Town of Newbury, New Hampshire Hazard Mitigation Plan

Town of Newbury Hazard Mitigation Committee

Colburn Farm Road - 2011

Upper Valley Lake Sunapee Regional Planning Commission

Update 2012

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I. INTRODUCTION

A. BACKGROUND

The New Hampshire Homeland Security & Emergency Management (NH HSEM) 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 human-made hazard events before they occur. The NH HSEM has provided funding to the Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC), to update local Hazard Mitigation Plans with several of its communities. UVLSRPC assisted the Town of Newbury in preparation of their first plan which was approved by FEMA on August 21, 2006. The UVLSRPC began updating the Hazard Mitigation Plan in November 2011. The *Newbury Hazard Mitigation Plan Update 2012* serves as a strategic planning tool for use by the Town of Newbury in its efforts to reduce future losses from natural and/or human-made hazard events before they occur.

The Newbury Hazard Mitigation Committee prepared the *Newbury Hazard Mitigation Plan Update 2012* with the assistance and professional services of the UVLSRPC under contract with the New Hampshire Homeland Security & Emergency Management operating under the guidance of the Federal Emergency Management Agency (FEMA). After a public meeting held in the Newbury Town Offices, the Newbury Board of Selectmen adopted the updated plan. A copy of the adoption can be found in Appendix E.

B. PURPOSE

The Newbury Hazard Mitigation Plan is a planning tool for use by the Town of Newbury in its efforts to reduce future losses from natural and/or human-made hazards. This plan does not constitute a section of the Town Master Plan, nor is it adopted as part of the Zoning Ordinance. However, this plan will be referenced within the Town Master Plan as a resource, and the Hazard Mitigation Plan will be used when developing and amending town regulations and ordinances to restrict development in hazard-prone areas.

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 should review and if necessary, update the mitigation plan annually. A five-year update is required to continue program eligibility.

Why develop a Mitigation Plan?
Planning ahead to lessen or prevent a disaster will reduce the human, economic, and environmental costs. 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, environmental, and social impacts. 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.

D. SCOPE OF THE PLAN

The scope of the *Newbury Hazard Mitigation Plan Update 2012* includes the identification of natural hazards affecting the Town, as identified by the Newbury Hazard Mitigation Committee. The hazards were reviewed under the following categories as outlined in the State of New Hampshire Hazard Mitigation Plan. The Committee has determined that landslides and subsidence are not risks in Newbury.

- Dam Failure
- Flooding
- Hurricane
- Tornado & Downburst
- Thunderstorm/Lightning/Hail
- Erosion
- Landslide
- Severe Winter Weather
- Earthquake
- Extreme Heat
- Drought
- Wildfire/Urban Fire
- Natural Contaminants
- Hazardous Materials Spill
- Terrorism
- Public Health

E. METHODOLOGY

Using the *Guide to Hazard Mitigation Planning for New Hampshire Communities* (2002) developed by the Southwest Regional Planning Commission (SWRPC), the Newbury Hazard Mitigation Committee, in conjunction with the UVLSRPC, developed the content of the updated *Newbury Hazard Mitigation Plan Update 2012* by tailoring the nine-step process set forth in the guidebook to a

ten-step process as appropriate for the Town of Newbury. Many FEMA resources and multiple State and Federal websites were also used as well. The Committee held a total of four posted meetings beginning in December 2011 and ending in January 2012. All meetings were posted at the Town Offices inviting the general public. A notice was placed in the local paper, the Intertown Record, to invite the public to work meetings. Notices were sent to the Town Offices of neighboring towns to invite town officials. There were no public attendees at the meetings, and no one inquired about the process. It is anticipated that there may be more interest at the Select Board meeting to adopt the plan. For the meeting agendas see Appendix C: Meeting Documentation.

The public will continue to have the opportunity to be involved in future revisions as meetings will be posted publicly. The Newbury Board of Selectmen adopted the Plan, contingent upon FEMA final approval at a public meeting, as shown in Appendix E.

There is an opportunity for partnerships between local boards, most notably the Board of Selectmen and the Planning Board, to implement the recommendations in this Plan.

- The Town of Newbury participates in Mutual Aid agreements with neighboring communities for police, fire, highway, and hazardous materials spills. Appendix F provides available agreements.
- The office of the New Hampshire Homeland Security and Emergency Management had an opportunity to participate in and comment on this planning process, as well as review the draft plan.

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

December 13, 2011
December 21, 2011
December 29, 2011
January 11, 2012

To complete the update of this Plan, the Hazard Mitigation Committee revisited the following planning steps. The format of the plan was changed to accommodate the most recent requirements since the original plan was completed. Each section was reviewed and revised during the Committee meetings and by research of the various relevant departments of the Town.

Step 1: Identify and Map the Hazards (December 2011)
Committee members identified areas where damage from natural disasters had previously occurred, areas of potential damage, and human-made facilities and infrastructure that were at risk for 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 (December 2011)
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 Newbury Hazard Mitigation Committee. A summary listing of "Critical Facilities" is presented in Chapter IV. Costs were determined for losses for each type of hazard.

Step 3: Identify Mitigation Plans/Policies Already in Place (December 2011)
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 relevant hazards. A summary chart and the results of this activity are presented in Chapter VI.

Step 4: Identify the Gaps in Existing Mitigation Actions and Progress from the 2006 Plan (December 2011)
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 Chapter VI. In addition, reference is made to the 2006 Plan suggested improvements and if not completed, explanations of why they were not completed.

Step 5: Determine New Actions to be Taken (December 2011)
During an open brainstorming session, the Hazard Mitigation Committee developed a list of other possible hazard mitigation actions and strategies for the Town of Newbury. Ideas proposed included policies, planning, and public information. A list of potential mitigation strategies can be found in Chapter VII. Some new actions may have been suggested in the 2006 plan—such as the Public Awareness Program. This is noted as appropriate in Table VII-1

Step 6: Evaluate Feasible Options (December 2011)
The Hazard Mitigation Committee evaluated strategies based on eight criteria derived from the criteria listed in the evaluation chart found on page 27 of the *Guide to Hazard Mitigation Planning for New Hampshire Communities*. The eight criteria used for evaluation of potential mitigation strategies are listed in Chapter VII. Each strategy was rated (high (3), average (2), or low (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 Chapter VII.

Step 7: Coordinate with other Agencies/Entities (Annually)
UVLSRPC staff reviewed the Newbury 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 is involved in preparing the updated Emergency Operations Plan participated in the hazard mitigation meetings to avoid duplication and to share information.

Step 8: Re-evaluate and Determine Priorities (December 2011)
The Committee reviewed the prioritization list from the 2006 plan in order to make changes and determine a final prioritization for existing hazard mitigation action improvements and proposed new actions. These are provided in Chapter VIII.

Step 9: Develop Implementation Strategy (December 2011)
Using the chart provided under step nine of the *Guide to Hazard Mitigation Planning for New Hampshire Communities*, 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 action. The prioritized implementation schedule can be found in Chapter VIII.

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* (2010), which served as a resource for the *Newbury Hazard Mitigation Plan*. The process for monitoring and updating the Plan can be found in Chapter IX.

F. HAZARD MITIGATION GOALS

The Town of Newbury Hazard Mitigation Committee reviewed the hazard mitigation goals for the State of New Hampshire, and revised them for Newbury. The goals were reviewed again during the update of the plan and determined to remain mostly valid although some goals were combined and the goal to reduce the Town's liability with respect to natural and man-made hazards was eliminated as it seemed redundant.

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;
    - the town's economy;
    - the town's natural environment, especially the water bodies;
    - 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.

3. To identify, introduce and implement cost effective hazard mitigation measures so as to accomplish the town's goals and to raise the awareness and acceptance of hazard mitigation.

4. To be proactive in working with service providers to protect and maintain uninterrupted power and communication services.

5. To ensure that hazard mitigation is part of the planning process for future development including town, State, and private recreational facilities.

G. ACKNOWLEDGEMENTS

The following people participated in the update of this plan as the Hazard Mitigation Committee:

Robert Lee, Newbury Police Chief
Dennis Pavlicek, Newbury Town Administrator
Cal Prussman, Newbury Highway Administrator
Henry Thomas, Newbury Fire Chief
Wayne Whitford, Newbury Health Officer & Emergency Management Director
Nancy St. Laurent, NH Homeland Security and Emergency Management Office
Victoria Davis, Upper Valley Lake Sunapee Regional Planning Commission

The Hazard Mitigation Committee was composed of local officials, representatives from state agencies (NH HSEM), citizens of Newbury and staff representatives of the UVLSPRC for meeting facilitation and plan development. Neighboring communities, agencies, businesses, academia, non-profits and other interested parties were invited to participate through the public posting of meeting times and agendas, by invitation or by public notice in the local newspaper. Historical information, relevant data and potential future mitigation strategies were contributed by all parties involved in the planning process. For a record of all meeting topics see Appendix C: Meeting Documentation. The staff representative of the UVLSRPC gathered all information from local officials, agency representatives and public input and compiled the information to develop the Plan.

II. COMMUNITY PROFILE AND DEVELOPMENT TRENDS

A. INTRODUCTION[1]

The Town of Newbury, NH is located in the Lake Sunapee region. Goshen, Sunapee, New London, Bradford, Washington and Sutton border Newbury. Newbury is home to Mount Sunapee, portions of Lake Sunapee, and the village of Blodgett's Landing.

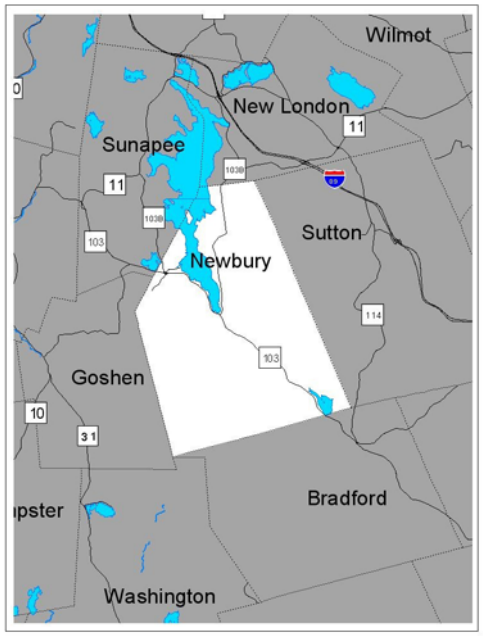


Figure 1: Locus Map of Newbury

Newbury straddles the divide between two major watersheds, the Merrimack and the Connecticut. Lake Todd, Doctor's Colony Pond, Loch Lyndon Reservoir, Lake Solitude, Gillingham Pond, and several brooks flow southeasterly to the Contoocook River via the Warner River, forming part of the Merrimack Watershed. To the northwest, surface waters drain into Lake Sunapee, from which waters flow via the Sugar River to the Connecticut River. Chalk Pond, Blodgett Brook, and many smaller brooks are part of the Lake Sunapee Watershed. Thirty percent of the Lake Sunapee Watershed lies within the borders of Newbury. Newbury's lakes and ponds

[1] Town of Newbury Master Plan (2007) and discussions with Committee.

cover 1,523 acres or six percent of the town. About thirty-three miles of permanent streams identified by the Planning Board (not including several hundred intermittent streams) flow within Newbury.

Newbury's wetlands are valuable for mitigating flooding events and erosion. Because of their soils and vegetation, wetlands act as a giant sponge during periods of high runoff and flooding, controlling the rate of runoff downstream and slowing floodwaters. In late summer, this stored water is slowly released, maintaining stream flows down river.

As part of the National Flood Insurance Program (NFIP), Flood Hazard Boundary Maps were prepared for the Town in 1986 and updated in 2010. The maps identified the 100-year floodplain areas which are shown on the hazards map in Appendix D. There are bands of flood zones around Lake Sunapee, Lake Todd, and Lock Lyndon Reservoir, as well in other areas of town.

Newbury is located in the foothills of the White Mountains. The highest point in the Town of Newbury is Mt. Sunapee at 2,725 feet and the lowest point is Lake Todd at 675 feet above sea level. Approximately 15 percent of the Town of Newbury has slopes greater than 25 percent and the majority of town has slopes of eight to fifteen percent. As the slope increases, the more challenging it is to develop the land, and the greater the potential to increase erosion and storm water runoff and exacerbate flooding. Generally, slopes over 25 percent are considered undevelopable.

The John Hay National Wildlife Refuge consists of 164 acres managed for migratory birds and resident wildlife by the US Fish and Wildlife Service as well as encompassing "The Fells," which is a grouping of historic buildings, grounds and gardens. The Mount Sunapee State Park and State Beach has 2,893 acres with frontage on Lake Sunapee and includes the Mount Sunapee Ski Resort managed by Okemo Mountain Resort.

Development Trends

Newbury's population has seen a two-fold increase in 30 years, from 961 in 1980 to 2,072 in 2010. Newbury has a high seasonal population, with 45 percent of housing in seasonal units, and the remaining 55 percent in year-round units. Seasonal visitors are not only present in the summer months; Sunapee Mountain Ski Area can accommodate 5,000 skiers a day in its peak season. Although the year-round population is around 2,000 residents, the population can increase to over 8,000 on a weekend during any season.

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, erosion, 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.

Due to the topography and the increasing stringency of town regulations and ordinances, it is not anticipated that there will be any major new developments in town.

It is anticipated that a senior housing project will be constructed within the next couple years. This will be a single building with 34 units. There will be a sprinkler system and an on-site cistern. The property is at the end of a dead-end road so there is only single access, but there will be truck access around the entire building.

Table II-1: AREA POPULATION TRENDS

Area	1980	1990	2000	2010
Newbury	**961**	**1,347**	**1,702**	**2,072**
Bradford	1,115	1,405	1,454	1,650
Goshen	549	742	741	810
New London	2,935	3,180	4,116	4,397
Sunapee	2,312	2,559	3,055	3,365
Sutton	1,091	1,457	1,544	1,837
Washington	411	628	895	1,123
Merrimack County	*98,302*	*120,240*	*136,225*	*146,445*
New Hampshire	*920,475*	*1,109,252*	*1,235,786*	*1,316,470*

Source: US Census

Table II-2: POPULATION PROJECTIONS FOR NEWBURY

	1980	1990	2000	2010	2020	2030
Population	961	1,347	1,702	2,072	2,320	2,510
Decade Change in Population	89%	40.2%	26.4%	21.7%	12.0%	8.2%

Source: 1970 – 2010 from US Census; 2020 – 2030 projections from NH Office of Energy & Planning

III. HAZARD IDENTIFICATION

The Newbury Hazard Mitigation 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 Newbury, Merrimack County, and the State of New Hampshire can be found in the following discussion and tables. After reviewing this information and the Emergency Operations Plan, the Committee conducted a Risk Assessment. The resulting risk designations are provided in the heading of each hazard table below as well as a more detailed discussion further into this chapter.

A. WHAT ARE THE HAZARDS IN NEWBURY?

Newbury is prone to a variety of natural and human-made hazards. The hazards that Newbury is most vulnerable to were determined through gathering historical knowledge of long-time residents and Town officials; research into the CRREL Ice Jam Database, FEMA and NOAA documented disasters, and local land use restrictions; and from the input of representatives from state agencies (NH HSEM). The hazards affecting the Town of Newbury are dam failure, flooding, hurricane, tornado and downburst, thunderstorm (including lightning and hail), erosion, severe winter weather (including extreme cold and ice storms), earthquake, drought, extreme heat, wildfire, natural contaminants to air and water, hazardous materials spills, potential terrorism, and public health hazards. Each of these hazards and the past occurrences of these hazards are described in the following sections. Hazards that were eliminated from assessment are those that have not had a direct impact on the Town of Newbury and are not anticipated to have an impact as determined by the Hazard Mitigation Committee, representatives from state agencies and citizens of the Town of Newbury.

Eliminated hazards include Expansive Soils, Subsidence, and Snow Avalanches due to factors such as topography, soils, and location of development. Discussions with the Natural Resource Conservation Service indicate that subsidence is not a concern in Newbury.

Natural Contaminants was added to reflect radon as examined in the State Plan and also including other natural contaminants found in the State. Erosion was added even though it is often related to flooding. It can be related to simple rain storms and development without proper precautions. Drought and Extreme Heat were added as these are potential hazards though they have not occurred frequently.

B. DESCRIPTIONS OF HAZARDS

An assessment of each hazard relevant to Newbury is provided below. An inventory of previous and potential hazards is provided. Past events are shown in the following tables and the potential for future events is then discussed and shown on a map in Appendix D. The "risk" designation for each hazard was determined after evaluations discussed later in this chapter.

- Dam Failure
- Flooding
- Hurricane
- Tornado & Downburst
- Thunderstorm/Lightning/Hail
- Erosion
- Landslide
- Severe Winter Weather
- Earthquake
- Extreme Heat
- Drought
- Wildfire/Urban Fire
- Natural Contaminants
- Hazardous Materials Spill
- Terrorism
- Public Health

Dam Failure

Dam failure 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. Appendix D is a map with the location of dams within Newbury. There are no mapped inundation areas.

Table III-1: DAMS

DAMS – POTENTIAL FAILURE: LOW/MEDIUM RISK									
Dam #	**Class**	**Dam Name**	**Water Body**	**Owner (Past or Present)**	**Status**	**Type**	**Impound-ment Area in Acres**	**Height of Dam (Ft)**	**Drainage Area in Acres**
168.01	L	Loch Lyndon Reservoir	trib Todd Lake	Ken Brown	Active	E	120	12.0	2.4
168.02		Gillingham Pond Dam	Mountain Brook	Mr. A. Turner	Ruins	S/E	0	11.0	14.4
168.03		Mountain Brook Dam	Mountain Brook	Unknown	Ruins		0	0	0
168.04	NM	Skating Pond Dam	unnamed brook	Town of Newbury	Active	E	5	4.0	0
168.05		Mountain View Lake	Mountain View Str	In Sunapee	NB		100	4.0	1.1
168.06	NM	Mountain Brook Dam	Small Brook	Sunapee Valley Assoc	Active	C	5	15	0
168.07	NM	Chalk Pond Dam	Chalk Pond	Jim McDonough	Active	S/E	21	1.0	0
168.08	NM	Ring Brook Dam	Ring Brook	Raymond Stone	Active	E	1	11.0	0
168.09	NM	Recreation Pond Dam	unnamed brook	Beverly Schydlowsky	Active	E	0.5	14.0	0
168.10		Mtn Brook Fire Pond Dam	Mountain Brook	Town of Newbury	Ruins	C	0	2.5	0
168.11	NM	Farm Pond Dam	unnamed brook	James Wright	Active	E	0.75	16.0	259.0

DAMS – POTENTIAL FAILURE: LOW/MEDIUM RISK									
Dam #	**Class**	**Dam Name**	**Water Body**	**Owner (Past or Present)**	**Status**	**Type**	**Impound-ment Area in Acres**	**Height of Dam (Ft)**	**Drainage Area in Acres**
168.12	NM	Webbs Dugout Dam	unnamed brook	Douglas Webb	Active	E	1	6.5	0
168.13	L	Recreation Pond Dam	trib Todd Brook	Abraham, Reis, et al	Active	E	30	8.0	2.67
168.14	NM	Fire Pond Dam	Natural swale	Douglas Webb	Active	E	0.25	12.0	15
168.15	NM	Recreation Pond	unnamed brook	Douglas Webb	Active	E	0.25	8.0	15
168.16	NM	Recreation Pond	trib Lake Sunapee	Vincent Iacopino	Active	C	0.25	14.0	0
168.17	S	Mt Sunapee Sewage Lagoon	NA	Mt Sunapee Resort	Active	E	2.8	22.0	0
168.18		Sunapee Sewage Lagoon Dam	NA	Mt Sunapee Resort	Exempt	E	2	22.0	0
168.19	NM	North Peak Vill Pond Dam	unnamed brook	N Peak Village Resort	Active	E	0.21	11.0	25.4
168.20	NM	Mt Sunapee Parking Detention	runoff	Mt Sunapee Resort	Active	E	0.3	10.0	.01
Source: Dam information provided by the NH Dam Bureau in 2007 and updated by the Committee in 2011; Significant & High Hazard dams must have an emergency action plan. The State of New Hampshire classifies dams into the following four categories: Blank- Non-Active; NM – Non-menace; L – Low hazard; S – Significant hazard; H – High Hazard; E-Earth; C-Concrete ; NB-Not Built									

Past Dam Failure Events

There have been no dam failures in Newbury or any surrounding towns which impacted Newbury. Several dams are rated by the State as "non-menace" or "low" hazard structures. This means there is no possibility for loss of life if any of these dams fail. A "low" hazard dam failure could cause some structural damage to buildings and roads though a "non-menace" dam failure would not. There are 12 non-menace dams and two low hazard dams. There is one dam rated as "significant" hazard. This means there is a significant hazard potential because the dam is in a location and of a size that failure or mis-operation of the dam would result in any of the following: Major economic loss to structures or property; structural damage to roads; major environmental or public health losses. These rankings were assigned by the NH Department of Environmental Services.

