volume of runoff, and accelerate the natural geologic erosion process. Erosion typically occurs at the outside of river bends and sediment deposits in low velocity areas at the insides of bends. Resistance to erosion is dependent on the riverbank’s protective cover, such as vegetation or rock riprap, or its soils and stability.

Dam Breach and Failure

Dam failure or breach results in rapid loss of water that is normally held by the dam. These kinds of floods pose a significant threat to both life and property.

Location and Extent of Past Flooding

Hazard	Date	Location	Description of Areas Impacted
FLOODING- DISASTER DECLARATIONS			
Flood	November 3-4, 1927	Southern NH	Damage to Road Network. Caused many roads to wash out.
Flood	March 11-21, 1936	NH State	Damage to Road Network. Flooding caused by simultaneous heavy snowfall totals, heavy rains and warm weather. Run-off from melting snow with rain overflowed the rivers
Flood	April 1969	Merrimack	Excessive snow melt
Flood	August 7-11, 1990	Belknap, Carroll, Cheshire, Coos, Grafton, Hillsborough, Merrimack & Sullivan Counties, NH	FEMA Disaster Declaration # 876. Flooding caused by a series of storm events with moderate to heavy rains. \$2,297,777 in damage.
Flood	October 29, 1996	Grafton, Hillsborough, Merrimack, Rockingham, Strafford & Sullivan Counties, NH	FEMA Disaster Declaration # 1144- DR. Flooding caused by heavy rains. \$2,341,273 in damage.
Flood	July 2, 1998	Southern NH	FEMA Disaster Declaration # 1231. Severe storms and flooding
Flood	October 26th 2005	Cheshire, Grafton, Merrimack, Sullivan, and Hillsborough Counties, NH	FEMA Disaster Declaration # 1610. Severe storms and flooding.
Flood	October-November 2005	Grafton, Hillsborough, Merrimack, Rockingham, Strafford & Sullivan counties	FEMA Disaster Declaration # DR-1144-NH

Flood	May 25th, 2006	Belknap, Carroll, Hillsborough, Merrimack, Rockingham, and Strafford Counties, NH	FEMA Disaster Declaration # 1643. Severe storms and flooding.
Flood	April 16, 2007	All counties, NH	FEMA Disaster Declaration # 1695. Severe storms and flooding. See Appendix G for more information
Flooding	Yearly w/ rain	Elkins Lake area	The committee noted flooding on an annual basis
Flooding	Yearly	Forest Acres Road	Annual flooding
Flooding	Yearly	Bog Road	Primarily road washouts on an annual basis
Flooding	Yearly	Stoneybrook Road	Annual flooding, primarily road washouts and some basement flooding
<p style="text-align: center;">ICE JAMS</p> <p>A search on the Cold Regions Research and Environmental Laboratory (CRREL) and discussion with New London residents revealed that there is no history of ice jam-related events in the Town of New London</p>			

Potential Future Events

According to the State of NH's 2004 Statewide Mitigation Plan the county of Merrimack has a high risk of flooding. There is yearly flooding along a number of rivers in New London. New London Emergency Management Committee members noted the following flood-prone areas in the Town of New London:

- Elkins Lake area
- Annual flooding (primarily road washouts and some flooded basements) on Stoneybrook Rd., Bog Rd., Forest Acres Rd. and other areas identified on GIS map.
- Flooded basements are often the result of lack of pump or foundation drain maintenance on the part of homeowners.

There is also potential for dam breach or failure, although the dams within New London are not categorized as significant hazards.

Dam Breach/Failure

- Elkins Dam is primary concern. Approximately 20 residences (8 in New London, the rest in Wilmot) would be impacted.
- No other dams are sizable enough to be of concern.

The State of New Hampshire classifies dams into the following four categories: NM – Non-menace S – Significant hazard Blank- Non-Active L – Low hazard H – High Hazard The table below shows all dams in the Town of New London.							
Dam #	Class	Dam Name	Owner	Status	Type	Surface Elevation (ft)	IMPND (Acres)
		Little Lake Sunapee				1219	472
		Elkins Dam					
		Otter Pond				185	1124
		Pleasant Lake				606	805
		Goose Pond				15	1170
Source: Dam information provided by the NH Dam Bureau in 2007 and will be verified by Town officials							

Drought

Overview

A drought is defined as a long period of abnormally low precipitation. The effects of drought are indicated through measurements of soil moisture, groundwater levels and stream flow; however, not all of these indicators will be low during a drought.

Location and Extent of Past Occurrences

Droughts in the region have had no geographic extent. Any drought in the past has affected the entire town to varying degree. Water bans are often instituted when summer residents substantially increase the population in the town.

DROUGHT- LOW RISK			
Drought	1929-1936	Statewide	Regional. Recurrence Interval 10 to > 25 years
Drought	1939-1944	Statewide	Severe in southeast and moderate elsewhere. Recurrence Interval 10 to > 25 years
Drought	1947-1950	Statewide	Moderate. Recurrence Interval 10 to > 25 years
Drought	1960-1969	Statewide	Regional longest recorded continuous spell of less than normal precipitation. Encompassed most of the Northeastern US. Recurrence Interval > 25 years
Drought	2001-2002	Statewide	Third worst drought on record, exceeded only by the drought of 1956-1966 and 1941-1942.

Potential Future Events

Based on the cyclical nature and past history of drought in the State of New Hampshire it is most probable that New London will see drought again in the future. However according to the State Hazard Plan Merrimack County has a medium risk of drought and it averages recurrence intervals between 10 and 25 years. Droughts in the past have had

no geographic extent within the Town of New London. It is reasonable to assume that future droughts that affect the region will not be isolated to any geographic extent.

Hurricane and High Wind Storms

Overview

“High winds are a primary cause of hurricane (and tornado)-inflicted loss of life and property damage.” (Northeast States Emergency Consortium Website) The powerful storm surge, and rain that accompany a hurricane lead to flooding causing further the loss of life and property damage. Other potential hazards associated with these storms include downbursts and lightning.

Hurricanes

A hurricane is an intense tropical weather system with a well-defined circulation and maximum sustained winds of 74 mph (64 knots) or higher. Hurricane winds blow in a large spiral around a relative calm center known as the "eye." The "eye" is generally 20 to 30 miles wide, and the storm may extend outward 400 miles. As a hurricane nears land, it can bring torrential rains, high winds, and storm surges. A single hurricane can last for more than 2 weeks over open waters and can run a path across the entire length of the eastern seaboard. August and September are peak months during the hurricane season that lasts from June 1 through November 30. Damage resulting from winds of this force can be substantial, especially considering the duration of the event, which may last for many hours (NH Hazard Mitigation Plan; FEMA website).

Location and Extent of Past Occurrences

The location of hurricanes is general and large in nature and when occurring in New London affects the entire town.

HURRICANES (CATEGORY GIVEN IF KNOWN) AND TROPICAL STORMS- LOW-MEDIUM RISK			
Hurricane	August, 1635	n/a	
Hurricane	October 18-19, 1778	n/a	Winds 40-75 mph
Hurricane	October 9, 1804	n/a	
Gale	September 23, 1815	n/a	Winds > 50mph
Hurricane	September 8, 1869	n/a	
Hurricane	September 21, 1938	Southern New England	Flooding caused damage to road network and structures. 13 deaths, 494 injured throughout NH. Disruption of electric and telephone services for weeks. 2 Billion feet of marketable lumber blown down. Total storm losses of \$12,337,643 (1938 dollars). 186 mph maximum winds.
Hurricane (Carol)	August 31, 1954	Southern New England	Category 3, winds 111-130 mph. Extensive tree and crop damage in NH, localized flooding

Hurricane (Edna)	September 11, 1954	Southern New England	Category 3 in Massachusetts. This Hurricane moved off shore but still cost 21 lives and \$40.5 million in damages throughout New England. Following so close to Carol it made recovery difficult for some areas. Heavy rain in NH
Hurricane (Donna)	September 12, 1960	Southern and Central NH	Category 3 (Category 1 in NH). Heavy flooding in some parts of the State.
Tropical Storm (Doria)	August 28, 1971	New Hampshire	Center passed over NH resulting in heavy rain and damaging winds
Hurricane (Belle)	August 10, 1976	Southern New England	Primarily rain with resulting flooding in New Hampshire. Category 1
Hurricane (Gloria)	September, 1985	Southern New England	Category 2, winds 96-110 mph. Electric structures damaged; tree damages. This Hurricane fell apart upon striking Long Island with heavy rains, localized flooding, and minor wind damage in NH
Hurricane (Bob)	August 19, 1991	Southern New England	Structural and electrical damage in region from fallen trees. 3 persons were killed and \$2.5 million in damages were suffered along coastal New Hampshire. Federal Disaster FEMA-917-DR
Hurricane (Edouard)	September 1, 1996	Southern New England	Winds in NH up to 38 mph and 1 inch of rain along the coast. Roads and electrical lines damaged
Tropical Storm (Floyd)	September 16-18, 1999	Southern New England	FEMA DR-1305-NH. Heavy Rains

Since 1635, ten hurricanes have reached New Hampshire. All areas of the town of New London are potentially at risk for hurricane events. Hurricane of 1938 is still evident in forested areas around New London. Pleasant Lake flooded and Millponds below flooded and overtopped road.

Potential Future Events

The State Hazard Plan lists Merrimack County as a medium risk for future hurricanes based on past evidence. Hurricanes in New London are more likely to cause flooding from associated rain than disturbance and destruction from winds speeds, although the region has seen remnants from many hurricanes from the coast over the past 100 years. The extent of hurricanes in New London would most likely not be geographically bound and would affect the entire community.

Tornadoes

Overview

“A tornado is a violent windstorm characterized by a twisting, funnel shaped cloud. These events are spawned by thunderstorms and, occasionally by hurricanes, and may occur singularly or in multiples. They develop when cool air overrides a layer of warm air, causing the warm air to rise rapidly. Most vortices remain suspended in the atmosphere. Should they touch down, they become a force of destruction.” (NH Hazard Mitigation Plan). The Fujita Scale is the standard scale for rating the severity of a tornado as measured by the damage it causes. Most tornadoes are in the F0 to F2 Class. Building to modern wind standards provides significant property protection from these hazard events. New Hampshire is located within Zone 2 for Design Wind Speed for Community Shelters, which suggests that buildings should be built to withstand 160 mph winds.

Downbursts

“A downburst is a severe localized wind blasting down from a thunderstorm. These ‘straight line’ winds are distinguishable from tornadic activity by the pattern of destruction and debris. Depending on the size and location of these events, the destruction to property may be devastating. Downbursts fall into two categories.” Microbursts cover an area less than 2.5 miles in diameter and macrobursts cover an area at least 2.5 miles in diameter.”

Location and Extent of Past Tornadoes

All areas of New London are potentially at risk for property damage and loss of life due to tornadoes. The “Tornado Project” (www.tornadoproject.com) lists three tornado events in Merrimack County between the years 1967 to 1976. These events are listed in Table 3, p. 16. The New London Emergency Management Committee noted the following areas that are generally vulnerable to tornadoes and other wind events.

- Generally vulnerable area: Around Lake Sunapee. 1980 microburst or tornado event recalled.
- Pingree Rd.; several events recalled (downed trees)

TORNADOS (FUJITA SCALE GIVEN IF KNOWN)			
Tornado	July 12, 1967	Merrimack Co.	F1 event; 5 people injured
Tornado	May 31, 1972	Merrimack Co.	F1 event; no injuries
Tornado	August 15, 1976	Merrimack Co.	F1 event; 5 injuries
Downburst	July 6, 1999	Merrimack County	Two roofs blown off structures; power outages; downed trees, utility poles, and wires

Potential Future Events

The State Hazard Plan list Merrimack County as an area of high risk for tornados and downbursts mostly due to the occurrence of three F1 tornados within a 10-year interval. Tornados in New London could be associated with a specific location. Previous tornados that have been documented have not documented the location specific to local implications.

