Town of Newport, New Hampshire
Hazard Mitigation Plan

FINAL DRAFT
Approved by FEMA – November 2004

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SECTION I: INTRODUCTION

BACKGROUND

The New Hampshire Office of Emergency Management (NHOEM) has a goal for all communities within the State of New Hampshire to establish local hazard mitigation plans as a means to reduce future losses from natural or man-made hazard events before they occur. The NHOEM has provided funding to the Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC), to conduct local Hazard Mitigation Plans for several of its communities. UVLSRPC began preparing a local Hazard Mitigation Plan for the Town of Newport in February 2004.

PURPOSE

The *Newport Hazard Mitigation Plan* serves as a strategic planning tool for use by the Town of Newport in its efforts to reduce future losses from natural and/or man-made hazard events before they occur. This Plan does *not* constitute a section of the Master Plan.

AUTHORITY

The Newport Hazard Mitigation Committee prepared the *Newport Hazard Mitigation Plan* with the assistance and professional services of the Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC) under contract with the New Hampshire Office of Emergency Management (OEM) operating under the guidance of the Federal Emergency Management Agency (FEMA). After a public hearing held on February 7, 2005, the Newport Board of Selectmen adopted the *Plan* on February 7, 2005.

SCOPE OF THE PLAN

The scope of the *Newport Hazard Mitigation Plan* includes the identification of natural and human-made hazards affecting the Town, as identified by the Newport Hazard Mitigation Committee. The hazards were reviewed under the following categories as outlined in the State of New Hampshire Hazard Mitigation Plan:

I. Flooding (Including hurricanes, 100-year floodplain events, debris-impacted infrastructure, erosion, mudslides, rapid snow pack melt, river ice jams, dam breach and/or failure)
II. Wind (Including hurricanes, tornadoes, "Nor'easters," downbursts and lightning)

III. Fire (Including forest fires and issues such as isolated homes and residential areas)
IV. Ice & Snow Events (Including heavy snow storms, ice storms, and "Nor'easters,")
V. Earthquake (Including landslides and other geologic hazards related to seismic activity)
VI. Other Events (Including hazardous materials events and terrorism).

METHODOLOGY

Using the *Hazard Mitigation Planning for New Hampshire Communities* handbook, as developed by the Southwest Regional Planning Commission (SWRPC), the Newport Hazard Mitigation Committee in conjunction with the UVLSRPC, developed the content of the *Newport Hazard Mitigation Plan* by following the ten-step process set forth in the handbook. The Committee, and/or other representatives, held a total of six meetings beginning in January and ending in September 2004. All meetings but those with the EMD were posted at the Town Office and open to the general public. The Newport Board of Selectmen held a public hearing and formally adopted it on February 7, 2005.

The following are dates of meetings that were vital to the development of this Plan:

- January 21, 2004: Meeting with Pete Lamb, EMD
- February 19, 2004: Hazard Mitigation Committee meeting
- March 18, 2004: Hazard Mitigation Committee meeting
- June 10, 2004: Hazard Mitigation Committee meeting
- August 24, 2004: Meeting with Pete Lamb, EMD
- September 16, 2004: Hazard Mitigation Committee meeting

To complete this Plan, the Hazard Mitigation Committee followed the following planning steps:

Step 1: Map the Hazards

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

Step 2: Determine Potential Damage

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 summary listing of "Critical Facilities" is presented at the end of Section II.

Step 3: Identify Plans/Policies Already in Place

Using information and activities in the handbook, the Committee and UVLSRPC staff identified existing mitigation strategies which are already implemented in the Town related to flood, wind, fire, ice and snow events, earthquakes, and human-made events. A summary chart and the results of this activity are presented in Section III of the *Plan*.

Step 4: Identify the Gaps in Protection/Mitigation

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. A summary chart and the results of these activities are presented in Section III of the *Plan*.

Step 5: Determine Actions to be Taken

During an open brainstorming session, the Hazard Mitigation Committee developed a list of other possible hazard mitigation actions and strategies for the Town of Newport. Ideas proposed included engineering/mapping (*e.g. digitizing floodplain maps*), emergency response and planning (*e.g. setting up flood committee)*, structural (*e.g. replacing Breakneck Rd. culvert*) and educational (*e.g. outreach to residents and businesses*).

Step 6: Evaluate Feasible Options

The Hazard Mitigation Committee reviewed each of the hazard mitigation actions and strategies that were identified in the brainstorming session using Evaluation Charts from Step Six of the handbook. Each strategy was rated (good, average, or poor) for its effectiveness related to fourteen factors (e.g., damage reduction, environmental impact, social acceptability and financial feasibility). Each factor was then scored according to the STAPLEE chart outlined in chapter seven of the handbook and all scores were totaled for each strategy. Strategies were ranked by overall score for preliminary prioritization then reviewed again under step eight.

Step 7: Coordinate with other Agencies/Entities

UVLSRPC staff reviewed the Emergency Operations Plan (EOP) and Newport Master Plan. This was done in order to determine if any conflicts existed or if there were any potential areas for cooperation. The Master Plan was also reviewed for discussion of development trends and to determine and assess existing mitigation policies in place. The following information sources were consulted in preparing the "Risk Assessment" section of the Plan: Northeast States Emergency Consortium (NESEC), New Hampshire Bureau of Emergency Management, FEMA Region 1, The Tornado Project, Cold Regions

Research and Environmental Laboratory (CRREL) Ice Jam Database, and the National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM). Other resources used for every stage of plan development, including assessing vulnerability and identifying and analyzing mitigation actions, are cited on page 34 of the Plan. Finally, staff from the NH Bureau of Emergency Management were invited to review the draft Plan.

Step 8: Determine Priorities

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

Step 9: Develop Implementation Strategy

Using the chart provided under step nine of the handbook, the Committee created an implementation strategy which included person(s) responsible for implementation (who), a schedule for completion (when), and a funding source and/or technical assistance source (how) for each identified hazard mitigation actions.

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.

People who participated in the development of this plan:

Pete Lamb, Chief/Emergency Management Co-Director
Dan O'Neill, Town Manager
Larry Wiggins, Director Public Works
Fraser Michaud, Supt. Of Highway
Pete Petschik, Field Representative, NH BEM
Paul Brown, Finance Manager
Bob Naylor, Water & Sewer Superintendent
Julie Collins, Planning & Zoning Coordinator
Bill Mealey, School Superintendent
David Hoyt, Chief of Police
Victoria Boundy, UVLSRPC

HAZARD MITIGATION GOALS AND OBJECTIVES

The *State of New Hampshire Natural Hazards Mitigation Plan*, which was prepared and is maintained by the New Hampshire Office of Emergency Management (OEM), sets forth hazard mitigation goals and objectives for the State of New Hampshire. The Town of Newport concurred with these goals and adopted them for the Town.

1. To improve upon the protection of 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.

3. To reduce the potential impact of natural and man-made disasters on critical facilities in the town.

4. To reduce the potential impact of natural and man-made disasters on the town's infrastructure.

5. To improve emergency preparedness.

6. To improve the town's disaster response and recovery capability.

7. To reduce the potential impact of natural and man-made disasters on private property.

8. To reduce the potential impact of natural and man-made disasters on the town's economy.

9. To reduce the potential impact of natural and man-made disasters on the town's natural environment.

10. To reduce the town's liability with respect to natural and man-made hazards generally.

11. To reduce the potential impact of natural and man-made disasters on the town's specific historic treasures and interests as well as other tangible and intangible characteristics which add to the quality of life of the citizens and guests of the town.

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

COMMUNITY PROFILE

Location, Topography and Weather Conditions

The Town of Newport, nestled in the hills of western New Hampshire, is the County seat of Sullivan County, and it includes the villages of Kellyville and Guild. Newport borders Claremont to the east, and is located between Interstates 89 and 91.

Newport's total land area is 43.6 sq. miles. The vast majority of Newport's land area (92 percent) remains undeveloped.[1] Forests occupy over 85 percent of the Town's 27,274 acres and thus represent the dominant land use in Newport. The most important feature of Newport's landscape is the Sugar River, which provided power for the early mills. Like most New England communities, the major transportation routes follow the river valleys. The South and North Branch join the main stem of the Sugar River in Newport.

The overall pattern of land use is typical of towns in this part of New Hampshire, with most of the concentrated development along major roads that loosely follow the river valley. Topography is the major constraint that affects this land use pattern. Eight or nine major hills and mountains present constraints to intensive development. The steep slopes in these areas, often interspersed with wet areas, add to the difficulties and costs of development. Road access can also be difficult.

Newport's annual mean temperature range is 12 to 83 degrees Fahrenheit. Its annual average rainfall is 42 inches, and its annual average snowfall is 60 inches.

[1] This and following information taken from Newport Master Plan, 1995.