The inundation areas for the "low" and "significant" hazard dams are shown on a map in Appendix D. Typically, any dam of significant or high hazard potential must submit an inundation plan and inundation area map to the State in case of dam failure. However, sewage lagoons are exempt from this requirement, so there are no mapped inundation areas for the Town of Newbury.

It does not appear from mapping resources that there are dams located in surrounding towns that would impact the Town of Newbury if they were to fail. This is due to the height of land within the town relative to surrounding towns.

Potential Future Dam Failure Events

According to the State's Mitigation Plan (2004), Merrimack County has a low risk of dam failure. The Committee determined dam failure is a low risk in Newbury. Although it is unlikely to occur, a dam failure by the Mount Sunapee lagoon would cause contamination of surface and ground water.

Flooding

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 Newbury 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. Floodplains indicate areas potentially affected by flooding. There are several types of 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. These areas were mapped for all towns in New Hampshire by FEMA.

River Ice Jams Ice forming in riverbeds and against structures presents significant hazardous conditions when 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.

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.

Severe Storms Flooding associated with severe storms can inflict heavy damage to property. Heavy rains during severe storms are a common cause of inland flooding.

Beaver Dams and Lodging Flooding associated with beaver dams and lodging can cause road flooding or damage to property.

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.

Past Flooding Events

Appendix D is a map which shows the locally identified flood area and the Flood Insurance Rate Map of Special Flood Hazard Areas. The following tables provide a list of floods in the State, County, and Newbury.

Riverine flooding is the most common disaster event in the State of New Hampshire, according to the State of New Hampshire Natural Hazards Mitigation Plan. According to the Plan: "Localized street flooding occasionally results from severe thundershowers, or over larger areas, from more general rain such as tropical cyclones and coastal "northeasters." More general and disastrous floods are rare but some occur in the spring from large rainfall quantities combined with warm, humid winds that rapidly release water from the snowpack…General flooding is also caused by major hurricanes that closely follow major rainstorms… As a result, New Hampshire has a high flood risk. (*State of NH Natural Hazards Mitigation Plan, Pages 12-13*)"

The following table lists past flood events. Note that Table III-5 for Erosion events also includes some flooding events.

Table III-2: FLOODING – FEMA DISASTER DECLARATIONS, LOCAL RECOLLECTIONS & CRREL ICE JAM INFORMATION

Hazard	Date	Location	Description of Areas Impacted	Damages
Flood	November 3-4, 1927	Statewide	NA	Unknown
Flood	March 11-21, 1936	NH State; Along Connecticut River	Damage to roads. Flooding caused by simultaneous heavy snowfall totals, heavy rains and warm weather. River overflow.	Unknown
Flood/Hurricane	September 21, 1938	Statewide	Flooding in several locations	Unknown
Flooding	June 15-16, 1943	Upper CT River	Intense rain exceeding four inches	
Flooding	August 1955	CT River Basin	Heavy rains caused extensive damage throughout basin	
Flooding	July – Aug 1986	Statewide	Severe summer storms: heavy rains, tornados flash flood, and severe winds (FEMA DR-771-NH)	

Hazard	Date	Location	Description of Areas Impacted	Damages
Flood / Severe Storm	April 16, 1987	Cheshire, Carroll, Grafton, Hillsborough, Merrimack, Rockingham, & Sullivan Counties, NH	FEMA Disaster Declaration # 789-DR (Presidentially Declared Disaster). Flooding of low-lying areas along river caused by snowmelt and intense rain.	$4,888,889 in damage.
Flood	August 7-11, 1990	Belknap, Carroll, Cheshire, Coos, Grafton, Hillsborough, Merrimack & Sullivan Counties, NH	FEMA Disaster Declaration #876-DR. Flooding caused by a series of storm events with moderate to heavy rains.	$2,297,777 in damage.
Flooding	August 19, 1991	Statewide	Hurricane Bob - effects felt statewide	
Flooding	October - Nov. 1995	North/West NH	Grafton County Declared: FEMA DR-1144-NH	
Flood	October 29, 1996	Grafton, Hillsborough, Merrimack, Rockingham, Strafford & Sullivan Counties, NH	FEMA Disaster Declaration # 1077- DR. Flooding caused by heavy rains; related to Hurricane Lily	$2,341,273 in damage.
Flood	October 26th 2005	Cheshire, Grafton, Merrimack, Sullivan, and Hillsborough Counties	FEMA Disaster Declaration #1610-DR. Severe storms and flooding.	$30,000,000 in damages.
Flood	May 13 -17, 2006	Belknap, Carroll, Grafton, Hillsborough, Rockingham, Strafford Counties	FEMA Disaster Declaration #1643-DR	Unknown
Flood	April 16, 2007	Statewide	FEMA Disaster Declaration #1695. Severe storms and flooding; Counties Declared: all	$27,000,000 in damages; 2,005 home owners and renters applied for assistance in NH.
Flood	July 24, 2008	Central and Southern NH; Counties Declared: Belknap, Carroll, Merrimack, Rockingham, and Strafford	FEMA DR 1782	Severe storms, tornado, and flooding
Flood	August 14, 2008	Central Northern NH; Counties Declared: Belknap, Carroll, Coos, and Grafton	FEMA Disaster Declaration #1787	$3 million in public assistance; primary damage to roads
Flood	March 14-31, 2010	Statewide	FEMA DR-1913; severe storms & flooding; Declared Counties: Hillsborough and Rockingham Counties	75% federal match

Hazard	Date	Location	Description of Areas Impacted	Damages
Flood	July 2011	Statewide	FEMA-4006-DR Federal assistance for Coos and Grafton Counties and hazard mitigation statewide	$1.8 million in public assistance; primary impact to roads and bridges

Potential Future Flooding Events

According to the State's Mitigation Plan, flooding is a high hazard risk in the county. The Committee determined flooding is a medium risk in Newbury.

The Town of Newbury has been a participant in the National Flood Insurance Program since 1975 and the current effective NFIP map is dated April 2010. There are about 180 houses and camps within the "Special Flood Hazard Areas." A map in Appendix D displays the "Special Flood Hazards Areas." There are currently 24 NFIP flood insurance policy holders in the Town of Newbury with a total insurance value of almost $6 million. No claims have been made, and there are no repetitive loss claims.

Hurricane

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 Natural Hazard Mitigation Plan*; FEMA website).

Past Hurricane Events

There have been several hurricanes over the years which have impacted New England and New Hampshire. These are listed below. The Hurricane of 1938 substantial property damage and downed trees blocked roads.

Table III-3: HURRICANES & TROPICAL STORMS

HURRICANES AND TROPICAL STORMS - HIGH RISK				
Hazard	**Date**	**Location**	**Description of Areas Impacted**	**Damages**
Hurricane	August, 1635	n/a		Unknown
Hurricane	October 18-19, 1778	n/a	Winds 40-75 mph	Unknown
Hurricane	October 9, 1804	n/a		Unknown
Gale	September 23, 1815	n/a	Winds > 50mph	Unknown
Hurricane	September 8, 1869	n/a		Unknown
The Great New England 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.	Unknown
Hurricane (Carol)	August 31, 1954	Southern New England	Category 3, winds 111-130 mph. Extensive tree and crop damage in NH, localized flooding	Unknown
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	Unknown
Hurricane (Donna)	September 12, 1960	Southern and Central NH	Category 3 (Category 1 in NH). Heavy flooding in some parts of the State.	Unknown
Tropical Storm (Daisy)	October 7, 1962	Coastal NH	Heavy swell and flooding along the coast	Unknown
Tropical Storm (Doria)	August 28, 1971	New Hampshire	Center passed over NH resulting in heavy rain and damaging winds	Unknown
Hurricane (Belle)	August 10, 1976	Southern New England	Primarily rain with resulting flooding in New Hampshire. Category 1	Unknown
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	Unknown

HURRICANES AND TROPICAL STORMS - HIGH RISK				
Hazard	**Date**	**Location**	**Description of Areas Impacted**	**Damages**
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	Unknown
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	Unknown
Tropical Storm (Floyd)	September 16-18, 1999	Southern New England	FEMA DR-1305-NH. Heavy Rains; Newbury received damage	Unknown
Hurricane (Katrina)	August 29, 2005 & continuing	East Coast of US and more	FEMA-3258-EM. Heavy rains and flooding devastating SE US	Unknown
Tropical Storm (Tammy)	October 5-13, 2005	East Coast of US	Remnants of Tammy contributed to the October 2005 floods which dropped 20 inches of rain in some places in NH.	Unknown
Tropical Storm (Irene)	August 26 – September 6, 2011	East Coast of US	FEMA-4026-DR for Coos, Carroll, Grafton, Strafford, Belknap, Merrimack and Sullivan Counties; EM-3333	$2 Million primarily for roads and bridges

Potential Future Hurricane Events

Hurricane events will affect the entire Town. It is impossible to predict into the future what damage will occur in the Town. According to the State's mitigation plan, Merrimack County has a medium risk for hurricanes. The Committee determined the hurricane risk to be medium in Newbury.

Tornado & Downburst

"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 Natural 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.

Significantly high winds occur especially during tornadoes, hurricanes, winter storms, and thunderstorms. Falling objects and downed power lines are dangerous risks associated with high winds. In addition, property damage and downed trees are common during severe wind occurrences. 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. Downbursts fall into two categories: 1. Microburst, which covers an area less than 2.5 miles in diameter, and 2. Macroburst, which covers an area at least 2.5 miles in diameter. Most downbursts occur with thunderstorms, but they can be associated with showers too weak to produce thunder.

Past Tornado & Downburst Events

The following table displays tornadoes occurring in Merrimack County. The Newbury Hazard Mitigation Committee could not recall any tornado events that have impacted the Town of Newbury.

Table III-4: TORNADOES AND DOWNBURSTS IN OR NEAR MERRIMACK COUNTY

TORNADOES & DOWNBURSTS – *HIGH* RISK			
	Date	**Fujita Scale**	**Damages**
Tornado	September 9, 1821	Most intense in NH	Killed 6 people; crossed Lake Sunapee
Tornado	July 14, 1963	F1	No deaths or injuries; costs unknown
Tornado	June 27, 1964	F0	No deaths or injuries; costs unknown
Tornado	August 11, 1966	F2	No deaths or injuries; costs unknown
Tornado	August 25, 1969	F1	No deaths or injuries; costs unknown
Tornado	May 31, 1972	F1	No deaths or injuries; costs unknown (Merrimack County)
Tornado	July 21, 1972	F1	No deaths or injuries; costs unknown
Tornado	May 11, 1973	F2	No deaths or injuries; costs unknown
Tornado	June 11, 1973	F0	No deaths or injuries; costs unknown
Tornado	August 15, 1976	F1	No deaths; 5 injuries; costs unknown (Merrimack County)
Tornado	August 13, 1999	F1	No deaths or injuries; costs unknown
Tornado	July 6, 1999	F2	No deaths or injuries; costs unknown (Merrimack County)
Tornado	Summer 2006	NA	Began in Barnet, VT and moved to Monroe, NH
Tornado	April 15, 2007	NA	Numerous trees were knocked down in Enfield, NH
Tornado	July 24, 2008	(EF 2)	Numerous trees and utility poles down and tearing down houses near Concord; 1 fatality and 2 injuries

Source: The Tornado Project web site and the State of NH Multi-Hazard Plan (October 2010)

Potential Future Tornado & Downburst Events

It is impossible to predict where a tornado or wind event will occur or what damage it will inflict. The FEMA website places the State of NH in the Zone 2 Wind Zone which provides that a community shelter should be built to a 160 mph "design wind speed." According to the State's mitigation plan, Merrimack County has a high risk for tornadoes. The Committee determined there is a medium risk for tornadoes and downbursts in Newbury.

Thunderstorms

A thunderstorm is a rain shower during which you hear thunder. Since thunder comes from lightning, all thunderstorms have lightning. A thunderstorm is classified as "severe" when it contains one or more of the following: hail three-quarter inch or greater, winds gusting in excess of 50 knots (57.5 mph), or a tornado. Hail is a form of precipitation that occurs when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere where they freeze into ice. When the hail particle becomes heavy enough to resist the updraft, it falls to the ground. The resulting wind and hail can cause death, injury, and property damage.

An average thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Winter thunderstorms are rare because the air is more stable, strong updrafts cannot form because the surface temperatures during the winter are colder.

Lightning is a giant spark of electricity that occurs within the atmosphere or between the atmosphere and the ground. As lightning passes through the air, it heats the air to a temperature of about 50,000 degrees Fahrenheit, considerably hotter than the surface of the sun. Fires are a likely result of lightning strikes, and lightning strikes can cause death, injury, and property damage. It is impossible to predict where lightning will strike.

Past Thunderstorm Events

There have been lightning strikes and hail in Newbury, but the Committee does not recall any severe damage. On June 18, 2011 there was a severe thunderstorm one mile west of Newbury. It downed many large branches in town. There was 1-inch hail as well as wind damage. On June 19, 2006 there was a severe thunderstorm in Newbury that took down several trees. Another thunderstorm on May 31, 2002 produced severe winds that downed trees and power lines throughout the central and southeastern part of the State. On July 6, 1999, lightening caused a forest fire on the east side of Bald Sunapee Mountain. *(from NOAA web site)*

Potential Future Thunderstorm Events

It is inevitable that thunderstorms will occur in Newbury's future. Lightning, hail, or wind from a thunderstorm could impact the entire Town. It is not possible to estimate possible damage. Most of the Town's critical facilities are near Lake Sunapee and are quite vulnerable to lightning. However, the newer Town buildings have lightning protection systems in the cupolas of the buildings including the town offices and the library. According to the State's mitigation plan, Merrimack County has a medium risk of a lightning hazard. The risk for future thunderstorm damage was determined by the Committee to be medium risk in Newbury.

Erosion

Soil erosion, although a natural process, can be greatly accelerated by improper construction practices. Because of the climate in New Hampshire and the general nature of our topography, eroded soils can be quickly transported to a wetland, stream, or lake. The New Hampshire Department of Environmental Services (DES) regulates major construction activities to minimize impacts upon these resources. A properly conducted construction project should not cause significant soil erosion.

Soil becomes vulnerable to erosion when construction activity removes or disturbs the vegetative cover. Vegetative cover and its root system play an extremely important role in preventing erosion by: (1) Shielding the soil surface from the impact of falling rain drops; (2) Reducing the velocity of runoff; (3) Maintaining the soil's capacity to absorb water, and (4) Holding soil particles in place.

Because of the vegetation's ability to minimize erosion, limiting its removal can significantly reduce soil erosion. In addition, decreasing the area and duration of exposure of disturbed soils is also effective in limiting soil erosion. The designer must give special consideration to the phasing of a project so that only those areas actively under construction have exposed soils. Other factors influencing soil erosion are: (1) Soil types, (2) Land slope, (3) Amount of water flowing onto the site from up-slope, and (4) Time of year of disturbance.

There are many areas of Hitchcock soils in Newbury. These soils are lacustrine or old lake bed materials typically found along the river. They are layered silt loams and fine sandy loams with very uniform grains. The lacustrine soils including Hitchcock are very susceptible to erosion on steep banks and in construction areas where the soils are not protected. There can be "piping" or undercutting, and because of the uniformity of the grains, when they are eroded, they can almost "flow."

Past Erosion Events

There have been several erosion events in Newbury, most recently in August 2008, April 2007, and October 2005. Many were primarily road washes associated with flooding and are addressed in that section. Repairs have many completed on many of these problem areas or they are in the works with the exception of the projects listed in the following table.

Table III-5: EROSION AREAS

Date	Location/Hazard	Description	Damages
Annual	Bay Point Road	Need bigger culvert	Road becomes muddy and impassable in spring
Annual	Cheney Road	Culvert undersized now that wooded area converted to pasture	Road washouts
Annual	Rollins Road (upper end)	Washout/deep mud in spring	Impassable in spring
Annual	Province Road	Washout/deep mud in spring	Impassable in spring
Annual	Colburn Farm Road	Brook overflows every year	Road washouts, culverts to be replaced 2012
Annual	Park 10 Road	Steep switch back road with 6 houses: 5 seasonal, one year-round; no good solution	Washouts in spring; dangerous in winter

Potential Erosion Events

Due to the topography and types of soils of the town, there is always potential for erosion. As properties are developed there will be less vegetative buffer to protect the town from erosion during rainstorms. The State plan does not provide a risk analysis for erosion. The Committee determined that erosion is a low/medium risk in Newbury.

Landslides

A landslide is the downward or outward movement of sloped materials reacting under the force of gravity, including mudslides, debris flows, and rockslides. The type of material and moisture content determine the susceptibility to a landslide. Landslides can damage or destroy roads, homes, railroads, electrical and phone lines, and other structures.

Past Landslide Events
There have been landslide/erosion events on Mountain Road along the guardrails and on Route 103 near Lakewood Manor. These are relatively small areas, but they could block the roads. There are no other known landslide areas.

Potential Landslide Events
There is always the potential for a landslide in an extreme weather event. It is possible that the above areas could be impacted again, but only during an extreme event. The Committee considers landslide events to have a *low* risk.

Severe Winter Weather

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 diminishes visual range. Such conditions, when extreme enough, are called "white outs."

Ice Storms Freezing rain occurs when snowflakes descend into a warmer layer of air and melt completely. When these liquid water drops fall through another thin layer of freezing air just above the surface, they don't have enough time to refreeze before reaching the ground. Because they are "supercooled," they instantly refreeze upon contact with anything that that is at or below 0 degrees C, creating a glaze of ice on the ground, trees, power lines, or other objects. A significant accumulation of freezing rain lasting several hours or more is called an ice storm. 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" Nor'easters can occur in the eastern United States any time between October and April, when moisture and cold air are plentiful. They are known for dumping heavy amounts of rain and snow, producing hurricane-force winds, and creating high surfs that cause severe beach erosion and coastal flooding. A Nor'easter is named for the winds that blow in from the northeast and drive the storm up the east coast along the Gulf Stream, a band of warm water that lies off the Atlantic coast.

There are two main components to a Nor'easter: Gulf Stream low-pressure system (counter-clockwise winds) generate off the coast of Florida. The air above the Gulf Stream warms and spawns a low-pressure system. This low circulates off the southeastern U.S. coast, gathering warm air and moisture from the Atlantic. Strong northeasterly winds at the leading edge of the storm pull it up the east coast. As the strong northeasterly winds pull the storm up the east coast, it meets with cold Arctic high-pressure system (clockwise winds) blowing down from Canada. When the two systems collide, the moisture and cold air produce a mix of precipitation.

Winter conditions make Nor'easters a normal occurrence, but only a handful actually gather the force and power to cause problems inland. The resulting precipitation depends on how close you are to the converging point of the two storms. 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.

Past Extreme Winter Weather Events

Extreme winter weather events occur annually in Newbury, but usually have minimal impacts on infrastructure and property. There are a few areas in town where extreme cold impacts road conditions and causes hazardous driving. There are three particular areas: on Route 103 and Lakewood Manor Road on the west side of Lake Sunapee, on Park 10 Road, and on Route 103 at the intersection with Mountain Road. The higher elevation of Newbury relative to neighboring towns produces more severe winter weather conditions. The following table provides a list of past extreme winter weather events in New Hampshire and Newbury.

