Town of Gilmanton, New Hampshire
Hazard Mitigation Plan Update, 2019

Prepared by the:

Gilmanton Hazard Mitigation Update Committee

Gilmanton Public Safety Complex

August 2019

Original Plan:
August 2005
Updates:
December 2012
August 2019

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Town of Gilmanton, New Hampshire
Hazard Mitigation Plan Update

August 2019

With Assistance from:
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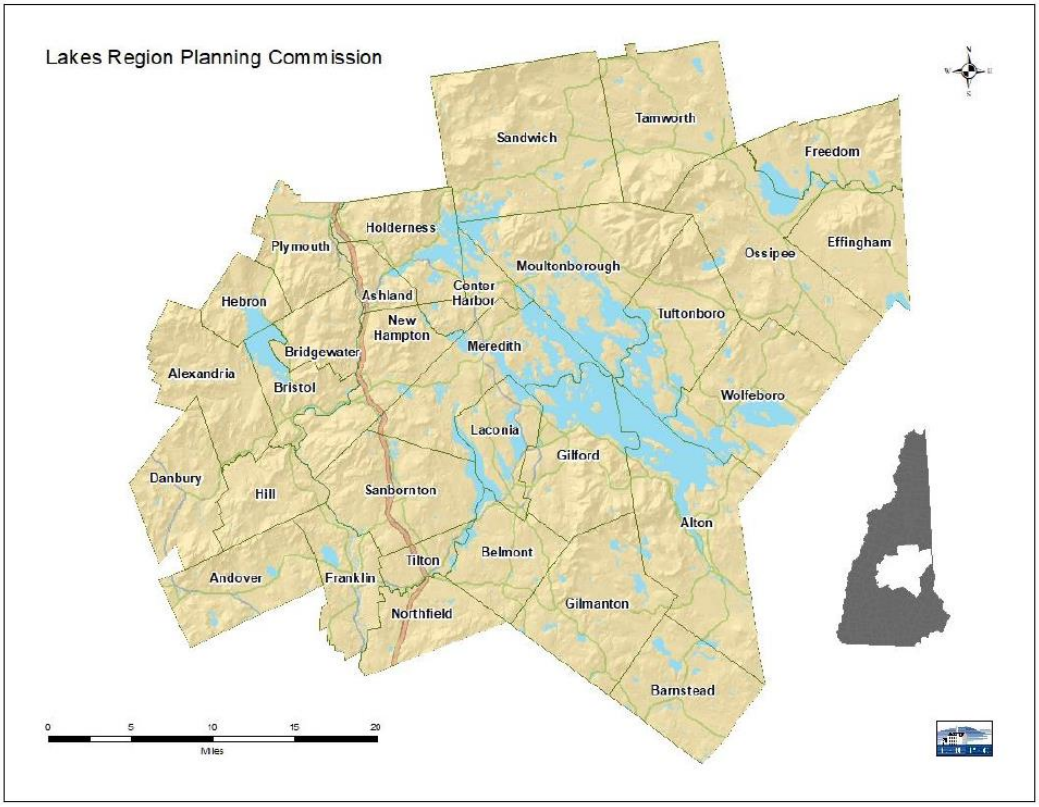
Funding for this plan was provided by the NH Department of Safety, Homeland Security and Emergency Management, and with matching funds provided by the Lakes Region Planning Commission.



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Acronyms and Abbreviations

CEO	Code Enforcement Officer
CRS	Community Rating System
DES	New Hampshire Department of Environmental Services
DOT	New Hampshire Department of Transportation
EMD	Emergency Management Director
EMPG	Emergency Management Performance Grant
EOC	Emergency Operations Center
FD	Fire Department
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
HazMat	Hazardous Materials
HD	Highway Department
HMGP	Hazard Mitigation Grant Program
HSEM	New Hampshire Homeland Security and Emergency Management
ISO	Insurance Service Office - A fire protection rating scale
LEOP	Local Emergency Operations Plan
LRPC	Lakes Region Planning Commission
Mag	Magnitude
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
PB	Planning Board
PD	Police Department
PPH	Partnership for Public Health
PSU	Plymouth State University
RSA	Revised Statute Annotated (New Hampshire's state laws)
USACE	United States Army Corps of Engineers

EXECUTIVE SUMMARY

The *Gilmanton Hazard Mitigation Plan Update* (the Plan) serves to reduce future losses from natural or man-made hazard events before they occur. The Plan was developed by the Gilmanton Hazard Mitigation Planning Update Committee (the Committee) with assistance from the Lakes Region Planning Commission, and contains statements of policy adopted by the Board of Selectmen in Chapter VI.

The Committee determined those natural and human-related hazards which pose at least a medium risk, based on a ranking system detailed in Chapter III, and shown below:

High Risk	Medium Risk	Medium-Low Risk
Severe Winter Weather	Inland Flooding & Dam Failure	Infectious Disease
	High Wind Events	Wildfire
	Drought	Earthquake
		Extreme Temperatures
		Lightning
		Tropical/Post-Tropical Cyclone

There have been a few minor changes to the list of Critical Facilities. The Committee identified existing programs related to hazard mitigation including the following:

Existing Plans, Regulations and Practices Supporting Hazard Mitigation	
Hazard Mitigation Plan 2012	Subdivision Regulations (2011)
Master Plan 2018	Site Plan Review Regulations (2013)
Zoning Ordinance (2018)	Dam Emergency Operations Plans (2006, 2013, 2014)
Floodplain Ordinance (2016)	Local Emergency Operations Plan (2017)
Mutual Aid Agreements	

Fifteen of the 30 Actions from the 2012 Plan have either been completed or are no longer pertinent. In its effort to further reduce the vulnerability of the town to future hazards, the committee developed a list of 32 general and hazard-specific mitigation actions, including the sixteen actions carried over from the previous plan. These actions were prioritized based on local criteria. Discussions were held regarding how implementation might occur over the next five years. The results of these discussions are summarized in Table 4: Implementation Schedule for Mitigation Actions.

CHAPTER I: PLANNING PROCESS

A. BACKGROUND

Communities are required to have an approved hazard mitigation plan as a condition of receiving hazard mitigation assistance funding as well as some other federal funding programs. Such plans are locally developed and adopted and approved by the Federal Emergency Management Agency (FEMA). Funds from these grants are to be used for hazard mitigation projects and actions that will ultimately reduce and mitigate future losses from natural or human hazard events. The NH Department of Safety's Division of Homeland Security and Emergency Management (HSEM) makes funding available to assist communities with plan development and update. Communities are provided the opportunity to select a contractor. The plan development process generally followed the steps outlined in FEMA's *Local Mitigation Planning Handbook (2013).*

B. AUTHORITY

The town of Gilmanton Hazard Mitigation Plan was prepared pursuant to Section 322, Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act and Section 104 of the Disaster Mitigation Act (DMA) of 2000. Section 322 of DMA 2000 emphasizes the need for State, local and tribal entities to closely coordinate mitigation planning and implementation efforts.

C. FUNDING SOURCE

The New Hampshire Department of Safety's Homeland Security and Emergency Management (NH HSEM) funded the Plan through a Pre-Disaster Mitigation grant with matching funds from the Lakes Region Planning Commission.

D. PURPOSE

The Gilmanton Hazard Mitigation Plan is a planning tool to be used by the town of Gilmanton, as well as other local, state, and federal government entities, in their efforts to reduce the negative effects from natural and human-related hazards. The Plan contains statements of policy as outlined in the Implementation Schedule for Mitigation Actions and in Chapter VI: Plan Adoption and Monitoring. All other sections of this plan are support and documentation for informational purposes only and are not included as a statement of policy.

E. SCOPE OF PLAN

The scope of this Plan includes the identification of natural hazards affecting the town of Gilmanton, as identified by the Committee. The Committee also chose to include man-made hazards in this update.

F. METHODOLOGY

The Lakes Region Planning Commission (LRPC) corresponded with the Gilmanton Emergency Management Director (EMD) in summer 2018 to begin the hazard mitigation update process in the town of Gilmanton. The EMD established the Gilmanton Hazard Mitigation Planning Update

Committee in fall 2018 for the purpose of updating a long-range plan for hazard mitigation. The Committee consisted of representatives from Police, Fire, and Highway Departments, as well as the Town Administrator and Assistant Town Administrator as a representative of the Board of Selectmen. Several meetings were open to the public.

Using FEMA's *Local Mitigation Plan Review Guide (2011), Mitigation Planning Workshop materials (2012), and the Local Mitigation Planning Handbook (2013*) as guidance, the Committee reviewed and updated various elements of the town's 2012 Hazard Mitigation Plan. The planner and the committee reviewed and referenced a variety of plans, studies, reports, and technical information during the development of this Plan Update; a list of these resources can be found in Appendix I. Data on property valuation was gathered from the Gilmanton MS-1 Report to the NH Department of Revenue Administration.

The Committee held meetings from October 2018 through May 2019 with a review of the draft plan by committee members in July 2019. The following timeline shows the dates and corresponding Committee actions. The committee reviewed each section of the plan and LRPC provided updated information on hazards in New Hampshire. Each section of the existing plan was revised and in some cases reformatted in order to develop a more comprehensive document. Any an d all public comments during the plan's development was included in relevant sections. Meeting notices and agendas were sent to identified stakeholders, local newspapers for publication, including the Town Office for posting and posted at the LRPC web page. Examples are included in Appendix D.

Committee Meetings

October 2, 2018: *Committee Meeting: Gilmanton Public Safety Complex*
- Overview of update process and objectives
- Discussion of Development Trends since 2012
- Review of Capabilities
- Identify Hazard Events since 2012

April 2, 2019 : *Committee Meeting: Gilmanton Public Safety Complex*
- Update of critical facilities and hazards on map
- Update Critical Facilities Vulnerability
- Status of 2012 Mitigation Projects
- Risk Assessment

April 23, 2019: *Committee Meeting: Gilmanton Public Safety Complex*
- Status of 2012 Mitigation Projects

May 21, 2019 : *Committee Meeting: Gilmanton Public Safety Complex*
- Gaps
- Potential Mitigation Actions
- Prioritization

Public Involvement

The Gilmanton Hazard Mitigation Planning Committee was well represented by municipal officials. The neighboring towns were also notified of all meetings and the review period. This provided an opportunity for local and regional businesses, organizations, agencies, public health institutions in Gilmanton and surrounding towns to review and comment during the plan update process through press releases and postings on the town and LRPC websites. Specific opportunities for public input occurred at each meeting. No comments were received from these stakeholders. One member of the public did attend the May meeting, voicing her concerns about the impacts on human health from the spreading of biosolids. This did result in the addition of a new mitigation action.

G. ACKNOWLEDGMENTS

Special thanks to the Gilmanton Hazard Mitigation Planning Committee for their time and effort in developing this Plan Update:

Joe Hempel	Gilmanton Fire Chief, EMD
Matthew Currier	Gilmanton Police Chief
Paul Perkins	Gilmanton Highway Agent
Heather Carpenter	Gilmanton Assistant Town Administrator
Patrick Bore	Gilmanton Town Administrator
Ryan McQuade	Gilmanton Fire Fighter
John Cunningham	Gilmanton Fire Fighter
Laine Rosato	Gilmanton Homeowner/Resident
Kayla Henderson	NH HSEM Mitigation Planner
Shawna-Leigh Morton	NHHSEM – Field Representative
Julia Chase	NHHSEM – Field Representative
David Jeffers	LRPC Regional Planner

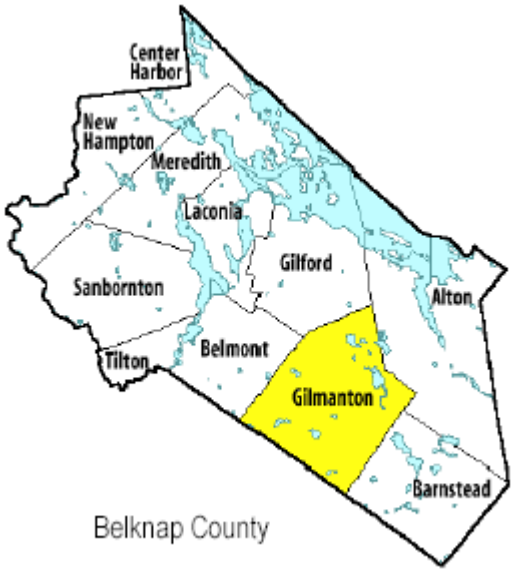
Additional information was provided by:

Jennifer Gilbert	Floodplain Management Coordinator, NH Office of Energy and Planning
Kent Finemore	Assistant Chief Engineer, NHDES – Dam Bureau
Nancy Baillargeon	Program Information Officer, NHDES – Dam Bureau

CHAPTER II: COMMUNITY PROFILE

A. GEOGRAPHY

The Town of Gilmanton is in Belknap County, approximately 20 miles from Concord. Seven different communities border Gilmanton: Belmont to the northwest, Gilford to the north, Alton to the northeast, Barnstead to the southeast, Pittsfield to the south, and Loudon and Canterbury to the southwest. The town of Gilmanton is comprised of 57.1 square miles of land area and 1.9 square miles of inland water area. The 2017 population of Gilmanton population was estimated at 3,751 residents resulting in a population density of 65.7 persons per square mile of land area.[1]



Gilmanton is part of the expansive, 5,010 square miles of land that make up the Merrimack River Watershed. Within that system, there are five subwatersheds in Gilmanton that all flow into tributaries of the Merrimack. These subwatersheds are the Winnipesaukee River, the Soucook River, the Upper Suncook River, the Suncook River, and the Winnipesaukee Drainage watersheds. The surface waters of Crystal, Sawyer, and Manning Lakes, as well as Loon and Shellcamp Ponds and the Suncook River are the well-known water bodies of the area.

Spring floods are common and are caused by rainfall in combination with snowmelt. Floods in late summer and fall are usually the result of above normal precipitation. Winter floods result from the occasional thaws, particularly in years of heavy snow cover.

There are two Class Significant Hazard dams located in Gilmanton: Crystal Lake & Sawyer Lake. As defined by the NH Department of Environmental Services, a Significant Hazard (Class B prior to 2014) dam is defined as a dam with a significant hazard potential which, if it were to fail, would result in major economic and environmental losses and structural damage to Class I and II roads.

A ridgeline running north to south extends roughly through the center of town. Steep slopes of greater than 25% make up 7% of the land area of Gilmanton and slopes greater than 15% account for 18% of the total land area. Gilmanton is a mixture of forests, farms, and small villages. There are numerous parcels of protected lands scattered throughout town along with nearly 3,000 contiguous acres under protection in the Hidden Valley area north of Manning Lake.

[1] NH Office of Strategic Initiatives (OSI) – State Data Center https://www.nh.gov/osi/data-center/index.htm

B. WEATHER CONDITIONS

Like many New England towns, Gilmanton's temperatures and precipitation vary greatly. January temperatures range from an average high of 30 degrees Fahrenheit to an average low of 5 degrees Fahrenheit. July temperatures range from an average high of 81 degrees Fahrenheit to an average low of 53 degrees Fahrenheit. Annual precipitation totals average about 43 inches, where the distribution is slightly lower in the winter months when compared to summer months. Gilmanton averages about 64 inches of snow per year.

Records indicate that this region has been experiencing more heavy precipitation events (>4" in 48 hours) over the past thirty years than prior to that.[2] New Hampshire is in a 160-mph wind zone; the majority of the southern half of the state (including all of Belknap County) is located in a hurricane-susceptible region.

C. PUBLIC SERVICES AND INFRASTRUCTURE

A three-member Board of Selectmen governs the town of Gilmanton. The town maintains a full-time Town Administrator. The Fire Department consists of a full-time Fire Chief, two other full-time staff, and a volunteer Fire Department of 30-35 individuals. The Fire Chief serves as the Emergency Management Director. The town has numerous water sources for firefighting, including dry hydrants throughout town. There is a full-time Police Chief with a full-time clerk, and four part-time officers. The Public Safety Building on NH Route 140 houses both departments. There is another Fire Station in Gilmanton Iron Works. The Fire Department also handles the Emergency Medical Services. Lakes Region General Hospital is the closest large healthcare facility. The Gilmanton Fire and Police Departments participate in the statewide mutual aid programs. The head of the Highway Department serves as the Highway Agent and directs three staff in maintaining more than 70 miles of town roads. The primary emergency shelter for the town is the Gilmanton Elementary School. There are several secondary emergency shelters.

Lakes Region General Hospital is 9 miles to the north in Laconia, Concord Hospital is 23 miles to the southwest in Concord, and Huggins Hospital is 25 miles to the northeast in Wolfeboro. Other hospitals are in Dover, Plymouth and Dartmouth-Hitchcock in Hanover.

NH Route 140 runs east – west across Gilmanton with NH Route 107 bisecting the town from north to south, where they intersect is Gilmanton Corners.

Gilmanton residents have access to drinking water through both private wells and water suppliers. Though most have private wells, there are two wellhead protection areas, one at Crystal Springs condominiums and the other at the Gilmanton Elementary School. All sewage in Gilmanton is handled through privately owned and maintained septic systems. NH Electric Cooperative supplies electric power to the majority of the town, serving 1,855 customers. EverSource, formerly Public Service of New Hampshire (PSNH), provides electric power to a smaller segment of town, 499 customers.

[2] http://www.unh.edu/news/releases/2014/04/ds04climate.cfm visited Sept. 6, 2014.

Students K - 8 attend Gilmanton Elementary School located on NH Route 140. Students in grades 9-12 attend Gilford High School. The nearest community college is Lakes Region Community College in Laconia, and the nearest college is the University of New Hampshire in Durham, NH.

D. LAND USE AND DEVELOPMENT TRENDS

Population, Housing Stock, and Growth Patterns

The town consists of two villages, Gilmanton Corners and Gilmanton Iron Works. The population of Gilmanton was one of the faster growing populations in the region during the 1980s through 2010.[3] The table to the right illustrates the population growth in Gilmanton over the past several decades (top), along with projected population change through the next few decades (bottom).[4] In 2017 the state estimated that population of Gilmanton was 3,751, a slight drop from the 2010 figure and well below the projected figure for 2020[5].

Census	Population	% Change from Prior Census
1960	736	
1970	1,010	37.22%
1980	1,941	92.20%
1990	2,609	34.41%
2000	3,060	17.30%
2010	3,777	23.43%
Date	**Projected Population**	**% Change from Prior Decade**
2020	3,895	3.12%
2030	4,125	5.90%
2040	4,257	3.20%

The median age of Gilmanton's residents increased substantially between 1980 and 2000 (from 31.2 to 40.1 years), in 2010 it was 43.1 years of age.[6] The current median age in Gilmanton is estimated to be 46 years.

Year	Housing Units Permitted	Total Housing Units
2010	1	2,119
2011	0	2,119
2012	1	2,120
2013	0	2,120
2014	1	2,121
2015	2	2,123
2016	10	2,133
2017	17	2,150

According to the 2010 Census, the percentage of seasonal housing units in Gilmanton (28% - 588 units) was nearly three times the statewide average (10.3%) which is the same rate as the average for all of Belknap County (28%) for seasonal homes.

The 2010 Census reported 2,119 Total Housing Units in Gilmanton, an increase of 271 units (14.6%) from the 2000 Census (1,848 units). Since then 32 permits have been reported[7].

These development trends indicate the possibility of several challenges for local mitigation efforts. The number of seasonal residential units is indicative of people from varying origins spending a portion of their time in the community. The first major challenge this presents is that the sheer number of people in town, especially in the summer, is greater than the number of year-round residents. The second challenge is in providing adequate information to all community members regarding the town's rules and procedures. For example, fire safety information for the influx of summer residents can be of

[3] *Lakes Region Demographic Profile*. Lakes Region Planning Commission, 2003, p. 7.
[4] US Census (2010), http://www.nh.gov/oep/programs/DataCenter/2010Census/index.htm.
[5] NH Office of Strategic Initiatives – State Data Center https://www.nh.gov/osi/data-center/index.htm
[6] *Lakes Region Demographic Profile*. Lakes Region Planning Commission, 2003, p. 9 and US Census (2010), http://www.nh.gov/oep/programs/DataCenter/2010Census/index.htm..
[7] *Current Estimates and Trends in New Hampshire's Housing Supply – Update: 2010-2017*. NH OSI (2018) https://www.nh.gov/osi/data-center/documents/housing-estimates-trends.pdf.

great value, not only for the high instances of campfires, but also for the general fire safety guidelines for residences in wooded areas.