DEVELOPMENT TRENDS

The large amount of undeveloped land (92 percent) in Newport might be a reflection of natural constraints of the land, low demand for housing or commercial/industrial sites, or limited accessibility offered by the Town road system.

The developed areas in Newport are primarily residential and mixed in character. The major residential areas are found in Newport Center, Guild, North Newport, and in the eastern part of town along Maple Street, Bradford Road, and Unity Road. Other residential development is scattered throughout town.

An area of mixed use is found in downtown Newport Center, and extending to the east and west along Route 11. The mixed-use area in the eastern end of town contains Sturm Ruger and other established major manufacturing enterprises, together with a mix of commercial uses. The area along Route 11 to the west has a sparser mixture of commercial uses. The other specific land uses worth noting are: an airport, a golf course, and two landfills.

The 1995 Master Plan calls for future land use to follow the traditional New England rural pattern, "relatively compact development surrounded by wooded or agricultural areas," and encourages downtown redevelopment and higher-density housing to be located in existing concentrated areas.

Development trends in Newport:

- Downtown economic redevelopment - but little area downtown for residential development
- Many developments continuing out in more remote areas - increasing wildland/urban interface risk.
- Off Unity Rd. - two major developments, one 65-unit, one 20-unit
- Meadow Park area - targeted for senior housing or the like; is downtown, but is in the flood area
- Trickle-down residential development from the Upper Valley area
- Undeveloped industrial area - Routes 11/103 towards Sunapee
- Rts. 11/103 between Newport and Claremont - likely continued commercial development

POPULATION GROWTH

Through the last three decades, the population has remained relatively steady in Newport. From 1990 to 2000, Newport grew by 2.6 percent to 6,269, a difference of 159. The median age is 37.1 percent, with 26.5 percent of the population under the age of 18 and 15.3 percent age 65 and older. The total number of households is 2,473, with an average size of 2.5 persons. Of those, 1,656 are family households, with an average size of 3.0 persons. As of April 1, 2000, there were 2,633 total housing units. Population density in 2002 was 145.7 persons per square mile of land area. Newport contains 43.5 square miles of land area and 0.1 square miles of inland water area.

Population Growth Comparisons: Newport and Neighboring Communities

Jurisdiction	1970	1980	1990	2000	Abs. Change 1980-1990	% Change 1980-1990	Abs. Change 1990-2000	% Change 1990-2000
Newport	**5,899**	**6,229**	**6,110**	**6,269**	**-119**	**-2**	**159**	**3**
Claremont	14,221	14,557	13,902	13,151	-655	-4	-751	-5
Unity	709	1,092	1,341	1,530	249	23	189	14
Sunapee	1,384	2,312	2,559	3,055	247	11	496	19
Sullivan County	30,949	36,063	38,592	40,458	2,529	7.0	1,866	4.8
NH	737,681	920,610	1,109,252	1,235,786	188,642	20.5	126,534	11.4

Source: U.S. Census Bureau, 1970-2000 Census

SECTION II:
HAZARD IDENTIFICATION
AND POTENTIAL RISK ASSESSMENT

The Newport 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 Sullivan County in particular. A list of past hazard events in the region is listed on pages 19-20. Armed with this information, the Committee conducted a Hazard Analysis and Risk Assessment for the Town of Newport, located on page 20.

A. FLOODING

The Newport Hazard Mitigation Committee reviewed the following kinds of hazards related to *flooding*:

1. Hurricanes

"A hurricane is a heat engine that derives its energy from ocean water. These storms develop from tropical depressions which form off the coast of Africa in the warm Atlantic waters. When water vapor evaporates, it absorbs energy in the form of heat. As the vapor rises, it cools within the tropical depression, then condenses, releasing heat, which sustains the system."[2]

Since 1635, ten hurricanes have reached New Hampshire: 1635, 1778, 1804, 1815, 1869, 1938, 1954, 1960, 1985 and 1991.[3]

All areas of the town of Newport are potentially at risk for hurricane events. The Hurricane of 1938 caused major tree damage and precipitated some flooding in the Town of Newport.

2. 100-year Floodplain Events

"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 dangerous floods are rare but some result in the spring from large rainfall quantities combined with warm, humid winds that rapidly release water from the snow pack ... General flooding is also caused by major hurricanes that closely follow

[2] State of New Hampshire Natural Hazards Mitigation Plan, p. 56
[3] Ibid.

major rainstorms. Significant flooding occurs periodically along the watercourses with resultant loss of lives and property."[4]

Similar to many other New Hampshire communities, the Town of Newport developed along the waterways. "As a result of this development pattern, the floodplains … were rapidly settled. The shift to industrialization during the mid-nineteenth century compounded the problem …" as "[r]esidents moved to the floodplains … Such encroachment has led to problems, as the floodplains are extensions of the watercourses and … carry excessive runoffs naturally. Flood safety is a great concern along these watercourses and can be greatly enhanced by flood hazard mitigation planning."[5]

The Newport Hazard Mitigation Committee identified the following areas that are vulnerable to flooding:

- 'Goshen Ocean' Dam at Gunnison Lake (Army Corps of Engineers). Damage to outlet two years ago.
- Elm Street, west side of bridge. In the 50-year floodplain. Is a risk every year due to snowmelt. Main highway is at risk for flooding, and there are about 20 businesses, including a health care facility.
- Meadow Park, Meadow Park Rd. Municipal recreation area.
- Breakneck Rd. Flooded 2-3 times a year. Undersized culvert and closed, unlined landfill in flooding area.
- Corbin Park/Bridge (covered bridge).
- Airport Runway 1836 Extension.
- Chandler's Mill Rd. At least two residences.
- Route 11/Guild neighborhood
- Coon Brook Rd. 56-site campground.
- Loon Lake Dam (Croydon). Several residences and an industrial area in Newport in the dam inundation area.
- Main St. by Common (inadequate storm drainage system)
- Pump Stations
- Roads
- Athletic fields/Trail System
- Water Supply
- Ames Plaza
- Golf Course

3. River Ice Jams

"Ice forming in riverbeds and against structures presents significant hazardous conditions [;] … storm waters encounter these ice formations which may create temporary dams. These dams may create flooding conditions where none previously existed (i.e., as a consequence of elevation in relation to normal floodplains). Additionally, there is the

[4] Ibid. p. 12
[5] Ibid. pp. 12-13

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."[6]

Bridges, culverts, water and sewer infrastructure, roads and water-based industrial sites may be especially vulnerable to this type of hazard.

The Committee identified the following areas vulnerable to ice jam events (The CRREL Ice Jam Database had no events on file):

- Sugar River
  - Junction of Sugar and South Branch
  - Below Ruger Dam to Main Street
  - Bend at Chandler's Mills
  - Pier Bridge on Chandler's Mill Rd. (State bridge)
  - Wright Bridge on Chandler's Mill Rd. (State bridge)
- Cutts Rd. - icing overtops road

4. Dam Breach and Failure

"The Department of Environmental Services (DES), through its Dam Bureau, is charged with the responsibility of ensuring the public safety as it relates to the regulation of dams. Specifically, authority is granted in the *Revised Statutes Annotated*, Chapter 482 'Dams, Mills and Flowage.' These laws enable DES to regulate the construction and reconstruction of dams, as well as to periodically inspect existing dams to ensure the design, construction, maintenance and operation meet accepted engineering standards … These dams function to serve the needs of flood control, recreation, wildlife enhancement and water resources management."[7]

Dams in Newport and the areas vulnerable to dam breach or failure:

Three cement dams upstream in Sunapee

- Sturm Ruger
- La Valley's - would be wiped out
- Dorr Woolen Bldg.
- One gasoline station
- About 12 residences

Ruger Dam

- Eagle Block
- Entire south end of Main Street
- Arlington Sample (manufacturing area)
- Rear parking lot of Police Station

[6] Ibid. p. 16
[7] Ibid. p. 17

- Recreational fields

Goshen Ocean Dam at Gunnison Lake: Breach or failure. Damage to outlet two years ago.

- Whole downtown would be severely impacted

Loon Lake Dam (Croydon). There are several residences and an industrial area in Newport in the dam inundation area.

B. WIND

The Newport Committee reviewed the following kinds of hazards related to *wind*:

1. Hurricanes

Wind speeds within hurricanes may reach 250 miles per hour in a Category 5 hurricane, as measured on the Saffir-Simpson Hurricane Scale. Tropical depressions are considered to be of hurricane force when winds reach 74 miles per hour. Damage resulting from winds of this force can be substantial, especially considering the duration of the event, which may last for many hours.[8]

All areas of Newport are potentially at risk if a hurricane reaches Sullivan County, NH.

2. Tornadoes

"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." [9]

All areas of Newport are potentially at risk for property damage and loss of life due to tornadoes. The Committee could not recall any past tornado events.