Severe Winter Weather Storms

Overview

Ice and snow events typically occur during the winter months and can cause loss of life, property damage, and tree damage.

Heavy Snow Storms

“A heavy snowstorm is generally considered to be one which deposits four or more inches of snow in a twelve-hour period... A blizzard is a winter storm characterized by high winds, low temperatures, and driving snow- according to the official definition given in 1958 by the U.S. Weather Bureau, the winds must exceed 35 miles per hour and the temperatures must drop to 20°F (-7°C) or lower. Therefore, intense Nor’easters, which occur in the winter months, are often referred to as blizzards. The definition includes the conditions under which dry snow, which has previously fallen, is whipped into the air and creates a diminution of visual range. Such conditions, when extreme enough, are called ‘white outs’.”

Ice Storms

“When a mass of warm moist air collides with a mass of cold arctic air, the less dense warm air will rise and the moisture may precipitate out in the form of rain. When this rain falls through the colder more dense air and comes in contact with cold surfaces, the latent heat of fusion is removed by connective and/or evaporative cooling. Ice forms on these cold surfaces and may continue to form until the ice is quite deep, as much as several inches. This condition may strain branches of trees, power lines and even transmission towers to the breaking point and often creates treacherous conditions for highway travel and aviation. Debris impacted roads make emergency access, repair and cleanup extremely difficult.

“Nor’easters”

In the winter months, [Towns within] the State may experience the additional coincidence of blizzard conditions with many of these events as well as the added impact of the masses of snow and/or ice upon infrastructure thus, impacting upon transportation and the delivery of goods and services for extended periods of time, as well as various related impacts upon the economy. The entire area of the State may be impacted by these events... Heavy snow and/or rainfall may be experienced in different areas of the State and the heavy rains may contribute to flood conditions. Nor’easter events which occur

toward the end of a winter season may exacerbate the spring flooding conditions by depositing significant snow pack at a time of the season when spring rains are poised to initiate rapid snow pack melting.”

Lightning

“Lightning is a giant spark of electricity that occurs between the positive and negative charges within the atmosphere or between the atmosphere and the ground. In the initial stages of development, air acts as an insulator between the positive and negative charges. However, when the potential between the positive and negative charges becomes too great, there is a discharge of electricity that we know as lightning.”

Location and Extent of Past Events

1998 Ice Storm

- Damages: Roughly \$1.2 million; National Guard responded
- Hit the 1,000-foot + elevations: In New London, it hit everywhere except Pleasant Lake
- No power for about one week
- Boundaries of town were closed off; one-lane roadways
- Tree cleanup with large crews made up of New Hampshire Office of Emergency Management (predecessor to NHBEM), other towns, local contractors, etc.

Snow Storms

- Entire town vulnerable; annual occurrences
- March 2001 (2 events): Structural damages. Four roof damages, two total collapses. Significant staff time for cleanup.

EXTREME WINTER WEATHER/ICE STORMS			
Ice Storm	December 17-20, 1929	New Hampshire	Unprecedented disruption and damage to telephone telegraph and power system. Comparable to 1998 Ice Storm (see below)
Ice Storm	Dec. 29-30, 1942	NH	Glaze storm; severe intensity
Snow Storm	December 10-13, 1960	New Hampshire	Up to 17 inches of snow in southern NH
Snow Storm	January 18-20, 1961	New Hampshire	Up to 25 inches of snow in southern NH
Snow Storm	February 2-5, 1961	New Hampshire	Up to 18 inches of snow in southern NH
Snow Storm	January 11-16, 1964	New Hampshire	Up to 12 inches of snow in southern NH
Blizzard	January 29-31, 1966	New Hampshire	Third and most severe storm of 3 that occurred over a 10-day period. Up to 10 inches of snow across central NH
Snow Storm	December 26-28, 1969	New Hampshire	Up to 41 inches of snow in west central NH
Snow Storm	February 18-20, 1972	New Hampshire	Up to 19 inches of snow in southern NH

Snow Storm	January 19-21, 1978	New Hampshire	Up to 16 inches of snow in southern NH
Blizzard	February 5-7, 1978	New Hampshire	New England-wide. Up to 25 inches of snow in central NH
Snow Storm	April 5-7, 1982	New Hampshire	Up to 18 inches of snow in southern NH
Ice Storm	February 14, 1986	New Hampshire	Fiercest ice storm in 30 yrs in the higher elevations in the Monadnock region. It covered a swath about 10 miles wide from the MA border to New London NH
Extreme Cold	November-December, 1988	New Hampshire	Temperature was below 0 degrees F for a month
Ice Storm	March 3-6, 1991	New Hampshire	Numerous outages from ice-laden power lines in southern NH
Ice Storm	January 15, 1998	New Hampshire	Federal disaster declaration DR-1199-NH, 20 major road closures, 67,586 without electricity, 2,310 without phone service, \$17+ million in damages to Public Service of NH alone

Potential Future Events

Three types of winter events are heavy snow, ice storms and extreme cold. Occasionally heavy snow will collapse buildings. Ice storms have disrupted power and communication services. Extreme cold affects the elderly. These random events make it difficult to set a cost to repair or replace any of the structures or utilities affected. The whole town is at risk from severe winter weather.

Lightning Events

Lightning kills an average of 87 people per year in the United States, and New Hampshire has the 16th highest casualty rate in the nation. All areas of New London are potentially at risk for property damage and loss of life due to lightning.

Similar to the rest of the state Merrimack County and New London have a high risk of severe winter weather storms.

Wildfire

Overview

There are many types and causes of fires. Wildfires, arson, accidental fires and others all pose a unique danger to communities and individuals. Since 1985, approximately 9,000 homes have been lost to urban/wild land interface fires across the United States (Northeast States Emergency Consortium: www.nesec.org). The majority of wildfires usually occur in April and May, when home owners are cleaning up from the winter months, and when the majority of vegetation is void of any appreciable moisture making them highly flammable. As weather and human activities change with the seasons of the year, so does the incidence, causes and severity of fires. Cold winter weather increases

indoor activities and the need for heating, which brings about the peak period of heating structure fires. Daily fire incidence is at its highest in the spring. Spring is characterized by an increase in outside fires and a decrease in fires related to heating. The increase in outside spring fires is in large part due to the increase in tree, grass, and brush fires. Summer fires reflect an increase of incendiary and suspicious fires, fires associated with fireworks and natural fires caused by lightning strikes. These fires are a reflection of the change to warmer weather and the consequent increase in both outside activities and dry natural vegetation. Fire incidence is at its lowest in the fall. In fall, there is a decrease in outside fires, an increase in heating-related structure fires and the peak period of cooking fires.

Location and Extent of Past Events

“Historically, large NH wildland fires run in roughly 50 year cycles. Present concerns of New Hampshire Department of Resources and Economic Development, Division of Forests & Lands are that the Ice Storm of 1998 has left a significant amount of woody debris in the forests of the region as may fuel future wildfires.” “NH averages 500 fires per year and averages ½ acre or less per fire due to the excellent coordination between Fire Towers and local Fire Departments.” Forested, high elevation areas in New London are particularly vulnerable to wildfire events. Prolonged drought increases the likelihood of such events. The Emergency Management Committee agreed that there are no particularly vulnerable urban/wildland interface areas, but noted the following:

- Forest Conservation District at the Wilmot line is very sparsely populated and difficult to access
- Summer 2001: a fire generated by lightning strike on Morgan Hill; 7-8 day event; small amount of acreage burned.
- Proximity to power lines - noted as risk factor
- Very small risk of urban fire, as New London has a very active commercial sprinkling program.
- USDA mapped hydrants and water resources and identified the areas south and west of I-89 as more vulnerable - dry hydrants were installed in that area.

Unlike many other natural hazards wildfires tend to be more localized and controllable through mitigation measures and education to residents. Extreme heat can aid in the potential for fires that are not mitigating events. However, there tends to be a greater risk of wildfire in the spring and fall when extreme heat is not an issue.

EXTREME HEAT- LOW-MEDIUM RISK			
Extreme Heat	July, 1911	New England	11-day heat wave in New Hampshire
Extreme Heat	Late June to September, 1936	North America	Temps to mid 90s in the northeast
Extreme Heat	Late July, 1999	Northeast	13+ days of 90+ degree heat
Extreme Heat	Early August, 2001	New Hampshire	Mid 90s and high humidity

Extreme Heat	August 2-4, 2006	New Hampshire	Regional heat wave and severe storms,
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Potential Future Events

The attached map of the wildland-urban interface provides an overview of the large amount of interface area that is vulnerable to wildfire. The State has indicated that there is a high risk for wildfire in this region. New London has many remote homes with a significant amount of forest. The areas show on the wildland-urban interface map are the most likely to be impacted

Seismic Hazards

Overview

Earthquakes

New England is considered a moderate risk earthquake zone. An earthquake is a rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and cause landslides, flash floods and fires. The magnitude and intensity of an earthquake is determined by the use of scales such as the Richter scale and the Mercalli scale.

Landslides

A landslide is the downward or outward movement of slope-forming materials reacting under the force of gravity, including mudslides, debris flows, and rockslides. Formations of sedimentary deposits along the Connecticut River also create potential landslide conditions. Landslides can damage or destroy roads, railroads, electrical and phone lines, and other structures.

Subsidence

Subsidence is the collapse of the Earth's surface elevation due to the removal of subsurface support. Many of the older industrial communities in the state have canals that were constructed to facilitate hydro-mechanical power to local factories. Generally, subsidence poses a greater risk to property than to human life.

Location and Extent of Past Occurrences

New London is all ledge and not next to fault line. The community planning process revealed no additional landslide or subsidence events that could be documented. Earthquakes have been felt throughout the entire town.

EARTHQUAKES (MAGNITUDE GIVEN IF KNOWN)- LOW-MEDIUM RISK			
Earthquake	1638	Central New Hampshire	6.5-7

Earthquake	October 29, 1727	Off NH/MA coast	Widespread damage Massachusetts to Maine
Earthquake	December 29, 1727	Off NH/MA coast	Widespread damage Massachusetts to Maine
Earthquake	November 18, 1755	Cape Ann, MA	6.0, much damage
Earthquake	1800s	Statewide New Hampshire	83 felt earthquakes in New Hampshire
Earthquake	1900s	Statewide New Hampshire	200 felt earthquakes in New Hampshire
Earthquake	March 18, 1926	Manchester, NH	Felt in Hillsborough County
Earthquake	December 20, 1940	Ossipee, NH	Both earthquakes of magnitude 5.5, both felt for 400,000 sq miles, structural damage to homes, damage in Boston MA, water main rupture.
Earthquake	December 24, 1940	Ossipee, NH	
Earthquake	December 28, 1947	Dover-Foxcroft, ME	4.5
Earthquake	June 10, 1951	Kingston, RI	4.6
Earthquake	April 26, 1957	Portland, ME	4.7
Earthquake	April 10, 1962	Middlebury, VT	4.2
Earthquake	June 15, 1973	Near NH Quebec Border, NH	4.8
Earthquake	January 19, 1982	Gaza (west of Laconia), NH	4.5, walls and chimneys cracked, damage up to 15 miles away in Concord
Earthquake	October 20, 1988	Near Berlin, NH	4

Potential Future Events

New Hampshire lies in a zone of moderate seismic vulnerability. The county is in an area of particularly high seismicity that is evident in a crescent of historical events beginning in the Ossipee Range and following the general contour of the Merrimack River Valley. The extent of most earthquakes would be town-wide.