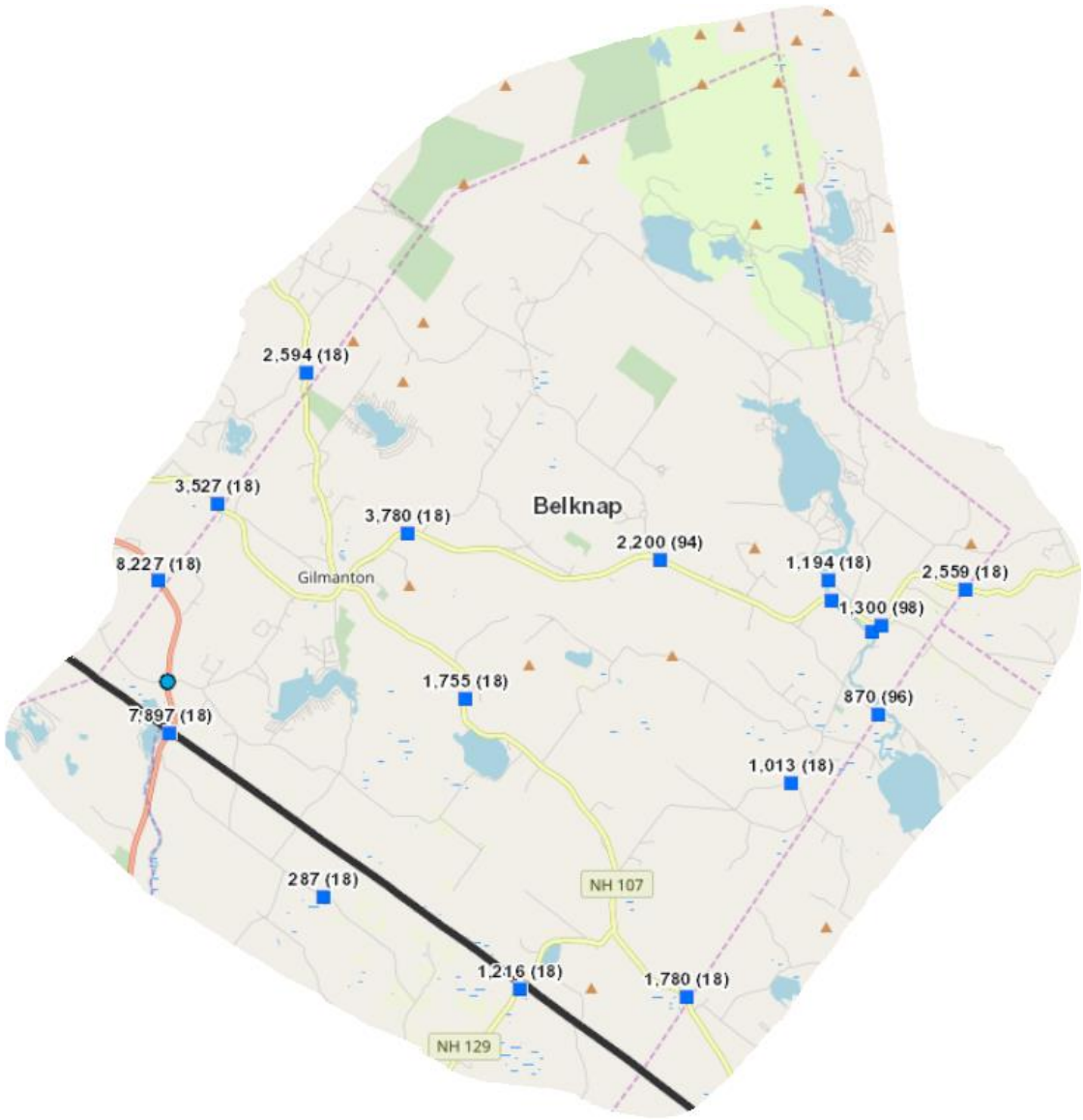
Another possible challenge in dealing with hazardous events is the potential for increased special needs populations. Those typically most at risk from severe weather events are the elderly and young children. This could include the town's aging population or visitors at the summer youth camps in town.

While there has been some variability in traffic over the years, the Traffic Volume Reports from the NH Department of Transportation indicate no dramatic changes in traffic volumes since 2008 along the majority of roads where counters are set out. Table 3 indicates the Average Annual Daily Traffic counts, measured in vehicles per day. As this is a projected average over the entire year, there are certainly many summer days and during special events when the volume of traffic on any one of these roads far exceeds these figures. In most cases, there was a slight increase. The map indicates the most recent count at each site with the year in parentheses, in many cases 2018.

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
BUREAU OF TRAFFIC

Bureau of Planning, Traffic Section, Traffic Reports *18-Feb-16*

STAT.	TYPE	LOCATION	FC	2008	2009	2010	2011	2012	2013	2014	2015
Town: GILMANTON											
171051	82	NH 107 (PROVINCE RD) SOUTH OF PRESCOTT RD	07	*	*	1500	*	*	1600	*	*
171052	62	NH 140 (GILMANTON RD EAST) AT ALTON TL	07	*	*	2100	*	*	2000	*	*
171053	82	NH 107 (PROVINCE RD) AT BARNSTEAD TL	07	*	1400	*	*	1300	*	*	1500
171054	82	NH 129 (OLD STAGE RD) AT LOUDON TL	08	*	*	870	*	*	970	*	*
171055	62	NH 107 (PROVINCE RD) AT BELMONT TL	07	*	*	2100	*	*	2300	*	*
171056	82	NH 140 WEST OF SAWTOOTH RD	07	*	*	3300	*	*	3200	*	*
171059	82	STAGE RD WEST OF BEAUTY HILL RD	08	*	700	*	*	810	*	*	800
171060	82	ELM ST OVER SUNCOOK RIVER	08	*	1000	*	*	1100	*	*	1000
171061	82	NH 140 OVER SUNCOOK RIVER	07	*	2300	*	*	2300	*	*	2400
171062	82	CRYSTAL LAKE RD OVER SUNCOOK RIVER	09	*	790	*	*	900	*	*	650



Source: https://nhdot.ms2soft.com/tcds/tsearch.asp?loc=Nhdot&mod=

Because of the seasonal nature of housing in Gilmanton, it is important to acknowledge that the actual number of people residing in town during the summer months might be much more than the year-round population.

While there has been little new development in Gilmanton during the past eight years, development has picked up in the last two years. Overall, the community's vulnerability to hazards has decreased.

CHAPTER III: RISK ASSESSMENT

A. IDENTIFYING HAZARDS

The Committee considered the various hazards identified in the 2012 Gilmanton Hazard Mitigation Plan. This plan identified the following hazards events as the greatest threats to the town at that time.

Hazards identified in the 2012 Gilmanton Hazard Mitigation Plan

High to Moderate Risk
Severe Winter Weather
Flooding & Dam Failure
Wildfire
Drought
Thunderstorm & Lightning
Hurricane
Utility Interruption
HazMat (Transportation)
Armed Attack (assault, sniper)

The Committee also reviewed historical information from local and internet sources about past hazard events in and near Gilmanton since 2012. Through this review of state-wide hazards, past regional and local events, and with discussion, the committee identified the hazards listed in the table below as the most significant hazards to the town of Gilmanton.

As part of the *State of New Hampshire Multi-Hazard Mitigation Plan* update process in 2018, some hazards were grouped together, some names were refined, a couple hazards were added, and a couple were dropped from the state-wide list. Tornado, downburst, and thunderstorm have been grouped as "High Wind Event". Hurricane, now referred to as "Tropical & Post-Tropical Cyclone" was not considered a high or medium risk hazard in this plan update. It was recognized that mitigating inland flooding and high winds will also be addressing any concerns that might be associated with cyclone events.

Severe winter weather continues to be the highest risk hazard. Inland flooding, dam failure, drought and high wind events, and drought continue to be medium risk hazards. Lightning and several other natural hazards were acknowledged as posing a potential impact to the town but either having been of weak magnitude or unlikely to occur in the area. Therefore, they were considered medium-low risk (See Chapter IV for details.).

High Risk	Medium Risk	Medium-Low Risk
Severe Winter Weather	Inland Flooding & Dam Failure	Infectious Disease
	High Wind Events	Wildfire
	Drought	Earthquake
		Extreme Temperatures
		Lightning
		Tropical/Post-Tropical Cyclone

Due to geography and climate, landslide and avalanche were not seen as hazards that apply to Gilmanton. Solar Storms and Space Weather were discussed and while it was acknowledged that there may be impacts to Gilmanton in the future (communications), that there was little that the community could currently do to mitigate this and therefore, considered it not applicable for this update. Background information on these hazards can be found in Appendix G.

It was pointed out to the committee that there is a distinction between natural and man-made/technological hazards. To meet FEMA plan development requirements, only natural hazards need to be addressed. This update focused on natural hazards so human-caused and technological hazards were not addressed during update process. Information from the 2012 plan addressing such hazards is included in Appendix G.

B. PROFILING HAZARD EVENTS

The committee reviewed the various hazards that might occur in Gilmanton and assessed the probability of such an event occurring in Gilmanton. This process began by taking the risk rating matrix from the previous plan, reviewing the hazards, past occurrences, specific areas of concern, and revising the Probability of Occurrence rating using the following categories:

- Unlikely: Less than 1% probability of occurrence in the next year
- Occasional: 1 to 10 percent probability of occurrence in the next year
- Likely: 10 to 90 percent probability of occurrence in the next year
- Highly Likely: 90 to 100 percent probability of occurrence in the next year

The resulting summary (below) indicates that of the natural hazard events anticipated to occur in Gilmanton, severe winter weather is seen as likely. Any hazards considered by the Committee as Unlikely are either not addressed or are described in Appendix G. While solar storms and space weather were acknowledged to be occasional events, the committee felt that there was little the town could do at this point in time to address it as a hazard so designated it is 'not applicable for this plan update'.

Probability of Occurrence

Likely	Occasional	Unlikely
Severe Winter Weather	High Wind Event	Landslide
	Inland Flooding	Avalanche
	Dam Failure	
	Wildfire	
	Drought	
	Earthquake	
	Extreme Temperature	
	Lightning	
	Tropical & Post-Tropical Cyclone	
	Infectious Disease	

The resulting summary indicates that of the natural hazard events anticipated to occur in Gilmanton, severe winter weather is seen as likely. Natural hazards seen as occasional occurrences include high wind events, flooding and dam failure, wildfire, drought, earthquake, extreme temperature, lightning, tropical or post-tropical cyclones, and infectious disease. Solar storms and space weather were

acknowledged to be an occasional occurrence but there was limited direct local knowledge of these events.

Each of the hazards that the Committee identified as likely or highly likely to occur in Gilmanton is profiled below along with some hazards that occur less frequently but due to their potential impact, the committee felt warranted a full discussion in the body of this plan. It describes the likely **location** of each hazard, the **extent** of the hazard, recent **history** of events, and the **probability** of an occurrence in Gilmanton. Note: For more complete history of events, see Appendix E.

The **extent** is a description of "how bad the hazard could get", considering three factors – magnitude, onset, and duration. *Magnitude* is size of the hazard, such as depth of floodwaters or wind speed. *Onset* is how quickly the hazard approaches. Depending on geography as well as the nature of the rainstorm, floodwaters might rise over a period of days, or it might take just a few hours to build up a concentrated flow. *Duration* is a matter of how long the hazard is present. A downburst or tornado exists for minutes or hours, while a hurricane or tropical depression is usually around for days.

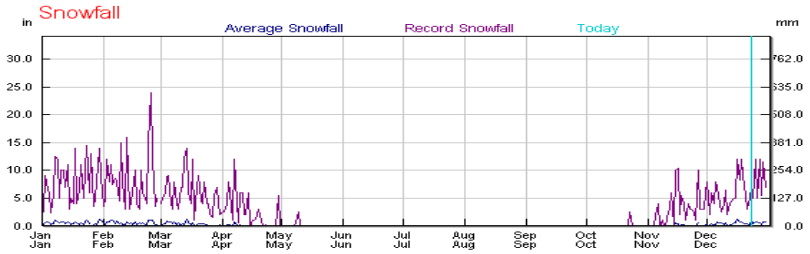
SEVERE WINTER WEATHER

Location: Snow and ice storms can affect the entire town. Severe winter weather occurs frequently in the northeast and the possibility exists for residents to have to withstand several days without power. No one area of the town and region is at greater risk than another. These weather events can vary greatly based on slight differences in temperature, humidity, and elevation. Some events will produce a combination of winter weather types. There are segments of the population that are more at risk. These include the elderly, people that need regular medical care, and young children.

Extent: Moderate

A heavy snowstorm can be defined as one which deposits four or more inches of snow in a twelve-hour period. Records indicate that eight or more inches have fallen in a single day on most dates from late November through mid-March but the region's average snowfall on any day from November through April is less than an inch. The record also shows that deposits of more than ten inches have happened in each of these months and on several days in February the area has seen more than fifteen and even twenty inches of snow in one day.

Average and Record Snowfalls for the Laconia, NH Airport[8]



In the winter months, the region may experience blizzard conditions. A blizzard is characterized by sustained winds or frequent gusts to 35 miles per hour or greater and considerable amounts of falling or blowing snow that last for a duration of three hours or longer. The combination of winds and snow

[8] Laconia is the nearest official station in New Hampshire with historical records. Weather Underground, Season Weather Averages https://www.wunderground.com/NORMS/DisplayNORMS.asp?AirportCode=KLCI&SafeCityName=Gilmanton&StateCode=NH&Units=none&IATA=LCI.

reduce visibility to less than a quarter mile.[9] Note: The scale at the top of this page is for the Regional Snowfall Index, which incorporates not only snowfall values but also the spatial extent of the storm and the population impacted[10].

Snowfall Categories

CATEGORY	RSI VALUE	DESCRIPTION
1	1–3	Notable
2	3–6	Significant
3	6–10	Major
4	10–18	Crippling
5	18.0+	Extreme

New Hampshire generally experiences at least one or two nor'easters each year with varying degrees of severity. A nor'easter is defined as a large anticyclone weather system that resides near the New England region. These storms have the potential to inflict more damage than many hurricanes because high winds can last from twelve hours to three days, while the duration of hurricanes ranges from six to twelve hours. A nor'easter also has the potential to sustain hurricane force winds, produce torrential rain, and create blizzard conditions in winter months.

An ice storm coats trees, power lines, streets, vehicles, and roofs with a very slick and heavy coating of ice. In the winter of 1998, a major ice storm crippled much of New Hampshire, coating everything with as much as three inches of ice. The U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory estimates a 40 – 90-year return period for an event with a uniform ice thickness of between 0.75 and 1.25 inches. Ten years later (2008), however, New Hampshire was struck again by another severe ice storm.

The Sperry-Piltz Ice Accumulation Index, or "SPIA Index" – Copyright, February, 2009

ICE DAMAGE INDEX	* AVERAGE NWS ICE AMOUNT (in inches) *Revised-October, 2011	WIND (mph)	DAMAGE AND IMPACT DESCRIPTIONS
0	< 0.25	< 15	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	0.10 – 0.25	15 - 25	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
	0.25 – 0.50	< 15	
2	0.10 – 0.25	25 - 35	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
	0.25 – 0.50	15 - 25	
	0.50 – 0.75	< 15	
3	0.10 – 0.25	> = 35	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
	0.25 – 0.50	25 - 35	
	0.50 – 0.75	15 - 25	
	0.75 – 1.00	< 15	
4	0.25 – 0.50	> = 35	Prolonged & widespread utility interruptions with extensive damage to main distribution feeder lines & some high voltage transmission lines/structures. Outages lasting 5 – 10 days.
	0.50 – 0.75	25 - 35	
	0.75 – 1.00	15 - 25	
	1.00 – 1.50	< 15	
5	0.50 – 0.75	> = 35	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.
	0.75 – 1.00	> = 25	
	1.00 – 1.50	> = 15	
	> 1.50	Any	

(Categories of damage are based upon combinations of precipitation totals, temperatures and wind speeds/directions.)

The Sperry-Piltz Ice Accumulation (SPIA) Index is being used to forecast and classify ice storms based on a combination of the average thickness of ice coating (referencing expected temperature and precipitation levels) and wind speed; ratings range from 0 to 5.[11] The SPIA Index was first used in the United States in 2009 and is now beginning to be utilized by the National Weather Service.

[9] "Winter storm terms," http://www.fema.gov/hazard/winter/wi_terms.shtm
[10] NOAA https://www.ncdc.noaa.gov/snow-and-ice/rsi/
[11] SPIA Northeast webpage, http://www.spia-index.com/neIce.php,

History:

Hazard	Date	Location	Remarks/Description	Source
Snowstorm	2/8-/10/2013	Statewide	Total Public Assistance Grants Dollars obligated was $6,153,471.49. Snowfall amounts were generally 18". **Declared Disaster, DR-4105.**	FEMA
Snowstorm	1/26-1/28/2015	Statewide	Snowfall across the state ranged from 10 to 30 inches. Blizzard conditions led to coastal flooding and splash over. Total Public Assistance Grants Dollars obligated was $4,939,214.76. **Declared Disaster, DR 4209.**	FEMA
Snowstorm	3/14-3/15/2017	Statewide	Primary impact was damage to utilities. Two counties received public assistance totaling $1,687,439.45. **Declared Disaster, DR-4316.**	FEMA
Blizzard	3/13-3/14/2018	Statewide	Up to 20" of snow with up to 80 mph winds. More than 140,000 households without power and 200 poles down. Especially impacted were Moultonborough, Tuftonboro, Wolfeboro, Alton, Belmont, and Center Harbor. **Declared Disaster, DR-4371**	HSEM

NOAA lists an additional 26 heavy snowstorms in Belknap County since 2012. No deaths, injuries or property damages were reported. While Gilmanton has experienced periodic severe winter weather over the past five years, no specific snow depths or damages in Gilmanton related to specific storms were noted.

Probability of Occurrence: Likely

HIGH WIND EVENTS

Location: On average, six tornadoes touch down somewhere in New England each year. There is no way of knowing where or when the next damaging tornado will strike as they are among the most unpredictable weather phenomena. Downbursts are 10 times more likely to occur than tornadoes. All areas of town are susceptible to damage from high winds.

Extent: Weak

Thunderstorms occur mainly in the summertime; some can be anticipated and detected well in advance while others are "pop-up" storms that are limited in size and duration. Most thunderstorms do not last long in any one location but move through quickly. Tornadoes are violent rotating storms that extend to the ground with winds that can reach 300 miles per hour. They are produced from thunderstorms and can uproot trees and buildings. Tornados are classified using the Enhanced Fujita (EF) Scale, based on wind estimates based on damage (right).[12]

Enhanced Fujita Scale						
EF Number	0	1	2	3	4	5
3-Second Gust (mph)	65-85	86-110	111-135	136-165	166-200	Over 200
Damage Indicator		Small barns, Farm Outbuildings	One-or two-family residences	Single-Wide Mobile Home	Double-Wide Mobile Homes	Apt, Condo, Townhouse (3 Stories or less)

[12] For more details go to the NOAA FAQ sheet http://www.spc.noaa.gov/faq/tornado/ef-scale.html.

According to the National Oceanic and Atmospheric Administration (NOAA) a downburst is a strong downdraft, rotational in nature, which causes damaging winds on or near the ground. Winds can exceed 130 mph.[13] Downbursts fall into two categories based on their size:

- microbursts, which cover an area less than 2.5 miles in diameter, and
- macrobursts, covering an area at least 2.5 miles in diameter.

History:

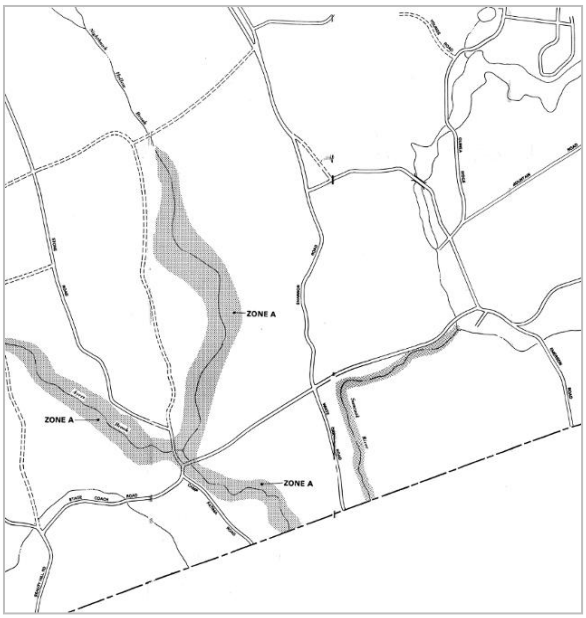
Hazard	Date	Location	Remarks/Description	Source
Tornado	7/4/2014	Gilford and Center Harbor	A waterspout touched down on Lake Winnipesaukee briefly. No damage was reported. EF0	NOAA
Tornado	7/30/2015	Warner	An EF0 touched down briefly in Warner. It snapped about 25 trees and tore a portion of roof off a large storage building.	NOAA
Tornado	7/18/2016	Pittsburg	A tornado touched down with winds of about 75 mph and a maximum path width of about 200 yards. 100s of trees were snapped and wires went down in multiple locations.	NOAA

NOAA lists four reports of tornados in New Hampshire since 2012 (three events); no injuries or deaths were reported. In this same time period, there were more than 19 reports of thunderstorm/high wind (>40 mph) events in Belknap County since 2012 with no deaths or injuries and $500 in damages recorded. Two reports were from Gilmanton, with damages including downed trees and wires (9/11/16) and a microburst with 80 mph wind gusts that snapped and uprooted trees near Sawyer Lake, damaging several homes/cottages (8/3/18).