3. "Nor'easters"

A Northeaster is "[a] large weather system traveling from South to North passing along or near the seacoast. As the storm approaches New England and its intensity becomes increasingly apparent, the resulting counterclockwise cyclonic wind, impact the coast and inland areas from a northeasterly direction. The sustained winds may meet or exceed

[8] Ibid. p. 56
[9] Ibid. p. 54

hurricane force, with larger bursts, and may exceed hurricane events by many hours in terms of duration. These storms have complex meteorological derivations."[10]

"Unlike the relatively infrequent hurricane, New Hampshire generally experiences at least one or two of these events each year with varying degrees of severity. These storms have the potential to inflict more damage than many hurricanes because … high winds can last from 12 hours to 3 days, while the duration of hurricanes ranges from 6 to 12 hours. Infrastructure, including critical facilities, may be impacted by these events, and power outages and transportation disruptions (i.e. snow and/or debris impacted roads, as well as hazards to navigation and aviation) are often associated with the event."[11]

All areas of Newport are potentially at risk for property damage and loss of life due to "Nor'easters."

4. Downbursts

"A downburst is a severe localized wind blasting down from a thunderstorm. These 'straight line' winds are distinguishable from tornadic activity by the pattern of destruction and debris. Depending on the size and location of these events, the destruction to property may be devastating. Downbursts fall into two categories." Microbursts cover an area less than 2.5 miles in diameter, and macrobursts cover an area at least 2.5 miles in diameter."[12]

Potentially all locations in Newport are at risk for property damage and loss of life due to downbursts. The Committee could not recall any past downburst events.

5. Lightning

"During the development of a thunderstorm, the rapidly rising air within the cloud, combined with the movement of the precipitation within the cloud, causes electrical charges to build up within the cloud. Generally, positive charges build up near the top of the cloud, while negative charges build up near the bottom. Normally, the Earth's surface has a slight negative charge. However, as the negative charges build up near the base of the cloud, the ground beneath the cloud and the area surrounding the cloud becomes positively charged. As the cloud moves, these induced positive charges on the ground follow the cloud like a shadow. Lightning is a giant spark of electricity that occurs between the positive and negative charges within the atmosphere or between the atmosphere and the ground. In the initial stages of development, air acts as an insulator between the positive and negative charges. However, when the potential between the

[10] Ibid. p. 58
[11] Ibid.
[12] Ibid. p. 59

positive and negative charges becomes too great, there is a discharge of electricity that we know as lightning."[13]

Lightning kills an average of 87 people per year in the United States, and New Hampshire has the 16th highest casualty rate in the nation.[14] All areas of Newport are potentially at risk for property damage and loss of life due to lightning.

C. WILDFIRE

The Newport Hazard Mitigation Committee reviewed *wildfire:*

"Historically, large NH wildland fires run in roughly 50 year cycles. The increased incidence of large wildland fire activity in the late 1940's and early 1950's is thought to be associated, in part, with debris from the Hurricane of 1938. Significant woody 'fuel' was deposited in the forests during that event. Present concerns of New Hampshire Department of Resources and Economic Development, Division of Forests & Lands are that the Ice Storm of 1998 has left a significant amount of woody debris in the forests of the region as may fuel future wildfires."[15]

"NH averages 500 fires per year and averages ½acre or less per fire due to the excellent coordination between Fire Towers and local Fire Departments."[16] There are several areas of the Town of Newport that are susceptible to wildfires. These areas have been identified on the GIS map. The following events and vulnerabilities were noted:

- Large fire in Croydon in the 1960s; no residences were affected.
- Entire town is surrounded by forest.
- Vulnerable residential areas: Cornish Turnpike; Hurd Rd.; Barton-Whitney Rd.; Cutts Rd.; Turkey Hill Rd.
- Two major subdivisions are being proposed in remote areas of town that are vulnerable to wildfire events.
- High-elevation areas have storm debris left over from the 1998 ice storm.
- There are areas open to off-road vehicles (ORVs) and mountain bikes that are not patrolled, and that may leave those areas vulnerable to wildfire.

D. ICE AND SNOW EVENTS

The Newport Hazard Mitigation Committee reviewed the following kinds of hazards related to *ice* and *snow:*

1. Heavy Snow Storms

[13] Ibid. p. 63
[14] Ibid. p. 63
[15] Ibid. p. 34
[16] Ibid. p. 34

"A heavy snowstorm is generally considered to be one which deposits four or more inches of snow in a twelve-hour period… A blizzard is a winter storm characterized by high winds, low temperatures, and driving snow- according to the official definition given in 1958 by the U.S. Weather Bureau, the winds must exceed 35 miles per hour and the temperatures must drop to 20°F (-7°C) or lower. Therefore, intense Nor'easters, which occur in the winter months, are often referred to as blizzards. The definition includes the conditions under which dry snow, which has previously fallen, is whipped into the air and creates a diminution of visual range. Such conditions, when extreme enough, are called 'white outs'."[17]

All areas of Newport are potentially at risk for property damage and loss of life due to heavy snows. The Committee noted the following about heavy winter storm events:

- Every year, there are one or two storms with 36 inches each accumulation.
- The fiscal impacts and man-hours are the biggest costs.
- 2002/3 - there were a total of 29 winter storm events.

2. Ice Storms

"When a mass of warm moist air collides with a mass of cold arctic air, the less dense warm air will rise and the moisture may precipitate out in the form of rain. When this rain falls through the colder more dense air and comes in contact with cold surfaces, the latent heat of fusion is removed by connective and/or evaporative cooling. Ice forms on these cold surfaces and may continue to form until the ice is quite deep, as much as several inches. This condition may strain branches of trees, powerlines and even transmission towers to the breaking point and often creates treacherous conditions for highway travel and aviation. Notwithstanding the unique beauty of such events, the weight of formed ice (especially with a following wind) may cause power and phone lines to snap and the towers that support them to fail under the load of ice and/or bending or broken tree limbs. Debris impacted roads make emergency access, repair and cleanup extremely difficult. The recent Ice Storm of January 1998 was not unique in either its spatial scope or its devastating consequences. A similar event in 1929 is believed to have been comparable to this event."[18]

All areas of Newport are potentially at risk for property damage and loss of life due to ice storms. The Committee noted the following impacts of ice storm events:

- Loss of power
- Trees down; also, forest fire damage
- Roads, especially dirt roads - loss of access

[17] Ibid. pp. 69-70
[18] Ibid. p. 80

3. "Nor'easters"

In the winter months, [Towns within] the State may experience the additional coincidence of blizzard conditions with many of these events as well as the added impact of the masses of snow and/or ice upon infrastructure thus, impacting upon transportation and the delivery of goods and services for extended periods of time, as well as various related impacts upon the economy. The entire area of the State may be impacted by these events… Heavy snow and/or rainfall may be experienced in different areas of the State and the heavy rains may contribute to flood conditions. Nor'easter events which occur toward the end of a winter season may exacerbate the spring flooding conditions by depositing significant snow pack at a time of the season when spring rains are poised to initiate rapid snow pack melting."[19]

All areas of Newport are potentially at risk for property damage and loss of life due to "Nor'easters."

E. SEISMIC HAZARDS

The Newport Hazard Mitigation Committee reviewed the following kind of seismic hazards:

1. Earthquakes

"A series of vibrations induced in the Earth's crust by the abrupt rupture and rebound of rocks in which elastic strain has been slowly accumulating."[20] "In general, New England is considered to have a moderate seismic vulnerability but a high seismic risk because of our built environment."[21] All areas of Newport are potentially at risk for property damage and loss of life due to earthquakes.

New England States Historical Earthquakes (*Source: NESEC website*)		
State	**Years of Record**	**# Of Earthquakes**
Connecticut	1568 - 1989	137
Maine	1766 - 1989	391
Massachusetts	1627 - 1989	316
New Hampshire	1728 - 1989	270
Rhode Island	1766 - 1989	32
Vermont	1843 - 1989	69
Total Number of Earthquakes within New England 1215. Total Number of Earthquakes in the Northeast, 1538-1989 4498.		

[19] Ibid. p. 70
[20] Ibid. p. 37
[21] Ibid. p. 43

2. Landslides

"Webster: 'The sliding of a mass of soil, detritus or rock on or from a steep slope.' More specifically, a landslide is the downward movement of slope forming materials reacting under the force of gravity including: mudflows, mudslides, debris flows, rockslides, debris avalanches, debris slides and earth flows. …Landslides may be formed when a layer of soil atop a slope becomes saturated by significant precipitation and slides along a more cohesive layer of soil or rock."[22]

The Committee noted two areas that are subject to landslides. These vulnerabilities are due to human design, not natural formation. The two areas are:

- Chandler Mill Rd., which is an alternative route to Claremont. About 20 years ago, the roadway eroded into the river.
- Blaisdell Rd. - there are about six residences on this road.