Landslides and avalanche events are thought to be moderate to low risk given the topography of the town. Although the town is situated at a high elevation compared to surrounding communities, the slope of many of the hillsides is gradual enough to not have a significant threat of landslides. The extent of landslides and avalanches would be localized although for this plan a study of steep slopes that are at risk was not done. The Town of New London has no history of these events and it is unlikely that there will be an increase in these events in the future.

Other Hazards

HazMat (Transport)

- Area off I-89 vulnerable due to prevailing winds out of the northwest.
- There is no industry in Town served by these vehicles but vehicles do pass through the area.
- No past hazmat incidents were recollectd.
- Route 11 is also an increasing risk for hazmat transport incidents.

HazMat (Fixed)

- New London Hospital
- Colby Sawyer College Ivey Science Center (limited)

Sources: Town of New London residents; New Hampshire Office of Emergency Management; Northeast State Emergency Consortium (NESEC) Website; US Army Corps of Engineers Ice Jam Database; www.tornadoproject.com.

ASSESSING PROBABILITY, VULNERABILITY AND RISK

The Committee members completed a Risk Assessment all of the types hazards identified in Chapter III. **Appendix B** provides a detailed methodology for the Risk Assessment. The process involved assigning Unlikely, Possible, Likely values (numerically 1, 2 or 3) to each hazard type for its potential of occurring based on past historic information. (An n/a score was given if there was insufficient evidence to make a decision). To assess vulnerability, a 1, 2, or 3 value was assigned to each hazard type. Risk was calculated by multiplying probability by the vulnerability. Low-Medium-High risk was assigned as shown below.

0-1.9- Low 2.0-3.9- Low-Med 4-5.9- Med 6-7.9- Med-High 8-9- High

Risk Assessment

Hazards (Natural & Manmade)	Probability of Occurrence Likely (3), Possible (2), Unlikely (1)	Probability based on State Hazard Plan Likely (3), Possible (2), Unlikely (1)	Average of Proba- bilities	Vulnerability based on State Hazard Plan High (3), Moderate (2), Low (1)	Vulnerability High (3), Moderate (2), Low (1)	Average of Vulnera- abilities	Risk Rating (Probability x Vulner- ability)
Flooding	2	3	2.5	3	1	2	5
Dam Failure	n/a	1	1	3	n/a	3	3
Drought	n/a	2	2	3	n/a	3	6
Hurricanes	2	2	2	3	2	2.5	5
Tornadoes	n/a	3	3	3	n/a	3	9

Severe Winter Weather	3	3	3	3	3	3	9
Lightning	n/a	2	2	3	n/a	3	6
Wildfire	3	3	3	3	1	2	6
Earthquake	1	2.5	1.75	3	1	2	3.5
Landslide	n/a	2	2	3	n/a	3	6
Avalanche	n/a	1	1	3	n/a	3	3
HazMat (transport)	3	n/a	3	3	3	3	9
HazMat (fixed)	1	n/a	1	3	1	2	2
Radon	n/a	2	2	3	n/a	3	6

SECTION IV: CRITICAL FACILITIES/LOCATIONS

The Critical Facilities list, identified by the New London Emergency Management Committee, is divided into three categories. The *first* category contains facilities needed for emergency response in the event of a disaster. The *second* category contains non-emergency response facilities that are not required in an event, but that are considered essential for the everyday operation of the Town of New London. The *third* category contains facilities/populations that the Committee wishes to protect in the event of a disaster.

Table 5: Emergency Response Facilities, Services & Structures

Critical Facility	Hazard Vulnerability	Replacement Value
New London Fire Dept. Land & Buildings	Winter storms	\$500,400
Highway Department Buildings	Winter storms	\$388,000
New London Elementary School (Red Cross Emergency Shelter)	Winter storms	\$6,620,700
Whipple Memorial Town Hall (incl. Police Station/EOC)	Winter storms; earthquake	\$816,400
Water Treatment Facility	Winter storms	\$202,300
New London Hospital (EMS)	Winter storms	\$7,285,800
Colby-Sawyer College Safety Department	Winter storms; earthquake	\$556,100
I-89 Bridges	Winter storms; flooding	\$800,000 per bridge
5 State-Listed bridges	Winter storms; flooding	\$4,000,000
County Road Bridge	Winter storms; flooding	\$800,000
Elkins Dam	Flooding	\$425,000

Table 6: Non-Emergency Response Facilities and Services

Critical Facility	Hazard Vulnerability	Replacement Value
Tracy Memorial Library	Winter storms	\$1,240,300
Transfer Station, Recycling & Disposal	Winter storms	\$468,300
Sewer Plant	Winter storms	\$704,700
New London Post Office	Winter storms	\$1,060,600
Old Colby Academy Building	Winter storms	\$583,900
Elkins Post Office	Winter storms; flooding	\$676,400

Table 7: Facilities/Populations to Protect

Critical Facility	Hazard Vulnerability	Replacement Value
New London Hospital	Fixed HazMat	\$7,285,800
Hilltop Place	144 multifamily units; winter storms	\$32,880,400

SECTION V: DETERMINING HOW MUCH WILL BE AFFECTED

A. IDENTIFYING VULNERABLE FACILITIES

It is important to determine which critical facilities and other structures are the most vulnerable and to estimate potential losses. The first step is to identify the facilities most likely to be damaged in a hazard event. To do this, the locations of critical facilities were compared to the location of various topographical elements, floodplains, roads and water bodies. Vulnerable facilities were identified by comparing their location to possible hazard events. For example, all of the facilities within the 100-year floodplain were identified and used in conducting the potential loss estimates and analysis on pages 21 and 22. Similarly, facilities located near steep slopes, earthquake sensitive areas, wildfire prone areas, etc. were identified and included in the analysis. There is neither large land areas slated for potential development nor large development projects in the works, so vulnerability of undeveloped land was not analyzed. Table 8, below, shows the vulnerability of existing developed areas.

Table 8: Vulnerability of Existing Developed Areas

Hazard Area	Total Buildings	Total Assessed Parcel Value	Critical Facilities
Elkins Area (Flood and Wind)	30 in New London	\$4,059,000	Elkins Post Office, Elkins Dam, Elkins Beach, bridges
Pingree Road (Hurricane, High Wind)	13	\$2,327,300	None
Lake Sunapee area (high wind)	110	\$174,480,700	None
Wildfire Area	30	\$5,003,600	None
Ice Storm		\$1,032,000,000	Entire town, including all critical facilities
I-89 HazMat area	N/A; structures not vulnerable	N/A	None; damage to lakes and water supply most critical
New London Hospital area	N/A	N/A	Senior Housing going in nearby; biological hazards are biggest concern

B. POTENTIAL LOSS ESTIMATES

This section identifies areas in town that are most vulnerable to hazard events and estimates potential losses from these events. It is difficult to ascertain the amount of damage caused by a natural hazard because the damage will depend on the hazard's extent and severity, making each hazard event quite unique. In addition, human loss of life was not included in the potential loss estimates, but could be expected to occur.

Flooding

There are approximately 30 structures in Elkins Village that are vulnerable to flooding. Their total assessed parcel values are \$4,059,000. Assuming the worst-case scenario of 100 percent loss to the structures, estimated damages would be \$4,059,000.

Hurricane

Damage caused by hurricanes can be severe and expensive. New London has been impacted in the past by both wind and flooding damage as a result of hurricanes. The total assessed value of structures in both the Lake Sunapee area and on Pingree Road is approximately \$177 million. Assuming 1% to 5% damage in these areas, a hurricane could result in \$2M to \$9M in damage.

Tornado, Downburst and Microburst

Tornadoes, downbursts and microbursts are relatively uncommon natural hazards in New Hampshire. On average, about six tornado events strike each year. In the State of NH, the total cost of tornadoes between 1950 and 1995 was \$9,071,389 (The Disaster Center). These wind events occur in specific areas, so calculating potential town-wide losses is not possible.

Severe Snow Storms

New England usually experiences at least one or two severe snowstorms, with varying degrees of severity, each year. Power outages, extreme cold, and impacts to infrastructure are all typical effects of winter storms in New London. All of these impacts are a risk to the community and put all residents, especially the elderly, at risk. There have been a total of six severe snow events since 1993, costing a total of \$58,729 in staff time and equipment (FEMA reimbursable costs).

Ice Storms

Ice storms often cause widespread power outages by downing power lines, and these storms can also cause severe damage to trees. The 1998 Ice Storm inflicted \$354,411 worth of damage in New London. Ice storms in New London could be expected to cause damage ranging from a few thousand dollars to one billion dollars, depending on the storm's severity.

Wildfire

The risk of fire is difficult to predict based on location. Forest fires are more likely to occur during drought years. In addition, areas and structures that are surrounded by dry vegetation that has not been suitably cleared are at high risk. Fire danger is generally

universal, however, and can occur practically at any time. Dollar damage would depend on the extent of the fire and the number and type of buildings burned. The cost to control a forest fire is roughly \$1,000 per acre for labor and materials. There are 30 buildings in New London most vulnerable to wildfire. The assessed value of these structures is \$5,003,600.

Earthquake

Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and precipitate landslide and flash flood events. Four earthquakes in NH from 1924-1989 had a magnitude of 4.2 or more. Two of these occurred in Ossipee, one west of Laconia, and one near the Quebec border. If an earthquake were to impact New London, underground lines would be vulnerable. Additionally, buildings that are not built to a high seismic design level would be susceptible to structural damage. This would include Town Hall, which is a brick building (\$816,400), and brick buildings on the Colby-Sawyer College campus (total value not determined). Finally, Elkins Dam would be vulnerable to a sizable earthquake event.