Table III-6: EXTREME WINTER WEATHER

EXTREME WINTER WEATHER – *HIGH* RISK				
Hazard	**Date**	**Location**	**Description of Areas Impacted**	**Damages**
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)	Unknown
Ice Storm	Dec. 29-30, 1942	New Hampshire	Glaze storm; severe intensity	Unknown
Blizzard	February 14-17, 1958	New Hampshire	20-30 inches of snow in parts of New Hampshire	Unknown
Snow Storm	March 18-21, 1958	New Hampshire	Up to 22 inches of snow in south central NH	Unknown
Snow Storm	December 10-13, 1960	New Hampshire	Up to 17 inches of snow in southern NH	Unknown
Snow Storm	January 18-20, 1961	New Hampshire	Up to 25 inches of snow in southern NH	Unknown
Snow Storm	February 2-5, 1961	New Hampshire	Up to 18 inches of snow in southern NH	Unknown
Snow Storm	January 11-16, 1964	New Hampshire	Up to 12 inches of snow in southern NH	Unknown
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	Unknown
Snow Storm	December 26-28, 1969	New Hampshire	Up to 41 inches of snow in west central NH; ice storm took out power for a week in nearby towns.	Unknown

EXTREME WINTER WEATHER – *HIGH* RISK				
Hazard	**Date**	**Location**	**Description of Areas Impacted**	**Damages**
Snow Storm	February 18-20, 1972	New Hampshire	Up to 19 inches of snow in southern NH	Unknown
Snow Storm	January 19-21, 1978	New Hampshire	Up to 16 inches of snow in southern NH	Unknown
Blizzard	February 5-7, 1978	New Hampshire	New England-wide. Up to 25 inches of snow in central NH	Unknown
Ice Storm	January 8-25, 1979	New Hampshire	Major disruptions to power and transportation	Unknown
Snow Storm	February, 1979	New Hampshire	President's Day storm	Unknown
Snow Storm	April 5-7, 1982	New Hampshire	Up to 18 inches of snow in southern NH	Unknown
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	Unknown
Extreme Cold	November-December, 1988	New Hampshire	Temperature was below 0 degrees F for a month	Unknown
Ice Storm	March 3-6, 1991	New Hampshire	Numerous outages from ice-laden power lines in southern NH	Unknown
Snow Storm	February/March 1993	New Hampshire	Newbury residents remember 3 storms with 36" of snow **(***per 2006 plan)*	Unknown
Snow Storm	1997	New Hampshire	Power outages due to heavy snowfall	Unknown
Ice Storm	January 15, 1998	New Hampshire; heavily impacted in Newbury	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	Unknown
Snow Storm	March 5-7, 2001	New Hampshire	Heavy snow. Newbury members remember 2 major events in this time period with 48" of snow. (*per 2006 plan)*	Unknown
Snow Storm	December 6-7, 2003	New Hampshire	Heavy snow. Federal Disaster Declaration FEMA-3193-NH	Unknown
Snow Storm	February 10-12, 2005	New Hampshire	Heavy snow. Federal Disaster Declaration FEMA-3208-NH	Unknown
Wind Storm	April 15, 2007	New Hampshire	Debris removal. Federal Disaster Declaration FEMA-1695-DR-NH	Unknown

EXTREME WINTER WEATHER – *HIGH* RISK				
Hazard	**Date**	**Location**	**Description of Areas Impacted**	**Damages**
Ice Storm	December 2008	New Hampshire	Debris removal. FEMA DR-1812; power outages in Newbury	$15 Million
Rain Storm	March 29, 2010	New Hampshire	FEMA DR-1892; Federal funding to Grafton, Hillsborough, Merrimack, Rockingham, Strafford, and Sullivan Counties; power loss	$2 Million
Snow Storm	March 6-7, 2011	New Hampshire	FEMA DR-	Unknown
Snow Storm	October 29-30, 2011	Statewide	EM-3344; power outages; FEMA-4049	Unknown

Potential Future Severe Winter Events

All areas of Newbury are at risk from ice storms, but particularly the higher elevations. There has been frequent loss of power and road and tree damage. There is the potential for severe winter damage every year. The event would affect the entire Town.

According to the State's mitigation plan, Merrimack County has a high risk for severe winter weather. The Committee determined severe winter weather to be a medium/high risk in Newbury.

Earthquake

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.

Past Earthquake Events

The following is a list of earthquakes which impacted New England, New Hampshire, and Newbury.

Potential Future Earthquake Damage:

A United States Geographic Survey mapping tool on the web (geohazards.cr.usgs.gov/ projects) projects a 5 – 6 peak ground acceleration (pga) with 10% probability of exceedance in 50 years for the Town of Newbury. This pga rating is equivalent to a Modified Mercalli Intensity of "V" with moderate perceived shaking and very light potential damage. An earthquake event would impact the entire Town. Two inactive fault lines cross into southwest Newbury, but it is believed they pose no threat.

According to the State's mitigation plan, Merrimack County has a medium/high risk for earthquakes. The Committee determined the risk to be low/medium in Newbury.

Table III-7: EARTHQUAKES

EARTHQUAKES – *LOW/MEDIUM* RISK			
	Location	**Magnitude**	**Damage/Notes**
February 5, 1663	St. Lawrence River area	NA	Eastern Canada and New England
October 29, 1727	Newbury, MA	NA	Widespread damage Massachusetts to Maine; aftershocks for several months
September 16, 1732	St. Lawrence Valley	NA	Felt at Piscataqua; centered near Montreal with much damage
November 18, 1755	Cape Ann, MA	NA	Much damage to Boston; felt from Chesapeake Bay to Halifax, NS
November 9, 1810	Exeter, NH	Intensity VI	Felt in Kennebunkport and Portland
November 18, 1872	Concord, NH	"Moderate"	Felt in adjacent towns and Laconia
December 19, 1882	Concord, NH	"Moderate"	Buildings shook in Dover and Pittsfield.
January 18, 1884	Contoocook	"Moderate"	NA
November 23, 1884	Concord, NH	"Heavy"	Felt in MA, CT, and NY
May 1, 1891	Concord, NH	"Mild Tremor"	Felt in Cambridge and Melrose, MA
October 9, 1925	SE NH and ME	NA	Moderate damage
March 18, 1926	Manchester, NH	Intensity V	Buildings rocked in New Ipswich
March 8, 1927	Concord, NH	"Small, localized"	Felt lightly in Cheshire and Hillsborough Counties
April 25, 1928	Northern NH	"Violent" in some places	Extended in to Maine and Vermont
November 18, 1929	Grand Banks, NL	7.2	All of NH felt minor effects
November 1, 1935	Timiskaming, Canada	6.25 (Intensity V)	Many places in NH reported the shock
December 20, 1940	Ossipee, NH	Both earthquakes 5.5	Damage to homes, water main rupture; impacted CT, ME, MA, NH, RI,

EARTHQUAKES – *LOW/MEDIUM* RISK			
	Location	**Magnitude**	**Damage/Notes**
December 24, 1940	Ossipee, NH	(Intensity VII)	VT & NJ; many aftershocks
June 26, 1964	Meriden, NH	Reached intensity VI	Slight damage in Bradford, NH and Springfield, VT
June 15, 1973	NH/Quebec border	4.8	NA
January 19, 1982	West of Laconia, NH	4.5	NA
Late 1980s	Newbury	NA	Residents remember an event; no structural damage
September 26, 2010	New Hampshire	3.4	Felt in Newbury; centered in Boscawen, NH

Source: earthquake.usgs.gov/earthquakes/states/new_hampshire/history.php for eathquakes through 1964. NH Multi-Hazard Mitigation Plan, 2010 for 1973-1982; earthquake.usgs.gov/earthquakes (12/13/11)

Extreme Heat

Extreme heat is characterized by abnormally high temperatures and/or longer than average time periods of high temperatures. These event conditions may impact the health of both humans and livestock.

Past Extreme Heat Events

The Committee members do not recall anyone in the town having issues with extreme heat. The following table lists the extreme heat events in the past which included the Northeast and New Hampshire.

Table III-8: EXTREME HEAT

Date	Location	Description	Damage
July, 1911	New England	11-day heat wave in New Hampshire	Unknown
Late June to September, 1936	North America	Temps to mid 90s in the northeast	Unknown
June - August, 1999	Northeast	Mean temperatures well above long-term average	Unknown
Early August, 2001	New Hampshire	Mid 90s and high humidity	Unknown
August 2-4, 2006	New Hampshire	Regional heat wave and severe storms	Unknown
July 2010	Northeast	Regional heat wave	Unknown

Potential Future Extreme Heat Events

Extreme heat would impact the entire city though those with air conditioning in their homes would have less impact. The costs of extreme heat are most likely to be in human life. The elderly are especially susceptible to extreme heat. The State did not develop a county risk factor for extreme heat in its *NH Hazard Mitigation Plan*. The Committee determined extreme heat to be a low/medium risk in Newbury.

Drought

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. Costs can include loss of agricultural crops and livestock.

Past Drought Events

The following is a list of past drought events which impacted the State and Newbury.

Table III-9: DROUGHT

DROUGHT – *LOW/MEDIUM* RISK			
Date	**Location**	**Description**	**Damages**
1929-1936	Statewide	Regional. Recurrence Interval 10 to > 25 years	Unknown
1939-1944	Statewide	Severe in southeast and moderate elsewhere. Recurrence Interval 10 to > 25 years	Unknown
1947-1950	Statewide	Moderate. Recurrence Interval 10 to > 25 years	Unknown
1960-1969	Statewide	Regional longest recorded continuous spell of less than normal precipitation. Encompassed most of the Northeastern US. Recurrence Interval > 25 years	Unknown
2001-2002	Statewide	May have had dug wells go dry in Newbury	Unknown

Source: State of NH Multi-Hazard Mitigation Plan, October 2010

Potential Future Drought Events

Drought will affect the entire Town. The damage will depend upon the crops being grown at the time of the drought. No cost has been assigned to residential wells going dry though new wells may have to be dug or drilled. According to the State's mitigation plan, Merrimack County has a medium risk for drought. The Committee determined drought to be a low/medium risk in Newbury.

Wildfire/Urban Fire

Wildfire is defined as any unwanted and unplanned fire burning in the forest, shrub or grass. Wildfires are frequently referred to as forest fires, shrub fires or grass fires, depending on their location. They often occur during drought and when woody debris on the forest floor is readily available to fuel the fire. The threat of wildfires is greatest where vegetation patterns have been altered by past unsafe land-use practices, fire suppression and fire exclusion. Vegetation buildup can lead to more severe wildfires.

Increased severity over recent years has decreased capability to extinguish wildfires. Wildfires are unpredictable and usually destructive, causing both personal property damage and damage to community infrastructure, cultural and economic resources. Negative short term effects of wildfires include destruction of timber, forage, wildlife habitats, scenic vistas and watersheds. Some long term effects include erosion and lowered water quality.

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.

The threat of wildland fires for people living near wildland areas or using recreational facilities in wilderness areas is real. Dry conditions at various times of the year and in various parts of the United States greatly increase the potential for wildland fires. Advance planning and knowing how to protect buildings in these areas can lessen the devastation of a wildland fire. To reduce the risk to wildfire, it is necessary to consider the fire resistance of structures, the topography of property and the nature of the vegetation in the area.

Past Wildfire Events

There is strict enforcement of outside burning and fire permits. The greatest danger is weather driven during periods of drought especially in spring before the grass has greened up.

On July 6, 1999, a thunderstorm is believed to be the apparent cause of a forest fire on the east side of Bald Sunapee Mountain. The fire was discovered on the 12th, but believed to have been caused by a lightning strike from a storm the previous week. About 80

firefighters from six towns battled the blaze for more than a day before it was contained. Helicopters were also used to drop water onto the blaze. *(NOAA web site, 11/29/11)* In 1982, the Town Fire Station burned down, but this was assumed to be caused by electrical problems. Between 1965 and 1970, there had been a Blodgett Landing Boathouse fire. Wind in from the lake threatened to spread the fire. The 50 residences at Blodgett's Landing were threatened, but none were burned. In 1947, a wildfire in Newbury and Goshen burned over 2,000 acres. *(State plan, 2010)* No structures were affected but the "Doctor's Colony" housing at the base of Mount Sunapee were vulnerable to the fire. The fire lasted over a week.

Potential Future Wildfire Events

There are many large, contiguous forest tracts in Newbury. Where development interfaces with the forested areas is called the "urban interface." These are the areas where structures could be impacted by a wildfire. The Committee considers all structures within Newbury to be in an urban interface, and wildfire could affect the entire Town in structural and timber loss. According to the State's mitigation plan, the county has a high probability of wildfire.

Prolonged drought increases the likelihood of such events. Due to ice and wind storms in recent years, there is substantial fuel in the forests for wildfires. A flood in 2008 has left significant debris in the forests.

In Newbury, there are a few areas of housing and camps that could be very susceptible to fire as the buildings are so close together. If one building caught on fire, it is likely that the fire would spread to the other nearby buildings. These areas include an area on the west side of Lake Sunapee on Bay Point Road, an area in northern Newbury on the eastern side of Lake Sunapee, the structures around Chalk Pond, and a small area in downtown Newbury.

A proposed senior housing project is expected to be developed just south of Newbury. This will be a single building with 34 units. There will be a sprinkler system and an on-site cistern. The property is at the end of a dead-end road so there is only single access, but there will be truck access around the entire building.

The Committee determined that the risk of wildfire and urban fire in Newbury is medium/high.

Natural Water & Air Contaminants

Radium, radon and uranium are grouped together because they are radionuclides, unstable elements that emit ionizing radiation. These three particular substances are a health risk only if taken into the body by ingestion or inhalation. They occur naturally in the environment, uranium and radium as solids in rock while radon exists as a gas. Radionuclides are undetectable by taste, odor, or

color, so only analytical testing can determine if they are present in water. Because they are associated with rock, wells drilled into bedrock are more likely to contain elevated levels of radionuclides than shallow or dug wells.

Radon gas can also be found in the soil. Openings between the soil and buildings, such as foundation cracks and where pipes enter, provide conduits for radon to move into structures. The difference in air pressure, caused by heated indoor air moving up and out of buildings, results in a flow of soil gas toward the indoors, allowing radon to potentially accumulate in structures. Air quality in a home can also be tested for radon.

There are many other natural contaminants which can render drinking water unsafe such as arsenic. The Drinking Water and Groundwater Bureau of the NH Department of Environmental Services has several fact sheets available to address these natural materials and suggests which materials to be included in testing. See their list of fact sheets at http://www.des.state.nh.us/dwg.htm.

Past Natural Water & Air Contaminant Events

There have been no known events related to natural water and air contamination in Newbury although there has been radon recorded in the area.

Table III-10: RADON

RADON					
County	**# Tests**	**G. Mean**	**Maximum**	**% > 4.0 pCi/l**	**% > 12.0 pCi/l**
Belknap	744	1.3	22.3	14.4	1.3
Carroll	1042	3.5	478.9	45.4	18
Cheshire	964	1.3	131.2	15.6	2.3
Coos	1072	3.2	261.5	41	17
Grafton	1286	2.0	174.3	23.2	5.2
Hillsborough	2741	2.1	202.3	29.6	6.8
Merrimack	**1961**	**2.0**	**152.8**	**25.2**	**6**
Rockingham	3909	3.0	155.3	40	9.5
Strafford	1645	3.4	122.8	44	13
Sullivan	466	1.4	29.4	15.7	2.1
STATEWIDE	**15860**	**2.4 pCi/L**	**478.9 pCi/L**	**32.4**	**8.6**

Source: Summary Table of Short-term Indoor Radon Test Results in NH's Radon Database 11/04/2003

Potential Future Natural Air & Water Contaminant Damage:

Although there are no known records of illness that can be attributed to radium, radon, or uranium or other contaminants in Newbury, residents should be aware that they are present. Houses with granite and dirt cellars are at increased risk to radon gas infiltration. According to the table above, Merrimack County radon levels are below the mean average for the State. According to the State's mitigation plan, Merrimack County has a medium probability of a radon related hazard.

In addition radium, radon, and uranium as well as other natural materials can be present in drinking water. Residents, especially with bedrock wells, should be aware of the possibility of water contamination and the availability of testing and remediation. The Committee determined that the risk of natural contaminants is a low/medium risk in Newbury.

Hazardous Materials Spills

Hazardous materials spills or releases can cause damage of loss to life and property. Short or long-term evacuation of local residents and businesses may be required, depending on the nature and extent of the incident. There are two types of potential spills: on-site or during transportation through town.

Past Hazardous Waste Spill Events

There have been no significant hazardous waste spills in Newbury—only minor spills at fuel tanks. There have been faulty underground storage tanks which have been cleaned up.

Potential Future Hazardous Waste Spill Events

There conceivably could be other spills near any home or business in Newbury during to home heating fuel delivery. The property owner is responsible for clean-up. The State oversees these reported spills. There are several fuel tanks in Newbury including the gas stations, the marina, the Mount Sunapee Resort, and the Town Highway Garage.

Also, Route 103 and 103A are major travel routes through the town where trucks could be transporting hazardous materials.

The State Plan did not provide a hazard risk ranking for hazardous materials spills. The Committee determined that the risk of hazardous materials spills is a low/medium risk for on-site spills and medium/high for transportation spills in Newbury.

Terrorism

Terrorism has been defined in many ways. The word terrorism is derived from the Latin term “terrere” which means to frighten. Under current United States law, set forth in the US Patriot Act, acts of domestic terrorism are those which: "(A) involve acts dangerous to human life that are a violation of the criminal laws of the United States or of any State; (B) appear to be intended— (i) to intimidate or coerce a civilian population; (ii) to influence the policy of a government by intimidation or coercion; or (iii) to affect the conduct of a government by mass destruction, assassination, or kidnapping; and (C) occur primarily within the territorial jurisdiction of the United States."

Past Terrorism Events

There have been no terrorism events within Newbury in the past.

Future Terrorism Events

The buildings with the greatest public threat would be the church and at town meeting at the Mount Sunapee Resort. The Mount Sunapee Resort also hosts town and private events such as concerts. There is also the potential for impact by terrorists if they are traveling to an intended target and have an accident or are stopped by law enforcement in Newbury.

The State did not provide a county hazard risk for terrorism. The Committee determined that the risk of terrorism is a low/medium risk in Newbury.

Public Health

Public Health concerns include contamination to drinking water, infectious diseases like meningitis, and insect-borne diseases. There are many gathering places for people where diseases could be transferred. Newbury hosts a regional Point of Distribution (POD) at the Mount Sunapee Resort for any potential outbreaks. The Greater Sullivan County Public Health Emergency Plan is constantly being updated and is referenced for more information.

Past Public Health & Infectious Disease Events

There have been no known major public health or infectious disease events in Newbury.

Future Public Health & Infectious Disease Events

There is always the potential for public health issues such as infectious disease especially due to a large transient population of summer residents and tourists. New strains of diseases are found, and the Town will always need to be prepared for new and known infectious diseases. The Committee determined that the risk for public health is low in Newbury.

C. HAZARD RISK RATINGS

The Town of Newbury Hazard Mitigation Committee reviewed each potential hazard and rated the probability of occurrence and vulnerability (cost if the hazard actually occurs) to come up with an overall risk rating. The ratings were based on past occurrences of hazards affecting the State of New Hampshire, Merrimack County, and the Town of Newbury. Severe Winter Weather was ranked at a high risk in Newbury. Newbury has made recent efforts to reduce the vulnerability to hazards such as culvert replacements.

Assessing Probability

The process involved assigning a number to each hazard type based on its potential of occurring determined using the committee's knowledge of past events:

1 – Unlikely: may occur after 25 years
2 – Possible: may occur within 10-25 years
3 – Likely: may occur within 10 years

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 in Table III-10. For comparative purposes the Low rating was given a designation of "1," the Medium rating a designation of "2," and the High rating a designation of "3." These figures are shown in Table III-12. Table III-11 shows the probabilities determined for the County within the 2010 State Plan.

Table III-11: PROBABILITY OF HAZARD IN MERRIMACK COUNTY FROM STATE PLAN, 2010

Flood	Dam Failure	Drought	Wildfire	Earth-quake	Land-slide	Radon	Tornado	Hurricane	Lightning	Severe Winter	Avalanche
H	L	M	H	M/H	M	M	H	M	M	H	L

Assessing Vulnerability

A relative scale of 1 to 3 was used to determine the impact and cost for human death and injury, property losses and damages, and business/agricultural impact: 1 – limited damage and cost; 2 - moderate amount of damage and cost, and 3 – high damage and cost.

Table III-12: COMMITTEE ASSESSMENT OF VULNERABILITY

Committee Assessment of Vulnerability	Human Impact	Property Impact	Economic Impact	Vulnerability
	Probability of death or injury	Physical losses and damages	Cottage businesses & agriculture	Avg. of human/ property/ business impact
Dam Failure	1	1	1	1.00
Flooding	2	2	1	1.67
Hurricane	2	2	2	2.00
Tornado & Downburst	3	3	3	3.00
Thunderstorm/Lightning/Hail	2	2	1	1.67
Erosion	1	2	1	1.33
Landslide	1	1	1	1.00
Severe Winter/Ice Storms	3	2	2	2.33
Earthquake	3	3	3	3.00
Extreme Heat	1	1	1	1.00
Drought	1	1	1	1.00
Wildfire/Urban Fire	3	3	3	3.00
Natural Contaminants	1	1	1	1.00
HazMat Spills	3	2	2	2.33
Terrorism	3	3	3	3.00
Public Health	1	1	1	1.00

Assessing Risk

The averages of each vulnerability and probability were multiplied to arrive at the overall risk the hazard has on the community. The overall risk or threat posed by a hazard over the next 25 years was determined to be high, medium, or low. Table III-12 provides the result of this evaluation.

HIGH (3)**:** 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 (2): 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 this hazard. This hazard should be included in the Town's emergency management training and exercise program.

LOW (1)**:** 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 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.