F. OTHER HAZARDS

1. Structure Fires

The Committee noted that the Town of Newport is vulnerable to structure fires because of the age of the buildings in the downtown. Many older buildings don't meet the new code criteria.

2. Hazardous Materials

Hazardous materials are chemical substances, which if released or misused can pose a threat to the environment or health. These chemicals are used in industry, agriculture, medicine, research, and consumer goods. Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials.

Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Many products containing hazardous chemicals are used and stored in homes routinely. These products are also shipped daily on the nation's highways, railroads, waterways, and pipelines.

Hazardous materials incidents can occur at any time without warning. Communities and residences located near industries or other property that involves the handling of hazardous materials are considered a higher risk. However, hazardous materials are transported regularly on highways and by rail and if released can spread quickly to any community. Human error is the probable cause of most transportation incidents and associated consequences involving the release of hazardous materials.

[22] Ibid. p. 45

The Committee noted the following hazardous materials concerns:

- Northwest prevailing winds
- A few years ago, an incident involving industrial bleach in front of the Fire Station. The downtown area was closed off, including the Town Office building. Approximately $2,000 in clean-up costs.
- Regular HazMat team - not up and running yet.
- Newport is at the geographic center of a major East West corridor and two major routes. There are no secondary routes sufficient for truck traffic (too narrow).
- Town emergency services would be "locked in" (no evacuation route)
- All Newport schools are on state routes
- Town Office, Police, Fire, EMS, outpatient health care facility - all are at risk
- Fixed Site:
    - LP Gas
    - Dorr
    - Sturm Ruger
    - Reed Mill Rd.
    - Johnson and Dix
    - Goodrich
    - Ames Plaza
    - Pike Industries
    - Two Shell stations
    - Two Citgo stations
    - Sunoco
    - Irving
    - Mobil

3. School Safety

The Committee held an extensive discussion regarding school safety, and the following concerns were noted:

- Intruders; violent crimes; bomb threats
- Next to transport routes - hazmat concerns
- Daycare and private institutions also vulnerable

4. Terrorism

The following were noted as vulnerable:

- Sturm Ruger: Major gun manufacturer with 1100 employees. Domestic Terrorism threat and hazmat threat (materials manufactured and stored).
- Water supply (surface water)
- Four machine shops
- Roymal Co. - international company
- Critical facilities: schools; three nursing homes

Past Hazards Events in Sullivan County and the State of New Hampshire

Hazard	Date	Area Affected (River Basin or Region)	Remarks/Description
Flooding	March 11-21, 1936	Statewide, including Sugar River	Double flood; due to rainfall and snowmelt
Flooding	September 21, 1938	Statewide	Hurricane
Flooding	August 1955	CT River Basin	Heavy rains caused extensive damage throughout basin
Flooding	April 1976	Connecticut River	Rain and snowmelt
Flooding	July - August 1986	Statewide	Severe summer storms: heavy rains, tornados flash flood, and severe winds (FEMA DR-771-NH)
Flooding	August 7-11, 1990	Statewide	A series of storm events with moderate to heavy rains. FEMA DR-876-NH
Flooding	August 19, 1991	Statewide	Hurricane Bob - effects felt statewide
Flooding	October 1996	North/West NH	Sullivan County Declared: FEMA-DR-1077-NH
Flooding	October - Nov. 1995	North/West NH	Sullivan County Declared: FEMA DR-1144-NH
Flooding	June - July 1998	Central & Southern NH	Sullivan County Declared: FEMA DR-1231-NH
Tornado	May 23, 1782	Sullivan County	No further information available
Tornado	September 9, 1821	Sullivan County	" "
Tornado	July 1, 1831	Sullivan County	" "
Hurricane	September 21, 1938	Statewide	186 mph (max)
Winter Storms ("Nor'easters, blizzards, snowstorms)	Too numerous to mention here	Northeast	Most notable events between the years 1955-1985: blizzards of February 1958 and January 1966, triple snowstorms of 1960/61 winter, wind and snowstorm of February 1978, "Presidents' Day Storm of 1979, and paralyzing urban storm of February 1983.
Ice Storm	Dec. 17-20, 1929	NH	Disruption and damage to telephone, telegraph, and power system.
Ice Storm	Dec. 29-30, 1942	NH	Glaze storm; severe intensity
Ice Storm	Dec. - Jan., 1969/70	NH	Power disruption to many communities
Ice Storm	Jan. 8-25, 1979	NH	Major disruptions to power and transportation
Ice Storm	January 7, 1998	NH	52 communities in nine counties impacted, six injuries, one fatality, road closures, power outages, telephone service failure, other damages.
Earthquake	December 20, 1940	Ossipee, NH	5.5 on Richter scale (this list of earthquakes are those with magnitude 4.2 or more, 1924 - 1989.)
Earthquake	December 24, 1940	Ossipee, NH	5.5
Earthquake	December 28, 1947	Dover-Foxcraft, ME	4.5
Earthquake	June 10, 1951	Kingston, RI	4.6
Earthquake	April 26, 1957	Portland, ME	4.7
Earthquake	April 10, 1962	Middlebury, VT	4.2
Earthquake	June 15, 1973	In NH @ Quebec border	4.8
Earthquake	January 19, 1982	West of Laconia, NH	4.5

Sources: New Hampshire Office of Emergency Management; Northeast States Emergency Consortium (NESEC) Website; US Army Corps of Engineers Ice Jam Database

Hazard Analysis and Risk Assessment - Town of Newport

The Town of Newport Hazard Mitigation Committee reviewed each potential hazard and assessed both the likelihood and impact of that hazard to determine a Community Vulnerability rating (**low**, **moderate**, or **high**). The Committee also identified the most vulnerable facilities and populations for each hazard type.

Hazard	Community Vulnerability Rating	Most Vulnerable
Flooding	High	Highway, roads, culverts, bridges, businesses, golf course, residences, campground, pump stations, water supply, athletic fields
Ice Jams	High	State Bridges
Drought	Moderate	Water supply
Hazardous Materials	High	Town Office, Fire, Police, EMS, outpatient health care facility, major highway corridor and intersection, business district
Wildfire	High	Several residential neighborhoods
Structure Fire	Moderate townwide, High downtown	Old, brick mill buildings in downtown
Winter Storm	High	Fiscal impacts and manpower costs
Ice Storm	Moderate	Roads, access, power
Hurricane	Moderate	Trees, flooding, houses, bridges, power
Earthquake	Moderate	Water & sewer, downtown brick buildings, including 3 schools, sewage treatment facility, bridges, roads
Landslide	Low	Chandler Mill Rd. and Blaisdell Rd. and 6 residences
Wind Events (incl. Thunderstorms)	Moderate to High	Tree damages and power outages
School safety (earthquake, domestic terrorism)	Moderate	Three schools, daycares and private educational institutions
Tornado	Low - Moderate	None identified
Terrorism	Low	Certain businesses, water supply

CRITICAL FACILITIES/LOCATIONS

Structures

- Water & sewer infrastructure
- Bridges
- Culverts
- Recreational facilities and fields
- Corbin Park Covered Bridge
- Breakneck Rd. culvert
- Underground Storage Tanks
- Auto sales parking lot
- Roads

Buildings

- Sturm Ruger
- LaValley's
- Dorr Woolen Building
- Ames Plaza businesses, including health care facility
- Residences
- Eagle Block
- Town Office
- Police and Fire
- Fixed Hazmat sites
- Three schools
- Sewage Treatment Facility

Evacuation Routes

- NH Rt. 11 and 103
- NH Rt. 10

Most Vulnerable Areas

- Downtown/Intersection of Rts. 11/103 and Rt. 10
- Ames Plaza
- Golf Course/South Main Street
- Guild Neighborhood
- Meadow Park area
- Airport Runway area

- Vulnerable residential areas (wildfire concern): Cornish Turnpike, Hurd Rd., Barton-Whitney Rd., Cutts Rd., Turkey Hill Rd.

POTENTIAL LOSS ESTIMATES

In order to determine potential dollar losses to vulnerable structures due to natural and man-made hazards, each hazard area was analyzed with results shown below. The Newport Hazard Mitigation Committee calculated the information below.

Hazmat

A catastrophic event downtown, e.g. propane tanker explosion, would be in the millions of dollars. Costs would include rebuilding costs, impact on bulk propane service, resulting flooding, proximity to schools, etc.

Surface Water Contamination

Newport's surface water supply serves 75 percent of the population (around 2200 structures). It is unsecured. Contamination, whether through terrorism or a natural event, would result in millions of dollars in costs, including remediation, decontamination of and possibly rebuilding of water mains.

Flooding

Neighborhood above Guild: If three cement dams upstream in Sunapee fail, there could be millions of dollars in costs.