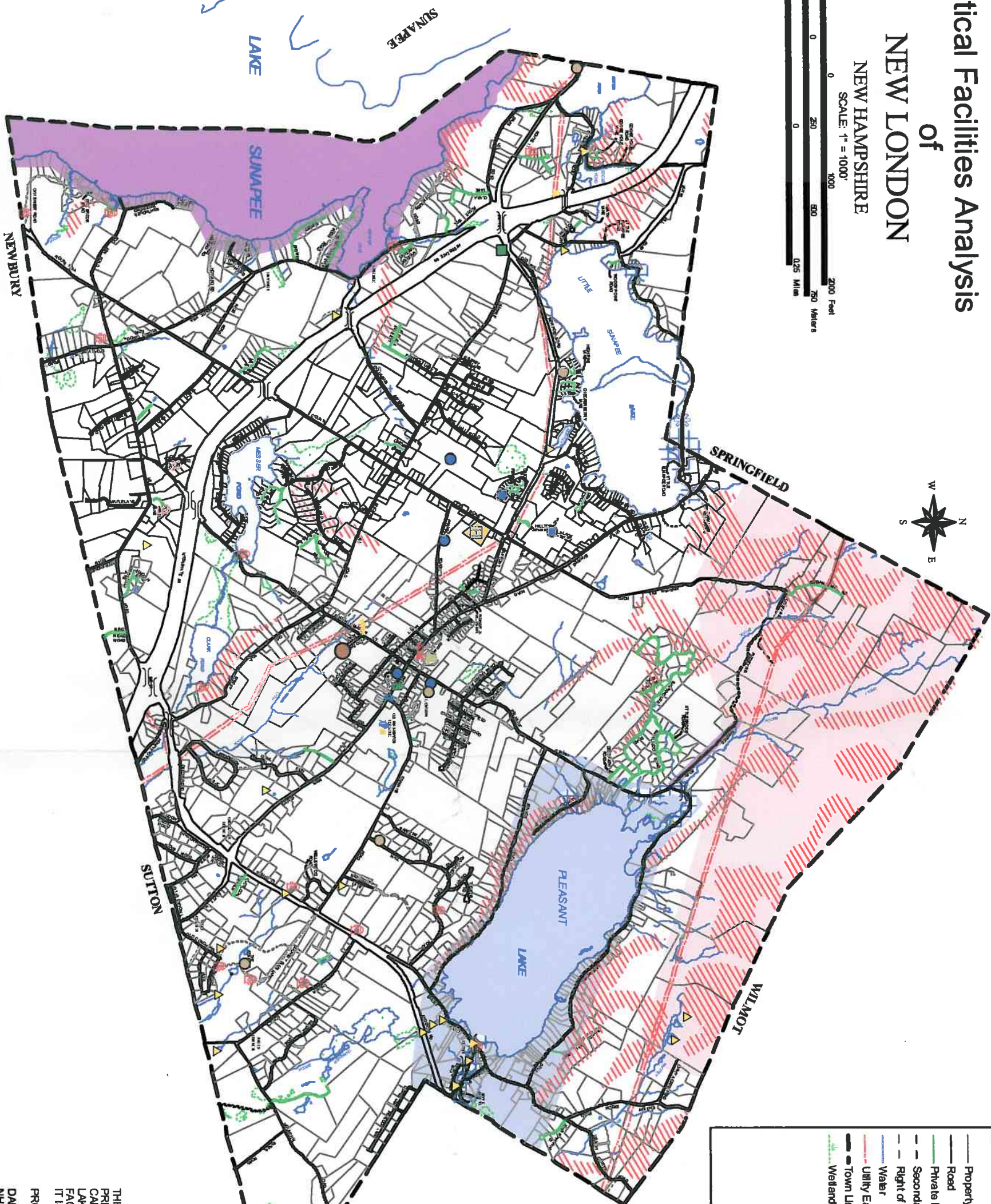
Landslide

In the past, landslide events have not caused damage to structures in New London, so no estimate was made for this type of event.

Critical Facilities Analysis Map

Critical Facilities Analysis of NEW LONDON

NEW HAMPSHIRE
SCALE: 1" = 1000'



LEGEND		
Property Line	Critical Facilities	Bridges
Road	New London Police Department	Dams
Private Road	and CSC Campus Safety	No or Low
Secondary Road	Elderly Housing	Hazard Potential
Right of Way	Elementary School/	Significant
Water	Middle School	Hazard Potential
Utility Easement	Fire Dept	
Town Line	Highway Dept	Hazards
Wetland	New London Hospital	Area EXCLUDED from
	Pump Station or Pump House	Ice Storm Damage
	Sewer Treatment Plant	Hazardous Materials
	Town Hall	Wildfire
	Transfer Station	High Winds
	Water Dept	Flooding Potential
	Hydrant	

NOTES

THIS MAP IS BASED ON THE TOWN OF NEW LONDON PROPERTY MAPS PREPARED IN 1975 BY WITMAN & HOWARD INC. DIGITIZED IN 1998 BY CARTOGRAPHIC ASSOCIATES INC. IT HAS BEEN EDITED BY UPPER VALLEY LAKE SUNAPEE REGIONAL PLANNING COMMISSION TO ILLUSTRATE CRITICAL FACILITIES AND HAZARDS TO THE TOWN OF NEW LONDON. IT IS INTENDED FOR REFERENCE AND PLANNING PURPOSES ONLY.

PROPERTY LINES CURRENT TO APRIL 1, 2004

DAMS FROM THE NHDES WATER DIVISION, DAM BUREAU, DISTRIBUTED BY NHDES, DECEMBER 2004.

BRIDGE LOCATIONS PROVIDED BY NHDOT, BUREAU OF TRANSPORTATION PLANNING, 2001.

CRITICAL FACILITIES AND HAZARDS WERE IDENTIFIED BY THE TOWN OF NEW LONDON AND DIGITIZED BY UVALSPC, DECEMBER 2005.

SECTION VI: EXISTING MITIGATION STRATEGIES

The next step involves identifying existing mitigation strategies for the hazards likely to affect the Town and evaluating their effectiveness. The following is a list of current policies, regulations and programs in the Town of New London that protect people and property from natural and man-made hazards.

A. Flooding

- National Flood Insurance Program
- Conservation Commission/Fund
- Shoreland Protection Act
- Dam EAPs
- Routine culvert maintenance
- Routine bridge maintenance (State) every three years

B. Wind

- Tree Warden
- Forest Management Plan for Phillips Preserve
- Tree City USA - tree maintenance plan for all Town trees

C. Winter Weather

- Town Highway & Winter Operations

D. Wildfire

- Fire Department
- Tree Warden
- Occasional bans on fireworks
- Pick-up truck and trailer for wildland fires

E. Seismic

- Statewide International Building Code

F. Hazardous Materials

- HazMat Plan in Emergency Operations Plan
- Midwestern Regional HazMat Team (mutual aid) beginning soon; currently rely on Lakes Region

G. Drought

- Water use restrictions

H. Multiple Hazards

- Emergency Operations Plan
- Town Plan
- Zoning Ordinance: wetlands, streams, shoreland overlay, steep slopes, etc.
- Capital Improvement Program
- Red Cross Emergency Shelter (Elementary School)
- Mutual Aid – Fire
- Mutual Aid – Police
- Mutual Aid – Highway
- Town Resource List (List of contractors, etc.)

Summary of Recommended Improvements

The New London Hazard Mitigation Team recommended improvements to existing programs as follows:

- Develop forest management plans for all Town forests
- Consider adopting International Building Code (IBC), especially for the electrical inspection for structural fires, and
- Develop an evacuation plan along I-89 (modeling for wind drift).

SECTION VII: NEWLY IDENTIFIED MITIGATION STRATEGIES

A. POTENTIAL MITIGATION STRATEGIES

The New London Emergency Management Committee brainstormed potential mitigation actions at a meeting on October 11, 2005. The new proposed measures are organized by the type(s) of hazard event that the mitigation action is expected to mitigate.

Multiple Hazards

- Determine the cost to underground utilities on Main Street (*Wind, winter storms*)
- Develop forest management plans for all Town forests (*Wind, fire, winter storms*)
- Adopt International Building Code (Seismic, wind, fire)
- Develop an educational outreach program to educate seasonal and year-round residents about the Town's vulnerability to hazards and how to prepare for them.

Flooding

- Find funding to map the stormwater infrastructure system.

Wind

- Develop educational materials for seasonal residents about the necessity of having spare water and spare gas for generators, to prepare for wind-related events.

Winter Weather

- Develop a public education plan to raise awareness about ice and storm event preparedness and response.
- Adopt a Highway Winter Maintenance Plan.
- Prepare a stock public service announcement for WNTK to broadcast at outset of winter season, advising residents to buy generators and be prepared.

Wildfire

- Require a second egress in "sensitive areas" for any new proposed developments as part of subdivision regulations.

Hazardous Materials

- Develop a wind modeling and evacuation plan for the properties near I-89 that are vulnerable to an airborne hazardous materials incident on I-89.
- Develop a drainage map for the neighborhood off I-89 to prepare for liquid hazardous materials incidents.
- Develop a list of needs for responding to liquid spill containment, and pursue state and federal funding to purchase these needs.

B. SUMMARY OF CRITICAL EVALUATION

The New London Hazard Mitigation Team reviewed each of the newly identified mitigation strategies using the following factors:

- Does it reduce disaster damage?
- Does it contribute to community objectives?
- Does it meet existing regulations?
- Can it be quickly implemented?
- Is it socially acceptable?
- Is it technically feasible?
- Is it administratively possible?
- Does the action offer reasonable benefits compared to cost of implementation?

The New London Hazard Mitigation Team assigned the following scores to each strategy for its effectiveness related to the critical evaluation factors listed above, and actions had the following scores, with the highest scores suggesting the highest priority. The highest possible total score is 24.

Project	Score	Additional Cost/Benefit Consideration	Mitigate Existing or New Built Environment, or Both?
Create a culvert damming kit to contain hazardous materials spills	24	Benefit far outweighs minimal cost of materials	Both
Develop an education and outreach campaign, including website information, mailings, and radio announcements	23	Benefits greatly outweigh minimal costs	Both – will reach new and prospective residents and businesses too
Develop a radio public service announcement message to educate residents about potential hazards	23	Benefits greatly outweigh staff time needed to develop PSA	Both, indirectly
Develop a wind modeling and evacuation plan for area off I-89	23	Some costs for software but benefits outweigh cost	Both
Complete and adopt Winter Maintenance Plan	22	No cost involved	Both, indirectly
Map stormwater drainage infrastructure	21	Will involve cost and time, but will reach many community objectives	Both
Adopt International Building Code	18	None	Both
Develop forest management plans for all Town forests	18	None	Both, for properties adjacent to forests
Determine the cost of undergrounding of utilities on Main Street	15	Need to do further cost/benefit analysis; costly project	Both
Require 2 nd egress for any new developments in hazard-sensitive areas	12	Needs more discussion and investigation	New

SECTION VIII: PRIORITIZED IMPLEMENTATION SCHEDULE

The New London Emergency Management Committee created the following action plan for implementation of priority mitigation strategies:

Mitigation Action	Who (Leadership)	When (Deadline)	Cost/Funding Source
Create a culvert damming kit to contain hazardous materials spills	Highway and Fire Depts.	By 2007	Cost of materials only/Town Funds
Develop an education and outreach campaign, including website information, mailings, and radio announcements	EMD	Ongoing	Staff time; advertising and mailing costs ~ \$1,000/year/Town Funds
Develop a radio public service announcement message to educate residents about potential hazards	EMD	By 2006	Staff time
Develop a wind modeling and evacuation plan for area off I-89	Fire Dept.	By 2008	Estimated \$2,000/NH BEM
Complete and adopt Winter Maintenance Plan	Road Agent & Town Administrator	By 2006	No costs
Map stormwater drainage infrastructure	Road Agent and EMD	Investigate costs by 2007; Implement by 2008	Estimated \$5,000 - UVLSRPC
Adopt International Building Code	Zoning Administrator and Fire Dept.	By 2007	No cost
Develop forest management plans for all Town forests	Conservation Commission	Ongoing	Estimated \$5,000 per plan/Town Funds
Determine the cost undergrounding of utilities on Main Street	EMD, with Main Street Committee	Complete investigation by March 2006	Under \$5,000 to investigate/Town Funds
Require 2 nd egress for any new developments in hazard-sensitive areas	Planner	By 2006	No cost

Include appropriate mitigation actions in the Town's Capital Improvement Plan	Town Administrator	Ongoing	No cost
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Future revisions of this plan will incorporate mitigation actions that protect the buildings and critical facilities identifies within this and future revisions of this plan.