Probability of Occurrence: Occasional

INLAND FLOODING AND DAM FAILURE

Location: The Gilmanton Flood Insurance Rate Maps (1979) show the flood boundaries in the event of a 100-year flood (right), defined as a having a one percent chance of flooding each year. In Gilmanton the floodplain is primarily located along Nighthawk Hollow Brook, Ayers Brook, and the Suncook River. Failure of the Crystal Lake Dam would impact the low-lying properties along the banks of the Suncook River near Gilmanton Ironworks. Failure of the Sawyer Lake Dam would have some impacts along Badger Brook as it flows west into Belmont.



Extent: Moderate

Flooding is defined as a temporary overflow of water onto lands that are not normally covered by water. It results from the overflow of rivers and tributaries or inadequate drainage. Flooding is most commonly associated with structures and properties located within the 1% annual (or 100-year) floodplain. Areas in this floodplain have been

[13] *Weather Glossary*. National Oceanic and Atmospheric Administration, http://www.weather.gov/glossary/index.php?letter=d.

identified as having a one percent chance of flooding any given year. This means that flooding in this area is projected to have an average recurrence interval of 100-years; however, that does not mean that a flood in this area will only occur once every hundred years.

There are no US Geological Survey (USGS) stream gauges in Gilmanton. The nearest gauge is in Chichester on the Suncook River, the outfall of Crystal Lake[14]. The image at right shows recent flow levels (lighter blues) compared with historic high flows (dark blue).

Dams in New Hampshire are classified by the New Hampshire Department of Environmental Services Dams Bureau. The four dam hazard classifications (High, Significant, Low, and Non-Menace) are based on the potential losses associated with a dam failure (see Appendix G for a detailed description). High (H) and Significant (S) Hazard dams have the highest potential for damage; this could include damage to state or municipal roadways as well as structures. The table below from NH DES lists all the dams associated with Gilmanton. There are 28 active and three exempt dams in Gilmanton, one High, one Significant, and four Low Hazard dams, with 22 Non-Menace dams. Each High or Significant Hazard dam has an Emergency Action Plan (EAP) which describes the inundation pathway and the magnitude and severity associated with a dam breach.

Dams in Gilmanton

DAM	HAZCL	STATUS	USE	NAME	RIVER	LENGTH	IMPND	HEIGHT	DOWNER
91.11	S	ACTIVE	R	CRYSTAL LAKE DAM	SUNCOOK RIVER	188	441	16	NH DES WATER DIVISION
91.01	H	ACTIVE	R	SAWYER LAKE DAM	BADGER BROOK	450	91	19	SAWYER LAKE VILLAGE DISTRICT
91.03	L	ACTIVE	R	SHELLCAMP POND DAM	ACADEMY BROOK	108	150.5	12	NH DES WATER DIVISION
91.05	L	ACTIVE	R	ACADEMY BROOK II DAM	ACADEMY BROOK	165	0.7	15	MR GRAHAM WILSON & MRS VIRGINIA SAPIRO
91.09	L	ACTIVE	R	ROLLINS POND DAM	KELLEY BROOK	192	37	17	MS PATRICIA BOSIAK
91.29	L	ACTIVE	R	GILLAN POND DAM	NELSON BROOK	300	40	10	MR ERNEST GILLAN
91.06	NM	ACTIVE	R	ACADEMY BROOK III DAM	POND BROOK	123	0.5	12	GRAHAM WILSON & VIRGINIA SAPIRO
91.07	NM	ACTIVE	R	LOON POND DAM	LOON POND BROOK	16	129	5	TOWN OF GILMANTON
91.08	NM	ACTIVE	R	LOON POND BROOK	LOON POND BROOK	0	0.26	15	MR FRANK JOYCE
91.1	NM	ACTIVE	R	KIMBALL BROOK DAM	KIMBALL BROOK	150	5	14	MERRIMACK COUNTY FISH & GAME CLUB
91.16	NM	ACTIVE	P	FIRE POND DAM	NATURAL SWALE	95	0.2	7	MS MARIA HUFSCHMID
91.17	NM	ACTIVE	C	FARM POND	NATURAL SWALE	0	0.58	12	MR GEORGE TWIGG, III
91.18	NM	ACTIVE	C	FARM POND	NATURAL SWALE	0	0.5	18	MR HAROLD J MCCLARY
91.19	NM	ACTIVE	P	FIRE POND	TR POND BROOK	0	0.5	11	GILMANTON SAND & GRAVEL
91.2	NM	ACTIVE	P	FIRE POND	TR NIGHTHAWK HOLLOW BROOK	0	0.25	10	MS CAROL DARBYSHIRE
91.21	NM	ACTIVE	C	WILDLIFE POND I	NATURAL SWALE	0	0.29	8	MS LOUISE BOARDMAN
91.22	NM	ACTIVE	R	SNOW DAM	NATURAL SWALE	0	0.37	8	MR CONRAD SNOW
91.23	NM	ACTIVE	R	EISANHAUER DAM	NATURAL SWALE	465	0.95	13	MR DONALD AGOSTINELLI
91.24	NM	ACTIVE	R	MEETINGHOUSE POND	TR NIGHTHAWK HOLLOW BROOK	150	25.34	3	UNKNOWN
91.25	NM	ACTIVE	C	WILDLIFE POND	AYRS BROOK	0	0.25	8	MR GEORGE MCCLARY
91.26	NM	ACTIVE	C	FARM POND II	TR AYERS BROOK	0	0.92	10	MR ARTHUR DAIGNEAU
91.28	NM	ACTIVE	C	FARM POND	NATURAL SWALE	0	0.46	10	MR JOHN F GALLANT
91.34	NM	ACTIVE	C	FARM POND	NATURAL SWALE	0	2.23	12	MR HERMAN KARDINAL ret mail
91.35	NM	ACTIVE	C	FARM POND	NATURAL SWALE	0	0.25	8	BOB POTTER
91.36	NM	ACTIVE	C	FARM POND	TR POND BROOK	0	0.25	14	MR WILLIAM J MORRISON
91.37	NM	ACTIVE	R	ROUND POND DAM	TR SUNCOOK RIVER	138	44.9	3	UNKNOWN
91.38	NM	ACTIVE	P	PERRY FIRE POND	UNNAMED STREAM	200	0.23	10	MR TERENCE W PERRY
91.4	NM	ACTIVE	P	VILLAGE FIRE POND DAM	UNNAMED STREAM	50	0.33	7	GILMANTON FIRE DEPARTMENT
91.14		EXEMPT	R	SUNCOOK RIVER IV DAM	SUNCOOK RIVER	0	0.25	3.5	FELLOWS
91.33		EXEMPT	C	FARM POND	NATURAL SWALE	0	0.25	4	MR LAUROSE WILKENS mail ret
91.39		EXEMPT	R	RAY POND	UNNAMED STREAM	150	0.5	5	MR PHILIP RAY mail ret
91.12		RUINS	M	SUNCOOK RIVER I DAM	SUNCOOK RIVER	0	0	14	MR HOWELL A POTTER
91.13		RUINS	M	SUNCOOK RIVER II DAM	SUNCOOK RIVER	140	0	12	MR HOWELL A POTTER
91.15		RUINS	R	DIMOCK DAM	UNNAMED BROOK	140	0	6	DIMOCK BUNGALOWS
91.27		RUINS	C	FARM POND III DAM	UNNAMED STREAM	0	0	0	UNKNOWN
91.02		BREACHED	R	BADGER BROOK DAM	BADGER BROOK	0	0	0	MR J R MUNZEY
91.04		BREACHED	R	ACADEMY BROOK I DAM	ACADEMY BROOK	125	3	12	MR TOM HAMLEY
91.3		NOT BUILT	P	SCHEUBLIN FIRE POND DAM	NATURAL SWALE	0	0.16	8	MR RAYMOND SCHEUBLIN
91.31		NOT BUILT	P	OCONNELL FIRE POND DAM	NATURAL SWALE	0	0	12	FRIEL GOLF & DEVELOPMENT
91.32		NOT BUILT	C	MCCLARY WILDLIFE POND D	NATURAL SWALE	0	0	0	MR HAROLD MCCLARY

[14] http://waterwatch.usgs.gov/.

The committee was provided with copies of the Emergency Action Plans for the two major dams in town. They noted several roads and bridges could be impacted by dam failure.

History:
Since 2012 two flood events were reported in the NOAA database for the Belknap County, including reports of structural damage in Gilford and Laconia totaling $45,000 in June 2017 Four flood events around the state were designated as Declared Disaster events.

Hazard	Date	Location	Remarks/Description	Source
Flood	6/26-7/3/2013	Grafton, Sullivan, Cheshire	The total Public Assistance was $5,903,017.87. **Declared Disaster, DR-4139**	FEMA
Flood	7/1-7/2/2017	Coos, Grafton	The total Public Assistance $699,661.26. Flood stages ranged from 9.00ft to 13.00ft. **Declared Disaster, DR-4329**.	FEMA
Flood	10/29 - 11/1/2017	Coos, Grafton, Carroll, Belknap, Merrimack, Sullivan	The total Public Assistance was $365,851.11. Flood stages ranged from 8.00ft to 13.00ft. **Declared Disaster, DR-4355**.	FEMA, NOAA
Flood	3/2-3/8/2018	Rockingham	**Declared Disaster, DR-4370.**	HSEM

Since the last plan update, several road segments have suffered from annual flooding including Stage Rd., Stone Rd., Currier Hill Rd., Crystal Lake Rd., and Meadow Pond Road. Additionally, in just the past couple of years, the intersection of Allen's Mills Rd. and NH Route 106 has experienced flooding, in part related to recent changes in land use activity. No reports of dam failures in Gilmanton were found since the last update.

Probability of Occurrence: Occasional

WILDFIRE
Location: Much of Gilmanton is heavily wooded; a fire could occur anywhere. Access could be limited as there are a limited number of roads to access these areas.

Extent: Moderate
A wildfire is defined as a fire in wooded, potentially remote areas that may endanger lives. New Hampshire has about 500 wild land fires each year; most of these burn less than half an acre.

The National Wildfire Coordinating Group (NWCG) has defined seven classes of wildfire based on size:

- Class A - one-fourth acre or less;
- Class B - more than one-fourth acre, but less than 10 acres;
- Class C - 10 acres or more, but less than 100 acres;
- Class D - 100 acres or more, but less than 300 acres;
- Class E - 300 acres or more, but less than 1,000 acres;
- Class F - 1,000 acres or more, but less than 5,000 acres;
- Class G - 5,000 acres or more.

History: Between 2014 and 2018 there were 724 wildfires in New Hampshire, burning 2,007 acres, averaging just under 3 acres per fire. The number of fires per year ranged from 53 (2018) to 351 (2016). Belknap County had just one wildfire in 2018, burning one acre.[15] There were no reports of wildfire in Gilmanton since the last plan.

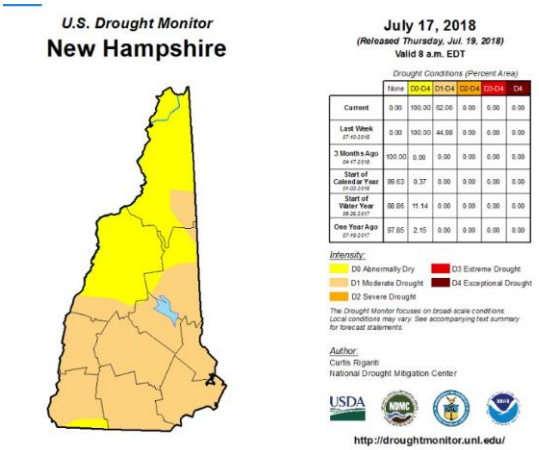
Probability of Occurrence: Occasional

DROUGHT

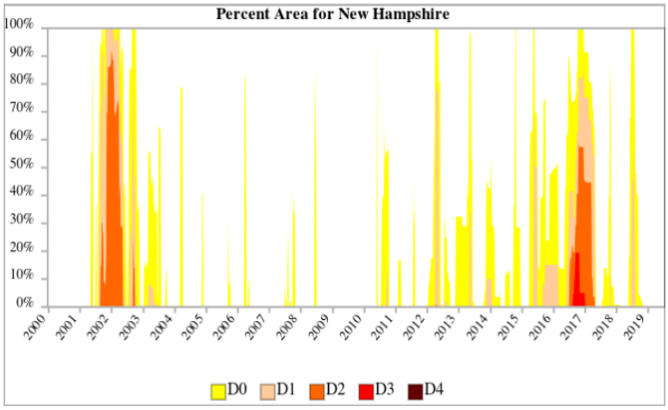
Location: Drought is a regional hazard, affecting broad sections of the state at any given time. The effects of a drought are felt locally based on local water resources and individual water uses.

Extent: Moderate

Drought occurs when less than the normal amount of water is available for extended periods of time. Effects may include decreased soil moisture, groundwater levels, streamflow, and lake, pond, and well levels may drop. Factors that may contribute to drought include reduced rain/snowfall, increased rates of evaporation, and increased water usage. New Hampshire generally receives adequate rainfall; it is rare that the state experiences extended periods of below normal water supplies.



Since 1990 New Hampshire has had a state Drought Emergency Plan, which identifies four levels of action indicating the severity of the drought: Alert, Warning, Severe, and Emergency. The US Drought Monitor[16] uses a five-level drought intensity scale ranging from Abnormally Dry to Exceptional Drought.



History: There have been six extended droughts in New Hampshire in the past century: 1929 – 1936, 1939 – 1944, 1947 – 1950, 1960 – 1969, and 2001 – 2002.[17] Southern New Hampshire received about half of its normal precipitation during 2016. Moderate drought conditions existed in New Hampshire during parts of 2015 and 2016. This continued for nearly a year, ending in April 2017. [18] Gilmanton experienced dry conditions during the drought of 2015 – 2017, no specific instances of impacts on the town were noted.

Probability of Occurrence: Occasional

[15] NH Division of Forests and Lands https://www.nh.gov/nhdfl/documents/2018-forest-fire-town-report.pdf
[16] US Drought Monitor http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?NH.
[17] http://des.nh.gov/organization/divisions/water/dam/drought/documents/historical.pdf.
[18] https://www.drought.gov/drought/states/new-hampshire

EARTHQUAKE

Location: An earthquake could affect all areas of Gilmanton. The infrastructure such as bridges are of greatest concern.

Extent: Weak

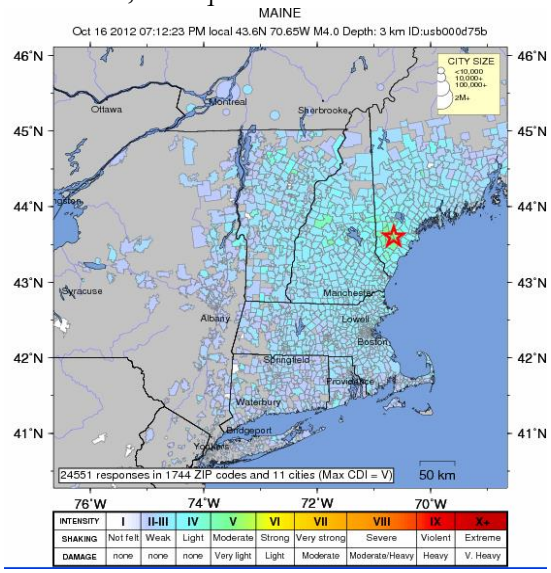
An earthquake is a series of vibrations induced in the Earth's crust by the abrupt rupture and rebound of rocks in which elastic strain has been slowly accumulating. Earthquakes are commonly measured using *magnitude*, or the amount of seismic energy released at the epicenter of the earthquake. The Richter magnitude scale is a mathematical device used to compare the size of earthquakes, shown in the table below[19]

Richter Magnitude Scale

Magnitude	Earthquake Effects
2.5 or less	Usually not felt but can be recorded by seismograph.
2.5 to 5.4	Often felt, but only causes minor damage.
5.5 to 6.0	Slight damage to buildings and other structures.
6.1 to 6.9	May cause a lot of damage in very populated areas.
7.0 to 7.9	Major earthquake. Serious damage.
8.0 or greater	Great earthquake. Can totally destroy communities near the epicenter.

New Hampshire is in an area of moderate seismic activity with respect to other regions of the country. This means the state could experience large (6.5-7.0 magnitude) earthquakes, but they are not likely to occur as frequently as in a high hazard area like the Pacific coast. There is the potential for nearby earthquakes to register 5.5 on the Richter Scale, causing slight damage to buildings and structures. Due to the unique geology of New Hampshire, earthquake propagation waves travel up to 40 times further than they do in the western United States, possibly enlarging the area of damage.[20] The strongest earthquakes to strike New Hampshire occurred December 20 and 24, 1940 in the town of Ossipee. Both earthquakes had a magnitude of 5.5 and were felt over an area of 400,000 square miles.

History: On average, every other year the Lakes Region experiences an earthquake, though these earthquakes are mild and go mostly undetected by people. Sanbornton and Tamworth are identified as major epicenters in the region.[21] A search of the USGS National Earthquake Information Center database shows that since 1990 there have been 22 earthquakes with a magnitude of at least 2.5 within a 100 km (62 mi.) radius of Gilmanton; the largest was magnitude 4.7.[22] Seven such earthquakes have occurred since 2010, including the 4.7 quake in southern Maine that shook the region on October 16, 2012. Some in Gilmanton felt it; no damage was reported. The image at right indicates the communities where



Areas where the October 16, 2012 earthquake was

[19] http://pubs.usgs.gov/gip/earthq4/severitygip.html
[20] http://www.nh.gov/safety/divisions/hsem/NaturalHazards/index.html
[21] http://des.nh.gov/organization/commissioner/pip/factsheets/geo/documents/geo-3.pdf
[22] USGS. https://earthquake.usgs.gov/earthquakes/search/

people reported feeling this event.[23] No earthquakes have occurred in Gilmanton since the last plan.

Probability of Occurrence: Occasional

EXTREME TEMPERATURES

Extreme temperatures are a period of prolonged and/or excessive hot or cold that presents a danger to human health and life.

Extreme Heat events occur as a result of above normal temperatures, which often coincide with high relative humidity, that increase the likelihood of heat disorders with prolonged exposure or strenuous activity. Heat related disorders include heat cramps, heat exhaustion, and heat stroke. Extreme heat can also damage or kill crops and animals (wild, farm, or domesticated), potentially presenting a risk to the economy.

Extreme Cold events are caused by the southern transport of arctic airmasses into the Northeast. This effect is exacerbated when there are winds present that effectively lower the temperature that is perceived by the human body, known as the wind chill. The risk comes from when the body is losing heat faster than it can produce it. Wind acts to carry heat away from the body, therefore amplifying the perceived temperature by the human body and reducing the body's core temperature. Cold disorders can include frostbite and hypothermia.

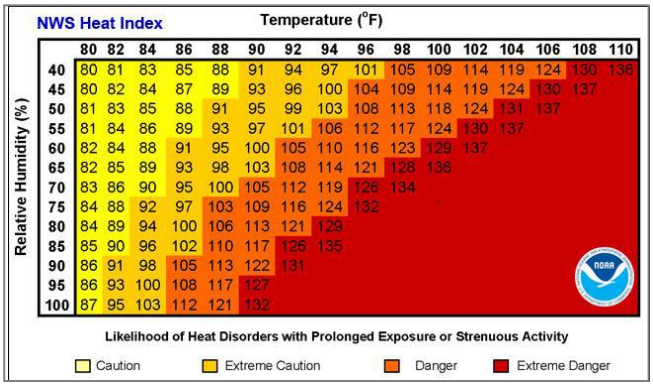
Frostbite occurs when uncovered skin/extremities are exposed to extreme cold and the body tissue is either injured or killed. Hypothermia is when the body is unable to heat itself at the rate it is being cooled and the body's core temperature begins to drop below normal values. A normal core body temperature is 98.6°F: mild hypothermia occurs when core body temperature drops between 90-95°F and severe hypothermia occurs at core body temperatures of below 90°F. If left untreated, hypothermia can result in unconsciousness and eventually death. Extreme cold can also damage or kill crops and animals (wild, farm, or domesticated), potentially presenting a risk to the economy.

Location:

Extreme temperatures can occur anywhere throughout the town of Gilmanton. Exposure to the combination of cold and wind could be enhanced at higher, more exposed elevations.

Extent: Weak

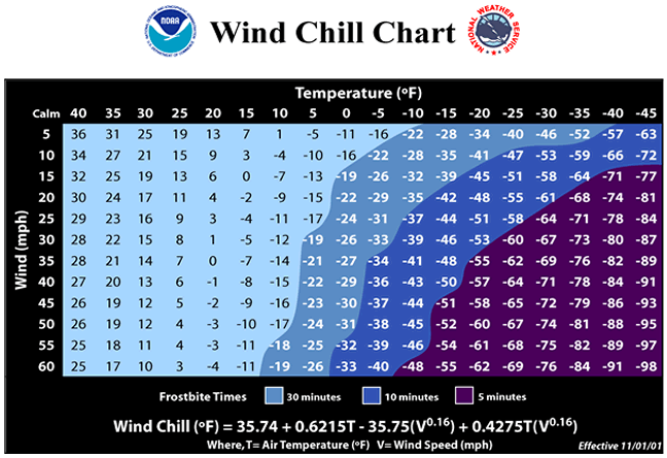
- Heat Advisory—Two or more consecutive hours of Heat Index values of 95-99 °F for two or more days *OR* any duration of Heat Index values of 100-104 °F. A Heat Advisory is issued within 12 hours of the onset of extremely dangerous heat conditions.
- Excessive Heat Warning—Two or more hours with Heat Index values of 105 °F or greater. An Excessive Heat Warning is issued within 12 hours of the onset of extremely dangerous heat conditions.