Table III-13: RISK ASSESSMENT

Hazards	Probability based on Committee Review	Vulnerability based on Committee Review	Risk Rating (Probability x Vulnerability)	Risk
Dam Failure	1	1.00	**1.00**	Low
Flooding	3	1.67	**5.01**	Medium
Hurricane	2	2.00	**4.00**	Medium
Tornado/Downburst	2	3.00	**5.00**	Medium
Thunderstorm	3	1.67	**5.01**	Medium
Erosion	3	1.33	**3.99**	Low/Medium
Landslide	1	1.00	**1.00**	Low
Severe Winter	3	2.33	**6.99**	Medium/High
Earthquake	1	3.00	**3.00**	Low/Medium
Extreme Heat	2	1.00	**2.00**	Low/Medium
Drought	2	1.00	**2.00**	Low/Medium
Wildfire/Urban Fire	2	3.00	**6.00**	Medium/High
Natural Contaminants	3	1.00	**3.00**	Low/Medium

Hazards	Probability based on Committee Review	Vulnerability based on Committee Review	Risk Rating (Probability x Vulnerability)	Risk
Haz Mat – On-Site	1	2.33	**2.33**	Low/Medium
Haz Mat - Transport	3	2.33	**6.99**	Medium/High
Terrorism	1	3.00	**3.00**	Low/Medium
Public Health	1	1.00	**1.00**	Low
0-1.9 Low 2-3.9 Low/Med 4-5.9 Medium 6-7.9 Med/High 8-9 High				

IV. CRITICAL FACILITIES & LOCATIONS

The Critical Facilities list identified by the Hazard Mitigation 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 Newbury. The third category contains special facilities and structures that the Committee wishes to protect in the event of a disaster. All facilities could be subject to earthquakes. Most would be subject to hurricanes, tornados or downbursts and lightning or hail, and severe winter weather causing ice damage; the term "Wind & Storm Events" is used for the latter hazards in the following tables. Current values were obtained from Town tax records using the figures for main structures plus assessed value for accessory structures for 2011.

Table IV-1: EMERGENCY RESPONSE FACILITIES, SERVICES & STRUCTURES

Critical Facility	Hazard Vulnerability	Building Value	Comments
Safety Services (fire & police) 952 Route 103	Fire, Hazmat, Lightning, Wind, Ice & Snow	$508,100	
Blodgett Fire Station (Garage for one fire truck) 44 Pine Street	Fire, Hazmat, Lightning, Wind, Ice & Snow	28,700	
Town Office Building (Primary Emergency Shelter) 937 Route 103	Fire, Hazmat, Lightning, Wind, Ice & Snow	491,300	
Highway Building (Secondary Emergency Shelter) 50 South Road	Fire, Hazmat, Lightning, Wind, Ice & Snow	768,700	
Fire and Safety Boat	Fire, Lightning, Wind, Ice & Snow	50,000	
Emergency Evacuation Routes – 103 and 103A	All Hazards	NA	

Table IV-2: NON-EMERGENCY RESPONSE FACILITIES AND SERVICES

Critical Facility	Hazard Vulnerability	Building Value	Comments
Gas Station	Fire, hazmat, wind, ice & snow, lightning	NA	
Center Meeting House/Church 945 Route 103	Fire, hazmat, wind, ice & snow, lightning	$164,800	

Critical Facility	Hazard Vulnerability	Building Value	Comments
South Newbury Union Church & Friendship House 162 Village Road	Fire, hazmat, wind, ice & snow, lightning	235,500	
Veterans' Hall 952 Route 103	Fire, hazmat, wind, ice & snow, lightning	135,200	On same parcel as Safety Services building
Transfer Station 201 Old Post Road	Fire, hazmat, wind, ice & snow, lightning	43,000	
Blodgett Landing Wastewater Treatment Plant Facilities, 365 Bowles Road	Fire, hazmat, wind, ice & snow, lightning	20,300	
Town Library 933 Route 103	Fire, hazmat, wind, ice & snow, lightning	288,800	

Table IV-3: FACILITIES AND POPULATIONS TO PROTECT

Critical Facility	Hazard Vulnerability	Building Value
Historical Society Building & Old Town Hall 133 Village Road	Fire, hazmat, wind, ice & snow, lightning	$177,000
Grange Hall 137 Village Road	Fire, hazmat, wind, ice & snow, lightning	68,500
Caboose Route 103	Fire, hazmat, wind, ice & snow, lightning	4,100
Town Park/Rest Rooms	Fire, hazmat, wind, ice & snow, lightning	NA
Hearse House 7 Sutton Road	Fire, hazmat, wind, ice & snow, lightning	4,500
Hay Estate/The Fells 456 Route 103A	Fire, hazmat, wind, ice & snow, lightning	1,554,700
State Beach 1439 Route 103	Fire, hazmat, wind, ice & snow, lightning	183,900
Best Western Motel 1403 Route 103	Fire, hazmat, wind, ice & snow, lightning	2,247,100
Mount Edge Resort 1380 Route 103	Fire, hazmat, wind, ice & snow, lightning	2,474,100

Table IV-4: HAZARD-PRONE AREAS AND THEIR DEVELOPMENT POTENTIAL

Critical Facility	Hazard Vulnerability	Building Value
Mount Sunapee Resort: Rental, cafeteria and public facility Main Base Lodge Storage Barn NEHSA Lodge Service Shop Building and Garages Pump Station Facility Mountain Top Lodge	Terrorism, fire, wind, ice and snow	$5,025,100; This is a State-owned facility that is anticipated to be fully developed.

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 past and potential hazard events. Facilities and structures located in federally and locally determined flood areas, wildfire prone areas, etc. were identified and included in the analysis. There are neither large land areas slated for potential development nor large development projects in the works, so vulnerability of undeveloped land was not analyzed. Most changes from the original plan are due to better mapping availability for floodplain location determination.

Table V-1: VULNERABILITY OF EXISTING STRUCTURES, INFRASTRUCTURE, AND NATURAL RESOURCES

Area	Hazard	Critical Facilities	Buildings	Infrastructure	Total Known Bldg Value
Special Flood Zones	Flooding	Route 103 (evacuation route)	179 residential single-family houses or camps with outbuildings	Roads and Bridges as shown on map in Appendix D	$42+ million
Densely Developed Areas	Urban Fire	W/S Lake Sunapee; Andrew's Brook Area; Edgemont; Chalk Pond	261 residential family homes or camps with outbuildings	Roads and Bridges as shown on map in Appendix D	$27+ million

B. IDENTIFYING VULNERABLE SPECIAL POPULATIONS

There are centers of special populations in as identified in Table IV-3. The elderly and physically or mentally impaired residents are also located within the community, but scattered throughout the Town in their homes. Town-wide programs will have to take this into account. Town officials having knowledge of its residents will assist in protection of those with special needs.

C. POTENTIAL LOSS ESTIMATES

This section identifies areas in the 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. FEMA's *Understanding Your Risks: Identifying Hazards and Estimating Losses* (August 2001) was used in estimating loss evaluations. The value of structures was determined by using Town records. The Town's tax maps were used to determine number of units within each hazard area. The land damage cost, structure content loss costs, and function loss cost were not determined.

Dam Failure – Low Risk – Unknown Estimated Cost
There are no flood inundation areas within the Town of Newbury, so no cost was assessed for this hazard. The Mount Sunapee Sewage Lagoon is rated as a significant risk but it is unknown what damage would result from a failure.

Flooding – Medium Risk – $12 Million Estimated Cost
There are 179 single-family houses and camps within the FEMA designated Special Flood Hazard areas. The value of these structures is about $42 million. There are no mobile homes, multi-family homes or businesses within these flood hazard areas. Assuming a 28% structural damage to the residential structures, the damage could total close to $12 Million.

Hurricane – Medium Risk – No Recorded or Estimated Cost
It is random which structures would be impacted and how much. There is no standard loss estimation available and no record of past costs.

Tornado & Downburst – Medium Risk – No Recorded or Estimated Cost
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 average annual cost of tornadoes between 1950 and 1995 was $197,000 (The Disaster Center). These wind events occur in specific areas, so calculating potential Town-wide losses is not possible. There is no standard loss estimation model available for tornadoes due to their random nature.

Thunderstorm/Lightning/Hail – Medium Risk – No Recorded or Estimated Cost
According to the Federal Alliance for Safe Homes, in an average year, hail causes more than $1.6 billion worth of damage to residential roofs in the United States, making it, year in and year out, one of the most costly natural disasters. Lightning is one of the most underrated severe weather hazards, yet it ranks as the second-leading weather killer in the United States. More deadly than

hurricanes or tornadoes, lightning strikes in America each year killing an average of 73 people and injuring 300 others, according to the National Weather Service. There is no cost estimation model for thunderstorms due to their random nature.

Erosion – Low/Medium Risk – Estimated Average $20,000 Year

Over the years, the Town of Newbury has spent a substantial amount of money on road improvement and repair due to erosion. The Highway Department estimates that the Town spends about an average of $20,000 per year on erosion damage to their roads not including catastrophic events.

Severe Winter Weather – Medium/High Risk – No Estimated Costs

Ice storms often cause widespread power outages by downing power lines, and these storms can also cause severe damage to trees. New England usually experiences at least one or two severe snowstorms, with varying degrees of severity, each year. All of these impacts are a risk to the community and put all residents, especially the elderly, at risk.

According to a study done for the Institute for Catastrophic Loss Reduction (Canada) and the Institute for Business and Home Safety (U.S.), the 1998 Ice Storm inflicted $1.2 billion (U.S.) worth of damage in the U.S. and Canada. In New Hampshire alone, over 67,000 people were without power (http://www.meteo.mcgill.ca/extreme/Research_Paper_No_1.pdf). The U.S. average insurance claim was $1,325 for personal property, $1,980 for commercial property, and $1,371 for automobiles.

Earthquake – Low/Medium Risk – $32 Million Estimated Cost

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 between 1924 and 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. Buildings in Newbury have not been subject to any seismic design level requirement for construction and would be susceptible to structural damage. The dams, bridges, and roads would be vulnerable to a sizable earthquake event.

FEMA's *Understanding Your Risks: Identifying Hazards and Estimating Costs*, August 2001 provides that an earthquake with a 5% peak ground acceleration (as determined by the US Geologic Survey for the area) could cause damage to single family residences by around 10% of the structural value. The total value of all building within Newbury is about $320 million. If all buildings in Newbury were impacted by an earthquake, the estimated damage could be around $32 million.

Extreme Heat – Low/Medium Risk – No Recorded or Estimated Cost

Excessive heat kills more people in the U.S. than tornadoes, hurricanes, floods, and lightning combined. The elderly, very young, obese and those who work outdoors or have substance abuse problems are most at risk from succumbing to heat. Additionally, people

in urban areas are more susceptible as asphalt and cement tend to hold in heat throughout the night (Federal Alliance of Safe Homes website). Newbury is a rural town, but with a substantial summer population; however, extreme heat is still an issue for most residents. The costs for this hazard are in terms of human suffering. It is not anticipated that there would be any structural or infrastructure costs.

Drought – Low/Medium Risk – No Recorded or Estimated Cost
A long drought would cause damage to crops and dry up wells. There is no cost estimate for this hazard in Newbury.

Wildfire/Urban Fire – Medium/High Risk – No Recorded or Estimated Cost
The risk of fire is difficult to predict based on location. About 32% of the Town is in the current use taxation program which indicates larger lots which are primarily forested. 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. Since the entire developed area of Newbury interfaces with forest, all structures are potentially vulnerable to wildfire. However, the Mount Sunapee Ski Resort has several commercial buildings in an elevated area that may be more susceptible. The value of the ski resort buildings is close to $5 million. According to the Grafton County Forester, there are no reliable figures for the value of timber in New Hampshire; and excluding the last big fires of the early 1940s, the acres and timber values affected by fires would not be supportive of major investment in fire prevention in this region (v. fire-prone western regions).

Areas of small lots and dense building include the Northeast Lake Sunapee area with 128 buildings (valued at $13 million); the West Shore of Lake Sunapee with 29 buildings (valued at $2.5 million); the Andrews Brook Area with 9 buildings (valued at $0.9 million), the Edgemont area with 20 buildings (valued at $4 million); and the Chalk Pond area with 77 buildings (valued at $6.8 million). If a fire were to start in any of these areas, all the buildings close by would be endangered.

Natural Contaminants – Low/Medium Risk – No Recorded or Estimated Cost

The cost of a natural contamination hazard would be the health of individuals exposed to the contaminant. No cost estimate is provided for this hazard.

Hazardous Material Spills – Low/Medium for On-Site Spills and Medium/High for Transportation Spills Risk – No Recorded or Estimated Cost

The cost of a hazardous material spill would depend upon the extent of the spill, the location of the spill in relation to population, structures, infrastructure, and natural resources, as well as the type of hazardous material. The cost of any clean-up would be imposed upon the owner of the material. However, other less tangible costs such as loss of water, soil, and air quality might be borne by the community. No cost estimate has been provided for this possible hazard. There are no significant hazardous waste generators in Newbury so any spills would be from heating fuel delivery or transport of materials through the Town on Routes 103 and 103A. These are major transportation routes in the area.

Terrorism Risk – Low/Medium Risk - No Recorded or Estimated Cost

The cost of any terrorism event is unpredictable and not estimated in this document.

Public Health Risk – Low Risk - No Recorded or Estimated Cost

The cost of any public health hazard or contagious disease is unpredictable and not estimated in this document.

VI. EXISTING MITIGATION ACTIONS

The next step involves identifying existing mitigation actions for the hazards likely to affect the Town and evaluating their effectiveness. Table VI-1 is a list of current policies, regulations and programs in the Town of Newbury that protect people and property from natural and human-made hazards as well as effectiveness and proposed improvements. Note that in the fifth column, the proposed improvements proposed in the 2006 plan are listed followed by what actions were taken or not taken to implement those proposed improvements.

Table VI-1: EXISTING MITIGATION ACTIONS

Existing Mitigation Action & Description	Service Area/Hazard Type	Responsible Local Agent	Effective-ness (Low, Average, High)	*2006 Plan Proposed Improvements*/Changes from 2006 Hazard Mitigation Plan	2012 Proposed Improvements or Update
National Flood Insurance Program – Provide program for affordable flood insurance	Entire Town/Flooding	Code Enforcement Officer	Average	*Work with FEMA to update floodplain maps*/Maps were updated in 2008 by FEMA though not significantly	Install survey benchmarks around town to ease residents in obtaining "Letters of Map Amendments" (LOMAs); inform residents of large number of structures in flood plain.
NH Shoreland Protection Act – Protect shoreland from development encroachment	Entire Town/Shoreland	Code Enforcement Officer	Average/ High	*No proposed improvements in 2006 plan*	None – This is a State law that the Town will continue to implement
NH Wetlands Protection – Protects all wetlands	Entire Town/ Flooding	Code Enforcement Officer	High	*Investigate prime wetland designation*/This is no longer considered an option	None – This is a State law that the Town will continue to implement
NH Dam Emergency Action Plans	NA	NA	NA	*Review and refine notification and evacuation procedures for dams*	*This action will be deleted as it is not relevant to the Town of Newbury—there are no dams in town with an emergency action plan.*
NH State Routine bridge maintenance – every 3 years	Entire Town/ Town Bridges	NA	NA	*No proposed improvements in 2006 plan*	*This action will be deleted as it is not relevant to the Town of Newbury—the town has no jurisdiction over State bridges.*

Existing Mitigation Action & Description	Service Area/Hazard Type	Responsible Local Agent	Effective-ness (Low, Average, High)	*2006 Plan Proposed Improvements*/Changes from 2006 Hazard Mitigation Plan	2012 Proposed Improvements or Update
NH Statewide International Building Code – Adopted as part of zoning ordinance	Entire Town/ Earthquake	Code Enforcement Officer	High	*No proposed improvements in 2006 plan*	None – Town adopts latest versions
Local Emergency Operations Plan – A document to prepare the town for all emergencies	Entire Town/All Hazards	Emergency Management Director	High	*Develop thorough section on HazMat response and mitigation when updating LEOP*/Updated with HazMit Annex	None – Will be updating LEOP next year
Emergency Communication – Provide system to communicate with the public and emergency service organization	Entire Town/All Hazards	Emergency Management Director	High	*Set up warning and notification system*/implemented Code Red in 2008; new EOC and Fire Station base stations	None – Will update systems as required by the State including Reverse 911
Radio Communication – Emergency departments communications	Entire Town/All Hazards	Fire Chief	Low	*Evaluate a mountain tower for improved radio communications*/ now have truck repeaters; in 2008 repeater at Hwy Garage	2012 base station upgrade at Highway Garage; Locate repeater on mountain for main frequency
Emergency Power – Provide power for heat and water during emergencies and power outages	Entire Town/All Hazards	Emergency Management Director	High	*Not in 2006 plan*	None - Safety Services Building, Highway Garage, Town Offices, Blodgett Sewer Plant, and sewer pumping stations have permanent generators
Town Building Protection – Provide lightning protection systems in any new Town buildings	Town Buildings/ Lightning	Code Enforcement Officer	High	*Install new fireproof safe or modify existing safe for town documents*/existing fireproof safe is adequate (delete this action in future plans)	None – Town will continue to provide lightning protection in new buildings
Conservation Fund for Land Protection – Purchase critical properties	Entire Town/All Hazards	Conservation Commission	High	*No proposed improvements in 2006 plan*	None – Town will continue to evaluate critical properties for purchase as appropriate
Tree Cutting – Remove hazardous trees and limbs after wind events	Entire Town/Wind Events & Severe Winter; Wildfire	Highway Administrator	High	*Meet with Public Service of NH to review most critical areas for tree maintenance*/Meetings on a regular basis	None – bought new chipper in 2009

Existing Mitigation Action & Description	Service Area/Hazard Type	Responsible Local Agent	Effective-ness (Low, Average, High)	*2006 Plan Proposed Improvements*/Changes from 2006 Hazard Mitigation Plan	2012 Proposed Improvements or Update
HazMat Mutual Aid – Midwestern Regional HazMat Team towns provide/ receive mutual aid in emergencies	Entire Town/Haz Mat Spills	Fire Chief	High	*No proposed improvements in 2006 plan*	Document mutual aid agreements and municipal authorization
Stormwater Infrastructure Inventory – Determine adequacies of culvert and other stormwater structures	Entire Town/Flooding & Erosion	Highway Administrator	High	*Work with UVLSRPC to carry out a stormwater infrastructure inventory*/UVLSRPC GPS'd all town culverts in 2005	None – Continue to maintain inventory of stormwater infrastructure
Town Highway & Winter Operations Plan – Determine priority for snow removal	Entire Town/Winter	Highway Administrator	High	*No proposed improvements in 2006 plan*	None – Town will continue using existing plan
Road & Bridge Improvement Program -	Entire Town/ Erosion	Highway Administrator	High	*Conduct engineering assessment on Sutton Road Bridge; replace culverts at Mountainside, Winding Brook (2), Colburn Farm Road, Morse Lane, Cheney Road*/All done except Colburn Farm Road	See following table for all proposed road and bridge projects
Highway Mutual Aid – Member towns provide and receive aid in emergency	Entire Town/All Hazards	Highway Administrator	High	*No proposed improvements in 2006 plan*	None – Town will continue use of mutual aid program
Fire Department – About 32 on-call volunteers	Entire Town/Wildfire and Urban Fire	Fire Chief	High	*Contact USDA Firewise Program about technical assistance, training and funding for wildfire mitigation and prevention*/Not aware of program	Fire Chief will look into program to see if it is relevant.
Fire Mutual Aid – Member towns of Kearsarge Mutual Aid provide and receive aid during emergencies	Entire Town/All Hazards	Fire Chief	High	*Conduct mutual aid drill in summer and winter at Blodgett's Landing*/Done in 2010	Organization working on inventory town resources to share; document mutual aid agreements and municipal authorization
Fire Safety Boat – Boat on Lake Sunapee for emergencies	Lake Sunapee structures/All Hazards	Fire Chief	High	*No proposed improvements in 2006 plan*	None – Recently replaced equipment on-board and refurbished boat

Existing Mitigation Action & Description	Service Area/Hazard Type	Responsible Local Agent	Effective-ness (Low, Average, High)	*2006 Plan Proposed Improvements*/Changes from 2006 Hazard Mitigation Plan	2012 Proposed Improvements or Update
Police Department – Chief and three full time officers	Entire Town/All Hazards	Police Chief	High	*Add one more full time officer next year ('07), 6 or 7 part-time; needs a 4-wheel vehicle*/Added F/T officer;have 3 P/T; all vehicles are 4-wheel drive	None – Adequate police force
Safety Services Call List– List to call senior citizens & disabled	Entire Town/All Hazards	Fire Chief & Police Chief	Average	*No proposed improvements in 2006 plan*	Advertise availability of list for residents to add themselves to the list as needed.
Police Mutual Aid – Member towns provide and receive aid during emergencies	Entire Town/All Hazards	Police Chief	Average	*No proposed improvements in 2006 plan*	None – Adequate mutual aid program
Water Use Restrictions – Limits water use during dry conditions	Entire Town/Drought	NA	NA	*No proposed improvements in 2006 plan*	*This action will be deleted as there are no town water systems.*
Town Master Plan – Addresses hazard mitigation	Entire Town/All Hazards	Planning Board	Low	*No proposed improvements in 2006 plan/*Plan was updated and no longer mentions hazard mitigation	Update master plan with Planning Assistant to add hazard mitigation concerns in planning the planning process and reference the hazard mitigation plan and the LEOP
Zoning Ordinance – Restricts development in Shoreland; setback from streams; wetland buffer; no building or clear cutting on steep slopes; no new development in flood zones	Entire Town/Flooding, Erosion	Planning Board	High	*Use watershed planning and management to protect surface and ground water*/2011-2012 Working with other towns in watershed to evaluate water supplies protection strategies	Have Planning Assistant at UVLSRPC evaluate zoning ordinance for further hazard mitigation requirements such as low impact development
Subdivision Regulations – Regulates subdivisions	Entire Town/All Hazards	Planning Board	High	*No proposed improvements in 2006 plan*	Have Planning Assistant at UVLSRPC evaluate subdivision regulations for further hazard mitigation requirements such as low impact development
Site Plan Review Regulations – Regulates multi-family and non-residential development	Entire Town/All Hazards	Planning Board	High	*No proposed improvements in 2006 plan*	Have Planning Assistant at UVLSRPC evaluate site plan review regulations for further hazard mitigation requirements such as low impact development

Existing Mitigation Action & Description	Service Area/Hazard Type	Responsible Local Agent	Effective-ness (Low, Average, High)	*2006 Plan Proposed Improvements*/Changes from 2006 Hazard Mitigation Plan	2012 Proposed Improvements or Update
Capital Improvement Program – Plan for purchase of emergency equipment	Entire Town/All Hazards	Town Administrator	High	*No proposed improvements in 2006 plan*	None – Adequate CIP planning
Educational Outreach Program –	Entire Town/All Hazards	Emergency Management Director and Town Administrator	Average	*Develop an education outreach for seasonal & year-round residents including necessity of having spare water and gas for generators. Upload hazard mitigation plan on website and create materials for emergency preparedness in the home/*Brochures on preparation are available in the Town Offices and on the town web site; and the hazard mitigation plan is available on the town web site	None – Woodstove safety workshops have been held at the town offices; the town report advised residents to keep their drive plowed for emergency vehicles; articles have been placed in the paper about generator and fire safety and the importance of displaying 911 numbers at homes. Emergency information such as food safety and emergency notifications are provided on the town web site. A quarterly newsletter provided emergency management information from the Fire and Police Departments.