SECTION IX: ADOPTION & IMPLEMENTATION OF THE PLAN

A good plan needs to provide for periodic monitoring and evaluation of its successes and challenges, and to allow for updates of the Plan where necessary. In order to track progress and update the Mitigation Strategies identified in the Plan, the Town of New London will revisit the Hazard Mitigation Plan *annually, or after a hazard event*. The New London Emergency Management Director will initiate this review and should consult with the Emergency Management Committee. Changes will be made to the plan to accommodate for projects that have failed, or that are not considered feasible after a review for their consistency with the evaluation criteria, the timeframe, the community's priorities, and funding resources. Priorities that were not ranked highest, but that were identified as potential mitigation strategies, will be reviewed as well during the monitoring and update of this plan, to determine feasibility for future implementation. During the annual review period, there will be a public hearing to receive public comment, and the Board of Selectmen will adopt the final Plan.

Implementation Through Existing Programs

The Plan will be adopted locally as an Annex to the recently updated Emergency Operations Plan (EOP), and it will be updated annually along with the EOP. In addition, the Board of Selectmen, during the Capital Improvement Process, will review and include any proposed structural projects outlined in this plan.

Continued Public Involvement

The public will continue to be involved in the hazard mitigation planning process. In future years, a public meeting will be held (separate from the adoption hearing) to inform and educate members of the public. This plan will be updated in full every five years. The NH Bureau of Emergency Management will be continuing funding for regional plans to communities within New Hampshire. This plan will be updated as part of the regional planning process within the next five years.

By the nature, natural hazards affect areas not defined by political boundaries. Additionally, response to these disasters often may rely on neighboring communities for assistance such as the mutual aid services. Because of this it is important to notify and work with adjacent communities. Notification of this plan and its meetings were publicly noticed and posted, although direct invitations were not made to neighboring municipalities of Springfield, Wilmot, Sutton and Sunapee. Future iterations and updates to this plan will incorporate invitations to those communities to comment and participate in the planning process.

Support for mitigation strategies is important in order to carry out implementation. Although this Hazard Mitigation Plan for the Town of New London was unable to interest additional parties, every effort will be made in the future to incorporate representation in future revisions of this plan. In order to ensure in the future that opportunity to participate in the planning process is given to other interested parties, the Town will send invitations to local businesses, educational institutions and non-profit organizations. Revisions of this plan shall incorporate press releases that will notice citizens, businesses and organizations of the

progress of the plan while also soliciting input that could strengthen the value of the plan. This process will enable more successful implementation actions.

Additionally, a press release will be distributed, and information will be posted on the Town website.

Copies of the HazMit Plan have been or will be sent to the following parties for review and comment:

- Nancy Erickson, New London Hospital
- Peter Berthiaume, Safety Officer, Colby-Sawyer College
- Emergency Management Directors, neighboring towns
- Nancy St. Laurent, Field Representative, NH Bureau of Emergency Management
- Richard Verville, NH Bureau of Emergency Management
- Don West, Principal, Kearsarge Regional Middle School
- Tom Brennan, Superintendent, Kearsarge Regional School District
- Water Precinct Commissioners
- Sewer Commissioners
- Board of Selectmen, New London

RESOURCES USED IN THE PREPARATION OF THIS PLAN

NH OEM's *State of New Hampshire Natural Hazards Mitigation Plan* (9/99)

Guide to Hazard Mitigation Planning for New Hampshire Communities, prepared for NH OEM by the Southwest Regional Planning Commission (October 2002)

FEMA's *Community Based Hazard Mitigation Planning: Lowering the Risks and Costs of Disasters* (8/98)

New London Emergency Operations Plan, 2005

Town of New London Master Plan, 1998

Town of Hanover, New Hampshire Hazard Mitigation Plan

www.nesec.org: *Website for Northeast States Emergency Consortium (NESEC)*

www.tornadoproject.com: *Website for The Tornado Project*

<http://www.crrel.usace.army.mil/>: *Cold Regions Research and Engineering Laboratory Website (CRREL)*

APPENDICES

Appendix A: Technical Resources

Appendix B: Technical and Financial Assistance

Appendix C: Matrix of Federal All-Hazards Grants

Appendix D: Meeting Documentation

Appendix E: Risk Assessment

Appendix F: Wildland/Urban Interface Map

Appendix G: Dam Breach Inundation Map

Appendix A:
Technical Resources

APPENDIX A:

TECHNICAL RESOURCES

1) Agencies

New Hampshire Bureau of Emergency Management	271-2231
Hazard Mitigation Section	271-2231
Federal Emergency Management Agency	(617) 223-4175
NH Regional Planning Commissions:	
Upper Valley Lake Sunapee Regional Planning Commission	448-1680
NH Executive Department:	
Governor's Office of Energy and Community Services	271-2611
New Hampshire Office of State Planning	271-2155
NH Department of Cultural Affairs:	271-2540
Division of Historical Resources	271-3483
NH Department of Environmental Services:	271-3503
Air Resources	271-1370
Waste Management	271-2900
Water Resources	271-3406
Water Supply and Pollution Control	271-3504
Rivers Management and Protection Program	271-1152
NH Office of Energy and Planning	271-2155
NH Municipal Association	224-7447
NH Fish and Game Department	271-3421
NH Department of Resources and Economic Development:	271-2411
Natural Heritage Inventory	271-3623
Division of Forests and Lands	271-2214
Division of Parks and Recreation	271-3255
NH Department of Transportation	271-3734
Northeast States Emergency Consortium, Inc. (NESEC).....	(781) 224-9876
US Department of Commerce:	
National Oceanic and Atmospheric Administration:	
National Weather Service; Gray, Maine	207-688-3216

US Department of the Interior:

US Fish and Wildlife Service 225-1411
US Geological Survey 225-4681
US Army Corps of Engineers.....(978) 318-8087

US Department of Agriculture:

Natural Resource Conservation Service 868-7581

2) Mitigation Funding Resources

404 Hazard Mitigation Grant Program (HMGP)NH Bureau of Emergency Management
406 Public Assistance and Hazard MitigationNH Bureau of Emergency Management

Community Development Block Grant (CDBG).....NH BEM, NH OEP, also refer to RPC

Dam Safety Program NH Department of Environmental Services

Disaster Preparedness Improvement Grant (DPIG)NH Bureau of Emergency Management

Emergency Generators Program by NESEC[‡]NH Bureau of Emergency Management

Emergency Watershed Protection (EWP) ProgramUSDA, Natural Resources Conservation Service

Flood Mitigation Assistance Program (FMAP)NH Bureau of Emergency Management

Flood Plain Management Services (FPMS) US Army Corps of Engineers

Mitigation Assistance Planning (MAP)NH Bureau of Emergency Management

Mutual Aid for Public Works NH Municipal Association

National Flood Insurance Program (NFIP) [†]NH Office of Energy and Planning

Power of Prevention Grant by NESEC[‡]NH Bureau of Emergency Management

Project Impact.....NH Bureau of Emergency Management

Roadway Repair & Maintenance Program(s)NH Department of Transportation

Section 14 Emergency Stream Bank Erosion & Shoreline Protection.....US
Army Corps of Engineers

Section 103 Beach Erosion.....US Army Corps of Engineers

Section 205 Flood Damage Reduction.....US Army Corps of Engineers

Section 208 Snagging and Clearing	US Army Corps of Engineers
Shoreline Protection Program.....	NH Department of Environmental Services
Various Forest and Lands Program(s).....	NH Department of Resources and Economic Development
Wetlands Programs.....	NH Department of Environmental Services

‡NESEC – Northeast States Emergency Consortium, Inc. is a 501(c) (3), not-for-profit natural disaster, multi-hazard mitigation and emergency management organization located in Wakefield, Massachusetts. Please, contact NH OEM for more information.

† Note regarding **National Flood Insurance Program (NFIP)** and **Community Rating System (CRS)**:

The National Flood Insurance Program has developed suggested floodplain management activities for those communities who wish to more thoroughly manage or reduce the impact of flooding in their jurisdiction. Through use of a rating system (CRS rating), a community's floodplain management efforts can be evaluated for effectiveness. The rating, which indicates an above average floodplain management effort, is then factored into the premium cost for flood insurance policies sold in the community. The higher the rating achieved in that community, the greater the reduction in flood insurance premium costs for local property owners. The NH Office of State Planning can provide additional information regarding participation in the NFIP-CRS Program.

3) Websites

Sponsor	Internet Address	Summary of Contents
Natural Hazards Research Center, U. of Colorado	http://www.colorado.edu/litbase/hazards/	Searchable database of references and links to many disaster-related websites.
Atlantic Hurricane Tracking Data by Year	http://wxp.eas.purdue.edu/hurricane	Hurricane track maps for each year, 1886 – 1996
National Emergency Management Association	http://nemaweb.org	Association of state emergency management directors; list of mitigation projects.
NASA – Goddard Space Flight Center “Disaster Finder:	http://www.gsfc.nasa.gov/ndrd/disaster/	Searchable database of sites that encompass a wide range of natural disasters.
NASA Natural Disaster Reference Database	http://ltpwww.gsfc.nasa.gov/ndrd/main/html	Searchable database of worldwide natural disasters.
U.S. State & Local Gateway	http://www.statelocal.gov/	General information through the federal-state partnership.
National Weather Service	http://nws.noaa.gov/	Central page for National Weather Warnings, updated every 60 seconds.
USGS Real Time Hydrologic Data	http://h20.usgs.gov/public/realtime.html	Provisional hydrological data

Dartmouth Flood Observatory	http://www.dartmouth.edu/artsci/geog/floods/	Observations of flooding situations.
FEMA, National Flood Insurance Program, Community Status Book	http://www.fema.gov/fema/csb.htm	Searchable site for access of Community Status Books
Florida State University Atlantic Hurricane Site	http://www.met.fsu.edu/explores/tropical.html	Tracking and NWS warnings for Atlantic Hurricanes and other links
National Lightning Safety Institute	http://lightningsafety.com/	Information and listing of appropriate publications regarding lightning safety.
NASA Optical Transient Detector	http://www.ghcc.msfc.nasa.gov/otd.html	Space-based sensor of lightning strikes
LLNL Geologic & Atmospheric Hazards	http://wwwep.es.llnl.gov/wwwep/ghp.html	General hazard information developed for the Dept. of Energy.
The Tornado Project Online	http://www.tornadoroject.com/	Information on tornadoes, including details of recent impacts.
National Severe Storms Laboratory	http://www.nssl.uoknor.edu/	Information about and tracking of severe storms.
Independent Insurance Agents of America IIAA Natural Disaster Risk Map	http://www.iaa.iix.com/ndcmap.htm	A multi-disaster risk map.
Earth Satellite Corporation	http://www.earthsat.com/	Flood risk maps searchable by state.
USDA Forest Service Web	http://www.fs.fed.us/land	Information on forest fires and land management.

APPENDIX B:

TECHNICAL AND FINANCIAL ASSISTANCE FOR HAZARD MITIGATION *Note – Communities must have an approved Hazard Mitigation Plan to be eligible for HMGP and PDM grants.*

◆ HAZARD MITIGATION GRANT PROGRAM - "Section 404 Mitigation"

The Hazard Mitigation Grant Program (HMGP) in New Hampshire is administered in accordance with the 404 HMGP Administration Plan which was derived under the authority of Section 404 of the Stafford Act in accordance with Subpart N. of 44 CFR.

The program receives its funding pursuant to a Notice of Interest submitted by the Governor's Authorized Representative (or GAR, i.e. the Director of NHOEM) to the FEMA Regional Director within 60 days of the date of a Presidentially Declared Disaster. The amount of funding that may be awarded to the State/Grantee under the HMGP may not exceed 15% of (over and above) the overall funds as are awarded to the State pursuant to the Disaster Recovery programs as are listed in 44 CFR Subpart N. Section 206.431 (d) (inclusive of all Public Assistance, Individual Assistance, etc.). Within 15 days of the Disaster Declaration, an Inter-Agency Hazard Mitigation Team is convened consisting of members of various Federal, State, County, Local and Private Agencies with an interest in Disaster Recovery and Mitigation. From this meeting, a Report is produced which evaluates the event and stipulates the State's desired Mitigation initiatives.