- Sturm Ruger
- La Valley's - would be wiped out
- Dorr Woolen Bldg.
- One gasoline station
- About 12 residences

Below Ruger Dam (Eagle Block): Routine spring flooding (annual)

- Entire south end of Main Street
- Arlington Sample (manufacturing area)
- Rear parking lot of Police Station
- Recreational fields

Ames Plaza: Every 5 to 10 years, Rt. 11 is flooded over

- Auto Sales - cars flooded
- Flooded basements
- 12 businesses total, including medical facility (ambulatory health care)

South Main Street: Golf course would be wiped out in major event

- Hundreds of thousands of dollars
- Reconstruction costs and loss of business

Goshen Ocean: Breach or failure
- Whole downtown would be severely impacted

Meadow Park area: downstream of golf course
- 4-5 houses
- Ambulance garage
- Recreational facilities

Airport Runway area: Downstream of Meadow Park area
- Would have to rebuild entire runway area in event of major flooding

Corbin Park: Common flooding area
- Covered bridge - $465K value; on National Historic Register; has fire detection; rebuilt in 1995

Chandlers' Mill Rd., near Cutts Rd. area
- Approximately 12 residences
- Ice jams can flood basements

Breakneck Rd.
- Culvert - $250K replacement value
- 2 residences impacted
- Transportation access issues
- Highway damage - reconstruction would be required

Ice Jams
Cost for machinery to break up the jams - $5-10 K

Wildfire
- Several million dollars for major wildfire event, if more than local resources are used.
- Cost for helicopter dropping water - $1500/hour

Winter Storms
- December 2003 - 2 major storms
- 1996 - 2 major storms (5 feet of snow in a week)
- Costs: Roughly $5 - 7 K per day: machinery/equipment; manpower; supplies

Earthquake - catastrophic
- Downtown area - brick buildings; density
- Eagle Block - $2 Million
- Water and sewer infrastructure
- Underground Storage Tanks

Wind Events

- Newport 60 - 70 percent forested
- Town Forest
- Ice Storm (worst case scenario) - wind event would increase wildfire risk

SECTION III:
EXISTING MITIGATION STRATEGIES
AND PROPOSED IMPROVEMENTS

REVIEW OF EXISTING PROGRAMS

The Newport Hazard Mitigation Committee identified the following existing mitigation strategies related to each Town department:

A. Planning

- Zoning Regulations
- Building Codes
- Subdivision Regulations
- Capital Improvement Program
- Water/Sewer Ordinance
- Master Plan
- Airport Master Plan
- Groundwater Protection Ordinance
- National Flood Insurance Program
- Conservation Commission

B. Emergency Management

- F/T Police, Fire, EMS, Public Works, Administrative Staff
- Newport is region's emergency dispatch for 5 communities
- Emergency Plan
- School Emergency Plans
- Mutual Aid Agreements: Police, Fire, Public Works
- Emergency Shelter: High School
- USDA Wildland/Urban Interface Program

C. School Emergency Issues

- Police Dept. - has a Special Operations Unit (regional) that covers the High School
- Emergency Plan for Richards and Towle Schools - one in every classroom; teachers are comfortable with it
- There are emergency backpacks (contain emergency supplies) in each classroom
- There are regular emergency drills
- Schools are in the area of town that has the highest HazMat concern; in a hazmat event, would have to shelter everyone in place at the school, close down windows and ventilation.

C. Other

- Large volunteer base in community

Summary of Recommended Improvements

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

- The Master Plan, Airport Master Plan, Emergency Plan and Building Code all need updating.
- Subdivision regulations need updating (haven't been updated since 1988).
- The High School, the official Red Cross shelter, is in the 100-year floodplain and in a high-risk hazmat area.
- There is no official secondary emergency shelter designated. Churches and two banks are potential back-up emergency shelters, but these buildings are also in the 100-year floodplain. If any new buildings are adequate in the future, they should be considered for shelter designation.
- Both Emergency Response departments and schools are in high-traffic areas. The Town should continue participation in the Midwestern New Hampshire Hazardous Materials Response Team.

SECTION IV:
NEWLY IDENTIFIED MITIGATION STRATEGIES AND CRITICAL EVALUATION

Summary of New Strategies

The Newport Hazard Mitigation Committee brainstormed potential mitigation actions at a meeting on June 10, 2004, and added a few on September 16. The new proposed measures were placed in the following four categories:

- Engineering/Mapping Studies
- Emergency Response/Planning
- Structural
- Educational

Engineering/Mapping

- Detailed, multi-purpose base map needed for a variety of purposes, including emergency planning and response
- Digitized tax map needed for the same.
- Digitized floodplain maps needed for floodplain mitigation and response

Emergency Response/Planning

- Investigate lock changes for schools (for security/terrorism planning purposes) - Change to a "keyless" or Primus system.
- Set up a committee to identify and study flooding "hotspots" in town. – Group decided these areas were known and a committee therefore not needed
- Continue involvement with the Midwestern New Hampshire Hazardous Materials Response Team.

Structural Projects

- Replace Breakneck Rd. culvert
- Relocate power lines - deemed a lower priority because of expense
- Conduct a bridge study to assess structural soundness
- Restore floodway and retention area at Pollard's Mills Bridge area, near golf course
- Address flooding issues at Airport Runway

Educational

- Investigate setting up a low-powered local radio station for broadcasting emergency information.
- Conduct educational outreach to residences and businesses about hazard mitigation.

Mitigation Actions Organized by Hazard Type

Multi-Hazard (Including wind and snow events, earthquake, landslide, and structure fires)

- Conduct educational outreach to residences and businesses about hazard mitigation (all hazards)
- Investigate setting up a low-powered local radio station for broadcasting emergency information (all hazards)
- Conduct a bridge study to assess structural soundness (wind and snow, earthquake)
- Relocate power lines (wind and snow)
- Detailed, multi-purpose base map needed for a variety of purposes, including emergency planning and response (all hazards)
- Digitized tax map needed for the same (all hazards)
- Update building code
- Update subdivision regulations

Flooding

- Digitized floodplain maps needed for floodplain mitigation and response
- Set up a committee to identify and study flooding "hotspots" in town.
- Replace Breakneck Rd. culvert
- Restore floodway and retention area at Pollard's Mills Bridge area, near golf course
- Address flooding issues at Airport Runway

Hazardous Materials

- Continue involvement with the Midwestern New Hampshire Hazardous Materials Response Team
- Relocate Fire Station out of the hazmat-vulnerable area.

Terrorism/School Safety

- Investigate lock changes for schools - Change to a "keyless" or Primus system

Summary of Critical Evaluation

The Newport Hazard Mitigation Team reviewed each of the newly identified mitigation strategies and analyzed its importance using the following factors:

- Project cost
- Sources for funds
- Cost/benefit analysis
- Likelihood of public support
- Mitigation of existing or future built environments, or both

Mitigation Action	Approx. Cost	Federal Funds	State Funds	Local Funds	Cost/Benefit	Likely Public Support	Reduce Impacts on Existing & New Built Enviro.?
Base Map	$150K			100 %	Baseline for all other maps	Moderate	Indirectly
Digitized tax map	$150K or more			100 %	Also a baseline map	Moderate	Indirectly
Digitized flood maps	UVLSRPC will provide				Ability to overlay on base map		Indirectly
School lock changes and other security upgrades	Plan to investigate	Homeland Security		Match	Safe schools are a priority; have security issues	High	Reduce likelihood on existing structure
Pollard's Mill mitigation – Seek funding	Seeking funding – using Staff time	Yes	Yes	Yes	Would mitigate further flooding impacts downstream; economic impacts	Moderate, as the Town would be seeking funding	Would reduce impacts on both existing and new bldgs. downstream
Bridge Study	State project	Yes	Yes	No	Mitigate flooding and earthquake events	High	Yes, both
Replace Breakneck Rd. culvert	Will investigate	Yes	Yes	Yes	Flood mitigation	High	Yes, both
Address Airport Runway flooding	$500K for engineering and construction	Yes	Yes	Hard to obtain	Frequently flooded; eroding	Low	Would address existing infrastructure (runway)
Emergency Broadcast Radio Station	Need to investigate				Broad public benefit	Moderate	Indirectly
Education & Outreach	No cost – just staff time				Broad public benefit	Moderate	Indirectly
Relocate Fire Station	$3-5 M	Yes	Yes	Yes	In high traffic/hazmat area	Low to Moderate	Existing
Update Subdivision regs.	Staff time				Will reduce flooding & maintenance costs	Controversial	Yes, would mitigate impacts on both
Update Building Code	Staff time				Better prepared for hazards	Controversial	Yes, both