Table VI-2: ROAD IMPROVEMENTS PROGRAM – PROPOSED IMPROVEMENTS

Location/Hazard	Problem	Mitigation Action
Province Road/Erosion & Mud	Becomes muddy and impassable each spring	Amend with hard pack and fabric
Cheney Road/Flooding & Erosion	Culvert undersized due to recent clear cutting to make pastures	Replace culvert with larger culvert
Bay Point Road/Flooding & Erosion	Inadequate culvert; could impact over 100 houses and into the Town of Sunapee	Replace culvert with larger culvert
Rollins Road	Washouts; deep mud in spring making road impassable	Replace culvert with larger culvert

The Committee developed Table VI-2 to examine the proposed improvements and evaluate them as 1: Low; 2: Average; and 3: High for effectiveness looking at several criteria as shown in the table. The totals are then ranked to prioritize the improvements to help the Committee focus on the most effective strategy improvements. Proposed strategies with total scores of 22-24 are considered to be highly beneficial improvements; total scores of 18-21 are considered moderately beneficial improvements; and total scores of 17 or less are considered lowest beneficial improvements.

Table VI-3: PRIORITIZING EXISTING MITIGATION STRATEGY IMPROVEMENTS

Rank	Strategy Improvement	Reduce Damage	Community Objectives	Existing Regulations	Quickly Implemented	Socially Acceptable	Technically Feasible	Admin Possible	Benefit - Cost	TOTAL SCORE	Mitigate Existing or New Dev
1	**Safety Services Call List**– Advertise availability of list for residents to add themselves to the list as needed.	3	3	3	3	3	3	3	3	24	Both
1	**Subdivision Regulations** – Require continued maintenance responsibility for fire protection structures; provide easement for unimpeded town access to fire protection structures in case of fire	3	3	3	3	3	3	3	3	24	New
1	**Road Improvements** – Province Road, Rollins Road, Cheney Road	3	3	3	3	3	3	3	3	24	Both
2	**Subdivision & Site Plan Review Regulations** – Review for possible hazard mitigation applicability	2	3	3	3	3	3	3	3	23	New
2	**Fire Department** – Fire Chief will look into Firewise program to see if it is relevant.	2	3	3	3	3	3	3	3	23	Both
2	**Road Improvements** – Bay Point Road	3	3	3	3	3	3	2	3	23	Both
3	**National Flood Insurance Program** – Install survey benchmarks around town to ease residents in obtaining "Letters of Map Amendments" (LOMAs); inform residents of large number of structures in flood areas.	1	3	3	3	3	3	3	3	22	Both
3	**Radio Communication** – 2012 base station upgrade at Highway Garage; Locate repeater on mountain for main frequency	3	3	3	3	3	3	1	3	22	Both
3	**Town Master Plan** – Update plan to include hazard mitigation planning	1	3	3	3	3	3	3	3	22	Both
3	**Zoning Ordinance** – Review ordinance for further hazard mitigation restrictions such as low impact development	2	3	3	2	3	3	3	3	22	Both
4	**Document Mutual Aid Agreements** – Provide documentation of agreements and municipal authorization as appendix to future haz mit plans.	1	3	3	1	3	3	3	3	18	Both

VII. GOALS AND NEWLY IDENTIFIED MITIGATION ACTIONS

A. GOALS

The Newbury Hazard Mitigation Committee reviewed its goals and developed objectives to meet these goals. The goals and objectives were re-evaluated during the updating of the plan to insure they remain valid and effective.

Goals

1. To identify, introduce and implement cost effective Hazard Mitigation measures so as to accomplish the Town's goals and to raise awareness and acceptance of hazard mitigation opportunities generally.

2. To improve upon the protection of the general population, the citizens, and visitors of the Town of Newbury from natural and human-made hazards.

3. To reduce the potential impact of natural and human-made disasters to:

    - the Town of Newbury's Critical Support Services,
    - Critical Facilities in the Town of Newbury,
    - the Town of Newbury's infrastructure,
    - private property,
    - the Town's economy,
    - the Town's natural environment, and
    - the Town's specific historic treasures and interests.

4. To improve the Town's Disaster Response and Recovery Capability as a hazard mitigation strategy to be prepared for emergencies and reduce their impact.

B. POTENTIAL MITIGATION ACTIONS

Summary of New Strategies

The Newbury Hazard Mitigation Committee brainstormed potential mitigation actions at a meeting. The proposed measures are organized by the type of hazard event that the mitigation action is expected to mitigate. Some actions have been moved to the existing actions table as noted in that table. Other items have been deleted as they are no longer deemed appropriate, e.g. proposed actions for infrastructure not in control of Newbury. A note in parentheses tells if the action is remaining from the previous plan and why or if it is new.

Table VII-1: PROPOSED NEW MITIGATION ACTIONS

Proposed New Mitigation Description	Service Area/ Hazard Type	Responsible Local Agent	If Recommended in 2006 Plan, why was it not put into place?
Municipal Antennae Easement Requirement – Evaluate requirement that new cell towers, wind turbines and other tall structures be required to allow municipal communication antennae	Entire Town/All Hazards	Planning Board	Not addressed in 2006 plan.
Lobby Public Utilities – Request permanent generators at switching stations to prevent communication interruptions during an emergency, especially the box providing service to the Emergency Operations Center	Entire Town/All Hazards	Emergency Management Director	Not addressed in the 2006 plan.

C. SUMMARY OF CRITICAL EVALUATION

The Newbury Hazard Mitigation Committee 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?

Each mitigation strategy was evaluated and assigned a score (High – 3; Average – 2; and Low – 1) based on the criteria. The Newbury Hazard Mitigation Committee 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. . Proposed strategies with total scores of 22-24 are considered to be highly beneficial improvements; total scores of 18-21 are considered moderately beneficial improvements; and total scores of 17 or less are considered lowest beneficial improvements.

Table VII-2: PRIORITIZING PROPOSED MITIGATION STRATEGIES

Rank	Strategy	Reduce Damage	Community Objectives	Existing Regulations	Quickly Implemented	Socially Acceptable	Technically Feasible	Administratively Possible	Benefit - Cost	TOTAL SCORE	Mitigate Existing or New Development or Both
1	**Municipal Antennae Easement Requirement** – Evaluate requirement that new cell towers, wind turbines and other tall structures be required to allow municipal communication antennae	1	3	3	3	3	3	3	3	22	both
2	**Lobby Public Utilities** – Request permanent generators at switching stations to prevent communication interruptions during an emergency, especially the box providing service to the Emergency Operations Center	1	3	3	3	3	3	1	3	20	both

VIII. PRIORITIZED IMPLEMENTATION SCHEDULE

The Newbury Hazard Mitigation Committee created the following action plan for implementation of priority mitigation strategies:

Table VIII-1: PRIORITIZED IMPLEMENTATION SCHEDULE FOR EXISTING PROGRAM IMPROVEMENTS

Mitigation Action	Who (Leadership)	When (Year)	How (Funding Sources)	Cost (Estimated)
Safety Services Call List– Advertise availability of list for residents to add themselves to the list as needed.	Fire Chief; Police Chief	2012	Salary/Taxes	$0
Subdivision Regulations – Require continued maintenance responsibility for fire protection structures; provide easement for unimpeded town access to fire protection structures in case of fire	Planning Board/Fire Chief	2012	Salary/Taxes and Board time	$0
Road Improvements – Province Road, Rollins Road, Cheney Road	Highway Administrator	2012-2013	Grants/Taxes	Province Rd - $51K; Rollins Rd - $21K; Cheney Rd - $13K
Subdivision & Site Plan Review Regulations – Review for possible hazard mitigation applicability	Planning Board	2015	Taxes (for consultant)	$1K
Fire Department – Fire Chief will look into Firewise program to see if it is relevant.	Fire Chief	2012	Salary/Taxes	$0
Road Improvements – Bay Point Road	Highway Administrator	2012-2013	Grants/Taxes	$13K
National Flood Insurance Program – Install survey benchmarks around town to ease residents in obtaining "Letters of Map Amendments" (LOMAs).	Town Administrator	2012-2013	Taxes	$5K
Radio Communication –Locate repeater on mountain for main frequency	Emergency Management Director	2013-2014	Grant/Dispatch fees	$5K
Town Master Plan – Update plan to include hazard mitigation planning	Planning Board	2015	Taxes (for consultant)	$1K
Zoning Ordinance – Review ordinance for further hazard mitigation restrictions such as low impact development	Planning Board	2015	Taxes (for consultant)	$1K
Document Mutual Aid Agreements – Provide documentation of agreements and municipal authorization as appendix to future haz mit plans.	Town Administrator	2012-2013	Taxes (use LGA counsel)	$0

Table VIII-2: IMPLEMENTATION SCHEDULE FOR PROPOSED MITIGATION ACTIONS

Mitigation Action	Who (Leadership)	When (Year)	How (Funding Source)	Cost
Municipal Antennae Easement Requirement – Evaluate requirement that new cell towers, wind turbines and other tall structures be required to allow municipal communication antennae	Emergency Management Director	2012-2013	Taxes/EMD stipend	$0
Lobby Public Utilities – Request permanent generators at switching stations to prevent communication interruptions during an emergency, especially the box providing service to the Emergency Operations Center	Board of Selectmen; Emergency Management Director	2012	Taxes/Board time and EMD stipend	$0

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 Newbury will revisit the Hazard Mitigation Plan annually, or after a hazard event. The Newbury Emergency Management Director will initiate this review and will consult with the Hazard Mitigation 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. The plan will be updated and submitted for FEMA approval at a minimum every five years as required by the Disaster Mitigation Act 2000.

A. IMPLEMENTATION THROUGH EXISTING PROGRAMS

The Plan will be adopted locally and referenced in the updated Emergency Operations Plan (EOP), and it will be updated annually along with the EOP. In addition, the Planning Board and Board of Selectmen, during the Capital Improvement Process, will review and include any proposed structural projects outlined in this plan, as appropriate. As other Town documents are updated, they will include consideration of the hazard risks and mitigation strategies from this plan. This would include the Town Master Plan.

B. 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 meeting) to inform and educate members of the public and to take public comment for incorporation into any updates of the plan. Additionally information will be posted on the Town website.

The public will continue to be provided with the opportunity to participate in hazard mitigation planning through public meetings and the town meeting when explaining programs and expenses. Town boards and the school will be alerted to the updated hazard mitigation plan for review prior to amending town regulations, ordinances, and plans.

Copies of future updated Hazard Mitigation Plans will be sent to the following parties for review and comment:

Emergency Management Directors, neighboring towns; Field Representative, NH Homeland Security & Emergency Management; Newbury Board of Selectmen and Planning Board; Upper Valley Lake Sunapee Regional Planning Commission

RESOURCES USED IN THE PREPARATION OF THIS PLAN

Guide to Hazard Mitigation Planning for New Hampshire Communities, prepared for NH Bureau of Emergency Management (now NH Homeland Security & Emergency Management) by the Southwest Regional Planning Commission (October 2002)

Local Mitigation Plan Review Guide, FEMA (October 1, 2011)

FEMA *Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000* (March 2004, Last Revised June 2007)

FEMA 386-1 *Getting Started: Building Support for Mitigation Planning* (September 2002)

FEMA 386-2 *Understanding Your Risks: Identifying Hazards and Estimating Costs* (August 2001)

FEMA 386-3 *Developing the Mitigation Plan: Identifying Mitigation Actions and Implementation Strategies* (April 2003)

Ice Storm '98 by Eugene L. Lecomte et al for the Institute for Catastrophic Loss Reduction (Canada) and the Institute for Business & Home Safety (U.S.) (December 1998)

Lucey, Bernie, P.E. NH Department of Environmental Services, Drinking Water & Groundwater Bureau, Phone Discussion 01/29/08

Town of Newbury Emergency Operations Plan (2006)

Town of Newbury Master Plan (2007)

NH Department of Environmental Services, Drinking Water & Groundwater Bureau Fact Sheets: *ARD-EHP-22 Radium, Radon, and Uranium: Health Information Summary (2007); WD-WSEB-3-11 Dissolved Mineral Radioactivity In Drinking Water (2004); WD-WSEB-2-1 Suggested Water Quality Testing for Private Wells (2003)*

NH Homeland Security & Emergency Management, *State of New Hampshire Multi-Hazard Mitigation Plan* (October 2010)

www.fema.gov/news/disasters.fema: Website for FEMA's Disaster List (last visited 11/29/11)

www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms: Website for National Oceanic & Atmospheric Administration Disaster List (last visited 11/29/11)

www.tornadoproject.com: Website for The Tornado Project (last visited 11/29/11)

www.crrel.usace.army.mil/: Website for Cold Regions Research and Engineering Laboratory Website (CRREL) (last visited 11/29/11)

www.nesec.org: Website for Northeast States Emergency Consortium (last visited 11/29/11)

http://earthquake.usgs.gov/earthquakes/states/index.php?regionID=29 : Website for area earthquake information (last visited 11/29/11)

www.bc.edu/research/westonobservatory/: Northeast earthquake data (last visited 11/29/11)

APPENDICES

Appendix A: **Technical Resources**

Appendix B: **Hazard Mitigation Assistance Grants**

Appendix C: **Meeting Documentation**

Appendix D: **Map of Past and Potential Hazard Event Areas and Critical Facilities**

Appendix E: **FEMA Approval and Town Resolution of Adoption**

Appendix F: **Mutual Aid Agreement Documentation**

APPENDIX A:

TECHNICAL RESOURCES

1) Agencies

New Hampshire Homeland Security & Emergency Management 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 Homeland Security & Emergency Management
406 Public Assistance and Hazard Mitigation ..... NH Homeland Security & Emergency Management
Community Development Block Grant (CDBG)..... NH Homeland Security, NH OEP, also refer to RPC
Dam Safety Program ..... NH Department of Environmental Services
Emergency Management Preparation Grant (EMPG) ..... NH Homeland Security & Emergency Management
Emergency Watershed Protection (EWP) Program ..... USDA, Natural Resources Conservation Service
Flood Mitigation Assistance Program (FMAP) ..... NH Homeland Security & Emergency Management
Flood Plain Management Services (FPMS) ..... US Army Corps of Engineers
Mitigation Assistance Planning (MAP) ..... NH Homeland Security & Emergency Management
Mutual Aid for Public Works ..... NH Municipal Association
National Flood Insurance Program (NFIP) † ..... NH Office of Energy and Planning
Project Impact..... NH Homeland Security & 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
Shoreland 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

† 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

Sponsor	Internet Address	Summary of Contents
		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.iiaa.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:
HAZARD MITIGATION ASSISTANCE GRANTS

Hazard Mitigation Assistance (HMA) grant program of the Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) presents a critical opportunity to protect individuals and property from natural hazards while simultaneously reducing reliance on Federal disaster funds. The HMA program provides pre-disaster mitigation grants annually to local communities. The statutory origins of the program components differ, but all share the common goal of reducing the loss of life and property due to natural hazards. Eligible applicants include State-level agencies including State institutions; Federally recognized Indian Tribal governments; Public or Tribal colleges or universities (PDM only); and Local jurisdictions that are participating in the National Flood Insurance Program (NFIP).

Aside from the HMA grants program, *Section 406 of the Stafford Act* of the Robert T. Stafford Disaster Relief and Emergency Assistance Act provides FEMA the authority to fund the restoration of eligible facilities that have sustained damage due to a presidentially declared disaster. Title 44 CFR §206.226 Restoration of Damaged Facilities contains a provision for the consideration of funding additional measures that will enhance a facility's ability to resist similar damage in future events. These funds can be combined with the following Hazard Mitigation Assistance Program grants to bring structures up above previous conditions to better resist future hazards.

1. *The Hazard Mitigation Grant Program (HMGP):* HMGP funding is available after a presidentially declared disaster and provides States with the incentive and capability to implement mitigation measures to ensure the opportunity to take critical mitigation measures to protect life and property from future disasters.

2. *The Pre-Disaster Mitigation (PDM) program*: This provides funds for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event as well as funding for disasters after-the-fact. Funding these plans and projects reduces overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations. PDM grants are awarded on a competitive basis.

3. *The Flood Mitigation Assistance (FMA) program*: This provides funds so that cost-effective measures can be taken to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the NFIP. The long-term goal of FMA is to reduce or eliminate claims under the NFIP through mitigation activities.

4. *The Repetitive Flood Claims (RFC) program*: This program provides funding to reduce of eliminate the long-term risk of flood damage to structures insured by NFIP that have had one or more claim payments for flood damages. The long-term goal of the RFC program is to reduce or eliminate claims under the NFIP through mitigation activities that are in the best interest of the NFIP.

5. *The Severe Repetitive Loss (SRL) program*: This program provides funding to reduce or eliminate the long-term risk of flood damage to severe repetitive loss residential structures insured under the NFIP.

Potential eligible projects are shown in the following table by grant program. For further information on these programs visit the following FEMA websites:

Section 406 - http://www.fema.gov/government/grant/pa/9526_1.shtm

HMGP - http://www.fema.gov/government/grant/hma/index.shtm

PDM – www.fema.gov/government/grant/pdm/

FMA – www.fema.gov/government/grant/fma

RFC – www.fema.gov/government/grant/rfc

SRL – www.fema.gov/government/grant/srl

Mitigation Project:	HMPG	PDM	FMA	RFC	SRL
Property Acquisition and Demolition or Relocation Project					
Property Elevation	**X**	**X**	**X**	**X**	**X**
Construction Type Projects					
Property Elevation	**X**	**X**	**X**	**X**	**X**
Mitigation Reconstruction[1]					**X**
Localized Minor Flood Reduction Projects	**X**	**X**	**X**	**X**	**X**
Dry Flood-proofing of Residential Property[2]			**X**		**X**
Dry Flood-proofing of Non-residential Structures			**X**	**X**	
Storm water Management		**X**	**X**		
Infrastructure Protection Measure		**X**			
Vegetative Management/Soil Stabilization	**X**	**X**			
Retrofitting Existing Buildings and Facilities (Wind/Earthquake)	**X**	**X**			
Safe room construction		**X**			
Post-disaster building code activities supporting officials during reconstruction	**X**				
Non-construction Type Projects					
All Hazard/Flood Mitigation Planning		**X**	**X**		

1. The SLR Program allows Mitigation Reconstruction projects located outside the regulatory floodway or Zone V as identified on the effective Flood Insurance Rate Map (FIRM), or the mapped limit of the 1.5-foot breaking wave zone. Mitigation Reconstruction is only permitted if traditional elevation cannot be implemented.
2. The residential structure must meet the definition of "Historic Structure" in 44 CFR§59.1.

Source: "Hazard Mitigation Assistance Program Guidance," FEMA, June 19, 2008

OTHER HAZARD MITIGATION ASSISTANCE FUNDING

Environmental Protection Agency

The EPA makes available funds for water management and wetlands protection programs that help mitigate against future costs associated with hazard damage.