Upon the GAR's receipt of the notice of an award of funding by the Regional Director, the State Hazard Mitigation Officer (SHMO) publishes a Notice of Interest (NOI) to all NH communities and State Agencies announcing the availability of funding and solicits applications for grants. The 404 Administrative Plan calls for a State Hazard Mitigation Team to review all applications. The Team is comprised of individuals from various State Agencies.

Eligible Subgrantees include:

- State and Local governments,
- Certain Not for Profit Corporations
- Indian Tribes or authorized tribal organizations
- Alaskan corporations not privately owned.

Minimum Project Criteria

- Must conform with the State's "409" Plan
- Have a beneficial impact on the Declared area
- Must conform with:
 - NFIP Floodplain Regulations
 - Wetlands Protection Regulations
 - Environmental Regulations
 - Historical Protection Regulations
- Be cost effective and substantially reduce the risk of future damage
- Not cost more than the anticipated value of the reduction of both direct damages and subsequent negative impacts to the area if future disasters were to occur i.e., min 1:1 benefit/cost ratio
- Both costs and benefits are to be computed on a "net present value" basis
- Has been determined to be the most practical, effective and environmentally sound alternative after a consideration of a range of options
- Contributes to a long-term solution to the problem it is intended to address
- Considers long-term changes and

Eligible Projects may be of any nature that will result in the protection to public or private property and include:

- Structural hazard control or protection projects
- Construction activities that will result in protection from hazards
- Retrofitting of facilities
- Certain property acquisitions or relocations
- Development of State and local mitigation standards
- Development of comprehensive hazard mitigation programs with implementation as an essential component
- Development or improvement of warning systems

FLOOD MITIGATION ASSISTANCE (FMA) PROGRAM

New Hampshire has been a participant in the Flood Mitigation Assistance Program (FMA or FMAP) since 1996/97. In order to be eligible, a community must be a participant in the National Flood Insurance Program.

In 1997, the State was awarded funds to assist communities with Flood Mitigation Planning and Projects. A Planning Grant from the 1996/97 fund was awarded to the City of Keene in 1998. In preparation for the development of the Flood Mitigation Plan, the Planning Department of the City of Keene created a digital data base of its floodplain including the digitizing of its tax assessing maps as well as its Special Flood Hazard Areas in GIS layers. The Plan Draft was submitted to FEMA for review and approval in March of 2000. The Plan includes a detailed inventory of projects and a "model" project prioritization approach.

Flood Mitigation Assistance Program

- NFIP Funded by a % of Policy Premiums
- Planning Grants
- Technical Assistance Grants to States (10% of Project Grant)
- Project Grants to communities
- Communities must have FEMA approved Flood Mitigation Plan to receive Project Funds

In 1998, the FMAP Planning Grant was awarded to the Town of Salem. Given the complexity of the issues in the Spicket River watershed, the Town of Salem subcontracted a substantial portion of the development of its Flood Mitigation Planning to SFC Engineering Partnership of Manchester, NH, a private engineering firm. Salem submitted a Plan and proposed projects to the State and FEMA in May of 1999 which were approved by FEMA. This made Salem the first community in NH to have a FEMA/NFIP approved Flood Mitigation Plan.

Eligible Projects

(44 CFR Part 78)

- Elevation of NFIP insured residential structures
- Elevation and dry-proofing of NFIP insured non-residential structures
- Acquisition of NFIP insured structures and underlying real property
- Relocation of NFIP insured structures from acquired or restricted real property to sites not prone to flood hazards
- Demolition of NFIP insured structures on acquired or restricted real property
- Other activities that bring NFIP insured structures into compliance with statutorily authorized floodplain management requirements
- Beach nourishment activities that include planting native dune vegetation and/or the installation of sand-fencing.
- Minor physical mitigation projects that do not duplicate the flood prevention activities of other Federal agencies and lessen the frequency of flooding or severity of flooding and decrease the predicted flood damages in localized flood problem areas. These include: modification of existing culverts and bridges, installation or modification of flood gates, stabilization of stream banks, and creation of small debris or flood/storm water retention basins in small watersheds (not dikes, levees, seawalls etc.)

◆ PRE-DISASTER MITIGATION PROGRAM (PDM)

FEMA has long been promoting disaster resistant construction and retrofit of facilities that are vulnerable to hazards in order to reduce potential damages due to a hazard event. The goal is to reduce loss of life, human suffering, economic disruption, and disaster costs to the Federal taxpayer. This has been, and continues to be accomplished, through a variety of programs and grant funds.

Although the overall intent is to reduce vulnerability before the next disaster threatens, the bulk of the funding for such projects actually has been delivered through a "post-disaster" funding mechanism, the Hazard Mitigation Grant Program (HMGP). This program has successfully addressed the many hazard mitigation opportunities uniquely available following a disaster. However, funding of projects "pre-disaster" has been more difficult,

particularly in states that have not experienced major disasters in the past decade. In an effort to address "pre-disaster mitigation", FEMA piloted a program from 1997-2001 entitled "Project Impact" that was community based and multi-hazard oriented.

Through the Disaster Mitigation Act of 2000, Congress approved creation of a national Predisaster Hazard Mitigation program to provide a funding mechanism that is not dependent on a Presidential disaster declaration. For FY2002, \$25 million has been appropriated for the new grant program entitled the ***Pre-Disaster Mitigation Program (PDM)***. This new program builds on the experience gained from Project Impact, the HMGP, and other mitigation initiatives.

Here are the high points of the FY 2002 PDM program:

The program will be administered by each State, with a base allocation of \$250,000, and additional funds provided via a population formula.

Eligible projects include:

- State and local hazard mitigation planning
- Technical assistance [e.g. risk assessments, project development]
- Mitigation Projects
 - Acquisition or relocation of vulnerable properties
 - Hazard retrofits
 - Minor structural hazard control or protection projects
- Community outreach and education [up to 10% of state allocation]

The emphasis for FY2002 will be on mitigation planning, to help localities meet the new planning requirements of the Disaster Mitigation Act of 2000.

Each state establishes grant selection criteria and priorities based on:

- The State Hazard Mitigation Plan
- The degree of commitment of the community to hazard mitigation
- The cost effectiveness of the proposed project
- The type and degree of hazard being addressed
- For project grants, "good standing" of the community in the National Flood Insurance Program

The funding is 75% Federal share, 25% non-Federal, except as noted below. The grant performance periods will be 18 months for planning grants, and 24 months for mitigation project grants. The PDM program is available to regional agencies and Indian tribes. Special accommodation will be made for "small and impoverished communities", who will be eligible for 90% Federal share, 10% non-Federal.

◆ DISASTER PREPAREDNESS IMPROVEMENT GRANT (DPIG)

FEMA and the State co-sponsor the DPIG Program, which supports the development and updating of disaster assistance plans and capabilities and promotes educational opportunities with respect to preparedness and mitigation. Authority: See Subchapter E. of 44 CFR.

Past DPIG initiatives include:

- Support of the position of Protection Planner/Hazard Mitigation Officer
- Installation of river gauges
- Support of the NH State Environthon School Program
- Coordinate the Voluntary Organizations Active in Disasters (VOAD) Program (See Resource Profile Annex) NHOEM via the DPIG has sponsored annual meetings with training workshops
- Sponsoring Dam Safety Training initiatives and workshops
- Production and distribution of a handbook for small embankment dam owners
- Inventory of the State's Dams
- Review of Dam Plans
- Sponsored extensive statewide, two day workshops for Granite State Incident Stress Debriefing Teams and funded educational materials
- Community visits and production of informational materials
- Assist with Plan Annex update for local Haz Mat planning.
- Funding workshops for NH Road Agents in cooperation with the T2 program of the Technology Transfer Center at the University of New Hampshire

Present DPIG funded Hazard Mitigation initiatives

- Support the position of Protection Planner/Hazard Mitigation Officer
- Continued support of the Environthon Program
- Development of this Plan
- Providing Technical Assistance to State and local officials
- Development of Emergency Operations Plans (EOPs) for Significant and High Hazard dams

Disaster Preparedness Improvement Grant

- *Evaluate natural hazards on a continuing basis and develop programs and actions required to mitigate such hazards*
- *Provide Technical Assistance*
- *Grants to States of up to \$50,000 annually*
- *(50% State match - cash or in kind)*

Eligible Projects Include:

- Evaluations of Natural Hazards
- Hazard Mitigation activities (i.e. Plan/ policy/program/strategy development
- Plan updates
- Handbooks: publication & distribution
- Creating exercise materials
- Developing Standard Operating Procedures
- Training state employees
- Report of formal analysis of State enabling legislation and authorities
- Update inventory of State/local Critical Facilities
- Develop a tracking system of critical actions to be taken post-event
- Creating Damage Assessment Plans and defining procedures
- Developing Plans for procedures when no Federal Aid is forthcoming
- Creating Plans for Search and Rescue Operations
- Developing Disaster accounting procedures

This list is not exhaustive

Future DPIG funded Hazard Mitigation initiatives

- Continued Support the position of Protection Planner/Hazard Mitigation Officer
- Continued support of the Environthon Program
- Update and maintenance of this Plan
- Provide Technical Assistance to State and local officials
- Support of other planning, technical assistance and training as indicated
- Digitization of EOPs for the State's "Significant" and "High Hazard" dams to provide rapid access to information in Emergency situations and to facilitate Plan maintenance.

COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

These Federal funds are provided through the U.S. Department of Housing and Urban Development (HUD) and are administered by the CDBG Program of the New Hampshire Office of State Planning.

Some CDBG disaster related funding has been transferred to FEMA recently and the SHMO is scheduled to receive guidance as to which specific funds and, new program management criteria.

The specific CDBG funds designated for hazard mitigation purposes are made available to address "unmet needs" pursuant to a given Disaster Declaration to States which request them. For these funds, project selection guidance is provided by NHOEM and NHOSP administers the grant.

Pursuant to Declaration DR-1144-NH, \$557,000.00 was made available to the State and pursuant to DR-1199-NH, the grant award is targeted at \$1,500,000.00.

In October of 1998, HUD announced the program guidelines for the expenditure of the DR-1144-NH related funding and the community of Salem applied for, and has received preliminary approval for funding to acquire a 19 unit trailer park in the Floodplain.

Community Development Block Grant

- *U.S. Dept. of Housing and Urban Development*
- *Funds for a Declared Disaster's "Unmet Needs"*
- *Projects must meet one of three National Objectives*
- *Provide a direct benefit to low and moderate income persons or households*
- *Prevent or eliminate slums and blight*
- *Eliminate conditions which seriously and immediately threaten the public health and welfare*

Additional conditions with respect to the expenditure of these funds includes the provision that at least 50% of the grant award must be expended in a manner which benefits individuals who earn 80% or less than the area's (county's) median income.

Mitigation Programs of Other NH State Agencies

The following agencies of the State of New Hampshire are directly or indirectly involved in activities that include Hazard Mitigation Planning and/or program implementation.