SECTION V: PRIORITIZED IMPLEMENTATION SCHEDULE AND FUNDING SOURCES

Implementation Strategy for Priority Mitigation Actions

Mitigation Action	Who (Leadership)	When (Deadline)	How (Funding Source)
Obtain detailed base map - on state list	911 Numbering Committee of Tax Dept.	ASAP	State Private Consultant
Digitized tax maps	Julie Collins	2005	State or Private Consultant through town funds (taxpayers approved funding for)
Digitized floodplain map	Julie Collins	2005	Regional planning commission through local dues or state grant funds
Investigate lock changes for schools (for security/terrorism planning purposes)	School Superintendent, EMD, Fraser Michaud advise	Fall 2004 - Investigate	Homeland Security Funding
Update Subdivision Regulations	Planning & Zoning	2007	Staff and volunteer time
Replace Breakneck Road culvert	Director Public Works	By 2006	Federal or State funds, such as Hazard Mitigation or Pre-Disaster Mitigation funds
Seek funds to restore floodway and retention area at Pollard's Mills Bridge area, near golf course	Town Manager	2005	Federal and State funds, with NH BEM and FEMA assistance
Conduct a bridge study	Director Public Works	Ongoing	DOT Bridge Aid program
Revise Building Code	Planning & Zoning	2009	Staff and volunteer time
Investigate setting up a low-powered local radio station for broadcasting emergency info	Town Manager	2005	Unknown
Implement education and outreach program on hazard mitigation for residents	Town Staff	Ongoing	Town and State funding
Relocate Fire Station	Town Manager/Fire Chief	2007-2009	Unknown
Study raising Airport runway	Public Works	2007	State and Federal funds

SECTION VI:
ADOPTION AND IMPLEMENTATION OF THE PLAN

A good plan needs to be periodically monitored and evaluated for 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, it is recommended that the Town of Newport revisit the Hazard Mitigation Plan *annually, or after a hazard event*. The Newport Emergency Management Director is responsible for initiating this review and should consult with the Hazard Mitigation Committee. Changes should 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 various criteria, the timeframe, the community's priorities, and funding resources. Priorities that were not ranked highest, but that were identified as potential mitigation strategies, should be reviewed as well during the monitoring and update of this plan, to determine feasibility for future implementation. During the annual review period, there should be a public hearing to receive public comment, and the Board of Selectmen should adopt the final Plan. The public should continue to be involved in the hazard mitigation planning process.

Implementation Through Existing Programs

In future years, the information in this plan may be incorporated as a separate chapter in the Master Plan. In addition, the Board of Selectmen, during the Capital Improvement Process, will review and consider the inclusion of proposed projects outlined in this plan. The Town's Emergency Management Director will ensure ongoing consistency between the Town's Hazard Mitigation Plan and the Emergency Plan.

RESOURCES USED IN THE PREPARATION OF THIS PLAN

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

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

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

Town of Newport Master Plan (1995)

Town of Newport Emergency Management Plan (April, 1992)

APPENDICES

Appendix A: Technical Resources

Appendix B: Technical and Financial Assistance

Appendix C: Matrix of Federal All-Hazards Grants

Appendix D: Meeting Minutes

Appendix A:

Technical Resources

APPENDIX A:

TECHNICAL RESOURCES

1) Agencies

New Hampshire Office of Emergency Management 271-2231
Hazard Mitigation Section 271-2231

Federal Emergency Management Agency ..... (617) 223-4175

NH Regional Planning Commissions:
Upper Valley Lake Sunapee Regional Planning Commission 448-1680

NH Executive Department:
Governor's Office of Energy and Community Services 271-2611
New Hampshire Office of State Planning 271-2155

NH Department of Cultural Affairs: 271-2540
Division of Historical Resources 271-3483

NH Department of Environmental Services: 271-3503
Air Resources 271-1370
Waste Management 271-2900
Water Resources 271-3406
Water Supply and Pollution Control 271-3504
Rivers Management and Protection Program 271-1152

NH Office of State Planning and Energy Programs 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 Office of Emergency Management
406 Public Assistance and Hazard Mitigation..... NH Office of Emergency Management

Community Development Block Grant (CDBG)..... NH OEM, NH OSP, also refer to RPC

Dam Safety Program .....NH Department of Environmental Services

Disaster Preparedness Improvement Grant (DPIG)..... NH Office of Emergency Management

Emergency Generators Program by NESEC‡ ..... NH Office of Emergency Management

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

Flood Mitigation Assistance Program (FMAP) ..... NH Office of Emergency Management

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

Mitigation Assistance Planning (MAP)..... NH Office of Emergency Management

Mutual Aid for Public Works.....NH Municipal Association

National Flood Insurance Program (NFIP) † ..... NH Office of State Planning

Power of Prevention Grant by NESEC‡ ..... NH Office of Emergency Management

Project Impact..... NH Office of Emergency Management

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

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

Section 103 Beach Erosion……US Army Corps of Engineers

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

Section 208 Snagging and Clearing .....US Army Corps of Engineers

Shoreline Protection Program.……...NH Department of Environmental Services

Various Forest and Lands Program(s)NH Department of Resources and Economic Development

Wetlands Programs.....….NH Department of Environmental Services

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

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

3) <u>Websites</u>

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

National Weather Service	http://nws.noaa.gov/	Central page for National Weather Warnings, updated every 60 seconds.
USGS Real Time Hydrologic Data	http://h20.usgs.gov/public/realtime.html	Provisional hydrological data
Dartmouth Flood Observatory	http://www.dartmouth.edu/artsci/geog/floods/	Observations of flooding situations.
FEMA, National Flood Insurance Program, Community Status Book	http://www.fema.gov/fema/csb.htm	Searchable site for access of Community Status Books
Florida State University Atlantic Hurricane Site	http://www.met.fsu.edu/explores/tropical.html	Tracking and NWS warnings for Atlantic Hurricanes and other links
National Lightning Safety Institute	http://lightningsafety.com/	Information and listing of appropriate publications regarding lightning safety.
NASA Optical Transient Detector	http://www.ghcc.msfc.nasa.gov/otd.html	Space-based sensor of lightning strikes
LLNL Geologic & Atmospheric Hazards	http://wwwep.es.llnl.gov/wwwep/ghp.html	General hazard information developed for the Dept. of Energy.
The Tornado Project Online	http://www.tornadoroject.com/	Information on tornadoes, including details of recent impacts.
National Severe Storms Laboratory	http://www.nssl.uoknor.edu/	Information about and tracking of severe storms.
Independent Insurance Agents of America IIAA Natural Disaster Risk Map	http://www.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:

Technical and Financial Assistance

APPENDIX B:

TECHNICAL AND FINANCIAL ASSISTANCE FOR HAZARD MITIGATION

Note – *Communities must have an approved Hazard Mitigation Plan to be eligible for HMGP and PDM grants.*

♦ HAZARD MITIGATION GRANT PROGRAM - "Section 404 Mitigation"

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

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

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

Eligible Subgrantees include:

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

Minimum Project Criteria

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

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

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

FLOOD MITIGATION ASSISTANCE (FMA) PROGRAM

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

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

Flood Mitigation Assistance Program

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

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

Eligible Projects

(44 CFR Part 78)

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

♦ PRE-DISASTER MITIGATION PROGRAM (PDM)

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

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

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

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

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

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

Eligible projects include:

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

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

Each state establishes grant selection criteria and priorities based on:

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

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

♦ DISASTER PREPAREDNESS IMPROVEMENT GRANT (DPIG)

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

Past DPIG initiatives include:

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

Disaster Preparedness Improvement Grant

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

Eligible Projects Include:

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

This list is not exhaustive

Present DPIG funded Hazard Mitigation initiatives

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

Future DPIG funded Hazard Mitigation initiatives

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

COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

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

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

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

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

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

Community Development Block Grant

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

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

Mitigation Programs of Other NH State Agencies

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

NH Department of Transportation Bureau of Repair and Maintenance

NH OSP/NFIP Program
NH OSP Coastal Program
NH DRED Division of Forests and Lands
NH DES Water Resources Division – Dam Safety Program
NH DES Wetlands Program
NH DES Shoreline Protection Program

Appendix C:

Matrix of Federal All-Hazards Grants

Appendix D:

Meeting Documentation

November 20, 2003

Peter Lamb
Director of Emergency Management
Newport Fire/EMS
11 Sunapee Street
Newport, NH 03773

Dear Mr. Lamb:

Thank you for your interest in hazard mitigation planning and for helping me set up the initial meeting early next year.

This planning effort is an investment that will enhance and strengthen the community's long-term stability and ability to prevent and respond to hazards. Developing a plan will also ensure compliance with the Disaster Mitigation Act of 2000, which states that NH communities *must* have a local hazard mitigation plan in place by November 1, 2004 to continue to be eligible for post-disaster assistance and certain mitigation grants.