Mitigation Funding Sources Program	Details	Notes
Clean Water Act Section 319 Grants	Grants for water source management programs including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulation. http://www.epa.gov/OWOW/NPS/cwact.html	Funds are provided only to designated state and tribal agencies
Clean Water State Revolving Funds	State grants to capitalize loan funds. States make loans to communities, individuals, and others for high-priority water-quality activities. http://www.epa.gov/owow/wetlands/initiative/srf.html	States and Puerto Rico
Wetland Program Development Grants	Funds for projects that promote research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution. http://www.epa.gov/owow/wetlands/initiative/#financial	See website

National Oceanic and Atmosphere Administration (NOAA)

NOAA is the major source for mitigation funding related to coastal zone management and other coastal protection projects.

Mitigation Funding Sources Program	Details	Notes
Coastal Services Center Cooperative Agreements	Funds for coastal wetlands management and protection, natural hazards management, public access improvement, reduction of marine debris, special area management planning, and ocean resource planning. http://www.csc.noaa.gov/funding/	May only be used to implement and enhance the states' approved Coastal Zone Management programs
Coastal Services Center Grant Opportunities	Formula and program enhancement grants for implementing and enhancing Coastal Zone Management programs that have been approved by the Secretary of Commerce. http://www.csc.noaa.gov/funding/	Formula grants require non-federal match
Coastal Zone Management Program	The Office of Ocean and Coastal Resource Management (OCRM) provides federal funding and technical assistance to better manage our coastal resources. http://coastalmanagement.noaa.gov/funding/welcome.html	Funding is reserved for the nation's 34 state and territory Coastal Zone Management Programs
Marine and Coastal Habitat Restoration	Funding for habitat restoration, including wetland restoration and dam removal. http://www.nmfs.noaa.gov/habitat/recovery/	Funding available for state, local and tribal governments and for- and non-profit organizations.

Floodplain, Wetland and Watershed Protection Programs

USACE and the U.S. Fish and Wildlife Service offer funding and technical support for programs designed to protect floodplains, wetlands, and watersheds.

Funding and Technical Assistance for Wetlands and Floodplains Program	Details	Notes
USACE Planning Assistance to States (PAS)	Fund plans for the development and conservation of water resources, dam safety, flood damage reduction and floodplain management. http://www.lre.usace.army.mil/planning/assist.html	50 percent non-federal match
USACE Flood Plain Management Services (FPMS)	Technical support for effective floodplain management. http://www.lrl.usace.army.mil/p3md-o/article.asp?id=9&MyCategory=126	See website
USACE Environmental Laboratory	Guidance for implementing environmental programs such as ecosystem restoration and reuse of dredged materials. http://el.erdc.usace.army.mil/index.cfm	See website
U.S. Fish & Wildlife Service Coastal Wetlands Conservation Grant Program	Matching grants to states for acquisition, restoration, management or enhancement of coastal wetlands. http://ecos.fws.gov/coastal_grants/viewContent.do?viewPage=home	States only. 50 percent federal share
U.S. Fish & Wildlife Service Partners for Fish and Wildlife Program	Program that provides financial and technical assistance to private landowners interested in restoring degraded wildlife habitat. http://ecos.fws.gov/partners/viewContent.do?viewPage=home	Funding for volunteer-based programs

Housing and Urban Development

The Community Development Block Grants (CDBG) administered by HUD can be used to fund hazard mitigation projects.

Mitigation Funding Sources Program	Details	Notes
Community Development Block Grants (CDBG)	Grants to develop viable communities, principally for low and moderate income persons. CDBG funds available through Disaster Recovery Initiative. http://www.hud.gov/offices/cpd/communitydevelopment/programs/	Disaster funds contingent upon Presidential disaster declaration
Disaster Recovery Assistance	Disaster relief and recovery assistance in the form of special mortgage financing for rehabilitation of impacted homes. http://www.hud.gov/offices/cpd/communitydevelopment/programs/dri/assistance.cfm	Individuals
Neighborhood Stabilization Program	Funding for the purchase and rehabilitation of foreclosed and vacant property in order to renew neighborhoods devastated by the economic crisis. http://www.hud.gov/offices/cpd/communitydevelopment/programs/neighborhoodspg/	State and local governments and non-profits

Bureau of Land Management

The Bureau of Land Management (BLM) has two technical assistance programs focused on fire mitigation strategies at the community level.

Mitigation Funding Sources Program	Details	Notes
Community Assistance and Protection Program	Focuses on mitigation/prevention, education, and outreach. National Fire Prevention and Education teams are sent to areas across the country at-risk for wildland fire to work with local residents. http://www.blm.gov/nifc/st/en/prog/fire/community_assistance.html	See website
Firewise Communities Program	Effort to involve homeowners, community leaders, planners, developers, and others in the effort to protect people, property, and natural resources from the risk of wildland fire before a fire starts. http://www.firewise.org/	See website

U.S. Department of Agriculture

There are multiple mitigation funding and technical assistance opportunities available from the USDA and its various sub-agencies: the Farm Service Agency, Forest Service, and Natural Resources Conservation Service.

Mitigation Funding Sources Agency Program	Details	Notes
USDA Smith-Lever Special Needs Funding	Grants to State Extension Services at 1862 Land-Grant Institutions to support education-based approaches to addressing emergency preparedness and disasters. http://www.csrees.usda.gov/funding/rfas/smith_lever.html	Population under 20,000
USDA Community Facilities Guaranteed Loan Program	This program provides an incentive for commercial lending that will develop essential community facilities, such as fire stations, police stations, and other public buildings. http://www.rurdev.usda.gov/rhs/cf/cp.htm	Population under 20,000
USDA Community Facilities Direct Loans	Loans for essential community facilities. http://www.rurdev.usda.gov/rhs/cf/cp.htm	Population of less than 20,000
USDA Community Facilities Direct Grants	Grants to develop essential community facilities. http://www.rurdev.usda.gov/rhs/cf/cp.htm	Population of less than 20,000
USDA Farm Service Agency Disaster Assistance Programs	Emergency funding and technical assistance for farmers and ranchers to rehabilitate farmland and livestock damaged by natural disasters. http://www.fsa.usda.gov/	Farmers and ranchers
USDA Forest Service National Fire Plan	Funding for organizing, training, and equipping fire districts through Volunteer, State and Rural Fire Assistance programs. Technical assistance for fire related mitigation. http://www.forestsandrangelands.gov/	See website
USDA Forest Service Economic Action Program	Funds for preparation of Fire Safe plans to reduce fire hazards and utilize byproducts of fuels management activities in a value-added fashion. http://www.fs.fed.us/spf/coop/programs/eap/	80% of total cost of project may be covered
USDA Natural Resources Conservation Service Emergency	Funds for implementing emergency measures in watersheds in order to relieve imminent hazards to life and property created by a natural disaster. http://www.nrcs.usda.gov/programs/ewp/	See website

Mitigation Funding Sources Agency Program	Details	Notes
Watershed Protection Support Services		
USDA Natural Resources Conservation Service Watershed Protection and Flood Prevention	Funds for soil conservation; flood prevention; conservation, development, utilization and disposal of water; and conservation and proper utilization of land. http://www.nrcs.usda.gov/programs/watershed/index.html	See website

Health and Economic Agencies

Alternative mitigation programs can be found through health and economic agencies that provide loans and grants aimed primarily at disaster relief.

Federal Loans and Grants for Disaster Relief Agency Program	Details	Notes
Department of Health & Human Services Disaster Assistance for State Units on Aging (SUAs)	Provide disaster relief funds to those SUAs and tribal organizations who are currently receiving a grant under Title VI of the Older Americans Act. http://www.aoa.gov/doingbus/fundopp/fundopp.asp	Areas designated in a Disaster Declaration issued by the President
Economic Development Administration (EDA) Economic Development Administration Investment Programs	Grants that support public works, economic adjustment assistance, and planning. Certain funds allocated for locations recently hit by major disasters. http://www.eda.gov/AboutEDA/Programs.xml	The maximum investment rate shall not exceed 50 percent of the project cost
U.S. Small Business Administration Small Business Administration Loan Program	Low-interest, fixed rate loans to small businesses for the purpose of implementing mitigation measures. Also available for disaster damaged property. http://www.sba.gov/services/financialassistance/index.html	Must meet SBA approved credit rating

Research Agencies

The United States Geological Survey (USGS) and the National Science Foundation (NSF) provide grant money for hazard mitigation-related research efforts.

Hazard Mitigation Research Grants Agency Program	Details	Notes
National Science Foundation (NSF) Decision, Risk, and Management Sciences Program (DRMS)	Grants for small-scale, exploratory, high-risk research having a severe urgency with regard to natural or anthropogenic disasters and similar unanticipated events. http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5423&org=SES	See website
U.S. Geological Survey (USGS) National Earthquake Hazards Reduction Program	The purpose of NEHRP is to provide products for earthquake loss reduction to the public and private sectors by carrying out research on earthquake occurrence and effects. http://www.usgs.gov/contracts/nehrp/	Community with a population under 20,000

Appendix C

Meeting Documentation

Hazard Mitigation Committee
Town of Newbury

WORK PLAN
To update plan approved August 2006

Meeting #1: December 13, 2011 9:00 – 11:00 AM (2 hours)

- General discussion of requirements and in-kind match process
- Review goals of hazard mitigation plan and revise (hand out)
- Review hazards (see poster – Add hazards? Remove hazards?)
- Identify and map past/potential hazards (update map & lists in Chapter 2)
- Flooding – Are there any non-FEMA flood areas?
- Specific past and potential events of hazards not in 2006 plan (recent events)
- Potential development areas in town (compare with list in 2006 plan)
- Identify critical facilities (update map and list)
- Determine Vulnerability to Hazards for Town
- Determine Probability of Hazards for Town
- Review Critical Facilities & hazard vulnerability
- Discuss future meetings, public notice, stakeholders to be notified, notices to abutting towns

Meeting #2 December 21, 2011 9:00 – 11:00 AM (2 hours)

- Review previously determined potential mitigation efforts (were they implemented? If not, why not and are they still on the table to be implemented?)
- Brainstorm improvements to existing mitigation efforts
- Brainstorm potential new mitigation efforts

Meeting #3 December 29, 2011 9:00 – 11:00 AM (2 hours)

- Evaluate the past and potential mitigation efforts
- Develop a prioritized implementation schedule and discuss the adoption and monitoring of the plan

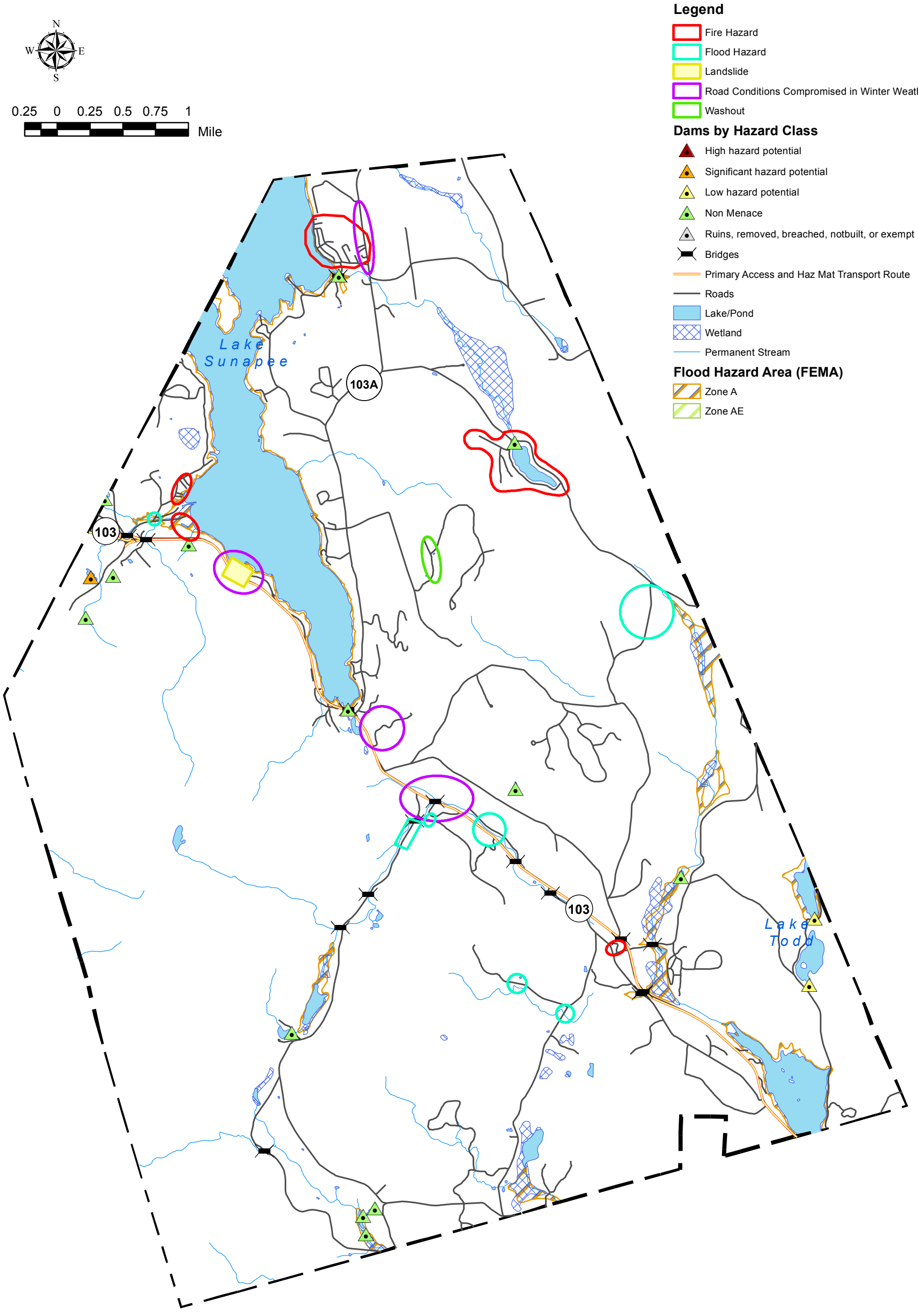
Meeting #4 January 11, 2012 9:00 – 10:00 AM (1 hour)

- Review and revise draft plan

Appendix D

Map of Hazard Areas and Critical Facilities

HAZARD AREAS MAP OF NEWBURY, NEW HAMPSHIRE



Legend

- Fire Hazard
- Flood Hazard
- Landslide
- Road Conditions Compromised in Winter Weather
- Washout

Dams by Hazard Class

- High hazard potential
- Significant hazard potential
- Low hazard potential
- Non Menace
- Ruins, removed, breached, notbuilt, or exempt
- Bridges
- Primary Access and Haz Mat Transport Route
- Roads
- Lake/Pond
- Wetland
- Permanent Stream

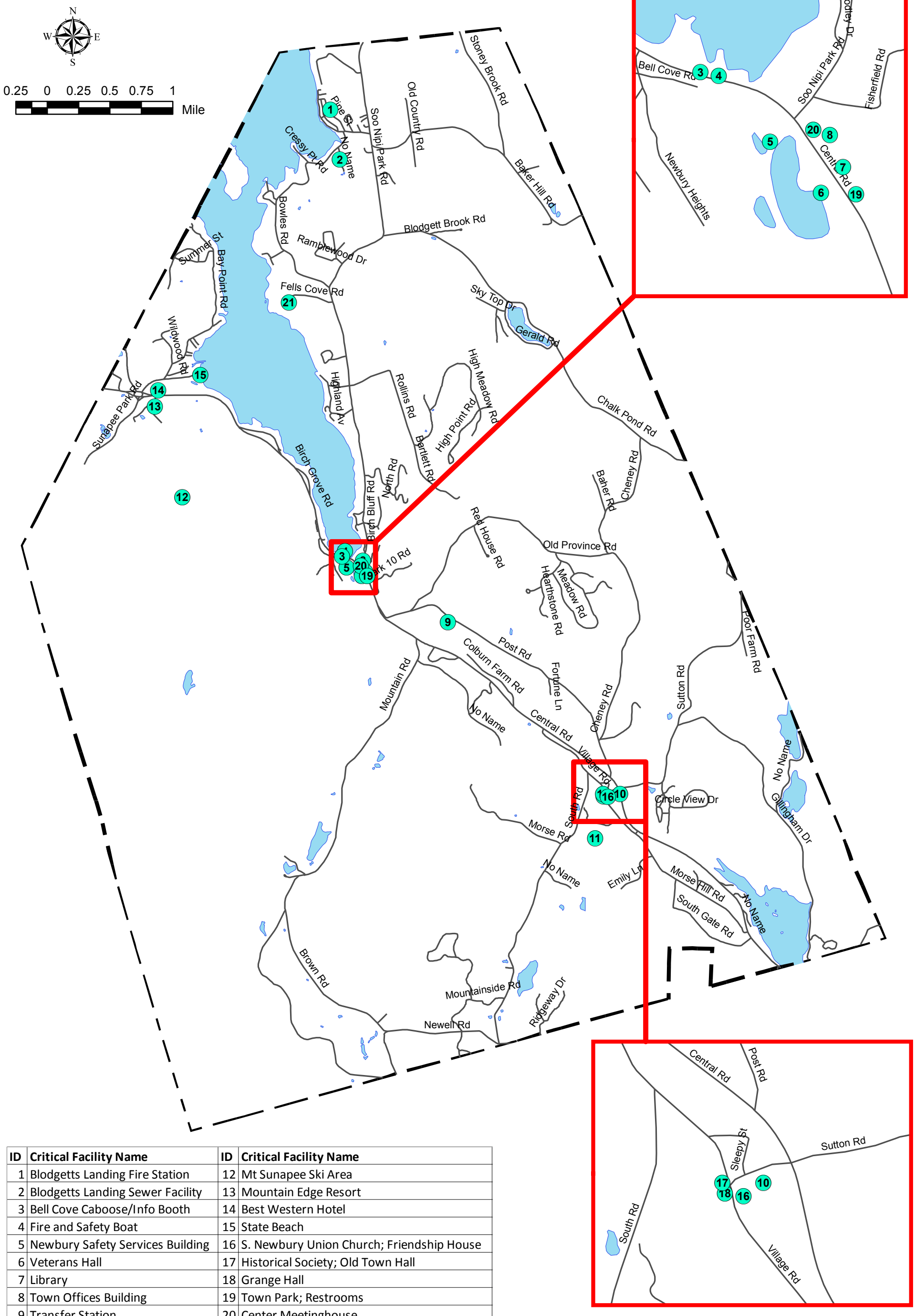
Flood Hazard Area (FEMA)

- Zone A
- Zone AE

NOTES

Floodplains from FEMA's Merrimack County digital Flood Insurance Rate Maps. Hazard areas and community facilities from Town of Newbury, 2006, updated 2011. Map created by UVLSRPC, 2011.

Critical Facilities Map for Newbury, New Hampshire



ID	Critical Facility Name	ID	Critical Facility Name
1	Blodgetts Landing Fire Station	12	Mt Sunapee Ski Area
2	Blodgetts Landing Sewer Facility	13	Mountain Edge Resort
3	Bell Cove Caboose/Info Booth	14	Best Western Hotel
4	Fire and Safety Boat	15	State Beach
5	Newbury Safety Services Building	16	S. Newbury Union Church; Friendship House
6	Veterans Hall	17	Historical Society; Old Town Hall
7	Library	18	Grange Hall
8	Town Offices Building	19	Town Park; Restrooms
9	Transfer Station	20	Center Meetinghouse
10	Hearse House	21	The Fells
11	Highway Department Garage		

Community facilities from Town of Newbury, 2006, updated 2011.
Map created by UVLSRPC, 2011.

Appendix E

FEMA Approval and Town Resolution of Adoption

U.S. Department of Homeland Security
FEMA Region I
99 High Street
Boston, MA 02110

FEMA

May 25, 2012

Jim Powell, Chair
Newbury Board of Selectmen
PO Box 296 US Route 103
Newbury, NH 03255

Dear Mr. Powell:

Thank you for the opportunity to review the Town of Newbury, NH Hazard Mitigation Plan. The Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA) Region I has evaluated the plan for compliance with 44 CFR Part 201. The plan satisfactorily meets all of the mandatory requirements set forth by the regulations. Congratulations on this achievement!

With this plan approval, the Town is eligible to apply for Mitigation grants administered by FEMA. Requests for mitigation funding will be evaluated individually according to the specific eligibility and requirements of each of these programs. Furthermore, a specific mitigation activity or project identified in your community's plan may not meet the eligibility requirements for FEMA funding, and even eligible mitigation activities are not automatically approved for FEMA funding under the programs referenced above.

The Town's Hazard Mitigation Plan must be reviewed, revised as appropriate, and resubmitted to FEMA for approval within **five years of the plan approval date of May 16, 2012** in order to maintain eligibility as an applicant for mitigation grants. Over the next five years, we encourage the town to continue updating the plan's assessment of vulnerability, adhere to its maintenance schedule, and begin implementing, when possible, the mitigation actions proposed in the plan.