NH Department of Transportation Bureau of Repair and Maintenance

NH OSP/NFIP Program

NH OSP Coastal Program

NH DRED Division of Forests and Lands

NH DES Water Resources Division – Dam Safety Program

NH DES Wetlands Program

NH DES Shoreline Protection Program

Appendix C:
Matrix of Federal All-Hazards Grants

Appendix C: Matrix of Federal All-Hazards Grants

This matrix provides information about key all-hazards grant programs from the Departments of Homeland Security, Justice, Transportation, Health and Human Services, and Education under which state, local, and tribal governments, first responders, and the public are eligible to receive preparedness, response, recovery, mitigation, and prevention assistance. It lists the purpose of the program, amount appropriated for this program in FY 2002 and 2003, and the website where additional information can be found.¹

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
Preparedness					Programs to prepare the Nation to address the consequences of natural and human-made disasters and emergencies.	
Department of Homeland Security	Border and Transportation Security Directorate	State Homeland Security Grant Program www.ojp.usdoj.gov	See DOJ State Domestic Preparedness Grant Program	\$566.3 million \$39.7 M Planning \$29.8 M Training \$99.3 M Exercises \$397.4 M Equipment	To provide for the purchase of specialized equipment to enhance the capability of state and local agencies to prevent and respond to incidents of terrorism involving the use of chemical, biological, radiological, nuclear or explosive (CBRNE) weapons; for the protection of critical infrastructure and prevention of terrorist incidents; for costs related to the design, development, conduct and evaluation of CBRNE exercises; for costs related to the design, development and conduct of a state CBRNE Training Program; and for costs associated with updating and implementing each state's Homeland Security Strategy.	State and local governments; first responders
	Emergency Preparedness and Response Directorate	Emergency Management Performance Grants www.fema.gov	\$134 million	\$165 million	To provide basic assistance to sustain the nation's emergency management system, build state and local emergency management capability, and serve as the foundation for first responder activities.	States with pass through to local emergency management organizations

¹ FY03 funding information for some grant programs and cooperative agreements are not yet available.

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
	Emergency Preparedness and Response Directorate	Assistance to Firefighters Grant Program www.usfa.fema.gov/grants	\$360 million	\$750 million	To provide direct assistance to local fire departments in order to support basic levels of capability to protect the health and safety of the public and firefighting personnel against fire and fire-related hazards, and to provide assistance for fire prevention programs	Local Fire Departments
	Emergency Preparedness and Response Directorate	State and Local Emergency Operations Planning Grants www.fema.gov	\$100 million	\$0	To provide funding assistance to States and local governments to update their all-hazards Emergency Operations Plans, with an emphasis making sure WMD hazards are covered in the plans.	States with a pass through to local governments
	Emergency Preparedness and Response Directorate	State and Local Emergency Operation Centers (EOCs) www.fema.gov	\$56 million	\$25 million	To address the most immediate EOC needs nationwide to build state and local capabilities to respond to all-hazards, including acts of terrorism.	States; local governments may be sub-grantees of the State
	Emergency Preparedness and Response Directorate	Citizen Corps www.citizencorps.gov	\$4 million	\$0	To support the formation of state and local Citizen Corps Councils to help drive local citizen participation by coordinating Citizen Corps programs, developing community action plans, assessing possible threats and identifying local resources to make communities safer, stronger, and better prepared to respond to the threats of terrorism, crime, public health issues, and disasters of all kinds.	States with a pass through to local governments
	Emergency Preparedness and Response Directorate	Community Emergency Response Teams www.fema.gov	\$17 million	\$18.8 million	To train people in neighborhoods, the workplace, and schools in basic disaster response skills, such as fire suppression, urban search and rescue, and medical operations, and helps them take a more active role in emergency preparedness.	States with pass through to local jurisdictions
	Emergency Preparedness and Response Directorate	National Fire Academy Training Grants www.fema.gov	\$1.2 million	\$1.2 million	To provide financial assistance to State Fire Training Systems for the delivery of a variety of National Fire Academy courses/programs.	State fire training organizations

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
	Emergency Preparedness and Response Directorate	Emergency Management Institute Training Assistance www.fema.gov	\$1.4 million	\$1.4	To defray travel and per diem expenses of State, local and tribal emergency management personnel who attend training courses conducted by the Emergency Management Institute, at the Emmitsburg, Maryland facility; Bluemont, Virginia facility; and selected off-site locations. Its purpose is to improve emergency management practices among State, local and tribal government managers, in response to emergencies and disasters. Programs embody the Comprehensive Emergency Management System by unifying the elements of management common to all emergencies: planning, preparedness, mitigation, response, and recovery.	State, local, and tribal emergency managers
	Emergency Preparedness and Response Directorate	Hazardous Materials Assistance Program (CERCLA Implementation)	\$330,000	200,000	Provide technical and financial assistance through the States to support State, local and tribal governments in oil and hazardous materials emergency planning and exercising. To support the Comprehensive Hazardous Materials (HAZMAT) Emergency Response – Capability Assessment Program (CHER-CAP) activities.	State, local, and tribal governments, state emergency response committees, local emergency planning commissions
	Emergency Preparedness and Response Directorate	Interoperable Communications Equipment Grant	\$0	\$25 million	To facilitate communications interoperability among public safety emergency responders at the state and local level. (This funding is being coordinated with funding provides through COPS.)	N/A

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
Department of Justice	Emergency Preparedness and Response Directorate	SARA Title III Training Program www.fema.gov	\$193,000	\$187,000	To make funding available to provide training in support of Tribal governments emergency planning, preparedness, mitigation, response, and recovery capabilities. These programs must provide special emphasis on emergencies associated with hazardous chemicals.	Indian tribal governments
	Emergency Preparedness and Response Directorate	Chemical Stockpile Emergency Preparedness Program www.fema.gov	\$64.8 million	\$72.1 million	A cooperative agreement to enhance emergency preparedness capabilities of the States and local communities at each of the eight chemical agent stockpile storage facilities. The purpose of the program is to assist States and local communities in efforts to improve their capacity to plan for and respond to accidents associated with the storage of chemical warfare materials.	State and local governments and the general public in the vicinity of the eight chemical agent stockpile storage facilities.
	Emergency Preparedness and Response Directorate	Metropolitan Medical Response System www.mmrs.hhs.gov	See HHS MMRS Grant	\$50 million	To provide contractual funding to the 122 largest metropolitan jurisdictions to sustain and enhance the integrated medical response plans to a WMD terrorist attack.	Local governments
	Office of Domestic Preparedness	State Domestic Preparedness Equipment Support Program www.usdoj.gov	\$315.7 million \$301.7 M Equipment \$14 M Exercises	See State Homeland Security Grant Program	Funding will be provided to enhance first responder capabilities, and to provide for equipment purchases and exercise planning activities for response to Weapons of Mass Destruction (WMD) domestic terrorist incidents.	State and local governments

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
	National Institutes of Justice	Domestic Anti-Terrorism Technology Development Program www.usdoj.gov/nij	\$47 million	N/A	To support the development of counter terrorism technologies, assist in the development of standards for those technologies, and work with state and local jurisdictions to identify particular areas of vulnerability to terrorist acts and be better prepared to respond if such acts occur.	States and local governments, nonprofit and for profit organizations, universities
	Office of Community Oriented Police Services (COPS)	COPS Interoperable Communications Technology Program www.cops.usdoj.gov	N/A	\$19.9 million	To facilitate communications interoperability public safety responders at the state and local level.	Tribal, State, and local law enforcement agencies
Department of Health and Human Services		Public Health and Social Services Emergency Fund www.hhs.gov	\$242.9 million	\$2.3 billion \$514 M Hospital Preparedness \$940 M Public Health Preparedness	To continue to prepare our nation's public health system and hospitals for possible mass casualty events, and to accelerate research into new treatments and diagnostic tools to cope with possible bioterrorism incidents.	Individuals, families, Federal, State, and local government agencies and emergency health care providers
	Health Resources and Services Administration	State Rural Hospital Flexibility Program www.ruralhealth.hrsa.gov	\$25 million	\$25 million	To help States work with rural communities and hospitals to develop and implement a rural health plan, designate critical access hospitals (CAHs), develop integrated networks of care, improve emergency medical services and improve quality, service and organizational performance.	States with at least one hospital in a non- metropolitan region

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
	Health Resources and Services Administration	EMS for Children www.hrsa.gov	\$18.9 million	\$19.5 million	To support demonstration projects for the expansion and improvement of emergency medical services for children who need treatment for trauma or critical care. It is expected that maximum distribution of projects among the States will be made and that priority will be given to projects targeted toward populations with special needs, including Native Americans, minorities, and the disabled.	State governments and schools of medicine
	National Institute of Health	Superfund Hazardous Substances Basic Research and Education www.nih.gov	\$25 million	\$48.9 million	To establish and support an innovative program of basic research and training consisting of multi-project, interdisciplinary efforts that may include each of the following: (1) Methods and technologies to detect hazardous substances in the environment; (2) advance techniques for the detection, assessment, and evaluation of the effects of hazardous substances on humans; (3) methods to assess the risks to human health presented by hazardous substances; and (4) and basic biological, chemical, and physical methods to reduce the amount and toxicity of hazardous substances.	Any public or private entity involved in the detection, assessment, evaluation, and treatment of hazardous substances; and State and local governments
		Metropolitan Medical Response System www.mmrs.hhs.gov	\$25 million	See EP&R MMRS Grant	To provide contractual funding to the 122 largest metropolitan jurisdictions to sustain and enhance the integrated medical response plans to a WMD terrorist attack.	Local governments
	Centers for Disease Control	Immunization Research, Demonstration, Public Information and Education www.cdc.gov	\$9 million	\$9 million	To assist States, political subdivisions of States, and other public and private nonprofit entities to conduct research, demonstrations, projects, and provide public information on vaccine-preventable diseases and conditions.	States and nonprofits organizations

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
	Centers for Disease Control	Surveillance of Hazardous Substance Emergency Events www.atsdr.cdc.gov	\$1.32 million	\$1.84 million	To assist State health departments in developing a State-based surveillance system for monitoring hazardous substance emergency events. This surveillance system will allow the State health department to better understand the public health impact of hazardous substance emergencies by developing, implementing, and evaluating a State-based surveillance system.	State, local, territorial, and tribal public health departments
	Centers for Disease Control	Human Health Studies, Applied Research and Development www.atsdr.cdc.gov	\$1.5 million	\$1.8 million	To solicit scientific proposals designed to answer public health questions arising from situations commonly encountered at hazardous waste sites. The objective of this research program is to fill gaps in knowledge regarding human health effects of hazardous substances identified during the conduct of ATSDR's health assessments, consultations, toxicological profiles, and health studies, including but not limited to those health conditions prioritized by ATSDR.	State health departments
Department of Education		School Emergency Response and Crisis Management Plan Discretionary Grant Program www.ed.gov/emergencyplan/	N/A	\$30 million	To provide school districts with funds to strengthen and improve current school crisis plans in preparation for emergencies including potential terrorist attacks.	School Districts
Department of Transportation	Research and Special Programs Administration	Hazardous Materials Emergency Preparedness Training and Planning Grants www.rspa.dot.gov	\$12.8 million	\$12.8 million	Increase state, local, territorial, and Native American tribal effectiveness to safely and efficiently handle HazMat accidents and incidents; enhance implementation of the Emergency Planning and Community Right-to-Know Act of 1986; and encourage a comprehensive approach to emergency planning and training by incorporating response to transportation standards.	States, local, territorial, tribal governments.