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

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

There is no "cost" to the town other than staff time for meetings. Typically, the process involves 5-6 monthly meetings, roughly two hours per meeting. UVLSRPC planners offer assistance in meeting preparation and follow-up, logistics, and most important, developing and producing the plan. I see your role as helping to publicize the effort, line up the right committee members and get people to the meetings. There is some additional legwork that committee members do in between the meetings but it is fairly minor. Then of course, there is the adoption and most importantly, the implementation of the Plan, which the town is responsible for.

I would recommend that we invite the following departments, at a minimum:

- Fire Department
- Police Department
- Selectboard
- Planning Board

- Public Works
- Conservation Commission
- Building/Health

I am suggesting that we have our initial meeting in January, and follow up with an evening public meeting, which FEMA strongly recommends. Enclosed is a sample invitation letter to the departments listed above. Also enclosed is the State of NH Hazard Mitigation Guidebook, which can provide you with additional information about the planning process.

If you have any further questions, please contact me. I'll look forward to hearing from you soon about our initial meeting.

Sincerely,

Victoria Boundy
Senior Planner

Newport Hazard Mitigation
2/19/04 Meeting

Present:

David Hoyt, Chief of Police
Pete Lamb, EM Co-Director
Fraser Michaud, Supt. Of Highway
Dan O'Neill, Town Manager
Larry Wiggins, Director of Public Works
Pete Petschik, Field Representative, NH BEM
Vicky Boundy, Senior Planner, UVLSRPC

Minutes:

The meeting began at 10:00 a.m. and adjourned at 12:00 noon. There was a round of introductions, and Vicky reviewed the purpose and process of this project. The Committee then looked over the proposed project workplan.

Vicky then handed out the State of NH "Natural Hazards Vulnerability Overview by County" and a summary of NH hazard history. The group then analyzed and discussed all hazard types that Newport is vulnerable to, rated them in terms of impact and likelihood, and discussed critical facilities in town that are vulnerable to these hazard events. See list below.

Finally, the group set a date for the next meeting: Thursday, March 18 (same time and place) and discussed the best method of notice for meetings. Vicky also mentioned that the meeting agendas should be posted publicly somewhere in Town Hall to allow members of the public to learn more and/or participate.

Thanks to all for participating in the February meeting.

<u>Flooding (Community Vulnerability Rating: High)</u>

- Goshen Ocean Dam @ Gunnison Lake (ACOE). Damage to outlet two years ago.
- Elm Street, west side of bridge. In the 50-year floodplain. Is a risk every year due to snowmelt. Main highway is at risk for flooding, and there are about 20 businesses, including a health care facility.
- Meadow Park, Meadow Park Rd. Municipal recreation area.
- Breakneck Rd. Flooded 2-3 times a year. Undersized culvert and closed, unlined landfill in flooding area.
- Corbin Park/Bridge (covered bridge). Airport Runway 1836 Extension.
- Chandler's Mill Rd. Two residences (?)
- Route 11/Guild (Road?)
- Coon Brook Rd. 56-site campground.

- Loon Lake Dam (Croydon). Several residences and an industrial area in Newport in the dam inundation area.
- Main St. by Common (inadequate storm drainage system)
- Pump Stations
- Roads
- Athletic fields/Trail System
- Water Supply

Ice Jam Events (High)

- Sugar River
    1. Junction of Sugar and South Branch
    2. Below Ruger Dam to Main Street
    3. Bend at Chandler's Mills
    4. Pier Bridge on Chandler's Mill Rd. (State bridge)
    5. Wright Bridge on Chandler's Mill Rd. (State bridge)
- Cutts Rd. Icing; overtops road

Drought (Moderate)

- Not an annual occurrence
- Municipal water supply is surface water (Gilman Pond, Unity)
- Back-up water supply is in floodplain
- 6,000 people (population) potentially impacted
- Increases wildfire threat

Wildfire (High)

- 1960s - fire in Croydon (no residences affected)
- Town is working with USDA Urban/Wildfire Interface Program
- Entire town is surrounded by forest
- Vulnerable residential areas: Cornish Turnpike; Hurd Rd.; Barton-Whitney Rd.; Cutts Rd.; Turkey Hill Rd.
- Two major subdivisions being proposed in remote areas of town
- High-elevation areas have ice-storm debris
- ORVs/Mountain bikes - Class VI Roads (? Don't remember the discussion thread here)

Structure Fires (Rating?)

- Downtown area
- Buildings grandfathered from code requirements

Winter Storms (High)

- Every year, one or two storms adding up to about 36 inches/year
- 2002/3 - total of 29 winter storm events
- "Skywarn" (weather watchers) - useful
- Fiscal impacts and man hours biggest costs
- Ice Storm Events:

  - Loss of power
  - Trees down (also forest fire damage)
  - Roads, especially dirt roads - loss of access

Hazardous Materials (High)

- Northwest prevailing winds
- A few years ago, incident in front of Fire Station (industrial bleach). Downtown area closed off, including Town Office. Approx. $2 Million in clean-up costs.
- Regular HazMat team - not up and running yet.
- 2 major routes - major East/West corridor - Newport is geographic center
- No secondary routes sufficient for truck traffic (too narrow)
- Town emergency services would be "locked in" (no evacuation route)
- Two elementary schools downtown on State routes
- Town Office, Fire, Police, EMS, outpatient health care facility - all at risk
- Fixed Sites:
  - LP Gas
  - Dorr
  - Sturm Ruger
  - Reed Mill Rd.
  - Johnson Dix
  - Goodrich
  - Ames Plaza
  - Pike Industries
  - Two Shell stations
  - Two Citgo stations
  - One Sunoco
  - Irving
  - Mobil

Earthquake (Moderate)

- Water and sewer infrastructure
- Downtown brick buildings:
  - Opera House/Town Office
  - Eagle Block
  - (3) Schools
  - Fire
  - Police
  - Downtown business district
- Two banks
- Town Rec. Building
- Cooperative Extension office
- County offices
- Sewage Treatment Facility
- Bridges
- Roads

Landslide (Rating?)

- Due to human design (not natural landslide areas)
- Chandler Mill Rd. About 20 years ago, roadway eroded into river
- Blaisdell Road (How many residences on both these roadways?)

Tornado (Low - Moderate)

- No events recalled

Wind Events, including Thunderstorms (Moderate to High)

- Two major high wind events (late 90s/2000). Tree damages and power outages throughout town.
- Tree damage - an annual occurrence

Hurricane (Moderate)

- 1938 Hurricane - Major tree damage (How about flooding?)

Downburst (Low)

- No events recalled

School Safety (Rating?)

- Intruders; violent crimes; bomb threats
- High School and two elementary schools - all have Emergency Plans
- Regional Special Operations Unit (Police and Fire)
- Fire Drills - annual
- Daycare and private institutions also vulnerable

Terrorism (Rating?)

- Sturm Ruger - 1100 employees. Major manufacturer. Domestic terrorism threat. Also a HazMat threat (materials manufactured and stored)
- Water supply (surface water)
- Four machine shops
- Roymal Co. - international company
- Critical facilities: Schools; three nursing homes

-End-

Newport Hazard Mitigation
3/18/04 Meeting

Present:

Pete Lamb, EM Co-Director
Dan O'Neill, Town Manager
Larry Wiggins, Director of Public Works
Paul Brown, Finance Manager
Pete Petschik, Field Representative, NH BEM
Vicky Boundy, Senior Planner, UVLSRPC

MINUTES

The meeting began at 10:00 a.m. and adjourned at 11:45 a.m. The Committee reviewed minutes from the 2/19 meeting, and made a few changes/additions. We then reviewed the "highest" hazard types and tried to estimate potential losses and costs for a worst-case scenario event.

1. Potential Loss Estimates

Hazmat
A catastrophic event downtown, e.g. propane tanker explosion, would be in the millions of dollars. Costs would include rebuilding costs, impact on bulk propane service, resulting flooding, proximity to schools, etc.

Surface Water Contamination
Newport's surface water supply serves 75 percent of the population (around 2200 structures). It is unsecured. Contamination, whether through terrorism or a natural event, would result in millions of dollars in costs, including remediation, decontamination of and possibly rebuilding of water mains.

Flooding

Neighborhood above Guild: If three cement dams upstream in Sunapee fail, there could be millions of dollars in costs.