Once again, thank you for your continued dedication to public service demonstrated by preparing and adopting a strategy for reducing future disaster losses. Should you have any questions, please do not hesitate to contact Marilyn Hilliard at (617) 956-7536.

Sincerely,

Don R. Boyce
Regional Administrator

DRB:mh

cc: Lance Harbour, Acting State Hazard Mitigation Officer
Beth Peck, NH Homeland Security and Emergency Management Planner
Victoria Davis, Upper Valley Lake Sunapee RPC Planner

Enclosure

RECEIVED MAR 29 2012

Town of Newbury, NH, New Hampshire
Board of Selectmen
A Resolution Approving the Newbury, NH Hazard Mitigation Plan – 2012 Update

WHEREAS, the Town of Newbury received assistance from the Upper Valley Lake Sunapee Regional Planning Commission through funding from the NH Homeland Security and Emergency Management to prepare a hazard mitigation plan; and

WHEREAS, several planning meetings to develop the hazard mitigation plan were held between 2011 and 2012 and then presented to the Board of Selectmen for review and discussion on March 26, 2012; and

WHEREAS, the Newbury Hazard Mitigation Plan – 2012 Update contains several potential future projects to mitigate the hazard damage in the Town of Newbury; and

WHEREAS, the Board of Selectmen held a public meeting on March 26, 2012 to formally approve and adopt the Newbury Hazard Mitigation Plan – 2012 Update.

NOW, THEREFORE BE IT RESOLVED that the Newbury Board of Selectmen approve the Newbury Hazard Mitigation Plan – 2012 Update.

APPROVED and SIGNED this 26th day of March, 2012.

TOWN OF NEWBURY
BOARD OF SELECTMEN

(seal)

Chair

ATTEST:

Vickie Davis

From: Hilliard, Marilyn <Marilyn.Hilliard@fema.dhs.gov>
Sent: Friday, March 23, 2012 2:48 PM
To: Vickie Davis
Cc: Peck, Elizabeth; Lance.Harbour@dos.nh.gov; Ndikum-Nyada, Brigitte; Johnson, Nan; Costa, Norma
Subject: Newbury, NH Approval Pending Adoption

Congratulations!

FEMA Region I has completed its review of the Newbury, NH Multi-Hazard Mitigation Plan and found it approvable pending adoption. With this approval, the jurisdiction meets the local mitigation planning requirements under 44 CFR 201 **pending FEMA's receipt of the adoption documentation and an electronic copy of the final plan**. These items should be provided to your state's mitigation planning point of contact who will ensure they are forwarded to FEMA. Acceptable electronic formats include a *.doc* or *.pdf* file and may be submitted on a CD. Upon FEMA's receipt of these documents, a formal letter of approval will be issued, along with the final FEMA Checklist.

The FEMA letter of formal approval will confirm the jurisdiction's eligibility to apply for Mitigation grants administered by FEMA and identify related issues affecting eligibility, if any. If the plan is not adopted within one calendar year of FEMA's Approval Pending Adoption, the jurisdiction must update the entire plan and resubmit it for FEMA review. If you have questions or wish to discuss this determination further, please contact me at marilyn.hilliard@fema.gov or 617-956-7536.

Thank you for submitting Newbury's Multi-Hazard Mitigation Plan and congratulations again on your successful community planning efforts.

marilyn.hilliard@fema.gov
Mitigation Division, FEMA Region I
99 High St., 6th fl., Boston, MA 02110
617-956-7536 phone
617-956-7574 fax

Newbury, NH Hazard Mitigation Plan 2012 Update

LOCAL MITIGATION PLAN REVIEW TOOL
Checklist & Plan Assessment

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA's evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan's strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdiction: Town of Newbury, NH	**Title of Plan:** Town of Newbury, New Hampshire Hazard Mitigation Plan 2012 Update **Type of Plan:** Single Jurisdiction	**Date of Plan:** 2012 Update: **Yes**
Local Point of Contact: Wayne Whitford **Title:** Newbury Health Officer & EMD **Agency:** Town of Newbury HM Committee. **Phone Number:** PH: (603) 763-4940 & FAX: (603) 763-5298 **E-Mail:** **wrwhitford@vzw.blackberry.net** **Local Point of Contact:** Dennis Pavilicek, Town Administrator townadmin@newburynh.org	**Address:** Newbury Offices PO Box 296 937 US Rte 103 Newbury, NH 03255	
Consultant: Victoria Davis **Title:** Planner **Agency:** Upper Valley Lake Sunapee RPC. **Phone Number:** (603) 448-1680 **E-Mail:** vdavis@uvlsrpc.org **E-Mail:**info@uvlsrpc.org	**Address:** Upper Valley Lake Sunapee RPC 10 Water Street, Suite 225 Lebanon, NH 03766	

State Reviewer: Beth Peck	**Title:** Hazard Mitigation lanner **E-Mail:** Elizabeth.Peck@dos.nh.gov	**Date:** 01/11/2012

FEMA Reviewers: Brigitte Ndikum-Nyada Alyse Struzziery	**Titles:** Community Planner STARR	**Dates:** March 15, 2012 February 2, 2012
Date Received in FEMA Region: 1-12-2012		
Plan Not Approved: Revise plan title - E1		
Plan Approvable Pending Adoption: 3-15-12	**Plan Adopted:**	
Plan Approved		

SECTION 1: REGULATION CHECKLIST

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been 'Met' or 'Not Met.' The 'Required Revisions' summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is 'Not Met.' Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan (section and/or page number)**	**Met**	**Not Met**
ELEMENT A. PLANNING PROCESS			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	Chapter I, p. 1-7	**YES**	
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Chapter I, p. 3	**YES**	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Chapter I, p. 3	**YES**	
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Chapter VI, p. 48-52 Table VI-I	**YES**	
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Chapter I, p. 3 Chapter IX, p. 59	**YES**	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	Chapter IX, p. 59	**YES**	
ELEMENT A: REQUIRED REVISIONS: (see pages 5 to 7 for additional comments)			
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	Chapter III, Parts B-C p. 12-38	**YES**	
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	Chapter III, Part B p. 12-36	**YES**	

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	Chapter III, Part C p. 37-38 Tables III-12 & III-13 Chapter V, Part C p. 44-47	**YES**	
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Chapter III, Part B p. 17	**YES**	
ELEMENT B: REQUIRED REVISIONS: (see pages 5 to 7 for additional comments)			
ELEMENT C. MITIGATION STRATEGY			
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Chapter VI, p. 48-52 Table VI-1	**YES**	
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	Chapter III, Part B p. 17 Chapter VI, p. 48-52 Table VI-1	**YES**	
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Chapter I, Part F p. 5-6 Chapter VII, Part A p. 54	**YES**	
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	Chapter VI, p. 48-52 Table VI-1 Chapter VII, p. 55	**YES**	
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Chapter VI, p. 53, Table VI-3 Chapter VII, p. 56, Table VII-2 Chapter VIII, p. 57, Table VIII-1	**YES**	
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Chapter IX, p. 51 & 59	**YES**	
ELEMENT C: REQUIRED REVISIONS: (see pages 5 to 7 for additional comments)			

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	Location in Plan (section and/or page number)	Met	Not Met
ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)			
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Chapter II, p. 9-10 Chapter VI, p. 53 Table VI-3 Chapter VII, p. 56 Table VII-2 Chapter VIII, p. 57 Table VIII-1	**YES**	
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Chapter VI, p. 48-52 Table VI-1	**YES**	
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Chapter VI, p. 53 Table VI-3 Chapter VII, p. 56 Table VII-2 Chapter VIII, p. 57 Table VIII-1	**YES**	
ELEMENT D: REQUIRED REVISIONS: (see pages 5 to 7 for additional comments)			
ELEMENT E. PLAN ADOPTION			
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	See below *Appendix E*		**X**
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	This is a single plan.	N/A	
ELEMENT E: REQUIRED REVISIONS: **E1. Prior to Plan's adoption,** incorporate the following change to Plan's title. The title referenced on the Adoption Certificate must be the title referenced throughout the plan or wherever applicable. For example, the plan's title is **Newbury Hazard Mitigation Plan 2012 Update**. The word **'Update'** and the **year** of adoption must be included in the plan's title. (i.e. "*A Resolution Approving the Newbury Hazard Mitigation Plan*." Must be revised to "A Resolution Approving the Newbury Hazard Mitigation Plan 2012 Update").			
ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

SECTION 2: PLAN ASSESSMENT

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Plan Strengths:

- The planning process reflects that, although there were no public attendees or any local officials from neighboring communities who participated in the planning process, the opportunity for them to participate was made available through various ways (postings at the Newbury Town office, a notice in the local paper as well as in the Intertown Record, and postings at the Town Offices in neighboring communities). (Chapter I, p. 3)
- Documentation of the planning process comprised of brief descriptions of plan meeting discussions. (Appendix C)
- The planning process describes the steps that were followed for updating the plan. (Chapter I, p. 4-5)
- The plan clearly describes how the public will continue to be involved in the future.

Opportunities for Improvement:

- The plan describes that notices were posted at the Town Offices as well as in the local paper and in the Intertown Record, which invited the public to work meetings. Although there were no public attendees and no inquiries about the planning process, describe how the anticipated interest at the Select Board meeting (as indicated on p. 3) will be documented and incorporated into the plan (if any).
- Describe how the planning process was initially established. Was there a structure or method of how the planning process was conducted?
- In addition to having notices posted at the Town Office, as well as at neighboring community's Town Offices, identify if any other methods were used to solicit input from the public (e.g. online surveys).
- Describe the schedule or method that will be used for evaluating the plan as the strategies are being implemented throughout the community.

Element B: Hazard Identification and Risk Assessment

Plan Strengths:

- The plan describes hazard identification and past hazard events in detail. (Chapter III, Part B, p. 12-36)
- Communication of risk on people, property, and infrastructure to the public (through tables) is included. (Chapter III – Chapter V, p. 12-48)

Opportunities for Improvement:

- Describe how the extent of each hazard was established (methodology).
- Describe how the vulnerability to each hazard was established. Was HAZUS used?

- Describe the vulnerability that the Town would face if any future development actually happened as well as the process for addressing other new developments. Would it alter the floodplain? If so, how can that be prevented? What regulations could be enforced?
- Additional maps that illustrate the locations of where each hazard would occur would be an asset to the plan.

Element C: Mitigation Strategy

Plan Strengths:

- The plan provides a table which lists the existing mitigation strategies as well as updates to those strategies along with identifying the responsible party for implementing each strategy. (Chapter VI, p. 48-52, Table VI-1)
- Table VI-1 describes the changes in the plan's development and the progress of the existing mitigation actions that were identified in the 2006 plan.
- The plan also provides newly identified mitigation strategies that the Town would like to implement. (Chapter VII, p. 55, Table VII-1)

Opportunities for Improvement:

- Provide a table or list of existing Town documents for which this mitigation plan can be incorporated into.
- In Table VII-1, there are only two proposed new mitigation actions. Although they would be implemented town-wide and address all hazards, provide more hazard-specific strategies that the Town could implement.
- Discuss briefly or in more depth and/or describe specific ways how incorporation of the mitigation strategy into other planning mechanisms such as comprehensive land-use plan and other growth management tools will be done or is being done by your community. Consider using a table or in a paragraph or two explain how your community will incorporate the mitigation strategy into their planning mechanism as well as integrate the mitigation actions with existing local authorities, policies, programs, and resources; discuss existing programs (including the NFIP), plans and policies that could be used to implement mitigation as well as document past projects etc…

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

Plan Strengths:

- The plan describes that the Newbury Emergency Management Director will initiate tracking the progress and updating the mitigation strategies that were identified and then will consult with the Hazard Mitigation Committee.
- The plan describes changes in development, including an upcoming senior housing project.

Opportunities for Improvement:

- Identify any barriers or obstacles to successful implementation/completion of mitigation actions.

B. Resources for Implementing Your Approved Plan

- Appendix B of the 2010 State of New Hampshire Hazard Mitigation Plan identifies a number of potential funding resources for various mitigation actions.
- More information about applying for grants, available publications and training opportunities can be obtained from New Hampshire's State Hazard Mitigation Officer or Planner.
- The FEMA Region has expressed interest in direct technical assistance on integrating non-regulatory flood risk products into hazard mitigation plans. The availability of this assistance is limited, but additional information can be found at: http://www.fema.gov/library/viewRecord.do?id=4763.

Appendix F

Mutual Aid Documentation

LAW ENFORCEMENT EXTENDED AUTHORITY AGREEMENT

This agreement is entered into as of the July 26, 2005 (date) by and between the Chief Law Enforcement Officers of the **Towns of Newbury, New London, Sunapee, Bradford, Sutton, Goshen, Wilmot** pursuant to the provisions of R.S.A. 105:13, which allows the Chief of Police from one jurisdiction to enter into an agreement with the Chief of Police from another community, allowing the extension of authority of the officers in the neighboring agency to that community.

1. Definitions: As used in this agreement

   a. "Party" means one of the governmental entities named above or such entities acting by their respective law enforcement agencies, if the context so requires.

   b. "Requesting party" means one party requesting law enforcement assistance from another party.

   c. "Assisting party" means either party rendering law enforcement assistance to the requesting party.

   d. "Chief law enforcement officer" means the Chief of Police or that person who is the department head of the agency, with peace officer authority, whether designated by appointment or election.

2. Duration. This agreement shall remain in full force and effect unless or until terminated by one of the parties as provided under RSA 105:13.

3. Assistance to be Rendered. In all instances of assistance, the assisting party may render any such assistance as it can give consistent with its own law enforcement needs and policies at the time.

4. Nature of Legal Entity. No separate legal entities are created by this agreement.

5. Purpose of Agreement. It is the purpose of this agreement to permit the parties hereto to provide mutual aid and assistance which transcend jurisdictional boundaries and which insures the prompt and effective delivery of law enforcement and emergency services to areas which, due to geographic remoteness, population sparsity, lack of manpower, or scheduled or unanticipated occurrences which exceed the available resources of the requesting party, are in need of an increased law enforcement presence.

6. Information. It is further desirable that the parties hereto should voluntarily assist each other by the interchange of law enforcement services and facilities, to cope with the problems of the emergency protection of life and property, and as otherwise necessary for the public health, welfare, safety and well-being. Accordingly, it is both necessary and desirable that a cooperative agreement be executed for the interchange of such mutual aid on an inter-jurisdictional basis.

7. Manner of Financing Agreement. Each party to this agreement shall with its lawful method of financing, establish and provide for payment of wages, worker's compensation coverage and all other benefits and responsibilities relating to their officers who respond to the other community in furtherance of this agreement, and all motor vehicles and equipment owned by the responding community shall remain the property of the responding community, except that in the event of a major occurrence involving an extraordinarily large number of officers, resources, or a considerable period of time, a party is allowed to request reasonable reimbursement of such extraordinary expenses from the requesting party.

8. Termination and Disposition of Property. This agreement may be voluntarily terminated in whole or in part by mutual consent of the parties, or 10 days after one of the parties has given written notice of intention to terminate to the other party. Upon such termination, all property not owned by one of the parties which is in its possession or custody, shall be returned to the other party forthwith.

9. Administration of Agreement. For purposes of administration of this agreement, the chief law enforcement officer of each agency is hereby designated to communicate and cooperate on a regular basis as necessary to effectuate this agreement.

10. Acquisition and Disposition of Property. In rendering mutual law enforcement assistance, each party shall be responsible for the provision of its own equipment, materials and supplies, except in cases of emergency where it appears to the officers or employees immediately involved that the sharing or use of equipment loaned or furnished by the other party is necessary or proper.

11. Minimum Standards for Personnel. No individual officer of either agency shall be authorized or commissioned to issue summonses or make arrests on behalf of the other agency unless that officer shall have met the minimum Police Standards and Training Council's requirements for certification as a bona fide full or part-time police officer and have written proof of this certification, and have met the minimum standards set forth for qualification with his/her agency's jurisdiction. No authority shall be denied under this agreement to any officer solely for reason of that officer's race, creed, color, sex, or national origin.

12. Liability of Parties. Each of the parties to this agreement shall indemnify its own employees for any liability or obligation to indemnify that may result from their actions under this agreement.

13. Insurance. Each party to this agreement shall provide professional liability insurance coverage in the amount of a least $1,000,000 per incident to each of their sworn officers and personnel injury and property damage liability coverage in the amount of at least $1,000,000 personal liability and $100,000 property damage for each police vehicle utilized by their agencies, and shall notify the other party to the agreement if at any time such insurance expires or is canceled.

14. Chain of Command. Requests for mutual aid shall be made through presently established communications systems, subject to orders from the ranking officer of the requesting party.

15. Reports. After all occurrences in which mutual law enforcement assistance was

requested and given, the parties shall exchange all reports arising out of the operation. Nothing in this section shall waive, limit or remove confidentiality imposed or allowed by law in regard to any such reports or the contents of the reports.

16. Prosecution. The responsibility for the prosecution of any criminal cases arising out of a request for assistance shall be that of the requesting party.

17. Control. The requesting party shall have and exercise general control of directing members of the assisting party to places where they are needed. However, where there is a commanding officer for the assisting party on-site at the location where the assistance is required, such commanding officer shall be responsible for exercising ultimate control over his/her forces in response to the general direction of the requesting party.

18. Responsibility. Officers of the requesting party shall be primarily responsible for making and processing arrests and the impounding and safe-guarding of lives and property within the territorial boundaries of the requesting jurisdiction. When a responding officer, while in the requesting jurisdiction, takes a person or property into custody, he/she shall relinquish custody at the earliest convenience to an officer of the requesting party for disposition in accordance with the policies of the requesting agency and applicable laws. Officers of the assisting party, who are subpoenaed to court as a direct or indirect result of providing services under this agreement, shall honor all subpoenas by the requesting party.

19. Emergency Situations. When an officer of one-party community, on or off duty, is in the other party community and becomes aware of, or observes an emergency which, if not immediately acted upon, will likely result in personal injury or property damage, and an officer of that other community is not immediately available to request enforcement action" the officer of the first community shall be authorized to temporarily exercise the same powers of detention or arrest that an officer of the other party would possess in the situation, but at the earliest practical moment, shall notify the ranking on-duty law enforcement officer immediately available in the other community that the emergency action was taken.

20. Training. The parties to this agreement agree to provide, at least annually, training to their officers who are subject to this agreement, and to familiarize any new officers with it prior to assuming normal duties.

21. Policies to be followed. If a responding officer is unaware of the written policies of the requesting department and not given specific instructions from that department, such officer shall act in strict conformity with the rules, regulations and procedures of the responding department provided they do not conflict with state law.

This agreement does not relieve either law enforcement agency of any duty imposed upon it by law.

Except for the right granted by this agreement to jointly exercise powers, this agreement does not authorize either party to exercise any power that it is not otherwise authorized to exercise. Nothing in this agreement shall be construed to either limit or extend the jurisdiction of either party, except as herein expressly set forth.

Appropriate officials of the parties may promulgate such written operational procedures to implement this agreement as may appear desirable.

All law enforcement powers, all of the privileges and immunities from liability, exemptions from laws, ordinances and rules, and all retirement, disability, worker's compensation and other benefits which apply to the activities of officers, agents, or employees when performing their respective functions within the territorial limits of their respective political subdivisions shall apply to them to the same degree and extent while; engaged in the performance of any of their functions and duties extra-territorial under the provisions of the agreement.

Signed,

Newbury Police Chief
Robert Lee

New London Police Chief
David Seastrand

Sunapee Police Chief
David Cahill

Sutton Police Chief
Patrick Tighe

Wilmot Police Chief
David White

Police Chief

Police Chief

Police Chief

MUTUAL AID AGREEMENT

This agreement is made between the Town of Sutton and the Town of Newbury;

WHEREAS:

The municipalities hereto are geographically located in proximity to each other, and the parties have determined it is to their mutual interest and benefit to furnish and receive supplemental police protection with each other.

Therefore, in consideration of their mutual covenants, the parties hereto agree as follows:

1.) *The Chief Law officer or his designee, or in time of emergency, the highest ranking on-duty law enforcement officer of one jurisdiction may request aid or assistance from the police department in the other jurisdiction that is a party to this agreement.*

2.) *Each party authorizes the police of the other party to answer calls and to provide police protection and service in their municipality, when requested, in the same manner and to the same extent as would its own police.*

3.) *It is mutually understood and agreed that the primary duty of each party is to provide adequate police protection within its own municipality, and compliance with a request for police assistance is voluntary and not compulsory for the party from which aid is requested. The extent of aid shall be determined solely by the party furnishing the aid, and the furnished aid may be recalled at the discretion of the party furnishing such aid.*

4.) *Personnel who are furnished shall work as far as possible under their own supervisors and any equipment shall, to the extent possible, be operated by the personnel of the municipality furnishing the equipment. General direction shall be given by the appropriate officers or persons of the party receiving the aid.*

5.) *Neither municipality of the agreement shall be required, except by mutual consent, to pay any charge or compensation to any other municipality to this agreement for services rendered hereunder. Any services performed or expenditures made in connection with furnishing mutual aid under this agreement by either party hereto shall be deemed for the direction protection and benefit of the inhabitants and property of that party.*

6.) *Any police officer of a municipality hereto furnishing aid to the other municipality shall at all times, remain the employee of the municipality that originally employed him, and the municipality furnishing aid shall at all*

times, be responsible for his wages, workmen's compensation and all other duties and responsibilities pertaining to his employment.