[23] USGS, Earthquake Archive Search. http://earthquake.usgs.gov/earthquakes/search/

- Excessive Heat Watches—Heat watches are issued when conditions are favorable for an excessive heat event in the next 24 to 72 hours. A Watch is used when the risk of a heat wave has increased but its occurrence and timing is still uncertain.
- Excessive Heat Outlooks—Issued when the potential exists for an excessive heat event in the next 3-7 days. An Outlook provides information to those who need considerable lead-time to prepare for the event.

- Wind Chill Watch: NWS issues a wind chill watch when dangerously cold wind chill values are *possible*. As with a warning, adjust your plans to avoid being outside during the coldest parts of the day. Make sure your car has at least a half a tank of gas and update your winter survival kit.



- Wind Chill Advisory: NWS issues a wind chill advisory when seasonably cold wind chill values but not extremely cold values are expected or occurring. Be sure you and your loved ones dress appropriately and cover exposed skin when venturing outdoors. A Wind Chill Advisory is issued for New Hampshire is wind chill values are expected to be -20°F to -29°F and winds are greater than 5 mph.

- Wind Chill Warning: NWS issues a wind chill warning when dangerously cold wind chill values are expected or occurring. A Wind Chill Advisory is issued for New Hampshire is wind chill values are expected to be -30°F and winds are greater than 5 mph.[24]

History:

Event Date	Event Description	Impacts	Location	Additional Information
July 1911	Heat Wave	Record high temperatures set in Concord, New Hampshire	Statewide	Extreme heat was recorded from July 3rd through July 5th, with high temperatures ranging from 101-102°F in Concord on these days.[116] These three days account for three of the top 10 hottest days on record for Concord, New Hampshire.
March 2012	Heat Wave	Record high temperatures set in Concord, New Hampshire	Statewide	High temperature records in Concord, New Hampshire were broken for 5 consecutive days, with the hottest day being 84°F.
September 2017	Heat Wave	High temperature records set across New Hampshire	Statewide	Mount Washington set record a daily high temperatures for four consecutive days. Manchester, Concord, and other areas across the State and New England also saw daily temperature records broken.[117]
December 2017	Cold Wave	Record low temperatures set across New Hampshire	Statewide	Record low temperatures were set across the State as a result of a cold wave. Portsmouth saw a low of -1°F and Mount Washington saw a low of -33°F (with a wind chill of -51°). Wind Chill Advisories were posted in central and southern New Hampshire, and Wind Chill Warnings were posted for northern New Hampshire.
February 2018	One Day Winter Heat Wave	High temperature records set across New Hampshire	Statewide	Exceptionally strong high pressure ridge in place across the Eastern Seaboard. Record high temperatures were broken across the State.[118]

[24] Adapted from *State of NH Multi-Hazard Mitigation Plan Update 2018* https://prd.blogs.nh.gov/dos/hsem/wp-content/uploads/2015/11/State-of-New-Hampshire-Multi-Hazard-Mitigation-Plan-Update-2018_FINAL.pdf.

Gilmanton has experiences periods of extreme heat and extreme cold annually since the last plan update.

Probability of Occurrence: Occasional

LIGHTNING

Location: Lightning can strike anywhere in town. Tall objects, such as the Academy Building (Town Offices) tend to be most susceptible to lightning strikes.

Extent: Weak

Lightning is a giant spark of electricity that occurs within the atmosphere, or between the atmosphere and the ground. As lightning passes through the air, it heats the air to a temperature of about 50,000 degrees Fahrenheit, considerably hotter than the surface of the Sun. During a lightning discharge, the sudden heating of the air causes it to expand rapidly, resulting in thunder.[25] Exactly where and when lightning will strike is unknown. These giant sparks of electricity can result in fire, damage to electronic equipment, injury/death to people. The National Weather Service utilizes a six-point scale for characterizing lightning activity called the Lightning Activity Level (LAL) based on frequency of ground strikes along with rainfall and ground conditions.[26]

Lightning Activity Level (LAL)	
LAL 1	No thunderstorms
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground strikes in a five-minute period.
LAL 3	Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a 5-minute period.
LAL 4	Scattered thunderstorms. Moderate rain is commonly produced Lightning is frequent, 11 to 15 cloud to ground strikes in a 5-minute period.
LAL 5	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a 5-minute period.
LAL 6	Dry lightning (same as LAL 3 but without rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag Warning.

History: Two lightning events occurred in the Lakes Region since 2012 that merit documentation, one impacting Gilmanton. In June 2013 there was a strike at a scout camp in Gilmanton (near West Alton) sending two dozen people to local hospitals, no deaths or serious injuries occurred.

Hazard	Date	Location	Remarks/Description	Source
Lightning	6/24/2013	West Alton/Gilmanton	Large hail and wet microbursts were main concerns. 30 people were injured by lightning at a Boy Scout camp in Gilmanton.	NOAA
Lightning	7/18/2013	Melvin Village (Tuftonboro)	Wind damage and heavy rain were the main concerns as the storm moved through the region. Lightning struck two sailboats causing them to catch fire and sink in Lake Winnipesaukee.	NOAA

[25] http://www.nh.gov/safety/divisions/hsem/HazardMitigation/documents/hmp-chapter-3.pdf accessed September 16, 2013.

[26] NWS Definitions webpage, http://graphical.weather.gov/definitions/defineLAL.html. Accessed June 3, 2014.

COUNTY	LOCATION	DATE	EVENT TYPE	DEATHS	INJURIES	PROPERTY DAMAGE
BELKNAP CO.	WEIRS BEACH	7/4/2012	Lightning	0	3	0.00K
BELKNAP CO.	WEST ALTON	6/24/2013	Lightning	0	30	0.00K
CARROLL CO.	MELVIN VLG	7/18/2013	Lightning	0	0	20.00K
CARROLL CO.	EAST MADISON	7/2/2014	Lightning	0	2	0.00K

Probability of Occurrence: Occasional

TROPICAL & POST-TROPICAL CYCLONES

Tropical and Post-Tropical cyclones are localized, very intense low-pressure wind system, forming over tropical oceans with winds of hurricane force. There are many stages throughout the life cycle of a tropical cyclone.

- Potential Tropical Cyclone: Describes a disturbance that is not yet a tropical cyclone, however, poses the threat of becoming one
- Tropical Disturbance: A cluster of showers and thunderstorms that flares up over the tropics. Usually 100-300 miles in diameter and generally move westward.
- Tropical Storm: Sustained wind levels are between 34 knots and 64 knots (39 to 74 MPH)
- Hurricane: Once a tropical cyclone sustains wind levels between 64 and 96 knots (74 to 111 MPH)
- Major Hurricane: A tropical cyclone with maximum sustained winds of 96 knots (111 MPH) and higher. Major hurricanes are classified as category 3 or higher.
- Post-tropical Cyclone: A former tropical cyclone, this term is used to describe a cyclone that no longer possess the sufficient tropical characteristics to be considered a tropical cyclone. These post-tropical cyclones often undergo an extratropical transition and form frontal boundaries. Post-tropical cyclones can continue carrying heavy rains and high winds and cause storm surge.

Location: A cyclone could affect all areas of Gilmanton. Stream crossings, floodplains, and steep slopes are most likely to be impacted.

Extent: Weak

Hurricanes are severe tropical storms that have winds at least 74 miles per hour. In the Lakes Region they could produce heavy rain and strong winds that could cause flooding or damage buildings, trees, power lines, and cars.[27] Hurricanes are measured by the Saffir-Simpson Hurricane Scale: a 1-5 rating based on a hurricane's intensity using wind speed as the determining factor (see table below). The scale is used to give an estimate of the potential property damage and flooding expected from a hurricane landfall.

Saffir-Simpson Hurricane Scale

Category	Characteristics
1	Winds 74-95 mph (64-82 kts or 119-153 km/hr). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage.

[27] http://www.fema.gov/hazard/hurricane/hu_about.shtm, visited January 25, 2011.

2	Winds 96-110 mph (83-95 kts or 154-177 km/hr). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings.
3	Winds 111-129 mph (96-113 kts or 178-209 km/hr). Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Flooding near the coast destroys smaller structures with larger structures damaged by battering from floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required.
4	Winds 130-156 mph (114-135 kts or 210-249 km/hr). Storm surge generally 13-18 ft above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km).
5	Winds greater than 156 mph (135 kts or 249 km/hr). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required.

Source: http://www.nhc.noaa.gov/aboutsshs.shtml

According to NOAA, while 2010 was one of the busiest hurricane seasons on record, 2013 was one of the least active hurricane seasons.[28] New Hampshire has not experienced a severe hurricane directly since 1938.

On September 21, 1938, a Category 3 hurricane claimed 13 lives in New Hampshire and many more throughout New England. Official records at the Weather Bureau in Concord show sustained winds of 56 miles per hour, but around the state, gusts around 100 miles per hour were reported, mostly due to topographical acceleration. The Merrimack River rose nearly 11 feet above its flood stage, *The Hanover Gazette* reported that in New Hampshire, 60,000 people were homeless, and many areas were without power. Damages were estimated at $22 million.[29] Hurricane Bob, a category 2 storm, in 1991, was declared a major federal disaster in New Hampshire and is recorded as a severe storm.[30]

History: In the past five years no hurricanes have hit the region or the town of Gilmanton, according to NOAA and the HMP Committee. By the time that a hurricane reaches central New Hampshire, it is rare that it is retains the characteristics of a hurricane. Wind speeds usually dissipate but they can still bring a great deal of rainfall to the region. That was the case with the remnants of Hurricanes Irene and Sandy, which hit the area in 2011 and 2012 as tropical depressions. There was little impact to Gilmanton from these events.

Probability of Occurrence: Occasional

[28] http://www.noaanews.noaa.gov/stories2010/20101129_hurricaneseason.html visited January 25, 2011 and http://www.noaanews.noaa.gov/stories2013/20131125_endofhurricaneseason.html,.
[29] http://www.nh.gov/safety/divisions/hsem/NaturalHazards/index.html, visited January 25, 2011.
[30] http://www.fema.gov/news/event.fema?id=2118 visited January 25, 2011

INFECTIOUS DISEASE

Infectious diseases are illnesses caused by organisms—such as bacteria, viruses, fungi or parasites. Some infectious diseases can be passed from person to person, some are transmitted by bites from insects or animals, and others are acquired by ingesting contaminated food or water or being exposed to organisms in the environment. Signs and symptoms vary depending on the organism causing the infection, but often include fever and fatigue. Mild infections get better on their own without treatment, while some life-threatening infections may require hospitalization.

While some diseases are so rare in each population that a single case warrants an epidemiologic investigation (e.g., rabies, plague, polio), there are other diseases that occur more commonly so that only deviations from the norm (i.e. seeing more cases than expected) warrants investigation.

Location

The entire State of New Hampshire is at risk for Infectious Diseases. The prevalent diseases can change based on the time of year, such as the influenza virus in the winter and foodborne disease in the summer. In Gilmanton the school, camps, and areas where the elderly gather are likely places for transmission to occur.

Extent: Moderate

Infectious disease is not a "natural hazard" and does not have a true "extent" as far as hazard mitigation planning goes, rather the focus is on preparedness and planning to minimize its impact on people. The magnitude and severity of infectious diseases is described by its speed of onset (how quickly people become sick or cases are reported) and how widespread the infection is. Some infectious diseases are inherently more dangerous and deadly than others, but the best way to describe the extent of infectious diseases relates to the disease occurrence

- *Endemic* – Constant presence and/or usual prevalence of a disease or infection agent in a population within a geographic area
- *Hyperendemic* – The persistent, high levels of disease occurrence
- *Cluster* – Aggregation of cases grouped in place and time that are suspected to be greater than the number expected even though the expected number may not be known
- *Epidemic* – An increase, usually sudden, in the number of cases of a disease above what is normally expected
- *Outbreak* – The same as epidemic, but over a much smaller geographical area
- *Pandemic* – Epidemic that has spread over several countries or continents, usually affecting many people

Gilmanton's high school children attend school in the neighboring town of Gilford, thus enabling infection and viruses to be transmitted from elsewhere. Given the seasonal population fluctuation in Gilmanton, an outbreak of an infectious disease is possible. An epidemic could be categorized by 5 things: Foodborne illnesses (E. Coli), Water (Cholera), Vaccine Preventable (Measles), Sexually Transmitted (HIV), and Person-to-Person (meningitis).

History: While there certainly have been minor outbreaks of flu in town, no major outbreaks of this or any other infectious disease in Gilmanton was identified during this process. The 2012-13 flu season was much more severe in New Hampshire than any of the previous decade; 35 deaths occurred

statewide, the most since 1997.[31] The committee expressed concern about the increasing frequency of Lyme disease, which is transmitted through the bite of the black-legged tick. Lyme disease can result in malaise, fever, muscle and joint pain. If left untreated it can progress to more severe neural and cardiac symptoms. For the past five years New Hampshire has had one of the highest rates of Lyme disease in the country. A monthly summary of infectious disease cases in NH is available at the NH DHHS website.[32]

Probability of Occurrence: Unlikely.

Summary

It is cost prohibitive to make the built environment resistant to the most devastating natural hazards that could occur, though reasonable measures can be taken to minimize loss of life and property damage. Gilmanton may be affected by an unavoidable extraordinary circumstance such as a violent earthquake, but historically, events of this magnitude have been infrequent. Those natural events that are common to the northeast also have common elements of concern for public safety. These include the potential for long-term power outages, the potential need for short-term sheltering facilities, and the availability of equipment and trained personnel. Key to loss prevention in these relatively common event scenarios is pre-event planning that critically assesses communications within the community, mutual aid resources regionally, public awareness and education, and emergency response training.

Lists of hazard events prior to 2013 is included in Appendix E. For more information on these and other hazards, please see Appendix G.

[31] NH Department of Health and Human Services http://www.dhhs.nh.gov/media/pr/2013/01-jan/01112013flu.htm, visited January 17, 2013.

[32] https://www.dhhs.nh.gov/data/index.htm

CHAPTER IV: VULNERABILITY ASSESSMENT

A. INVENTORY ASSETS

The list of critical infrastructure for the town of Gilmanton (below) was updated by the Committee and the values updated by the Assistant Town Administrator (2018). The critical infrastructure list has four classifications, 1) Primary Response 2) Secondary Response 3) Populations to Protect and 4) Major Evacuation Routes. The first category contains facilities essential in a hazard event, including the Emergency Operation Center. The second contains supplies, utilities, and transportation services. The third category is a list of facilities that have been identified by the Committee as either vulnerable or concentrated populations that may require additional attention in the event of a disaster, and historic structures. The fourth category contains evacuation routes.

The committee removed several facilities from the list of Secondary Shelters after a review of the capabilities of the structures such as electricity, bathrooms, and kitchen facilities.

Critical Facilities

Facility Type	Name	Location	Owner	Assessed Value	Capacity	Notes
Category 1 - Primary Response Facilities						
EOC (Secondary), Fire & Police Stations, Communications	Public Safety Building	297 NH Rt. 140	Municipal	$889,200		Y
EOC (Primary), Fire Station	Ironworks Fire Station	1824 NH Rt. 140	Municipal	$834,900	40	Y
Shelter (Primary) EOC (Secondary)	Gilmanton School	1386 NH Rt. 140	SAU 79	$5,041,800	250	Y, K
Town Hall, Shelter (Secondary), Historic	Academy Building (Municipal Offices)	503 Province Rd. (NH Rt. 107)	Municipal	$2,028,000	295	Y, K
Public Works, Emergency Fuel	Highway Department	770 Stage Road	Municipal	$217,600		Y (portable)
Shelter (Secondary)	Center Congregational Community Church - Corners	497 Provence Road	Private	$284,600	40	N, K
Shelter (Secondary)	Center Congregational Community Church - Iron Works	1817 NH Route 140	Private	$77,300	40	N, K
Shelter (Secondary)	Gilmanton Year Round Public Library	1385 NH Rt. 140	Private		40	N, K
Category 2 - Secondary Response Services/Facilities						
Public Utilities	IW: NH Elec. Coop & TDS, Corners: NH Elec. Coop., EverSource	11 Elm Street	Private			
Transportation	First Student Bus Company	33 EastGate Park Rd, Belmont	Private			
Supplies	Iron Works Market	1818 NH Route 140	Private			Y, K
Category 3 - Populations and Places to Protect						
High Population Area	Four Corners Village Area	NH Routes 140 & 107	Private			
High Population Area	Ironworks Village Area	NH Route 140 & Elm St.	Private			
High Population Area	Sawyer Lake	Sawyer Lake Road	Private			
High Population Area	Shellcamp Pond	Lakeshore Drive, Meadow Pond Road, & Ridgewood Drive	Private			
High Population Area	Crystal Lake Park	Crystal Lake Road	Private			
High Population Area	Rocky Pond	NH Route 106 & South Road	Private			
High Population/Recreation Area	Hidden Valley Boy Scout Camp	159 Manning Lake Road	Private			K
High Population/Recreation Area	Camp Bell - Boy Scout Camp	Places Mill Road	Private			K
Historic	Ironworks Library	10 Elm Street	Private	$123,700		N
Historic	Corner Library	509 Province Rd	Municipal	$136,900		N
Major Evacuation Routes						
Evacuation Route	NH Rt 140		State			
Evacuation Route	NH Rt 106		State		Problem with flooding	
Evacuation Route	NH Rt 107		State			
Evacuation Route	NH Rt 129		State			
Evacuation Route	Middle Route		Municipal			
Evacuation Route	Stage Road		Municipal		Problems with flooding	
Evacuation Route	Allens Mills Road		Municipal		Problem with flooding	
KEY: Y - has generator, N - no generator, K - Has kitchen						
Assessment Source - Primex						

The Vulnerability matrix from the 2012 HMP was reviewed by the committee. Changes to the list of facilities were noted (mainly focused on clarifying shelter capacity) as well as any changes to the potential hazards. Vulnerability ratings from the 2012 plan were carried over and committee members were asked to make any necessary adjustments to the scores. Vulnerability incorporates exposure to the hazard, values of the facility and its contents to the town, and likelihood of compromised service.

Very few structures/infrastructure in town were rated as particularly vulnerable to hazards by the committee. Gilmanton Elementary School serves as the regional shelter as well as being the school, where youth spend much of their time, bad weather will have an impact on that facility. The Ironworks Fire Station and the Highway department buildings are vulnerable to flooding, especially in the event of dam failure. The commit tee did also take into consideration properties and structures beyond those identified as "critical".