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
Response					Programs to coordinate Federal response efforts and to assist states, localities, and tribes in responding to disasters and emergencies.	
Department of Homeland Security	Emergency Preparedness and Response Directorate	Urban Search and Rescue www.fema.gov	\$32.4 million	\$60 million	To expand the capabilities of existing Urban Search and Rescue Task Forces.	28 existing US&R Task Forces
Recovery					Programs to provide assistance to States, localities, tribes, and the public to alleviate suffering and hardship resulting from Presidentially declared disasters and emergencies caused by all types of hazards.	
Department of Homeland Security	Emergency Preparedness and Response Directorate	Individual Assistance	\$256 million (as of 4/03 for disasters and emergencies declared in FY02; additional funding expected as assistance is provided; FY01=\$1.39 billion as of 4/03)	N/A	To provide assistance to individuals and families who have been affected by natural or human-made Presidentially declared disasters. Funding provided from the Disaster Relief Fund.	Individuals and Families

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
	Emergency Preparedness and Response Directorate	Public Assistance	\$519 million (as of 4/03 for disasters and emergencies declared in FY02; additional funding expected as assistance is provided; FY01=\$3.6 billion as of 4/03)	N/A	To provide assistance to states, localities, tribes, and certain non-profit organizations affected by natural or human-made Presidentially declared disasters. Funding provided from the Disaster Relief Fund	State, local and tribal governments; private non-profit organizations
	Emergency Preparedness and Response Directorate	Fire Management Assistance Grant Program	\$56 million (as of 4/03; for fires declared in FY02; additional funding is expected as assistance is provided)	N/A	Provide funds to States, local, and tribal governments for the mitigation, management, and control of wildland fires posing serious threats to improved property.	State, local and tribal governments
Small Business Administration	Office of Disaster Assistance	Disaster Loan Program www.sba.gov/disaster/			To offer financial assistance to those who are trying to rebuild their homes and businesses in the aftermath of a disaster.	Individuals, families, private sector
Department of Justice	Office for Victims of Crime	Antiterrorism and Emergency Assistance Program www.usdoj.gov	Based on Need of Applicant Community	Based on Need of Applicant Community	To provide assistance programs for victims of mass violence and terrorism occurring within and outside the United States and a compensation program for victims of international terrorism.	Public and private nonprofit victim assistance agencies
Mitigation					Programs to reduce or eliminate future risk to lives and property from disasters.	

Agency	Office/ Directorate	Program	Amount (FY 02)	Amount (FY 03)	Purpose	Funding Beneficiaries
Department of Homeland Security	Emergency Preparedness and Response Directorate	Hazard Mitigation Grant Program	\$16.5 million (as of 4/03 for disasters declared in FY02; additional funding expected as assistance is provided; FY01=\$319 million as of 4/03)	N/A	To provide assistance to states, localities, and tribes to fund projects that will reduce the loss of lives and property in future disasters. Funding is provides from the Disaster Relief Fund and administered by the states according to their own priorities.	State, local, and tribal governments
	Emergency Preparedness and Response Directorate	Pre-Disaster Mitigation Program	\$25 million	\$150 million	This program provides funding for mitigation activities before disaster strikes. In recent years it has provided assistance for mitigation planning. In FY03, Congress passes a competitive pre-disaster mitigation grant program that will include project funding.	State, local, and tribal governments
	Emergency Preparedness and Response Directorate	Map Modernization	\$11 million	\$33 million	This funding provides assistance to develop digital flood maps, support flood-mapping activities and expand the Cooperating Technical Partners Program to communities and regional entities.	State, local and tribal governments
Prevention					Programs to interdict potentially hazardous events from occurring	
Department of Health and Human Services	Centers for Disease Control	Immunization Grants www.cdc.gov	\$350 million (317 Grants) \$745 million (VFC Grants)	\$403 million (317 Grants) \$772.3 million (VFC Grants)	To assist States and communities in establishing and maintaining preventive health service programs to immunize individuals against vaccine-preventable diseases.	States

Appendix D:
Meeting Documentation

December 13, 2004

Jessie Levine
Town Administrator
P.O. Box 240
New London, NH 03257

Dear Ms. Levine:

Thank you for your interest in hazard mitigation planning. It is an investment that will enhance and strengthen the community's long-term stability and ability to prevent and respond to hazards. Developing a plan will also ensure compliance with the Disaster Mitigation Act of 2000, which states that NH communities *must* have a local hazard mitigation plan in place to continue to be eligible for post-disaster assistance and certain mitigation grants.

There are a variety of natural hazards - flooding, fire, ice-related storms - and not every community faces the same kinds of threats. There is no "one plan fits all," so each community develops a plan that fits the local needs. The advantages of preparing a Hazard Mitigation Plan are numerous, but of central interest to NH towns is that it allows towns to apply for various assistance programs. The benefits of having a Plan in place before a disaster strikes include:

- Potential for loss reduction in future events;
- Reduction of social, emotional, and economic disruption caused by disasters; and
- Assignment of responsibilities for the mitigation initiatives.

There is no "cost" to the Town other than staff time for meetings. Typically, the process involves about six monthly meetings, two hours per meeting. UVLSRPC planners offer assistance in meeting preparation, facilitation, and plan development. The Plan must then be approved by FEMA and adopted locally.

I look forward to meeting you this Friday the 17th.

Sincerely,

Victoria Boundy
Senior Planner

Encl: FEMA Project Review Form
Plan Example: Washington Hazard Mitigation Plan
Proposed Project Workplan

**Emergency Management Committee
Town of New London**

**AGENDA
Tuesday, June 21, 2005
2:00 - 3:30
New London Fire Station**

2:00	Introductions and overview of project
2:30	Determine meeting schedule and review workplan
3:00	Past/potential hazards in New London
3:30	Adjourn

Handouts (Attached):

- Overall Hazard Mitigation Goals of the State of New Hampshire
- Merrimack County Risk Analysis and Hazard History
- Draft Hazard Mitigation Work Plan

**Emergency Management Committee
Town of New London**

**AGENDA
Tuesday, July 19, 2005
2:00 – 3:30 p.m.
New London Fire Station**

- | | |
|------|---|
| 2:00 | Identify and map critical facilities |
| 2:30 | Assess community vulnerability and calculate potential losses |
| 3:30 | Adjourn |

**Emergency Management Committee
Town of New London**

**AGENDA
Tuesday, September 13, 2005
3:00 – 4:30 p.m.
Town Offices**

- | | |
|------|---|
| 3:00 | Review hazard history/potential losses |
| 3:30 | Brainstorm potential hazard mitigation projects |
| 4:30 | Adjourn |

**Emergency Management Committee
Town of New London**

**AGENDA
Tuesday, October 11, 2005
3:00 – 4:30 p.m.
Town Offices**

- | | |
|------|---|
| 3:00 | Review list of potential hazard mitigation projects |
| 3:30 | Evaluate hazard mitigation projects |
| 4:30 | Adjourn |

Appendix E:

Risk Assessment

Probability- The Committee members completed a risk assessment of all types of hazards identified in Chapter III. The process involved assigned Unlikely (1), Possible (2), Likely (3) to each hazard type for its potential of occurring based on the committee's knowledge of past historic information. The ratings were based on the probability that the occurrence may happen within the next ten years (3), between 10-25 years (2), or after 25-years (1). (An n/a score was given if there was insufficient evidence to make a decision). To ensure some balance with a more scientific measurement, the plan also identifies the probability of occurrence from the State Hazard Plan as shown below.

State Hazard Plan – *“By weighting both the building value and population, each county is assigned a Vulnerability Level, as seen in Table 4.2 on the next page. In addition you will find Table 4.1 which identifies the hazard risk (probability of occurring) by county. By evaluating the two tables you can compare each county's vulnerability with it's' risk to the 12 different hazards that occur in New Hampshire.”*

In summary, the counties of Hillsborough, Merrimack and Rockingham have a high vulnerability due to large population concentration and high value of state owned buildings as well as high risk of flooding, wildfire, tornadoes/downburst, and severe winter weather.”

Table 4.1 Hazard Risk by County											
<i>Flood</i>	<i>Dam Failure</i>	<i>Drought</i>	<i>Wildfire</i>	<i>Earth quake</i>	<i>Land slide</i>	<i>Radon</i>	<i>Tornado</i>	<i>Hurricane</i>	<i>Lightning</i>	<i>Sever Winter</i>	<i>Avalanche</i>
<i>H</i>	<i>L</i>	<i>M</i>	<i>H</i>	<i>M+</i>	<i>M</i>	<i>M</i>	<i>H</i>	<i>M</i>	<i>M</i>	<i>H</i>	<i>L</i>
Table 4.2 Hazard Risk Vulnerabilty by County											
<i>Hillsborough</i>	<i>Merrimack</i>	<i>Rockingham</i>	<i>Grafton</i>	<i>Stratford</i>	<i>Coos</i>	<i>Belknap</i>	<i>Cheshire</i>	<i>Sullivan</i>	<i>Carroll</i>		
<i>H</i>	<i>H</i>	<i>H</i>	<i>M</i>	<i>M</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>L</i>		

Vulnerability- The Committee members completed a risk assessment of all type of hazards identified in Chapter III. The process also involved assigning vulnerability based on the Committee's opinion of the extent of damage the hazard may cause based on past occurrences and current assessments of the Town. Great amount of damage and cost (3), moderate amount of damage and cost (2), and limited damage or costs (1).

The probabilities and vulnerabilities were then averaged with those that were determined by the State Hazard Plan.

The averages of each vulnerability and probability were multiplied to arrive at the overall risk the hazard has on the community.

Risk - An adjective description (High, Medium, or Low) of the overall threat posed by a hazard over the next 25 years.

HIGH: (1) There is strong potential for a disaster of major proportions during the next 25 years; or (2) history suggests the occurrence of multiple disasters of moderate proportions during the next 25 years. The threat is significant enough to warrant major program effort to prepare for, respond to, recover from,

and mitigate against this hazard. This hazard should be a major focus of the town's emergency management training and exercise program.

MEDIUM: There is moderate potential for a disaster of less than major proportions during the next 25 years. The threat is great enough to warrant modest effort to prepare for, respond to, recover from, and mitigate against this hazard. This hazard should be included in the town's emergency management training and exercise program.

LOW: There is little potential for a disaster during the next 25 years. The threat is such as to warrant no special effort to prepare for, respond to, recover from, or mitigate against this hazard. This hazard need not be specifically addressed in the town's emergency management training and exercise program except as generally dealt with during hazard awareness training.

Appendix F:
Wildland/Urban Interface Map

Town of New London
NH Wildland - Urban Interface Map

Townline

Property Line, Roads, Water

Property Line

Road

Private Road

Secondary Road

Water

Wildfire Risk Area

Interface

Intermix

Utility Easement and Wetlands

Utility Easement

Wetland

Water

Source Data:
Radeloff, V. C., R. B. Hammer, S. I Stewart, J. S. Fried, S. S. Holcomb,
and J. F. McKeefry. 2005. The Wildland Urban Interface in the United States.
Ecological Applications 15:799-805.

Base map features are based on the Town of New London property maps
prepared in 1975 by Witman & Howard, Inc. and digitized in 1996 by
Cartographic Associates, Inc.

Map created by Upper Valley Lake Sunapee Regional Planning Commission,
November 2007.

Appendix G:
Dam Breach Inundation Map

0.2 0 0.2 0.4 0.6 0.8 1 Mile

Map created by NH Dept. of Environmental Services, based upon draft Pleasant Lake Inundation Map submitted in 1993, and extended downstream in accordance with the results of the 1993 breach analysis by Stevens Engineering. Chase Pond Inundation Area based upon Map Map included in the Chase Pond EAP.