7.) *This agreement is intended to implement the provisions of RSA 48:11a and RSA 105:13 and to extend the authority of all duly authorized police officers of the Town of Sutton to the Town of Newbury.*

8.) *The parties to this agreement shall periodically confer and advise each other as to the type of equipment and number of personnel that may be available in the event of an extreme emergency or disorder, including the transport and processing of multiple arrestees and the operation of temporary detention facilities, as well as the radio communications capability of each agency.*

9.) *This agreement shall remain in full force and effect until terminated by the mutual consent of the Chiefs of both municipalities, or until ten days after the Chief of one municipality has received notification from the Chief of the other municipality of his intent to terminate the agreement.*

THIS AGREEMENT is executed on the 3rd *day of* December, 2009

TOWN OF SUTTON

Jonathan Korbet
Chief of Police
1 North Road
North Sutton, NH 03260

TOWN OF NEWBURY

Robert Lee
Chief of Police
952 Rte. 103
Newbury, NH 03255

New Hampshire Public Works Mutual Aid Program
Mutual Aid and Assistance Agreement

This Agreement is entered into by each of the entities that executes and adopts the understandings, commitments, terms, and conditions contained herein:

WHEREAS, the State of New Hampshire is geographically vulnerable to a variety of natural and technological disasters; and

WHEREAS, Chapter 53-A of the New Hampshire Revised Statutes Annotated, permits municipalities to make the most efficient use of their powers by enabling them to cooperate with other municipalities on a basis of mutual cooperation and recognizing this vulnerability and providing that this Agreement's intended purposes are to:

(1) Reduce vulnerability of people and property of this State to damage, injury, and loss of life and property;

(2) Prepare for prompt and efficient rescue, care, and treatment of threatened or affected persons;

(3) Provide for the rapid and orderly rehabilitation of persons and restoration of property; and

(4) Provide for cooperation and coordination of activities relating to emergency and disaster mitigation, preparedness, response, and recovery; and

WHEREAS, in addition to the State, the Federal Emergency Management Agency (FEMA) has recognized the importance of the concept of coordination between the State and local governments; and

WHEREAS, under Chapter 53-A and other chapters of the New Hampshire Revised Statutes Annotated, entities entering into mutual aid and assistance agreements may include provisions for the furnishing and exchanging of supplies, equipment, facilities, personnel, and services; and

WHEREAS, the entities which have chosen to become signatories to this Agreement wish to provide mutual aid and assistance among one another at the appropriate times.

THEREFORE, pursuant to RSA 53-A:3, I, these entities agree to enter into this Agreement for reciprocal emergency management aid and assistance, with this Agreement embodying the understandings, commitments, terms, and conditions for said aid and assistance, as follows:

SECTION I: DEFINITIONS

The following definitions will apply to the terms appearing in this Agreement.

A. *"Agreement"* means this document, the New Hampshire Public Works Mutual Aid Program Agreement.

B. *"Aid and assistance"* includes personnel, equipment, facilities, services, supplies, and other resources.

C. *"Authorized Representative"* means a party's employee who has been authorized, in writing by that party, to request, to offer, or to otherwise provide assistance under the terms of this Agreement. The list of Authorized Representatives for each party executing this Agreement shall be attached to the executed copy of this Agreement. (In the event of a change in personnel, unless otherwise notified, the presumption will be that the successor to that position will be the authorized representative.)

D. *"Disaster"* means a calamitous event threatening loss of life or significant loss or damage to property, such as a flood, hurricane, tornado, dam break, or other naturally-occurring catastrophe or man-made accidental, military, or paramilitary cause.

E. *"Mutual Aid Resource List"* means the list of Providers, equipment, and personnel maintained by the UNH Technology Transfer Center.

F. *"Party"* means a governmental entity which has adopted and executed this Agreement.

G. *"Provider"* means the party which has received a request to furnish aid and assistance from another party in need (the "Recipient"). In the absence of any local governing body designation, the Provider shall be represented by the local agency charged with recovery and repair activities including, but not limited to, opening of public ways; removal of debris; building of protective barriers; management of physical damage to structures and terrain; transportation of persons, supplies, and equipment; and repair and operation of municipal utilities.

H. *"Recipient"* means the party setting forth a request for aid and assistance to another party (the "Provider"). In the absence of any local governing body designation, the Provider shall be represented by the local agency charged with recovery and repair activities including, but not limited to, opening of public ways; removal of debris; building of protective barriers; management of physical damage to structures and terrain; transportation of persons, supplies, and equipment; and repair and operation of municipal utilities.

SECTION II: INITIAL RECOGNITION OF PRINCIPLE BY ALL PARTIES; AGREEMENT PROVIDES NO RIGHT OF ACTION FOR THIRD PARTIES

A. As this is a reciprocal contract, it is recognized that any party to this Agreement may be requested by another party to be a Provider. It is mutually understood that each party's foremost responsibility is to its own citizens. The provisions of this Agreement shall not be construed to impose an unconditional obligation on any party to this Agreement to provide aid and assistance pursuant to a request from another party. Accordingly, when aid and assistance have been requested, a party may in good faith withhold the resources necessary to provide reasonable and adequate protection for its own community, by deeming itself unavailable to respond and so informing the party setting forth the request.

B. Given the finite resources of any jurisdiction and the potential for each party to be unavailable for aid and assistance at a given point in time, the parties mutually encourage each other to enlist other entities in mutual aid and assistance efforts and to enter into such agreements accordingly. Concomitantly, the parties fully recognize that there is a highly meritorious reason for entering into this Agreement, and accordingly shall attempt to render assistance in accordance with the terms of this Agreement to the fullest extent possible.

C. Pursuant to RSA 53-A and as elaborated upon in Section XI of this Agreement, all functions and activities performed under this Agreement are hereby declared to be governmental functions. Functions and activities performed under this Agreement are carried out for the benefit of the general public and not for the benefit of any specific individual or individuals. Accordingly, this Agreement shall not be construed as or deemed to be an agreement for the benefit of any third parties or persons and no third parties or persons shall have any right of action under this Agreement for any cause whatsoever. All immunities provided by law shall be fully applicable as elaborated upon in Section XI of this Agreement.

SECTION III: GOVERNING BOARD; POWERS

A. The New Hampshire Public Works Mutual Aid Program shall be governed by a Board of Directors composed as follows:

(1) Four (4) members who shall be members of and appointed by the New Hampshire Road Agents Association;
(2) Two (2) members who shall be members of and appointed by the New Hampshire Public Works and Municipal Engineers Association;
(3) One (1) member who shall be members of and appointed by the New Hampshire Municipal Management Association;
(4) One (1) member who shall be members of and appointed by the New Hampshire Association of Fire Chiefs;
(5) One (1) member who shall be members of and appointed by the New Hampshire Association of Chiefs of Police;
(6) The Commissioner of the Department of Transportation or a designee, *ex. officio*;
(7) The Director of the New Hampshire Office of Emergency Management or a designee, *ex. officio*;
(8) The Director of the University of New Hampshire Technology Transfer Center or a designee, *ex. officio*; and
(9) The Executive Director of the New Hampshire Municipal Association or a designee, *ex. officio*.

B. *Ex-officio* members shall be non-voting members and shall not be counted for a quorum. A majority of the voting members appointed and qualified shall constitute a quorum for the transaction of any business and a majority vote of these present and voting at any meeting shall be required for any action.

C. The fiscal and business year of the New Hampshire Public Works Mutual Aid Program shall be from January 1 to December 31 of each year. The Board of Directors shall meet at least four (4) times each year and shall, at the first meeting of each year, elect a Chair and Vice Chair to serve for that year.

D. The term of office of voting members shall be three (3) years or until their successor is appointed and qualified. The initial terms of office shall be staggered as follows:

(1) The four Category (1) members shall hold initial terms of one (1) year; two (2) years; and two (2) for three (3) years;
(2) The two Category (2) members shall hold initial terms of one (1) year and two (2) years.
(3) The Category (3) member shall hold an initial term of one (1) year.
(4) The Category (4) member shall hold an initial term of two (2) years.
(5) The Category (5) member shall hold an initial term of three (3) years.

E. The New Hampshire Public Works Mutual Aid Program Board of Directors shall have the authority to:

(1) Enter into any necessary agreements on behalf of the participating units of government in furtherance of this Mutual Aid Agreement, subject to any necessary ratification by the participating units;
(2) Adopt an annual budget and establish an annual fee for participating in the New Hampshire Public Works Mutual Aid Program;
(3) Propose modifications to the mutual aid agreement for ratification by participating units of government;
(4) Promulgate reasonable rules to govern the New Hampshire Public Works Mutual Aid Program; and
(5) Perform any other function and undertake any other activity reasonably necessary to carry out the purpose of this agreement unless said function or activity is subsequently disavowed by a majority vote of the governing bodies of the participating municipal government units.

SECTION IV: PROCEDURES FOR REQUESTING ASSISTANCE

Mutual aid and assistance shall not be requested unless the resources available within the stricken area are deemed inadequate by Recipient. When Recipient becomes affected by a disaster and deems its resources inadequate to rectify the given situation, it may request mutual aid and assistance by communicating the request directly to one or more Providers on the Mutual Aid Resource List, indicating the request is made pursuant to this mutual aid agreement. The request shall be followed as soon as practicable by a written confirmation of that request. All requests for mutual aid and assistance shall be transmitted as set forth below.

A. METHOD OF REQUEST FOR MUTUAL AID AND ASSISTANCE: Recipient shall directly contact Provider's authorized representative, setting forth the information in paragraph B of this Section (Section IV). All communications shall be conducted directly between Recipient and Provider. Recipient shall be responsible for the costs and expenses incurred by any Provider in providing aid and assistance pursuant to the provisions of this Agreement as noted in Section VIII of this Agreement.

B. *REQUIRED INFORMATION:* Each request for assistance shall be accompanied by the following information, in writing or by any other available means, to the extent known:

(1) Stricken Area and Status: A general description summarizing the condition of the community (i.e., whether the disaster is imminent, in progress, or has already occurred) and of the damage sustained to date;
(2) Services: Identification of the service function(s) for which assistance is needed and the particular type of assistance needed;
(3) Infrastructure Systems: Identification of the type(s) of public infrastructure system for which assistance is needed (water/sewer, storm water systems, streets) and the type of work assistance needed;
(4) Aid and Assistance: The amount and type of personnel, equipment, materials, and supplies needed and a reasonable estimate of the length of time they will be needed;
(5) Facilities: The need for sites, structures, or buildings outside Recipient's geographical limits to serve as relief centers or staging areas for incoming emergency goods and services; and
(6) Meeting Time and Place: An estimated time and a specific place for a representative of Recipient to meet the personnel and resources of any Provider.

C. STATE AND FEDERAL ASSISTANCE: If the severity of the emergency is expected to exhaust the reasonably available resources on the Mutual Aid Resource List, then the Recipient shall be responsible for notifying the appropriate state agencies or coordinating requests for state and/or federal assistance.

SECTION V: PROVIDER'S ASSESSMENT OF AVAILABILITY OF RESOURCES AND ABILITY TO RENDER ASSISTANCE

When contacted by a Recipient in need, Provider's authorized representative shall assess Provider's own local situation in order to determine available personnel, equipment, and other resources. If Provider's authorized representative determines that Provider has available resources, Provider's authorized representative shall so notify the Recipient. Provider shall complete a written acknowledgment regarding the assistance to be rendered (or a rejection of the request) and shall transmit it by the most efficient practical means to the Recipient for a final response. Provider's acknowledgment shall contain the following information:

(1) In response to the items contained in the request, an acknowledgment of the personnel, equipment, and other resources to be sent;
(2) The projected length of time such personnel, equipment, and other resources will be available to serve Recipient, particularly if the period is projected to be shorter than one week (as provided in the "Length of Time for Aid and Assistance" section [Section VII] of this Agreement.)

(3) The estimated time when the assistance provided will arrive at the location designated by the Authorized Representative of the Recipient; and
(4) The name of the person(s) to be designated as Provider's supervisory personnel (pursuant to the "Supervision and Control" section [Section VI] of this Agreement).

SECTION VI: SUPERVISION AND CONTROL

A. Provider shall designate supervisory personnel among any employees sent to render aid and assistance to Recipient. As soon as practicable, Recipient shall assign work tasks to Provider's supervisory personnel, and unless specifically instructed otherwise, Recipient shall have the responsibility for coordinating communications between Provider's supervisory personnel and Recipient.

Based upon such assignments set forth by Recipient, Provider's supervisory personnel shall:

(1) have the authority to assign work and establish work schedules for Provider's personnel. Further, direct supervision and control of Provider's personnel, equipment, and other resources shall remain with Provider's supervisory personnel. Provider should be prepared to furnish communications equipment sufficient to maintain communications among its respective operating units, and if this is not possible, Provider shall notify Recipient accordingly;
(2) maintain daily personnel time records, material records, a log of equipment hours, and other expenses;
(3) shall report work progress to Recipient at mutually agreed upon intervals.

SECTION VII: LENGTH OF TIME FOR AID AND ASSISTANCE; RENEWABILITY; RECALL

A. Unless otherwise provided, the duration of Provider's assistance shall be presumed to be for an initial period of twenty-four (24) hours, starting from the time of arrival. Thereafter, assistance may be extended as the situation warrants for periods agreed upon by the authorized representatives of Provider and Recipient.

B. As noted in Section II of this Agreement, Provider's personnel, equipment, and other resources shall remain subject to recall by Provider to provide for its own citizens if circumstances so warrant. Provider shall make a good faith effort to provide at least twenty-four (24) hours advance notification to Recipient of its (Provider's) intent to terminate portions or all assistance, unless such notice is not practicable, in which case as much notice as is reasonable under the circumstances shall be provided.

SECTION VIII: COST DOCUMENTATION

A. Personnel – Provider shall continue to pay its employees according to its then prevailing ordinances, rules, regulations, and collective bargaining agreements. At the conclusion of the period of assistance, the Provider shall document all direct and indirect payroll costs plus any taxes and employee benefits which are measured as a function of payroll (i.e.; FICA, unemployment, retirement, etc.).

B. Provider's Traveling Employee Needs – Provider shall document the basic needs of Provider's traveling employees, such as reasonable out-of-pocket costs and expenses of Provider's personnel, including without limitation to transportation expenses for travel to and from the stricken area, shelter, and subsistence.

C. Equipment – Provider shall document the use of its equipment during the period of assistance including all repairs to its equipment as determined necessary by its on-site supervisor(s) to maintain such equipment in safe and operational condition, fuels, miscellaneous supplies, and repairs directly caused by provision of the assistance.

D. Materials And Supplies – Provider shall document all materials and supplies furnished by it and used or damaged during the period of assistance.

SECTION IX: RIGHTS AND PRIVILEGES OF PROVIDER'S EMPLOYEES

Whenever Provider's employees are rendering aid and assistance pursuant to this Agreement, such employees shall retain the same powers, duties, immunities, and privileges they would ordinarily possess if performing their duties within the geographical limits of Provider.

SECTION X: PROVIDER'S EMPLOYEES COVERED AT ALL TIMES BY PROVIDER'S WORKERS' COMPENSATION POLICY

Recipient shall not be responsible for reimbursing any amounts paid or due as benefits to Provider's employees due to personal injury or death occurring during the period of time such employees are engaged in the rendering of aid and assistance under this Agreement. It is mutually understood that Recipient and Provider shall be responsible for payment of such workers' compensation benefits only to their own respective employees. Further, it is mutually understood that Provider will be entirely responsible for the payment of workers' compensation benefits to its own respective employees.

SECTION XI: IMMUNITY

Pursuant to RSA 53-A, all activities performed under this Agreement are hereby declared to be governmental functions and the liability of both Provider and Recipient shall be governed by NH Statutes, RSA 107-C:10.

SECTION XII: PARTIES MUTUALLY AGREE TO HOLD EACH OTHER HARMLESS

Each party (as indemnitor) agrees to protect, defend, indemnify, and hold the other party (as indemnitee), and its officers, employees, and agents, free and harmless from and against any and all losses, penalties, damages, assessments, costs, charges, professional fees, and other expenses or liabilities of every kind and arising out of or relating to any and all claims, liens, demands, obligations, actions, proceedings, or causes of action of every kind in connection with or arising out of indemnitor's negligent acts, errors and/or omissions. Indemnitor further agrees to investigate, handle, respond to, provide defense for, and defend any such claims, etc. at indemnitor's sole expense and agrees to bear all other costs and expenses related thereto. To the extent that immunity does not apply, each party shall bear the risk of its own actions, as it does with its day-to-day operations, and determine for itself what kinds of insurance, and in what amounts, it should carry. Each party understands and agrees that any insurance protection obtained shall in no way limit the responsibility to indemnify, keep, and save harmless the other parties to this Agreement.

SECTION XIII: ROLE OF THE NHMA AND UNIVERSITY OF NH TECHNOLOGY TRANSFER CENTER

A. Under this Agreement, the responsibilities of the NH Municipal Association (NHMA) are:

(1) to serve as the fiscal agent of the Program for the invoicing and collection of any dues or fees, recipient for special grants or awards, and for the processing of all accounts receivable and payable;
(2) to serve as the central depository for executed agreements; and
(3) to provide administrative support to the Board of Directors.

B. Under this Agreement, the responsibilities of the University of New Hampshire Technology Transfer Center (UNH T^2) are:

(1) to maintain the Mutual Aid Resource List, and to provide this listing to each of the entities on an annual basis.
(2) to train public works personnel and other local officials in the implementation of the NHPWMAP.

SECTION XIV: AMENDMENTS; ADDITIONAL MEMBERS

A. *Manner* – This Agreement may be modified at any time by (1) a proposal of the Board of Directors and upon the consent of a majority of the participating government units or (2) upon the mutual written consent of the Recipient and Provider.

B. *Addition of Other Entities* – Additional entities may become parties to this Agreement upon: (1) acceptance and execution of this Agreement; (2) sending said executed copy of the Agreement to the New Hampshire Municipal Association with payment of any dues or fees; and (3) completing and returning the Mutual Aid Resource List.

SECTION XV: INITIAL DURATION OF AGREEMENT; RENEWAL; TERMINATION

This Agreement shall be binding for not less than one (1) year from its effective date, unless terminated upon at least sixty (60) days advance written notice by a party as set forth below. Thereafter, this Agreement shall continue to be binding upon the parties in subsequent years, unless canceled by written notification served personally or by registered mail upon the New Hampshire Municipal Association, which shall provide notice to all other parties. The withdrawal shall not be effective until sixty (60) days after notice thereof has been sent to all other parties. A party's withdrawal from this Agreement shall not affect a party's liability or obligation under the terms of this Agreement incurred hereunder. Once the withdrawal is effective, the withdrawing entity shall no longer be a party to this Agreement, but this Agreement shall continue to exist among the remaining parties.

SECTION XVI: HEADINGS

The headings of various sections and subsections of this Agreement have been inserted for convenient reference only and shall not be construed as modifying, amending, or affecting in any way the express terms and provisions of this Agreement.

SECTION XVII: SEVERABILITY – EFFECT ON OTHER AGREEMENTS

Should any clause, sentence, provision, paragraph, or other part of this Agreement be adjudged by any court of competent jurisdiction to be invalid, such judgment shall not affect, impair, or invalidate the remainder of this Agreement. Each of the parties declares that it would have entered into this Agreement irrespective of the fact that any one or more of this Agreement's clauses, sentences, provisions, paragraphs, or other parts have been so declared invalid. Accordingly, it is the intention of the parties that the remaining portions of this Agreement shall remain in full force and effect without regard to the clause(s), sentence(s), provision(s), paragraph(s), or other part(s) invalidated.

SECTION XVIII: EFFECTIVE DATE

This Agreement shall take effect upon its approval by the entity seeking to become a signatory to this Agreement and upon proper execution hereof.

IN WITNESS WHEREOF, each of the parties have caused this New Hampshire Public Works Mutual Aid Program Agreement to be duly executed in its name and behalf by its chief executive officer, who has signed accordingly with seals affixed and attested with concurrence of a majority of its governing board, as of the date set forth in this Agreement.

WITNESS:

BY: Dennis J. Pavlicek
Printed Name: Dennis J. Pavlicek
Title: Town Administrator
Municipal Government Unit: Town of Newbury
Date: 12/8/98

DULY AUTHORIZED REPRESENTATIVE

Name: Calvin Prossman
Title: Highway Administrator
Address: P.O. Box 296
City/State/Zip: Newbury NH 03255
Phone: (603) 938-5494 ; (603) 763-4940
Fax: (603) 763-5298
Pager: 564-6821
After Hours: 763-4765 (Home)