Vulnerability of Critical Facilities

Gilmanton - 2019	Natural Hazards														
Facility/Infrastructure	Severe Winter Weather	Dam Failure	Wildfires	Earth-quakes	Light-ning	Cyclonic Events	Drought	Inland Flood	High Wind Events	Extreme Temps	Land-slide	Aval-anche	Infect-ious Diseases	Solar Storms & Space Weather	SUM TOTAL
Primary Response Facilities															
Public Safety Building	3	1	2	2	2	2	2	1	1	1	1	1	2	3	24
Ironworks Fire Station	3	3	2	2	2	2	2	2	1	1	1	1	1	2	25
Gilmanton School	3	1	2	2	2	2	2	1	2	1	1	1	3	2	25
Municipal Offices (Academy Building)	3	1	2	2	2	2	2	1	1	1	1	1	2	2	23
Highway Department	3	3	2	2	2	2	2	2	1	1	1	1	1	3	26
Ironworks Town Hall	3	3	2	2	2	2	2	2	1	1	1	1	1	1	24
Hidden Valley Camp	3	2	2	2	2	2	2	2	1	1	1	1	3	1	25
Corner Church	3	3	2	2	2	2	2	2	1	1	1	1	2	1	25
Ironworks Church	3	2	2	2	2	2	2	2	1	1	1	1	2	1	24
Year-round Library	3	1	2	2	2	2	2	1	1	1	1	1	2	1	22
Secondary Response Facilities															
Utilities: NHEC, EverSource, TDS - Telephone	3	3	2	2	2	2	2	2	1	1	1	1	1	3	26
First Student Bus Company	3	2	2	2	2	2	2	2	1	1	1	1	3	2	26
Iron Works Market	3	3	2	2	2	2	2	2	1	1	1	1	2	1	25
Populations and Places to Protect															
Four Corners Village Area	3	2	2	2	2	2	2	2	1	1	1	1	1	1	23
Ironworks Village Area	3	3	2	2	2	2	2	2	1	1	1	1	1	1	24
Sawyer Lake	3	2	2	2	2	2	2	2	1	1	1	1	1	1	23
Shellcamp Pond	3	2	2	2	2	2	2	2	1	1	1	1	1	1	23
Crystal Lake Park	3	3	2	2	2	2	2	2	1	1	1	1	1	1	24
Rocky Pond	3	2	2	2	2	2	2	2	1	1	1	1	1	1	23
Hidden Valley & Camp Bell Boy Scout Camps	3	2	2	2	2	2	2	2	1	1	1	1	2	1	24
Ironworks Library	3	3	2	2	2	2	2	2	1	1	1	1	1	1	24
Corner Library	3	1	2	2	2	2	2	1	1	1	1	1	1	1	21
Major Evacuation Routes															
NH Rt 140	3	3	2	2	2	2	2	3	1	1	1	1	1	1	25
NH Rt 106	3	2	2	2	2	2	2	2	1	1	1	1	1	1	21
NH Rt 107	3	3	2	2	2	2	2	2	1	1	1	1	1	1	22
NH 129	3	2	2	2	2	2	2	3	1	1	1	1	1	1	22
Stage Road	3	3	2	2	2	2	2	2	1	1	1	1	1	1	22
Allens Mills Rd	3	2	2	2	2	2	2	2	1	1	1	1	1	1	21
Middle Route	3	2	2	2	2	2	2	2	1	1	1	1	1	1	21
Total	66	51	44	44	44	44	44	44	22	22	22	22	29	25	
Key: Low = 1, High = 3															

B. IMPACT OF HAZARDS

The impact of a hazard is the potential degree of damage that could occur in Gilmanton. To rate the impact of a hazard, committee members considered the damages and consequences that might result from an event, in three separate impact areas Human, Property, and Businesses & Services. This incorporates the likelihood of injury or death, the assessed value of each critical facility and the vulnerability of these facilities. It also considers the anticipated disruption of services to residents and visitors. Four levels of impact were used, as defined below:

- **Low:** There is little likelihood that injury or death will result from this hazard. The damage to land and property will likely be limited. Essential services and other services that residents and visitors depend upon will not be interrupted.
- **Moderate:** There is some likelihood that injury or death will result from this hazard. There will likely be some damage to land and property. There will likely be some interruption of essential services and other services that residents and visitors depend upon for hours of days.
- **High:** It is quite likely that injury or death will result from this hazard. There will be damage to multiple properties. Essential services and other services that residents and visitors depend upon be likely be interrupted for days.
- **Catastrophic:** Multiple injuries or deaths will likely result from this hazard. Damage to properties will be widespread and extensive. Essential services and other services that residents and visitors depend upon be likely be interrupted for days or weeks.

Structural Value

The 2018 assessed value of the critical facilities are listed in the table below, totaling $21,237,800. The value of the municipal structures is $4,344,700 and the Gilmanton Elementary School (Primary Shelter) is another $5,041,800. This does not necessarily reflect the cost of full replacement. Also not reflected in this assessment is the value of built infrastructure such as streets, bridges, drainage, and utility transmission lines.

The 2018 assessed value of all the structures in Gilmanton is $286,887,300. The value of the residential structures in town totals $259,369,600 or 90%. The value of the commercial/industrial structures in Gilmanton is $4,626,500 and the value of the tax-exempt structures is $13,578,800. An additional $9,312,400 of structural value is classified as public utilities. The figures used are from the town's 2018 MS-1 form submitted annually to the NH Department of Revenue. The table below illustrates the potential loss if a hazard event impacted even a small percentage (1%, 2% or 5%) of the structures in Gilmanton.

Gilmanton Structural Assessment (2018) and Selected Percentages

	Residential*	Manufactured Housing	All Housing	Comm/ Indust	Exempt	Utilities	Total
Value - structures	$258,505,700	$863,900	$259,369,600	$4,626,500	$13,578,800	$9,312,400	$286,887,300
1%	$2,585,057	$8,639	$2,593,696	$46,265	$135,788	$93,124	$2,868,873
2%	$5,170,114	$17,278	$5,187,392	$92,530	$271,576	$186,248	$5,737,746
5%	$12,925,285	$43,195	$12,968,480	$231,325	$678,940	$465,620	$14,344,365
*Residential includes Duplex, Multi-Family, and Condominium							

In Chapter II Community Profile it was pointed out that while the year-round population of Gilmanton in 2017 was 3,751 residents, the true number of people in the town, especially in the summertime could be much more than that figure due to seasonal visitors.

Severe Winter Weather
The school and any flat- roofed or low-sloped buildings are all susceptible to damage from snow and ice loads.

Downed limbs and wires and unplowed or untreated roads can severely limit emergency access to many residences. The potential for very cold temperatures and loss of power can quickly compound the issue. Heavy snowstorms typically occur from December through April. New England usually experiences at least one or two heavy snowstorms with varying degrees of severity each year. Power outages and impacts to infrastructure are all effects of winter storms that have been felt in Gilmanton in the past. All these impacts are a risk to the community, including isolation, especially of the elderly (22% of the population), and increased traffic accidents.

In addition, the residents of Gilmanton rely on private wells, so they are dependent on electricity to not only operate their heating systems but also their water systems; loss of power can be deadly. Fire response can be hindered not only by poor road conditions, but also by frozen water sources.

Unlike normal snowfall, ice storms could present significant problems including vehicular accidents. Downed power lines and fallen trees make it difficult for the DPW and emergency crews to respond. School busses are also at risk.

All structures in Gilmanton are susceptible to damage by winter weather events, whether through ice storms, blizzards, or the heavy, wet snow often associated with a nor'easter. The potential for impact to the town is seen as moderate. Assuming 2% town-wide damage to buildings, winter weather could result in $5,737,746 in damages annually.

High Wind Events
Tornados and downbursts could strike anywhere in town with little, if any warning. While individual events may be small and rare, their impacts could be devastating. All structures, especially older ones, which are not necessarily built to the current building code standards, could be at risk.

Tornadoes are relatively uncommon natural hazards in New Hampshire; on average, on average, about six tornadoes touch down each year. Damage largely depends on where the tornado strikes. If it were to strike an inhabited area, the impact could be severe. More common in Gilmanton would be a microburst event; these are becoming more and more common in the Lakes Region and could result in damage.

Gilmanton has experienced both tornadoes and downbursts. On July 24, 2008, a tornado cut a 50-mile swath from near Concord through Ossipee. In Gilmanton, this tornado left a large swath of damage including fallen power lines and power outages, and blow downs.

Damage can occur to most structures in town as a result of downed trees in any high wind event, including the commonly occurring thunderstorms. These winds can bring down limbs and trees, causing damage to structures as well as pulling down power and telephone lines and blocking roads.

This is particularly the case along private roadways that may only get limited cutback of vegetation. No critical facilities or infrastructure were identified as particularly vulnerable.

As noted earlier, all structures in Gilmanton are susceptible to damage by high wind events, whether through thunderstorms, downburst, or tornado. The potential impact to the town due to high winds is considered moderate to high. Assuming 2% town-wide damage to buildings any given year, high winds could result in $5,737,746 in damages annually.

Flooding/Dam Failure

Gilmanton has been involved in the National Flood Insurance Program (NFIP) since 1975. The Flood Hazard Boundary Maps for Gilmanton were revised in 1979 and then converted to Flood Insurance Rate Maps December 1, 2008. The town is an active participant in the program through the administration of its floodplain ordinance. By actively participating in the NFIP property owners can purchase flood insurance through this FEMA program. information about this program is made available on the town's website http://www.newgilmantonnh.org/building-code-enforcement/pages/federal-flood-insurance.

The Flood Insurance Rate Maps (FIRM) for Gilmanton were developed September 21, 1979, no digital FIRM maps exist for Belknap County. The town had Community Assistance Contacts with the NH Floodplain Manager on June 9, 2015, there has been a Community Assistance Visit. The town's Floodplain Ordinance was amended in 2016 in coordination with New Hampshire Office of Energy and Planning, adopted at Town Meeting and are now compliant. There is no Flood Insurance Study (FIS) for Belknap County and according to the State Floodplain Manager, neither upgrading the FIRMs nor development of an FIS for Belknap County are part of FEMA's current priorities.[33] The Gilmanton Code Enforcement Officer (CEO) is responsible for maintaining floodproofing and elevation certificates. The town will consult with the NH Floodplain Manager on Floodplain Ordinance issues. The CEO will continue to work with the Gilmanton Planning Board to enforce the town's up-to-date Floodplain Ordinance.

There are currently two buildings with flood insurance policies in force through the NFIP with a total of $183,000 of insurance in force. Both are single family homes. Neither of the insured properties are in the A-Zone (1% chance of an annual flood), both are in the B, C, and X Zones (less than 1% chance of an annual flood - Moderate to Low Risk Areas). Since 2008 there have been no losses paid out (for a total of $0). There have been no NFIP-insured structures in Gilmanton that have sustained repetitive losses. If there is a 1% chance of each of these properties flooding each year, then there is the potential that flooding could result in $1,830 in damages.

Flooding is often associated with hurricanes, heavy rains, ice jams and rapid snowmelt in the spring; these factors cause flooding along the banks of Gilmanton's streams, ponds, and lakes. This also results in flooding of roads, making the roads impassable and cutting homes in flooded areas off from emergency responders.

Heavy rain, rapid snowmelt and stream flooding also cause culverts to be overwhelmed and roads to wash out. Today, with changes in land use, aging roads, designs that are no longer effective and undersized - culverts, the risk of flooding and the subsequent erosion of Gilmanton's roadways is a

[33] NFIP State Coordinator, NH Office of Energy and Planning, May 22, 2014.

concern. Inadequate and aging storm water drainage systems create local flooding on many of Gilmanton's roads.

Gilmanton's localized flooding issues have been and continue to be addressed by the Department of Public Works. Several projects identified in the 2012 plan have been completed. Work still does need to be done to address flooding due to undersized culverts along portions of Stage, Stone, and Allen's Mills Roads. Bridges along Crystal Lake Road and Stage Road need repair and enlargement.

Dam Failure is defined a rapid, uncontrolled release of impounded water. Crystal Lake Dam and Sawyer Lake Dam both have Emergency Action Plans. If Crystal Lake dam failed, there would be impacts to Crystal Lake Road, NH Route 140 near Gilmanton Ironworks (overtopped or breached) along with Stage Road and River Road (overtopped). Impacts for a failure of the Sawyer Lake Dam would be felt along Munsey Hill Road and NH Route 107 as it empties into Sargent Lake in Belmont. Additionally, while a failure of the Sunset Lake Dam in Alton would have the most direct impacts on infrastructure in Alton (several roads and culverts would be damaged), it would raise the level of Crystal Lake in Gilmanton and overtop the bridges on NH Route 140 and River Road.

Estimates of impact usually focus on structural values. It is important to note that much of the impact from flooding in Gilmanton has been to infrastructure. There are significant costs to repairing and maintaining roads that are so often affected by storm water flooding and erosion. In addition, there are significant life safety issues; residents are often cut off because of road closures and erosion.

Potential impact to the town due to flooding or dam failure is considered moderate. Assuming 2% to town-wide damage to buildings any given year, high winds could result in $5,737,746 in damages annually.

Wildfire

In Gilmanton a wildfire could have the greatest impact on individual homes or seasonal camps. Critical facilities were not viewed as being particularly vulnerable, as they are located along the town's major roadways.

Due to the heavily wooded nature of the town, all properties in town have the potential to be impacted by a wildland fire. The areas most susceptible tend to be rather remote and relatively few structures would be impacted. The potential impact on the town by a wildfire event was considered to be moderate. Assuming 2% town-wide damage to buildings, each year wildfire could result in $5,737,746 in damages.

Drought

Drought could affect individual homeowners with shallow wells, along with agricultural businesses. An extended period without precipitation could elevate the risk for wildfire and blowdowns in the forest and with an extreme drought, the water supply and aquifer levels could be threatened. A lack of snow may also contribute to the effects of drought. In addition, all of Gilmanton's residents rely on wells.

The impact on the town by a drought event was considered to be moderate. The cost of drought in Gilmanton is difficult to calculate as any cost would primarily result from an associated fire risk and diminished water supply. Therefore, the potential loss structure value was not estimated.

Earthquake
According to the US Geologic Survey, the overall earthquake risk to the state is high due to the built environment; which means that many structures in the state are old or not built to withstand an earthquake. A relatively large earthquake likely would impact the roads including the bridges, limiting the ability of emergency services to be rendered. All structures in Gilmanton are susceptible to damage by an earthquake, although very few have more than two stories and made of masonry. The committee felt that since Gilmanton Elementary School houses a vulnerable population in the town's children and serves as the town's primary shelter, it would be prudent to ensure that this structure is hardened against earthquakes.

Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and are often associated with landslides and flash floods. Five earthquakes occurred in New Hampshire between 1924-2012 having a magnitude of 4.2 or more. Two of these occurred in Ossipee, one west of Laconia, and one near the Quebec border. The most recent earthquake took place just over the New Hampshire/Maine state line in Hollis, ME in October 2012. None have occurred since then. The 2012 earthquake measured 4.6 on the Richter scale and was felt throughout New England.[34]

Although historically earthquakes have been uncommon in New Hampshire, the potential does exist, and depending on the location, the impact could be significant. The likely impact of an earthquake on the town was considered to moderate. Therefore, the potential structure loss value due to earthquakes was determined to be between 2% of the total assessed structure value $5,737,746.

Extreme Temperature
The impact of extreme temperatures would be felt by all, but the most vulnerable are the elderly, the young, and those with limited resources. Impacts are mainly to people's health and the costs associated with helping people feel comfortable and responding to their immediate health care needs. There could also be impacts to structures, especially due to frozen and burst pipes. The potential for impact to the town is seen as moderate. Assuming 2% town-wide damage to buildings, each year extreme temperatures could result in $5,737,746 in damages.

Lightning
Severe lightning as a result of summer storms or as a residual effect from hurricanes and tornadoes has occurred in Gilmanton. Several of the town's structures are older buildings and virtually all structures are surrounded by forest. Dry timber on the forest floor and the age of many structures combined with lightning strikes can pose a significant disaster threat. It can also wreak havoc with electrical and communications systems. Lightning could do damage to specific structures, injure or kill an individual, but the direct damage would not be widespread.

The potential impact to the town due to lightning is moderate. Assuming 2% town-wide damage to buildings annually, then each year lightning could result in $5,737,746 in damages.

Tropical or Post-Tropical Cyclone
While most facilities in town have the potential to be impacted in some fashion, direct structural impact would most likely affect the structures in the floodplain or along steep hillsides. Emergency services might be compromised due to heavy rain or downed trees.

[34] USGS http://earthquake.usgs.gov/earthquakes/eventpage/usb000d75b#pager,

Higher category hurricanes are rare in central New Hampshire, but they could occur. More commonly these storms impact the area as tropical storms. In August 2011, the remnants of Hurricane Irene produced high winds and torrential rain which lead to road closures due to several factors including flooding, downed power lines, and downed trees.

All structures in Gilmanton are susceptible to damage by cyclones, which can bring high winds, heavy rains, and flooding in certain areas. Due to the infrequency of major hurricanes in this part of the state and the likelihood that hurricanes generally become tropical storms by the time they reach Gilmanton, the potential impact to the town due to Tropical or Post-Tropical Cyclones is moderate. Assuming 2% town-wide damage to buildings, a hurricane event might result in $5,737,746 in damages.

Infectious Diseases

The concerns associated with an epidemic include local capacity to respond to not only the residents of Gilmanton but also any visitors. The community does partner with the Partnership for Public Health (PPH) https://www.pphnh.org/emergency-preparedness/ for resources and training. The facilities that would most likely be impacted is the Gilmanton Elementary School/primary shelter. In fact, most of the impact would be on staff and services, not the structures itself. The severity of the impact would depend upon how many fell ill, and how quickly they can be treated. Catching and treating infectious diseases early can reduce the strain in limited resources.

The impact of an epidemic on the town would be moderate. The cost of infectious diseases in Gilmanton is difficult to calculate as any cost would primarily result from health care response. Therefore, a potential loss structure value was not estimated.

C. SUMMARY OF RISK

Considering the likelihood of occurrence of an event (*probability*), the *extent* (magnitude/severity), and the potential *impact* of a particular hazard event, the *risk* of the various hazards that might occur in Gilmanton was determined by the Committee through discussion (see table below). Level of risk was determined using these definitions:

Low: Two or more criteria fall in lower classifications or the event has a minimal impact on the planning area. This rating is sometimes used for hazards with a minimal or unknown record of occurrences or for hazards with minimal mitigation potential.

Medium: The criteria fall mostly in the middle ranges of classifications and the event's impacts on the planning area are noticeable but not devastating. This rating is sometimes used for hazards with a high extent rating but very low probability rating.

High: The criteria consistently fall in the high classifications and the event is likely/highly likely to occur with severe strength over a significant to extensive portion of the planning area.

Hazard Risk

Gilmanton Hazards - 2019	Probability	Extent	Human Impact	Property Impact	Business Impact	Average Impact	Risk
Definition	Likelihood this will occur w/in 100 yrs	(Magnitude / Strength)	Probability of Death or Injury	Physical Loss or damage	Interruption of Service	Average of Human, Property, Business	Probability x Exent x Avg. Impact
Scale	1: Unlikely 2: Occasional 3: Likely 4: Highly Likely	1: Weak, 2: Moderate, 3: Severe, 4: Extreme	1: Low 2: Moderate 3: High 4: Catastrophic	1: Low 2: Moderate 3: High 4: Catastrophic	1: Low 2: Moderate 3: High 4: Catastrophic	1: Low 2: Moderate 3: High 4:Catastrophic	Low Medium High
Severe Winter Weather	**3**	**2**	2	2	2	**2.00**	**12.00**
Dam Failure	**2**	**2**	2	2	2	**2.00**	**8.00**
Drought	**2**	**2**	2	2	2	**2.00**	**8.00**
High Wind Events (Tom./Downb.)	**2**	**2**	2	2	2	**2.00**	**8.00**
Inland Flooding	**2**	**2**	2	2	2	**2.00**	**8.00**
Infectious Diseases	**1**	**2**	2	2	2	**2.00**	**4.00**
Wildfires	**1**	**2**	2	2	2	**2.00**	**4.00**
Earthquakes	**2**	**1**	2	2	2	**2.00**	**4.00**
Extreme Temperatures	**2**	**1**	2	2	2	**2.00**	**4.00**
Lightning	**2**	**1**	2	2	2	**2.00**	**4.00**
Tropical & Post-Tropical Cyclones	**2**	**1**	2	2	2	**2.00**	**4.00**
Landslides	**1**	**1**	2	2	2	**2.00**	**2.00**
Avalanches	**1**	**1**	1	1	1	**1.00**	**1.00**
Considered Not Applicable							
Solar Storms & Space Weather	**2**	**2**	2	2	2	**2.00**	**8.00**

Impact - Human, Property, Business
Low: There is little likelihood that injury or death will result from this hazard. The damage to land and property will likely be limited. Essential services and other services that residents and visitors depend upon will not be interrupted.
Moderate: There is some likelihood that injury or death will result from this hazard. There will likely be some damage to land and property. There will likely be some interuption of essential services and other services that residents and visitors depend upon for hours of days.
High: It is quite likely that injury or death will result from this hazard. There will be damage to multiple properties. Essential services and other services that residents and visitors depend upon be likely be interupted for days.
Catastrophic: Multiple injuries or deaths will likely result from this hazard. Damage to properties will be widespread and extensive. Essential services and other services that residents and visitors depend upon be likely be interupted for days or weeks.

It should be noted that the ranking of individual hazards for the purposes of planning discussion should not in any way diminish the potential severity of the impacts of a given hazard event. Further, hazards ranked as low risk may have the impact of increasing the risk of other hazards when they occur. For example, in the event of a drought, the risk of wildfire may be greater. In combination, hazard events may have the impact of overwhelming existing emergency response systems.