- Sturm Ruger
- La Valley's - would be wiped out
- Dorr Woolen Bldg.
- One gasoline station
- About 12 residences

Below Ruger Dam (Eagle Block): Routine spring flooding (annual)

- Entire south end of Main Street
- Arlington Sample (manufacturing area)
- Rear parking lot of Police Station

- Recreational fields

Ames Plaza: Every 5 to 10 years, Rt. 11 is flooded over
- Auto Sales - cars flooded
- Flooded basements
- 12 businesses total, including medical facility (ambulatory health care)

South Main Street: Golf course would be wiped out in major event
- Hundreds of thousands of dollars
- Reconstruction costs and loss of business

Goshen Ocean: Breach or failure
- Whole downtown would be severely impacted

Meadow Park area: downstream of golf course
- 4-5 houses
- Ambulance garage
- Recreational facilities

Airport Runway area: Downstream of Meadow Park area
- Would have to rebuild entire runway area in event of major flooding

Corbin Park: Common flooding area
- Covered bridge - $465K value; on National Historic Register; has fire detection; rebuilt in 1995

Chandlers' Mill Rd., near Cutts Rd. area
- Approximately 12 residences
- Ice jams can flood basements

Breakneck Rd.
- Culvert - $250K replacement value
- 2 residences impacted
- Transportation access issues
- Highway damage - reconstruction would be required

Ice Jams

Cost for machinery to break up the jams - $5-10 K

Wildfire
- $50 million for major wildfire event, if just local resources are used.
- Cost for helicopter dropping water - $1500/hour

Winter Storms
- December 2003 - 2 major storms
- 1996 - 2 major storms (5 feet of snow in a week)
- Costs: Roughly $5 - 7 K per day: machinery/equipment; manpower; supplies

Earthquake - catastrophic
- Downtown area - brick buildings; density
- Eagle Block - $2 Million
- Water and sewer infrastructure
- Underground Storage Tanks

Wind Events

- Newport 60 - 70 percent forested
- Town Forest
- Ice Storm (worst case scenario) - wind event would increase wildfire risk

2. Existing HazMit Programs

After estimating potential losses for each type of storm event, we began reviewing existing hazard mitigation related programs and policies currently in place in Newport. Following is the draft list that was brainstormed at this meeting.

Planning

- Zoning regulations
- Building codes - *want to update this year*
- Subdivision regulations
- Capital Improvement Program - *equipment needs covered*
- Water/Sewer ordinance
- Master Plan - *needs updating*
- Airport Master Plan - *needs updating*
- Groundwater protection ordinance - *on Town Meeting this year (did it pass?)*
- National Flood Insurance Program (*are there any repetitive loss areas?*)
- Chief Lamb and Chief Hoyt - *contact people for NFIP*
- (*Wetland protection?*)

Emergency Management

- F/T Police, Fire, EMS, Public Works, Administrative staff
- Newport is region's emergency dispatch for five communities
- Emergency Plan - needs updating
- School emergency plans
- Mutual aid agreements for Police, Fire, and Public Works
- Emergency Shelters:
    - High School - *official shelter; has emergency back-up power; is Red Cross shelter; is in the 100-year floodplain.*
    - No official secondary emergency shelter
    - Churches, 2 banks with common rooms and back-up power - possible emergency shelters

Other

- Large volunteer base in community

3. Development Trends in Newport

- Downtown economic redevelopment - but little area downtown for residential development
- Many developments continuing out in more remote areas - increasing wildland/urban interface risk.
- Off Unity Rd. - two major developments, one 65-unit, one 20-unit
- Meadow Park area - targeted for senior housing or the like; is downtown, but is in the flood area
- Trickle-down residential development from the Upper Valley area
- Undeveloped industrial area - Routes 11/103 towards Sunapee
- Rts. 11/103 between Newport and Claremont - likely continued commercial development

4. Potential Mitigation Projects

Everyone was asked to come prepared for the next meeting with some potential mitigation project ideas. It might help to think about the following categories:

- Emergency Response
- Planning/Zoning
- Education and Outreach
- Engineering/Mapping
- Structural/Equipment
- Training

5. "Homework"

- June meeting: Bring, or email/mail in advance your ideas for mitigation needs and project ideas.
- Please keep track of how much time you put in outside of meetings, for UVLSRPC contractual purposes.
- I will bring funding and technical resources lists to next meeting.
- Pete: Please invite Julie Collins and someone from the schools to attend our June meeting.

Thanks to all for participating in the very productive March meeting.

NEXT MEETING (DATE CHANGE): Thursday, June 3rd, 10:00 a.m. - Agenda to follow in late May.

Newport Hazard Mitigation
6/10/04 Meeting

Present:
Pete Lamb, EM Co-Director
Dan O'Neill, Town Manager
Larry Wiggins, Director of Public Works
Fraser Michaud, Supt. Of Highway
Bob Naylor, Water & Sewer Dept.
Julie Collins, Planning & Zoning Coordinator
Bill Healey, School Superintendent
Vicky Boundy, Senior Planner, UVLSRPC

MINUTES

The meeting began at 10:00 a.m. and adjourned at 11:45 a.m. The Committee brainstormed potential hazard mitigation projects, created a final list of projects, and developed an implementation schedule.

1. School Emergency Issues
As the School Superintendent was present at the meeting, the group briefly discussed emergency planning issues and existing programs related to the Newport schools. Below were some of the points discussed:

- Police Dept. - has a Special Operations Unit (regional) that covers the High School
- Emergency Plan for Richards and Towle Schools - one in every classroom; teachers are comfortable with it
- There are emergency backpacks (contain emergency supplies) in each classroom
- There are regular emergency drills
- Schools are in the area of town that has the highest HazMat concern; in a hazmat event, would have to shelter everyone in place at the school, close down windows and ventilation.

2. Potential Hazard Mitigation Projects

Note: There are two new projects on this list. Please review them and let me know if you feel they should not be included as projects. Nick Catsum, owner of Newport Golf Course, spoke with Dan and Vicky about flooding concerns. When the new State Bridge was put in by the golf course, some riverside flood retention areas were removed. Nick is requesting that we investigate state or federal funding to restore that area (at the 15th Fairway) to mitigate flooding impacts. Nick also suggested that perhaps a small committee could be formed to identify and catalogue hot spot flooding areas throughout town and to make mitigation recommendations. Nick volunteered to be part of such a group.

Engineering/Mapping

- Detailed, multi-purpose base map needed for a variety of purposes

- Digitized tax maps needed for multi-purpose
- Digitized floodplain maps needed

Emergency Response/Planning

- Investigate lock changes for schools (for security/terrorism planning purposes) - Change to keyless system or Primus key system, which can't be duplicated
- Set up a committee to identify and study flooding "hotspots" in town

Structural

- Replace Breakneck Road culvert
- Relocation of power lines - deemed a lower priority
- Conduct a bridge study to assess structural soundness
- Restore floodway and retention area at Pollard's Mills Bridge area, near golf course

Educational

- Investigate setting up a low-powered local radio station for broadcasting emergency information
- Conduct educational outreach to residents and businesses about hazard mitigation **(*More details about how this will be done? I forget some of the ideas that came up*.)**

3. Draft Implementation Schedule

Mitigation Action	Who (Leadership)	When (Deadline)	How (Funding Source)
Detailed base map - on state list	911 Numbering Committee of Tax Dept.	ASAP	State Private Consultant
Digitized tax maps	Julie Collins	2005	State or Private Consultant through town funds (taxpayers approved funding for)
Digitized floodplain map	Julie Collins	2005	Regional planning commission through local dues or state grant funds
Investigate lock changes for schools (for security/terrorism planning purposes)	School Superintendent, EMD, Fraser Michaud advise	Fall 2004 - Investigate	Homeland Security Funding
Set up a committee to identify and study flooding "hotspots" in town	EMD? P & Z?	?	Town staff and volunteer time; NH Bureau of Emergency Management/FEMA

			technical assistance
Replace Breakneck Road culvert	Director Public Works	By 2006	Federal or State funds, such as Hazard Mitigation or Pre-Disaster Mitigation funds
Conduct a bridge study	Director Public Works	Ongoing	DOT Bridge Aid program
Floodplain restoration project - Pollards Mills Bridge area	??	??	State or Federal Funding, e.g. Flood Mitigation Assistance funds
Investigate setting up a low-powered local radio station for broadcasting emergency information	Town Manager	2005	Unknown (***DAN - ANY IDEAS?***)
Implement education and outreach program on hazard mitigation for residents	??	??	??

4. Next Planning Steps

3. Summer 2004: Vicky will meet with Pete Lamb after July 24th to refine draft Hazard Mitigation Plan
4. Revised draft will then be sent to Committee members
5. Early September: Get draft out to town boards/departments and members of the public
6. October: Adopt Plan

5. Plan Review

We discussed who should review Draft Plan and how to distribute them:

- Town Manager
- Board of Selectmen
- Planning and Zoning Coordinator
- School Superintendent
- All Town department heads
- Police Department
- Town voluntary boards, e.g. Conservation Commission, Planning Board, etc.
- Airport Committee
- Historic Commission
- Revite

Post at Town Hall that Plan Drafts are available, and leave copies there. Announce at NCTV that Plan Drafts are available for review.