CHAPTER V: MITIGATION STRATEGIES

A. CURRENT PLANS, POLICIES, AND REGULATIONS

The planning decisions that affect community growth patterns have evolved over the years as Gilmanton has developed. Many local programs have the effect of mitigating disasters; some of these have been in effect for years, others were implemented since the development of the 2012 Hazard Mitigation Plan. A review of existing mitigation strategies was conducted and included review of pertinent documents including the zoning ordinance, subdivision regulations, emergency management plan, site plan regulations, and discussion with Committee members. The following strategies detail existing plans and regulations related to hazard mitigation. The review of existing capabilities and effectiveness utilized these categorizations:

Poor ..... *The policy, plan or mutual aid system does* ***not work as well as it should*** *and* ***often*** *falls short of meeting its goals.*

Fair .....*The policy, plan or mutual aid system does* ***not work as well as it should*** *and* ***sometimes*** *falls short of meeting its goals.*

Good .....*The policy, plan or mutual aid system* ***works well*** *and* ***is achieving its goals****.*

Excellent .....*The policy, plan or mutual aid system* ***works very well*** *and* ***often exceeds its goals.***

Untested .....*The policy, plan or mutual aid system* ***has not yet been tried or put to the test.***

- **Hazard Mitigation Plan (2012):** Identifies actions to mitigate the impacts of hazard events. *Good*.
- **Emergency Operations Plan (2017):** Local guide for response to hazard events. *Good*.
- **Floodplain Ordinance (2007):** Gilmanton has been involved in the National Flood Insurance Program (NFIP) since 1975. The Flood Hazard Boundary Maps for Gilmanton were revised in 1979 and then converted to Flood Insurance Rate Maps in 2008. These serve as the most recent representation of the potential flood areas in Gilmanton. The town maintains a Floodplain Ordinance that restricts the types of development that can occur in the floodplain. *Good*,
- **Dam Emergency Action Plans**: Plans are in place for Sawyer (2006) and Crystal Lake (2013) dams and Sunset Lake dam in Alton. In addition to maintaining the Plans, routine dam inspections are performed on-site as prescribed by the New Hampshire Department of Environmental Service's Dams Bureau. *Fair*.
- **Master Plan (2018):** Many of the goals and objectives from the Gilmanton Master Plan support hazard mitigation ideals. These include addressing issues associated with growth, infrastructure, and land use, along with improving the quality of roads throughout town. *Good*.
- **Zoning (2019):** The Zoning Ordinance regulates land use in Gilmanton and has been updated in regularly since 2010. Likewise, the Road Design Standards were updated in 2010 and Subdivision Regulations in 2011. Wellhead and Aquifer Protection ordinances were adopted in 2011, a Steep Slopes Overlay in 2012, and a Biosolids ordinance in 2018. The Site Plan Review Regulations (2013) address topics such as erosion and sediment control in the development of commercial and residential sites (three or more units). *Good*
- **Capital Improvement Plan:** This multi-year budgeting tool is actively used for addressing many of the town's infrastructure and equipment needs. Last met in 2016. *Fair*.
- **Infrastructure:** Gilmanton adheres to the State Bridge Design Standards. Bridges are inspected by the state and maintained by the town. Local funds for this work are included in the town's CIP. The Road Agent inspects culverts and storm drains two – three times per year and conducts

maintenance as needed. He also does roadside mowing once a year to reduce fire hazards. There is a very active snowmobile club that carries out maintenance on Class VI roads. *Good*.

- **Building Code and Code Enforcement:** Follow the BOCA and NFPA standards and the town does have a Code Enforcement Officer. *Good*.
- **Town Administration**: The town does have a Town Administrator and some (but not all) data from the town is backed up regularly and a copy is kept off site. *Fair*,
- **Hazardous Materials:** The Fire Department has the capacity to do initial containment of a spill and is supported by the Central NH HazMat Team. The town participates in the regional household hazardous waste collection. *Good*.
- **Communications**: The town of Gilmanton maintains a Reverse 911 system for notifying residents town-wide in case of an emergency. They now also utilize Nixle and residents can sign up for it through the town website. *Good*.
- **Outreach and Education:** The Police and Fire Departments conduct several outreach programs for residents and in the school, including distribution of smoke detectors, Fire Prevention Week, gun safety workshop, the DARE program, and Project Good Morning for seniors. *Good*.
- **Mutual Aid:** The goal of New Hampshire Mutual Aid agreements is to facilitate quick response to a variety of emergencies by creating an inter-community cooperative. The program creates a network of communities that will assist one another during emergency situations. This is done through the creation of partnering agreements and fashioning a protocol for requesting and receiving mutual aid. *Good*.
    - *Fire Department:* The Fire Department actively participates in the Lakes Region Mutual Aid.
    - *Police Department:* The Police Department actively participates in the Belknap County Sheriff's Department Mutual Aid and has formal mutual aid agreements with surrounding towns.
- **Training:** The staffs of both the Fire and Police Departments participate in regular local and regional training programs. *Good*.
- **School Emergency Planning:** Gilmanton Elementary School has an Evacuation Plan and practice implementing it regularly. The School Emergency Prevention Plan is being updated. by the school administration and the Police Chief. *Good*.
- **Water Resources Plan:** A Water Resources Plan identifying fire ponds and dry hydrants and recommending various fire protection actions was developed for the Fire Department by the NH Rural Fire Protection Program in 2010. Several of the recommendations have been implemented. *Good*.

B. STATUS OF 2012 ACTIONS

The 2012 HMP contained 29 recommendations. A review of the status of these actions reveals that eight have been completed and seven others are no longer considered pertinent or workable. The status of the mitigation actions recommended in the 2012 plan is indicated in Table 1 as either Deleted (X), Completed (C), or Deferred (D) – some are partially completed (C/D). Effectiveness was rated using the same terms and definitions as were used in the previous section. Deferred Actions (or deferred portions of Actions) were carried forward to be considered as new Mitigation Actions.

The planning document completed during this time (Emergency Operations Plan Update) reference the HMP and many of the road and culvert recommendations in the 2013 were implemented in the last 5 years. The Master Plan does not specifically mention the HMP and its Mitigation actions.

Table 1: Status of Actions from the 2012 Hazard Mitigation Plan

Hazard Type	Action	Status 2019	Effective-ness	Comment
Wildfire/ Conflagration	Establish regulations for fire buffers around structures	X		No longer needed - poorly worded
Flood	Replace and enlarge culverts along Guinea Ridge Rd. near Durrell Mt. Rd.	X		No longer pertinent
Flood	Replace and enlarge culvert along Middle Route near NH Rt.140	X		No longer pertinent
All	Develop a plan for handicap transportation to shelters and publicize this plan.	X		Such transportation is a rare need. If transportation is needed, it is done on an individual basis by cruiser or ambulance.
All	Update list of at-risk populations and their potential needs.	X		No longer considered necessary.
All	Improve pavement conditions along Allen's Mills Rd. (Evacuation Route).	X		Did ditching in 2015. Did some paving in 2017. Need to work with landowner (see New Actions)
All	Join the NH Mutual Aid for Public Works Program. This enables participants to contact communities directly that have the resources required to assist with emergencies at hand.	X		Town utilizes local assistance/contractors.
Wildfire	Purchase a back-country rescue/fire suppression ATV.	C	Good	Completed in 2018

Hazard Type	Action	Status 2019	Effective-ness	Comment
Flood	Replace and enlarge culverts along Loon Pond Rd, near Griffin Rd.	C	Good	2013 - New box culvert
Flood	Make needed improvements to roads and drainage to reduce washouts along Hatch Rd. near the town line.	C	Good	In 2019 work plan
Flood	Document the Storm Drain/Culvert Maintenance Program.	C	Fair	Road Agent has a plan.
Dam/ Flood	Work with the NHDES to ensure that the Emergency Actions Plans for each Class B dam that could impact Gilmanton is updated.	C	Good	NH DES Dam Bureau has up-to-date Dam EAPs for all three dams impacting Gilmanton
All	Update website with emergency preparedness links	C	Good	Went up in Spring/Summer 2019
All	Update Emergency Operations Plan	C	Good	Completed in 2017
All	Purchase and install an emergency generator for the Academy Building.	C	Good	Done in 2018-19
Terror/Armed Attack/Civil Disobedience	Develop and implement an employee identification system that will allow for proper security during an emergency.	C/D	Good	The PD and FD are set. Security at some other municipal facilities have some gaps and the town is exploring solutions.
Flood	Make needed improvements to roads and drainage to reduce washouts along Currier Hill Rd. west of High St.	C/D	Good	Have replaced pipes. One more needs enlargement, scheduled for 2021.
Flood	Repair and widen the bridge along Crystal Lake Rd. near Places Mill Rd.	C/D	Good	Work is underway and slated for completing on 2020. Utilizes State Aid Bridge funds.
Flood	Repair and widen the bridge along Stage Rd. near Beauty Hill Rd.	C/D	Good	Work is underway and slated for completing on 2019. Utilizes State Aid Bridge funds.
Flood	Replace and enlarge culverts along Stage Rd. near Stone Rd., along Stone Rd. near Meetinghouse Pond.	C/D	Untested	These are in the current work plan for 2019.

Hazard Type	Action	Status 2019	Effective-ness	Comment
Fire	Implement the recommendations of the 2010 Water Resources Plan.	C/D	Good	Plan was reviewed by the Fire Chief. Several of the projects have been completed, others are being addressed as funding and opportunity arise.
All	Improve pavement conditions along Stage Rd. (Evacuation Route).	C/D	Good	Initial paving in 2017. Working on further paving in 2019 & 2020 work plan.
All	Include the Gilmanton Hazard Mitigation Plan in the town Master Plan.	D		While the principles of mitigation planning are part of the new Master Plan, specific reference to the plan or mitigation actions are not included.
Flood	Actively participate in and adopt recommendations of Geofluvial Assessment.	D		Limited public support in 2012
Flood	Develop and implement a system for maintaining Elevation Certificates for properties within the floodplain.	D		Limited occasion for doing this - Floodplain exists around Ayers Brook, Nighthawk Hollow Brook, and the Suncook River.
Dam/ Flood	Develop regular correspondence with State and private dam owners regarding dam maintenance.	D		This is an ongoing process. The Town is working on a maintenance agreement w/ homeowner's assoc. for the town-owned dam on Loon Pond.
All	Conduct a table-top exercise	D		Not had opportunity
All	Update and implement the School Emergency Prevention Plan.	D		This is an ongoing process
All	Develop a plan to enable residents to bring pets to a shelter and publicize this plan.	D		This is being worked on.
All	Reduce the number of "dead zones" for radio communication.	D		Radios are pretty good. There is still a gap in coverage in the southern part of town.

C. MITIGATION GOALS AND TYPES OF ACTIONS

GOALS:
The Gilmanton Hazard Mitigation Planning Committee concurs with the State Hazard Mitigation goals and further defined goals most pertinent to the town. Based on the hazards studied, and the assessment of current and proposed mitigation strategies, the Committee re-evaluated the 2005 Plan goals and recommends the hazard mitigation goals listed below for the current plan. This does not represent a substantial change in town priorities since the 2012 Plan.

Goal I: Community and Resource Protection
Reduce the potential impact of natural and manmade disasters on the town's residents and visitors, as well as its critical facilities, property, economy, and natural resources, while improving the emergency communication, alert, and response systems.

Goal II: Outreach and Education
Improve public awareness of the impacts of potential hazards and hazard preparedness, while increasing the public's involvement in emergency response and recovery.

Goal III: Coordination and Communication
Ensure plans are in place to address various emergency situations and that regular communication occurs between various departments and with local, regional, and state officials; thereby ensuring that those involved are aware of their responsibilities.

Goal IV: Damage Prevention
Minimize the damage and public expense which might be caused to public and private buildings and infrastructure due to natural and manmade hazards.

MITIGATION ACTION TYPES:
There are several types of actions that communities may take to reduce the likelihood that a hazard might impact the community. These include:

A. Actions that will keep things from getting worse - Prevention
- a. Zoning – floodplain and steep slope overlays
- b. Open space preservation
- c. Subdivision and Site Plan Review
  - i. Impervious surface limits
  - ii. Stormwater management
- d. Capital Improvements Plan – limiting the extension of public infrastructure into hazard areas
- e. Building and Fire codes

B. Actions that address individual buildings - Property Protection
- a. Flood-proofing existing buildings
- b. Retrofitting existing buildings to reduce damage
- c. Relocating structures from hazard-prone areas
- d. Public procurement and management of land vulnerable to hazard damage

C. Actions that will inform the public - Public education and awareness
- a. Make hazard information and maps available to residents and visitors.
  - i. Paper or electronic
  - ii. Targeted at residents and businesses in hazard-prone areas
  - iii. Set up displays in public areas, or homeowners associations.
  - iv. Give educational programs in schools.
  - v. Make information available through newspapers, radio, TV.
- b. Ask businesses to provide hazard information to employees.
- c. Adopt a real estate disclosure requirement so that potential owners are informed of risks prior to purchase.

D. Actions that will protect natural resources
- a. Erosion and sediment control programs
- b. Wetlands protection programs
- c. Expand public open space
- d. Environmental restoration programs

E. Actions that will protect emergency services before, during, and immediately after an event (long-term continuity)
- a. Protect warning system capability
- b. Protection or hardening of critical facilities such as fire stations or hospitals
- c. Protection of infrastructure, such as roads that are needed in emergency response

F. Actions that will control the hazard – Structural projects
- a. Diversion of stormwater away from developed areas
- b. Reservoirs to store drinking water

D. POTENTIAL ACTIONS

Through a review of the risk assessment and local vulnerabilities, several problem statements were identified and refined by the Committee. As noted earlier, actions or portions of actions which were deferred from the previous plan were brought forward in this table (Table 2) and considered along with new ideas. Multiple brainstorming sessions yielded an updated list of potential actions to address these current problems. The following table lists the problem statements and potential actions along with the hazard that they address. The ID numbers are used simply for tracking purposes; they do not indicate any sort of prioritization. Blue highlighted Hazard text indicate actions from the 2012 plan that are deferred. The right-hand columns note whether the potential action addresses existing structures/infrastructure or future (new) structures/infrastructure as well as which goal(s) they address and the type or types of mitigation action each represents. Red highlighted ID numbers indicate actions that are likely to mitigate the gap/problem as opposed to a preparedness/response action.

Table 2: Gaps and Potential Actions indicating Hazard, Structure, Goal, and Type of Action

ID	Hazard	Problem Statement	Action	Existing /New Structure	Goal	Mitigat. Action Type
1	Severe Winter Weather	The more that property owners do to reduce the impacts of winter weather to their property, the less damage is likely to be sustained.	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of severe winter weather on their properties.	E/N	**OE**	**C**
2	Infectious Diseases	The more that residents and visitors do to protect themselves from infectious diseases, the less emergency response it likely to be required.	Work with PPH to provide information and public outreach regarding steps that residents and visitors can take to reduce the likelihood of being impacted by infectious diseases.	E/N	**OE**	**C**
3	High Wind Event	Downed trees and branches can damage property and hinder emergency response vehicles. The more property owners do to reduce the impacts of high winds to their property, the less damage is likely.	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of high winds on their properties.	E/N	**OE**	**C**
4	Drought	Drought can lead to low water tables and dry wells. Most properties rely on private wells.	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of drought on their properties.	E/N	**OE**	**C**
5	All	The school is the largest gathering a vulnerable population. Being prepared for natural and human-caused hazards can reduce the impacts of an event.	Update and implement the School Emergency Prevention Plan.	E	**CC**	**A C**
6	Flood	There is a need to widen and repair the bridge along Crystal Lake Rd. to improve the infrastructure and reduce flooding.	Repair and widen the bridge along Crystal Lake Rd. near Places Mill Rd.	E	**DP**	**E**

ID	Hazard	Problem Statement	Action	Existing /New Structure	Goal	Mitigat. Action Type
7	Flood	There is a need to widen and repair the bridge along Stage Rd. to improve the infrastructure and reduce flooding.	Repair and widen the bridge along Stage Rd. near Beauty Hill Rd.	E	**DP**	**E**
8	Flood	There is a need to enlarge the culverts along Stage Rd. and Stone Rd. to reduce flooding.	Replace and enlarge culverts along Stage Rd. near Stone Rd., along Stone Rd. near Meetinghouse Pond.	E/N	**DP**	**E**
9	Flood	Flooding occurs at the intersection of Allen's Mills Rd. and NH Rte. 106. In cold months this leads to icy roadways. Both are evacuation routes.	Improve drainage conditions along Allen's Mills Rd. (Evacuation Route) at NH Rte. 106.	E/N	**DP**	**E**
10	Fire	Ensuring that there are adequate water supplies throughout the town is important to emergency response and property protection.	Implement the recommendations of the 2010 Water Resources Plan.	E/N	**CRP**	**B**
11	All	Integrating hazard mitigation actions into other town planning efforts & documents assures that mitigation efforts are in line with other town priorities and enhances the likelihood of implementation.	Include the Gilmanton Hazard Mitigation Plan in the town Master Plan.	E/N	**CC**	**A C**
12	All	The town shelter does not have a plan for accommodating pets in an emergency. This deficiency may lead some people to not utilize the shelter when it would be appropriate for them to use it.	Develop a plan to enable residents to bring pets to a shelter and publicize this plan.	n/a	**CC/OE**	**R**
13	All	Practicing the Emergency Operation Plan can build confidence and identify gaps.	Conduct a table-top exercise	E/N	**CC**	**R**
14	All	While Stage Rd. is an evacuation Rd, the pavement is in poor condition, in part due to poor drainage and washout.	Improve pavement conditions along Stage Rd. (Evacuation Route).	E	**CRP**	**E**
15	Wildfire	Many homes in Gilmanton are built near the woods and are susceptible to damage during a wildfire.	Conduct educational outreach regarding mitigation strategies for wildfire, including information about Fire Permits and the FireWise program. Include this information on the town website.	E/N	**OE**	**C**

ID	Hazard	Problem Statement	Action	Existing /New Structure	Goal	Mitigat. Action Type
16	Tropical or Post-tropical Cyclone	The combination of high winds and heavy rains during a cyclone can combine to bring down branches, trees, and wires damaging structures and leading to flooding.	Provide information and public outreach on steps that people can take to keep themselves safe and mitigate the effects of the high winds and rain on their homes and businesses.	E/N	**OE**	**C**
17	Extreme Temperature	If vulnerable populations do not take appropriate steps, they can succumb to extreme heat or extreme cold, putting a burden on the emergency response system.	Provide information and public outreach regarding steps that residents and visitors can take to protect themselves in extreme temperatures.	E/N	**OE**	**C**
18	Extreme Temperature	In winter, unprotected pipes can burst damaging property and endangering residents.	Provide information and public outreach on measures that property owners can take to mitigate the effects on their homes and businesses, such as keeping pipes from freezing in cold temperatures.	E/N	**OE**	**C**
19	Other (Contamination)	Some consider the spreading of BioSolids as a threat to water and human health. There are a few agricultural operations in town that are still allowed to conduct this practice.	Consider developing a health ordinance against the spreading of BioSolids in Gilmanton.	n/a	**CRP**	**A**
20	Earthquake	The elementary school can be hardened, protecting many of the town's vulnerable population.	Work with Gilmanton Elementary School on retrofitting & hardening the school building against earthquakes and other events that might damage the structure.	E	**DP**	**B E**
21	Flooding	Meadow Pond Road floods due to beaver activity, restricting traffic and emergency response to the area.	Work with NH Fish & Game and NH DES to reduce the flooding on Meadow Pond Rd near Shellcamp Rd. associated with beaver dams.	E/N	**CRP**	**E**
22	Dam/ Flood	There should be a better awareness of dam maintenance and periodic communication with dam owners. Best done when there is not an emergency.	Develop regular correspondence with State and private dam owners regarding dam maintenance.	E/N	**DP**	**B C**
23	Flood	Culverts and other drainage structures should be built and maintained to protect the town's infrastructure. There should be a written record of work on these structures.	Document the Storm Drain/Culvert Maintenance Program.	E/N	**DP**	**E C**

ID	Hazard	Problem Statement	Action	Existing /New Structure	Goal	Mitigat. Action Type
24	All	While communication in town has improved, there are still some gaps in coverage in the southern part of town. This could impact emergency response.	Reduce the number of "dead zones" for radio communication.	E/N	**CC**	**R**
25	Flood	Washouts have occurred along Currier Hill Road west of High Street.	Make needed improvements to roads and drainage to reduce washouts along Currier Hill Rd. west of High St.	E/N	**DP**	**E**
26	Lightning	Many municipal records and documents are stored in the Academy Building, a large wooden structure.	Investigate the best options for the town to mitigate the effects of lightning **on critical records**, especially those in the Town offices.	n/a	**CRP**	**E**
27	Earthquake	Damage to a dam during an earthquake may threaten property and people downstream.	Learn more about how susceptible the dams and bridge in town are to earthquakes (NH DES & NH DOT)	E	**CC**	**C E**
28	Terror/Armed Attack/Civil Disobedience	In an emergency quick, secure identification of personnel can make for better emergency response. Not all municipal offices have an ID system.	Develop and implement an employee identification system that will allow for proper security during an emergency.	E/N	**CRP**	**C**
29	Lightning	Many of the town's municipal properties do not have lightning rods, surge protection, or other form of protection against lightning strikes.	Investigate the best options for the town to mitigate the effects of lightning **on critical facilitie**s, especially the Town Hall and offices.	E	**DP**	**B E**
30	Flood	A Geofluvial Assessment can identify areas of the riverbank most susceptible to erosion and recommend actions to reduce hazards.	Actively participate in and adopt recommendations of Geofluvial Assessment.	N	**CRP**	**A C**
31	Flood	The town does not have a documented system for maintaining Elevation certificates for floodplain properties.	Develop and implement a system for maintaining Elevation Certificates for properties within the floodplain.	N	**CRP**	**A C**

E. PRIORITIZATION OF ACTIONS

After considering the pros and cons of each proposed action, the Committee prioritized the various projects which had been identified. All suggested actions, whether deferred or new were treated as potential actions and prioritized in a similar manner. Appendix H shows the full prioritization scores in each of seven categories. Table 3 shows the Actions ordered by their overall score; those with similar scores are then ordered by the Hazard Type. Total scores range from a low of -2 to a high of 7.

Table 3: Proposed Actions in Ranked Order

Hazard Type	Action	Total
Severe Winter weather	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of severe winter weather on their properties.	**7**
Infectious Diseases	Work with PPH to provide information and public outreach regarding steps that residents and visitors can take to reduce the likelihood of being impacted by infectious diseases.	**7**
High Wind Event	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of high winds on their properties.	**7**
Drought	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of drought on their properties.	**7**
All	Obtain and install and appropriately sized generator for the facility to meet the various purposes that it serves.	**6**
All	Update and implement the School Emergency Prevention Plan.	**5**
Flood	Document the Storm Drain/Culvert Maintenance Program.	**4**
Flood	Repair and widen the bridge along Crystal Lake Rd. near Places Mill Rd.	**3**
Flood	Repair and widen the bridge along Stage Rd. near Beauty Hill Rd.	**3**
Flood	Replace and enlarge culverts along Stage Rd. near Stone Rd., along Stone Rd. near Meetinghouse Pond.	**3**
Flood	Improve drainage conditions along Allen's Mills Rd. (Evacuation Route) at NH Rte. 106.	**3**
Fire	Implement the recommendations of the 2010 Water Resources Plan.	**3**
All	Include the Gilmanton Hazard Mitigation Plan in the town Master Plan.	**3**
All	Reduce the number of "dead zones" for radio communication.	**3**
All	Develop a plan to enable residents to bring pets to a shelter and publicize this plan.	**2**

Hazard Type	Action	Total
Flood	Make needed improvements to roads and drainage to reduce washouts along Currier Hill Rd. west of High St.	**1**
All	Conduct a table-top exercise	**1**
All	Improve pavement conditions along Stage Rd. (Evacuation Route).	**1**
Wildfire	Conduct educational outreach regarding mitigation strategies for wildfire, including information about Fire Permits and the FireWise program. Include this information on the town website.	**0**
Tropical or Post-tropical Cyclone	Provide information and public outreach on steps that people can take to keep themselves safe and mitigate the effects of the high winds and rain on their homes and businesses.	**0**
Lightning	Investigate the best options for the town to mitigate the effects of lightning **on critical records**, especially those in the Town offices.	**0**
Flood	Actively participate in and adopt recommendations of Geofluvial Assessment.	**0**
Extreme Temperature	Provide information and public outreach regarding steps that residents and visitors can take to protect themselves in extreme temperatures.	**0**
Extreme Temperature	Provide information and public outreach on measures that property owners can take to mitigate the effects on their homes and businesses, such as keeping pipes from freezing in cold temperatures.	**0**
Earthquake	Learn more about how susceptible the dams and bridge in town are to earthquakes (NH DES & NH DOT)	**0**
Terror/Armed Attack/Civil Disobedience	Develop and implement an employee identification system that will allow for proper security during an emergency.	**-1**
Other (Contamination)	Consider developing a health ordinance against the spreading of BioSolids in Gilmanton.	**-1**
Lightning	Investigate the best options for the town to mitigate the effects of lightning **on critical facilitie**s, especially the Town Hall and offices.	**-1**
Flood	Develop and implement a system for maintaining Elevation Certificates for properties within the floodplain.	**-1**
Earthquake	Work with Gilmanton Elementary School on retrofitting & hardening the school building against earthquakes and other events that might damage the structure.	**-1**
Flooding	Work with NH Fish & Game and NH DES to reduce the flooding on Meadow Pond Rd near Shellcamp Rd. associated with beaver dams.	**-2**
Dam/ Flood	Develop regular correspondence with State and private dam owners regarding dam maintenance.	**-2**

F. IMPLEMENTATION OF MITIGATION ACTIONS

There are many factors that influence how a town chooses to spend its energy and resources in implementing recommended actions. Factors include:

- Urgency
- How quickly an action could be implemented
- Likelihood that the action will reduce future emergencies
- Regulations required to implement the action
- Administrative burdens
- Time (both paid and volunteer)
- Funding availability
- Political acceptability of the action.

In the context of these factors, the Committee discussed the mitigation actions and relative level of priority, recognizing that some actions are of greater priority to different town departments. The implementation schedule (Table 4) indicates the estimated cost of implementation, potential funding sources, the parties responsible for bringing about these actions, and implementation time frame. For simplicity, costs were considered as Low, Medium, or High. Low is under $1,000, Medium $1,000 to $10,000, and over $10,000 was considered High.

Timeframe	Description
Short Term	1-2 years
Medium Term	2 -4 years
Long Term	4 or more years

Though some of the proposed actions received a high score in the previous section, the time frame for which the actions are executed depend upon staff time and budgetary limitations. The highlighted ID numbers indicate mitigation actions as opposed to preparation actions.

These are listed in order of their Time Frame. To keep the plan current, the implementation schedule should be updated and re-evaluated on a regular basis as outlined in the monitoring section of this plan (Section VI.B). Note that the town's HSEM Field Representative can be a good resource for specific federal funding opportunities.

Table 4: Implementation Schedule for Mitigation Actions by Time Frame

ID	Hazard Type	Problem Statement	Action	Comment	Anticipated Costs	Potential Funding	Responsible Party	Time Frame
1	Severe Winter Weather	The more that property owners do to reduce the impacts of winter weather to their property, the less damage is likely to be sustained.	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of severe winter weather on their properties.	Use both print and electronic media.	Low	Town Budget	EMD	Short
2	Infectious Diseases	The more that residents and visitors do to protect themselves from infectious diseases, the less emergency response it likely to be required.	Work with PPH to provide information and public outreach regarding steps that residents and visitors can take to reduce the likelihood of being impacted by infectious diseases.	Use both print and electronic media.	Low	Town Budget & PPH	EMD	Short
3	High Wind Event	Downed trees and branches can damage property and hinder emergency response vehicles. The more property owners do to reduce the impacts of high winds to their property, the less damage is likely.	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of high winds on their properties.	Use both print and electronic media.	Low	Town Budget	EMD	Short
4	Drought	Drought can lead to low water tables and dry wells. Most properties rely on private wells.	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of drought on their properties.	Utilize links to long-range forecasts specific to NH. Associate it with issuing a Burn Permit.	Low	Town Budget	Fire Chief	Short
5	All	The school is the largest gathering a vulnerable population. Being prepared for natural and human-caused hazards can reduce the impacts of an event.	Update and implement the School Emergency Prevention Plan.	This is an ongoing process	Low	Department Budgets	School Super., Fire & Police Chiefs	Short
5A	All	The school is the largest gathering place for a vulnerable population. It also serves as the Primary Shelter.	Obtain and install and appropriately sized generator for the facility to meet the various purposes that it serves.	Work has begun on this process.	Medium	HSEM/ FEMA grants	EMD & School Super.	Short
6	Flood	There is a need to widen and repair the bridge along Crystal Lake Rd. to improve the infrastructure and reduce flooding.	Repair and widen the bridge along Crystal Lake Rd. near Places Mill Rd.	Work is underway and slated for completing on 2020. Utilizes State Aid Bridge funds.	High ($175,000)	State Bridge Aid/ Town Budget	RA/ Select	Short

ID	Hazard Type	Problem Statement	Action	Comment	Anticipated Costs	Potential Funding	Responsible Party	Time Frame
7	Flood	There is a need to widen and repair the bridge along Stage Rd. to improve the infrastructure and reduce flooding.	Repair and widen the bridge along Stage Rd. near Beauty Hill Rd.	Work is underway and slated for completing on 2019. Utilizes State Aid Bridge funds.	High ($200,000)	State Bridge Aid/ Town Budget	RA/ Select	Short
8	Flood	There is a need to enlarge the culverts along Stage Rd. and Stone Rd. to reduce flooding.	Replace and enlarge culverts along Stage Rd. near Stone Rd., along Stone Rd. near Meetinghouse Pond.	These are in the current work plan for 2019.	Medium	Town Budget and FEMA grants	RA	Short
9	Flood	Flooding occurs at the intersection of Allen's Mills Rd. and NH Rte. 106. In cold months this leads to icy roadways. Both are evacuation routes.	Improve drainage conditions along Allen's Mills Rd. (Evacuation Route) at NH Rte. 106.	Runoff from adjacent land runs into roadway, puddles, and freezes, creating a hazard to travelers.	Medium	Town Budget	RA	Short
10	Fire	Ensuring that there are adequate water supplies throughout the town is important to emergency response and property protection.	Implement the recommendations of the 2010 Water Resources Plan.	Fire Chief to review	Medium	Grant/ Dept. Budget	Fire Chief	Short
11	All	Integrating hazard mitigation actions into other town planning efforts & documents assures that mitigation efforts are in line with other town priorities and enhances the likelihood of implementation.	Include the Gilmanton Hazard Mitigation Plan in the town Master Plan.	Master Plan updated in 2018..	Low	N/A	PB	Short
12	All	The town shelter does not have a plan for accommodating pets in an emergency. This deficiency may lead some people to not utilize the shelter when it would be appropriate for them to use it.	Develop a plan to enable residents to bring pets to a shelter and publicize this plan.	This is being worked on.	Low	Grant/ Dept. Budget	Select. & School Super.	Short
13	All	Practicing the Emergency Operation Plan can build confidence and identify gaps.	Conduct a table-top exercise	Not had opportunity	Low	Department Budgets	EMD	Short
14	All	While Stage Rd. is an evacuation Rd, the pavement is in poor condition, in part due to poor drainage and washout.	Improve pavement conditions along Stage Rd. (Evacuation Route).	Initial paving in 2017. Working on further paving in 2019 & 2020 work plan.	High ($500,000)	Town Budget	RA	Short

ID	Hazard Type	Problem Statement	Action	Comment	Anticipated Costs	Potential Funding	Responsible Party	Time Frame
15	Wildfire	Many homes in Gilmanton are built near the woods and are susceptible to damage during a wildfire.	Conduct educational outreach regarding mitigation strategies for wildfire, including information about Fire Permits and the FireWise program. Include this information on the town website.		Low	Town Budget	Fire Chief	Short
16	Tropical or Post-tropical Cyclone	The combination of high winds and heavy rains during a cyclone can combine to bring down branches, trees, and wires damaging structures and leading to flooding.	Provide information and public outreach on steps that people can take to keep themselves safe and mitigate the effects of the high winds and rain on their homes and businesses.	Concerns include downed wires and lightning strikes. Utilize the town website with links to Code Red, ReadyNH.gov.	Low	Town Budget	EMD	Short
17	Extreme Temperature	If vulnerable populations do not take appropriate steps, they can succumb to extreme heat or extreme cold, putting a burden on the emergency response system.	Provide information and public outreach regarding steps that residents and visitors can take to protect themselves in extreme temperatures.	Use both print and electronic media.	Low	Town Budget	EMD	Short
18	Extreme Temperature	In winter, unprotected pipes can burst damaging property and endangering residents.	Provide information and public outreach on measures that property owners can take to mitigate the effects on their homes and businesses, such as keeping pipes from freezing in cold temperatures.		Low	Town Budget	EMD	Short
19	Other (Contamination)	Some consider the spreading of BioSolids as a threat to water and human health. There are a few agricultural operations in town that are still allowed to conduct this practice.	Consider developing a health ordinance against the spreading of BioSolids in Gilmanton.	The town does currently have a zoning ordinance restricting the spreading of BioSolids that 'grandfathers' existing operations.	Low	Town Budget	BoS, TA	Short
20	Earthquake	The elementary school can be hardened, protecting many of the town's vulnerable population.	Work with Gilmanton Elementary School on retrofitting & hardening the school building against earthquakes and other events that might damage the structure.		High	Dept. of Education, Town Budget	EMD, TA, School Super.	Short

ID	Hazard Type	Problem Statement	Action	Comment	Anticipated Costs	Potential Funding	Responsible Party	Time Frame
21	Flooding	Meadow Pond Road floods due to beaver activity, restricting traffic and emergency response to the area.	Work with NH Fish & Game and NH DES to reduce the flooding on Meadow Pond Rd near Shellcamp Rd. associated with beaver dams.		Medium	Town Budget	Road Agent	Short
22	Dam/ Flood	There should be a better awareness of dam maintenance and periodic communication with dam owners. Best done when there is not an emergency.	Develop regular correspondence with State and private dam owners regarding dam maintenance.	This is an ongoing process. The Town is working on a maintenance agreement w/ homeowner's assoc. for the town-owned dam on Loon Pond.	Low	Department Budget	Select	Short
23	Flood	Culverts and other drainage structures should be built and maintained to protect the town's infrastructure. There should be a written record of work on these structures.	Document the Storm Drain/Culvert Maintenance Program.	Road Agent has a plan.	Low	Grant/ Dept. Budget	RA	Medium
24	All	While communication in town has improved, there are still some gaps in coverage in the southern part of town. This could impact emergency response.	Reduce the number of "dead zones" for radio communication.	Radios are pretty good. There is still a gap in coverage in the southern part of town.	Medium	Grants/ County & Town Budgets	Fire & Police Chiefs	Medium
25	Flood	Washouts have occurred along Currier Hill Road west of High Street.	Make needed improvements to roads and drainage to reduce washouts along Currier Hill Rd. west of High St.	Have replaced pipes. One more needs enlargement, scheduled for 2021.	Medium	Town Budget and FEMA grants	RA	Medium
26	Lightning	Many municipal records and documents are stored in the Academy Building, a large wooden structure.	Investigate the best options for the town to mitigate the effects of lightning **on critical records**, especially those in the Town offices.	This should include off-site back-up of paper and computer records.	Low	Town Budget	TA	Medium
27	Earthquake	Damage to a dam during an earthquake may threaten property and people downstream.	Learn more about how susceptible the dams and bridge in town are to earthquakes (NH DES & NH DOT)		Low	Town Budget	EMD & RA	Medium

ID	Hazard Type	Problem Statement	Action	Comment	Anticipated Costs	Potential Funding	Responsible Party	Time Frame
28	Terror/ Armed Attack/ Civil Disobedience	In an emergency quick, secure identification of personnel can make for better emergency response. Not all municipal offices have an ID system.	Develop and implement an employee identification system that will allow for proper security during an emergency.	The PD and FD are set. Security at some other municipal facilities have gaps and the town is exploring solutions.	Medium	Grant/ Town Budget	Select	Medium
29	Lightning	Many of the town's municipal properties do not have lightning rods, surge protection, or other form of protection against lightning strikes.	Investigate the best options for the town to mitigate the effects of lightning **on critical facilitie**s, especially the Town Hall and offices.	This should include lightning rods and surge protection.	Low	Town Budget	TA	Medium
30	Flood	A Geofluvial Assessment can identify areas of the riverbank most susceptible to erosion and recommend actions to reduce hazards.	Actively participate in and adopt recommendations of Geofluvial Assessment.	Limited public support in 2012	Low	N/A	CC/PB	Long
31	Flood	The town does not have a documented system for maintaining Elevation certificates for floodplain properties.	Develop and implement a system for maintaining Elevation Certificates for properties within the floodplain.	Limited occasion for doing this	Low	Dept. Budget	CEO	Long

CHAPTER VI: PLAN ADOPTION AND MONITORING

A. IMPLEMENTATION

The Gilmanton Hazard Mitigation Plan Update Committee, established by the EMD and Board of Selectmen, will meet annually to review the Plan and provide a mechanism for ensuring that an attempt is made to incorporate the actions identified in the plan into ongoing town planning activities. Essential elements of implementation require that all responsible parties for the various recommendations understand what is expected of them, and that they are willing to fulfill their role in implementation. It is therefore important to have the responsible parties clearly identified when the town adopts the final plan. Where appropriate it would be helpful to have any hazard mitigation activities identified in job descriptions.

Many of the actions in this plan rely on the town's operating budget along with grant funds available through FEMA and other sources such as those listed in Appendix B. The Emergency Management Director will coordinate with the department heads, Budget Committee, and Selectmen to ensure that funds and staff time for these projects are available. The EMD will also coordinate with the NH HSEM Field Representative to ensure that the town applies for appropriate grant funds.

For those mitigation actions which involve either revisions to the Subdivision Regulations or development of regulations or standards, members of the Hazard Mitigation Committee will work with the Planning Board to develop appropriate language.

When appropriate, an effort will be made to incorporate this plan into the Emergency Operations Plan. Within a year after the town officially adopts the 2019 update to the Hazard Mitigation Plan, an attempt will be made to have hazard mitigation strategies integrated into these existing mechanisms and into all other ongoing town planning activities.

B. PLAN MAINTENANCE & PUBLIC INVOLVEMENT

The Gilmanton Hazard Mitigation Planning Committee and the Selectboard, in order to track progress and update the mitigation strategies identified in Chapter V - D & E, will review the Gilmanton Hazard Mitigation Plan every year or after a hazard event. The town of Gilmanton Emergency Management Director is responsible for initiating this review and needs to consult with members of the Gilmanton Committee identified in this Plan. Changes will be made to the Plan to accommodate projects that have failed, are no longer consistent with the timeframe identified, are no longer consistent with the community's priorities, or lack funding resources. Priorities that were not ranked high, but identified as potential mitigation strategies, will be reviewed during the monitoring and update of this Plan to determine feasibility of future implementation. In keeping with the process of adopting the Plan, a public hearing will be held to receive public comment on the Plan.

Maintenance and updating will be held during the annual review period and the final product adopted by the Selectboard. The Committee will meet annually as part of this plan maintenance. The Emergency Management Director is also responsible for updating and resubmitting the plan to

NH HSEM to be re-approved every five years. The EMD will convene a plan update committee in mid-2023 to begin updating this plan before it expires.

On behalf of the Hazard Mitigation Committee, the Emergency Management Director, under direction of the Selectboard, will be responsible for ensuring that town's departments and the public have adequate opportunity to participate in the planning process during the Plan's annual review and during any Hazard Mitigation Committee meetings. Administrative staff may be utilized to assist with the public involvement process.

For each committee meeting, and the annual update process, techniques that will be utilized for public involvement include:

- Provide invitations to Budget Committee members;
- Provide invitations to municipal department heads;
- Post notices of meetings at the Town Hall, Police and Fire Stations, and on the town website;
- Submit press releases for publication in the *Laconia Citizen*, *Laconia Daily Sun*, and other appropriate newspapers or media outlets.

Entities to invite to future Hazard Mitigation plan updates include the Emergency Management Directors of the neighboring communities of Alton, Barnstead, Belmont, Pittsfield, Loudon, and Canterbury.

C. SIGNED CERTIFICATE OF ADOPTION

THE GILMANTON, NH HAZARD MITIGATION PLAN, UPDATE 2019

WHEREAS, the town of Gilmanton has historically experienced damage from natural hazards and it continues to be vulnerable to the effects of severe winter weather, flooding, high winds, and fire resulting in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the town of Gilmanton has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its Hazard Mitigation Plan Update 2019 under the requirements of 44 CFR 201.6; and

WHEREAS, public and committee meetings were held between October 2018 and July 2019 regarding the development and review of the Hazard Mitigation Plan Update 2019; and

WHEREAS, the Plan specifically addresses hazard mitigation strategies and Plan maintenance procedure for the town of Gilmanton; and

WHEREAS, the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact the town of Gilmanton, with the effect of protecting people and property from loss associated with those hazards; and

WHEREAS, adoption of this Plan will make the town of Gilmanton eligible for funding to alleviate the impacts of future hazards; now therefore be it

RESOLVED by the Board of Selectmen:

1. The Plan is hereby adopted as an official plan of the town of Gilmanton;

2. The respective officials identified in the mitigation strategy of the Plan are hereby directed to pursue implementation of the recommended actions assigned to them;

3. Future revisions and Plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as a part of this resolution for a period of five (5) years from the date of this resolution.

4. An annual report on the progress of the implementation elements of the Plan shall be presented to the Board of Selectmen by the Emergency Management Director

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and the corporate seal of the Town Seal or Notary this 26th day of August, 2019.

Marshall E. Bishop

Mark E. Warren

Michael J. Wilson

BREINN D. DAIGNEAULT
NOTARY PUBLIC
State of New Hampshire
My Commission Expires
September 3, 2019

APPENDIX A: TECHNICAL RESOURCES

NH Homeland Security and Emergency Management 271-2231
http://www.nh.gov/safety/divisions/HSEM/
Hazard Mitigation Section 271-2231
http://www.nh.gov/safety/divisions/hsem/HazardMitigation/index.html

Federal Emergency Management Agency ..... (617) 223-4175
http://www.fema.gov/
FEMA, National Flood Insurance Program, Community Status Book
http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book

Regional Planning Commissions:
Lakes Region Regional Planning Commission 279-8171
http://www.lakesrpc.org/

NH Governor's Office Strategic Initiatives 271-2155
https://www.nh.gov/osi/index.htm
New Hampshire Floodplain Management Program
http://www.nh.gov/oep/programs/floodplainmanagement/index.htm

NH Department of Transportation 271-3734
http://www.nh.gov/dot/index.htm

NH Department of Cultural Affairs 271-2540
http://www.nh.gov/nhculture/
Division of Historical Resources 271-3483
http://www.nh.gov/nhdhr/

NH Department of Environmental Services 271-3503
http://www.des.state.nh.us/
Dam Bureau 271-63406
http://www.des.state.nh.us/organization/divisions/water/dam/index.htm

NH Municipal Association 224-7447
http://www.nhmunicipal.org/LGCWebsite/index.asp

NH Fish and Game Department 271-3421
http://www.wildlife.state.nh.us/

NH Department of Business and Economic Development 271-2591
http://www.dbea.nh.gov/
Division of Forests and Lands 271-2214
http://www.nhdfl.org/
Natural Heritage Inventory 271-2215
http://www.nhdfl.org/about-forests-and-lands/bureaus/natural-heritage-bureau/
Division of Parks and Recreation 271-3255
http://www.nhstateparks.org/

NH Department of Health and Human Services 271-9389
http://www.dhhs.state.nh.us/

Northeast States Emergency Consortium, Inc. (NESEC) ..... (781) 224-9876
http://www.nesec.org/

US Department of Commerce ..... (202) 482-2000
http://www.commerce.gov/
National Oceanic and Atmospheric Administration ..... (202) 482-6090
http://www.noaa.gov/
National Weather Service, Eastern Region Headquarters
http://www.erh.noaa.gov/
National Weather Service, Taunton, Massachusetts ..... (508) 824-5116
http://www.erh.noaa.gov/er/box/
National Weather Service, Gray, Maine ..... (207) 688-3216
http://www.erh.noaa.gov/er/gyx/

US Department of the Interior
http://www.doi.gov/
US Fish and Wildlife Service 225-1411
http://www.fws.gov/
US Geological Survey 225-4681
http://www.usgs.gov/
US Geological Survey Real Time Hydrologic Data
http://waterdata.usgs.gov/nwis/rt
US Army Corps of Engineers ..... (978) 318-8087
http://www.usace.army.mil/

US Department of Agriculture
http://www.usda.gov/wps/portal/usdahome
US Forest Service ..... (202) 205-8333
http://www.fs.fed.us/

New Hampshire Electrical Cooperative ..... (800) 698-2007
http://www.nhec.com/

Cold Region Research Laboratory 646-4187
http://www.crrel.usace.army.mil/

National Emergency Management Association ..... (859) 244-8000
http://nemaweb.org

National Aeronautics and Space Administration
http://www.nasa.gov/
NASA Optical Transient Detector – Lightning and Atmospheric Research
http://thunder.msfc.nasa.gov/

National Lightning Safety Institute ..... http://lightningsafety.com/

The Tornado Project Online ..... http://www.tornadoproject.com/

National Severe Storms Laboratory ..... http://www.nssl.noaa.gov/

Plymouth State University Weather Center ..... http://vortex.plymouth.edu/

APPENDIX B: MITIGATION FUNDING RESOURCES

There are numerous potential sources of funding to assist with the implementation of mitigation efforts. A list of state and federal resources is provided below. Some of these may not apply or be appropriate for Gilmanton. The NH Homeland Security and Emergency Management Field Representative for Belknap County can provide some assistance.

404 Hazard Mitigation Grant Program (HMGP) ..... NH Homeland Security and Emergency Management

406 Public Assistance and Hazard Mitigation ..... NH Homeland Security and Emergency Management

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

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

Emergency Watershed Protection (EWP) Program ..... USDA, Natural Resources Conservation Service

Flood Mitigation Assistance Program (FMA) ..... NH Homeland Security and Emergency Management

Highway Safety Improvement Program……. NH Department of Transportation

Pre-Disaster Mitigation Assistance Planning (PDM) ..... NH Homeland Security and Emergency Management

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

National Flood Insurance Program (NFIP) ..... NH Office of Strategic Initiatives

Project Impact ..... NH Homeland Security and Emergency Management

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

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

Various Forest and Lands Program(s) ..... NH Division of Forests and Lands

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

State Aid Bridge Program for Communities ..... NH Department of Transportation

Contribution to Damage Losses (RSA 235:34) ..... NH Department of Transportation

APPENDIX C: PUBLICITY AND INFORMATION

Notices of meetings were sent to committee members, other stakeholders, and the town for posting. They were also posted on the LRPC web calendar. Press releases were sent to the weekly *Baysider* and the local daily papers *Laconia Citizen* and *Laconia Daily Sun* prior to the Committee meetings. Several informational handouts and the 2012 Hazard Mitigation Plan were distributed to the committee and available at all meetings.

Gilmanton HMP Update

DJ David Jeffers

Reply | Reply All | Forward | ...

To Chief Hempel - Gilmanton (firechief@gilmantonnh.org); 'Paul Perkins'; 'Matt Currier'; 'Heather Carpenter'; Gilmanton Town Admin (townadministrator@gilmantonnh.org)

Fri 4/12/2019 4:29 PM

Cc Julia Chase - NH HSEM (Julia.Chase@dos.nh.gov); Henderson, Kayla; 'Whitney Welch'; 'jbeland@pphnh.org'; Gilbert, Jennifer; 'Trask, Thomas'; 'nancy.baillargeon@des.nh.gov'; 'Steve Doyon'; 'Chief Stephen Carrier'; 'emermgr@barnstead.org'; 'bfd@belmontnh.org'; 'Ryan Heath'

You replied to this message on 4/22/2019 1:46 PM.

Gilm_Agenda 3.doc 115 KB

Notice.PR_Gilm.03.doc 41 KB

Hello,

The town of Gilmanton is continuing the process of updating their Hazard Mitigation Plan with assistance from the Lakes Region Planning Commission (LRPC).

You are being contacted and notified of the upcoming meeting (4/23) because you may have an interest in hazard mitigation planning in Gilmanton and may be able to provide information or thoughts pertinent to the planning process. If you cannot attend the meeting but would like to provide some input, please send it to me at this email.

We look forward to any input that you wish to provide.

Dave

David Jeffers
Regional Planner
Lakes Region Planning Commission
103 Main St. Suite #3
Meredith, NH 03253
(603) 279-8171
(603) 279-0200 f

Lakes Region Planning Commission

www.lakesrpc.org

Welcome! The Lakes Region Planning Commission is a unique association of local governments that provides comprehensive planning services to meet the diverse needs of New Hampshire's Lakes Region.

LAKES REGION PLANNING COMMISSION
103 Main Street, Suite #3
Meredith, NH 03253
tel (603) 279-8171
fax (603) 279-0200
www.lakesrpc.org

September 25, 2018

For Immediate Release

Contact: David Jeffers, 279-5341, djeffers@lakesrpc.org

Town of Gilmanton Hazard Mitigation Plan Meeting

The Gilmanton Hazard Mitigation Plan Committee is in the process of updating its 2012 Hazard Mitigation Plan. The committee is represented by a variety of local interests including the Fire, Police, Highway, and Land Use departments, along with the Planning and Select boards. The group is focusing on the natural hazards that put Gilmanton at risk as well as the development of recommendations to protect the safety and well being of town residents.

The committee will meet on October 2, 2018 at the Gilmanton Public Safety Building (297 NH Route 140) starting at 1:00 PM. Residents of Gilmanton and representatives from neighboring communities are encouraged to attend and provide input.

Hazard Mitigation Planning is as important to reducing disaster losses as are appropriate regulations and land use ordinances. The most significant areas of concern for Gilmanton are being reviewed and evaluated through this process; in the 2012 Plan these included winter storms and flooding.

With the update to the Hazard Mitigation Plan, town leaders will be able to evaluate the status of current plans, policies, and actions then develop and prioritize actions to reduce the impacts of these and other hazards. Community leaders want the town to be a disaster resistant community and believe that updating the Hazard Mitigation Plan will bring Gilmanton one step closer to that goal.

For more information please call Chief Hempel, Emergency Management Director at 364-2500 or David Jeffers, Regional Planner, Lakes Region Planning Commission at 279-5341.

Page 4 — THE LACONIA DAILY SUN, Saturday, May 18, 2019

Page 14 — THE LACONIA DAILY SUN, Saturday, May 18, 2019

Gilmanton Hazard Mitigation Plan meeting will be May 21

GILMANTON — The Gilmanton Hazard Mitigation Plan Committee is updating its 2012 Hazard Mitigation Plan. The committee is represented by fire, police, and highway departments, along with the planning and select boards. The group is focusing on the natural hazards that put Gilmanton at risk as well as the development of recommendations to protect the safety and well-being of town residents.

The committee will meet on Tuesday, May 21, at the Gilmanton Public Safety Building, 297 New Hampshire Route 140, at 10 a.m. Residents of Gilmanton and representatives from neighboring communities are encouraged to attend and provide input.

For more information, call Chief Hempel, emergency management director, at 603-364-2500 or David Jeffers, regional planner, Lakes Region Planning Commission, at 603-279-5341.

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Lakes Region Planning Commission

Planning Regionally - Growing Locally

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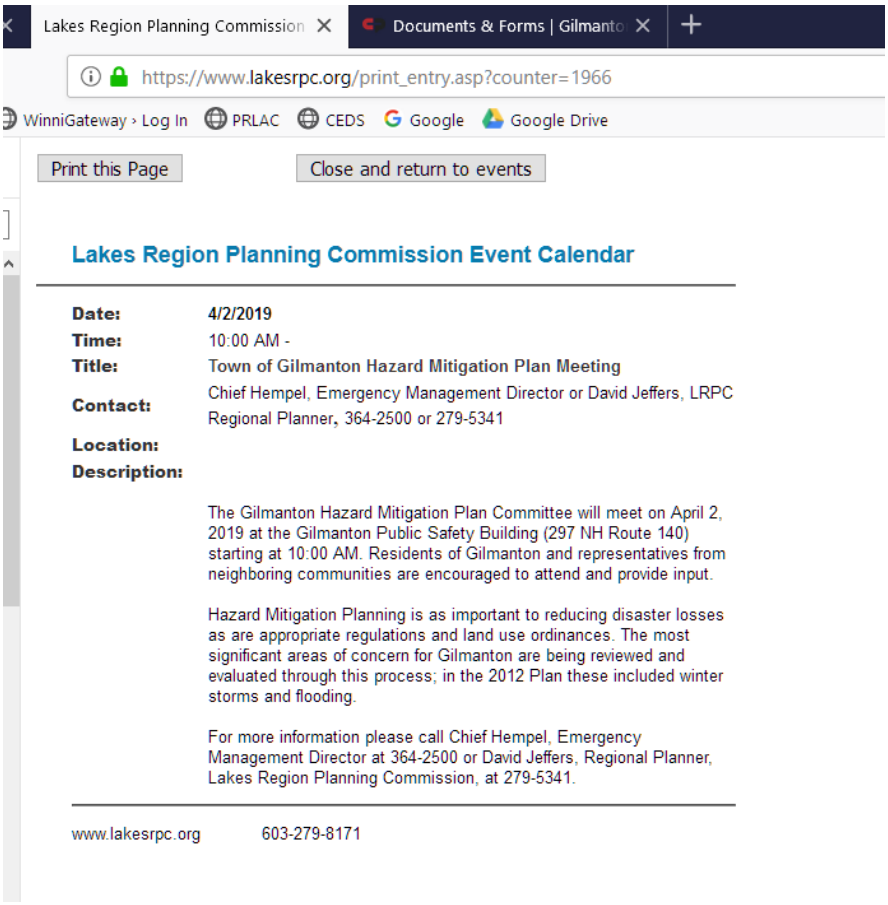
Event Calendar

Latest News

Calendar of Events - Calendar View

Click for List View...

<<		May 2019				
Sun	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
28	29 Town of Effingham Hazard Mitigation Plan Update Meeting	30 Pemigewasset River Local Advisory Committee (PRLAC)	1 Technical Transportation Advisory Committee (TAC) Meeting	2	3	4
5	6	7	8 LRPC Executive Board Meeting HHW Coordinators Meeting	9	10	11
12	13	14	15	16	17	18
19	20 Lakes Region Planning Commission Meeting	21 Town of Gilmanton HMP Update Meeting	22	23 Town of Effingham HMP Update Meeting	24	25
26	27	28	29	30	31	1
2	3	4	5 Technical Transportation Advisory Committee (TAC) Meeting	6	7	8


Lakes Region Planning Commission
Documents & Forms | Gilmanto
https://www.lakesrpc.org/print_entry.asp?counter=1966
WinniGateway › Log In
PRLAC
CEDS
Google
Google Drive
Print this Page
Close and return to events
Lakes Region Planning Commission Event Calendar
Date: 4/2/2019
Time: 10:00 AM -
Title: Town of Gilmanton Hazard Mitigation Plan Meeting
Contact: Chief Hempel, Emergency Management Director or David Jeffers, LRPC Regional Planner, 364-2500 or 279-5341
Location:
Description:
The Gilmanton Hazard Mitigation Plan Committee will meet on April 2, 2019 at the Gilmanton Public Safety Building (297 NH Route 140) starting at 10:00 AM. Residents of Gilmanton and representatives from neighboring communities are encouraged to attend and provide input.
Hazard Mitigation Planning is as important to reducing disaster losses as are appropriate regulations and land use ordinances. The most significant areas of concern for Gilmanton are being reviewed and evaluated through this process; in the 2012 Plan these included winter storms and flooding.
For more information please call Chief Hempel, Emergency Management Director at 364-2500 or David Jeffers, Regional Planner, Lakes Region Planning Commission, at 279-5341.
www.lakesrpc.org 603-279-8171

State and Local Mitigation Planning

Building stronger and safer

Hazard mitigation planning is the process state, local and tribal governments use to identify risks and vulnerabilities associated with natural disasters and to develop long-term strategies for protecting people and property in future hazard events. The process results in a mitigation plan that offers a strategy for breaking the cycle of disaster damage, reconstruction and repeated damage and a framework for developing feasible and cost-effective mitigation projects. Under the Disaster Mitigation Act of 2000 (Public Law 106-390), State, local and Tribal governments are required to develop a hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance.

Reducing risks through mitigation planning

A hazard mitigation plan is a long-term strategy for reducing disaster losses. The planning process promoted by the Disaster Mitigation Act of 2000 is as important as the resulting plan because it encourages jurisdictions to integrate mitigation with day-to-day decision-making regarding land-use planning, floodplain management, site design and other functions.

Mitigation planning elements

- Public involvement – In addition to government agencies involved in incident management, floodplain management and economic development, the planning process usually involves a range of stakeholders, including representatives of neighborhood groups, civic organizations, academia, environmental groups, the business community and individual citizens. Involving stakeholders is essential to determining the most vulnerable populations and facilities in the community and to assuring community wide support for the plan.
- Risk assessment – A risk assessment is the process of identifying natural hazards and risks associated with them, including threats to public health and safety, property damage and economic loss. The assessment answers the fundamental question, "What would happen if a natural disaster occurred?" and provides a factual basis for the mitigation activities proposed in the strategy. The assessment includes a description of the type, location and extent of natural hazards; the jurisdiction's vulnerability to the hazards; and the type and numbers of buildings, infrastructure and critical facilities located in identified hazard areas.
- Mitigation strategy – Based on the risk assessment, State, local and Tribal governments develop mitigation goals and objectives and a strategy for mitigating disaster losses. The strategy sets forth an approach for implementing activities that are cost-effective, technically feasible and environmentally sound.

Hazard mitigation plan required to receive HMGP Project Grants

Local jurisdictions are required by federal law to have a FEMA-approved hazard mitigation plan in order to receive Pre-Disaster Mitigation (PDM) or Hazard Mitigation Grant Program (HMGP) project grant funding. However, in extraordinary circumstances, HMGP funds can be awarded to communities that agree to develop a hazard mitigation plan within 12 months of receiving the project grant. Every State has a FEMA-approved hazard mitigation plan, though many local jurisdictions still do not.

FEMA "FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards."

Fact Sheet

State and Local Mitigation Planning

FEMA

Mitigation Examples

History shows that the physical, financial and emotional losses caused by disasters can be reduced significantly through mitigation planning. Mitigation focuses attention and resources on solving a particular problem (such as reducing repetitive flood losses) and thereby produces successive benefits over time. Through implementation of local floodplain ordinances, for example, it is estimated that $1.1 billion in flood damages are prevented annually.

Mitigation includes a broad range of activities designed to protect homes, schools, public buildings and critical facilities. Examples include the following types of projects:

- Adopting and enforcing more stringent building codes, flood-proofing requirements, seismic design standards, or wind-bracing requirements for new construction or the retrofit of existing buildings.
- Exceeding the National Flood Insurance Program (NFIP) floodplain management regulations by elevating structures above the base flood elevation (BFE) in high-risk areas.
- Adopting stricter development regulations and zoning ordinances that steer development away from areas subject to flooding, storm surge, or coastal erosion.
- Retrofitting public buildings, schools and critical facilities, such as police and fire stations, to withstand hurricane-strength winds or ground shaking from earthquakes.
- Using public funds to acquire damaged homes or businesses in flood-prone areas, demolish or relocate the structures and use the property for open space, wetlands, or recreational uses.
- Building community shelters and "safe rooms" to help protect people in public buildings and schools in hurricane- and tornado-prone areas.

Planning tool available for government agencies

FEMA has developed a number of planning tools to help government agencies develop mitigation plans. These include how-to guides, CD ROMs and online information about organizing a planning team, involving stakeholders, conducting risk assessments, evaluating potential mitigation measures, conducting benefit-cost analyses and other planning issues.

For more information

Please visit: http://www.fema.gov/plan/mitplanning/index.

For state name disaster recovery, visit www.fema.gov or your state Web-site.

FEMA

"FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards."

APPENDIX D: MEETING AGENDAS & PARTICIPATION

This section contains copies of the Committee meeting agendas and a summary of participation. All Committee meetings were held in the Gilmanton Public Safety Building. Agendas were developed by the LRPC planner, and meetings were chaired by the Emergency Management Director; copies were posted and sent to neighboring EMDs. Agendas indicated opportunities for public input.

Gilmanton Hazard Mitigation Plan Update Committee

October 2, 2018 1:00 PM
Gilmanton Public Safety Building
297 NH Route 140, Gilmanton, NH

AGENDA

1. Introductions
2. What is Hazard Mitigation Planning?
   a. Mitigation planning vs. emergency response planning
3. Purpose of Committee and Community Outreach
4. Identify all natural hazards in the Gilmanton area
   a. since 2012
   b. potential
5. Changes to Critical Facilities
6. Development Trends
7. Community Capabilities
   a. Planning & Regulatory
   b. Administrative and Technical
   c. Financial
   d. Education & Outreach
   e. National Flood Insurance Program (NFIP)
8. Schedule for future meetings
9. Public Input

Goals for next meeting:
   a. Risk Assessment, including data collection
   b. Town Goals

The focus of this process is **mitigation**, which is action taken to reduce or eliminate long-term risk to hazards.
Mitigation is different from preparedness, which is action taken to improve emergency response or operational preparedness.

Definitions for evaluation of Capabilities

Poor (P)..... *The policy, plan, mutual aid system or action does* ***not work as well as it should*** *and* ***often*** *falls short of meeting its goals.*

Fair (F)..... *The policy, plan, mutual aid system or action does* ***not work as well as it should*** *and* ***sometimes*** *falls short of meeting its goals.*

Good (G)..... *The policy, plan, mutual aid system or action* ***works well*** *and* ***is achieving its goals****.*

Excellent (E)..... *The policy, plan, mutual aid system or action* ***works very well*** *and* ***often exceeds its goals.***

Untested (U)**.....** *The policy, plan, mutual aid system or action* ***has not yet been developed, tested, or built*** *and* ***cannot yet be evaluated.***

Gilmanton Hazard Mitigation Plan Update Committee

April 2, 2019 10:00 AM
Gilmanton Public Safety Building
297 NH Route 140, Gilmanton, NH

AGENDA

1. Introductions
2. Update Critical Facilities Vulnerability Rating
3. Status of 2012 Mitigation Projects
4. Risk Assessment
    a. Hazards
        i. location
        ii. extent
        iii. frequency
    b. Assets
        i. people
        ii. economy
        iii. built environment
            1. existing structures
            2. infrastructure
            3. critical facilities
            4. cultural resources
            5. future development
5. Schedule for future meetings
6. Public Input

Goals for next meeting:
    a. Gaps
    b. Town Goals

Gilmanton Hazard Mitigation Plan Update Committee

April 23, 2019 10:00 AM
Gilmanton Public Safety Building
297 NH Route 140, Gilmanton, NH

AGENDA

1. Introductions
2. Complete Status of 2012 Mitigation Projects
3. Mitigation Goals
4. Gaps in coverage
5. Potential Mitigation Actions
6. Schedule for future meetings
7. Public Input

Goals for next meeting:

a. Mitigation Actions addressing each hazard
b. Costs and benefits associated with each Mitigation Action
c. Prioritization of Mitigation Actions

The focus of this process is **mitigation**, which is action taken to reduce or eliminate long-term risk to hazards.

Mitigation is different from preparedness, which is action taken to improve emergency response or operational preparedness.

Gilmanton Hazard Mitigation Plan Update Committee

May 21, 2019 10:00 AM
Gilmanton Public Safety Building
297 NH Route 140, Gilmanton, NH

AGENDA

1. Introductions
2. Gaps in coverage
3. Potential Mitigation Actions - Mitigation Actions addressing each hazard
4. Mitigation Goals
5. Schedule for future meetings
6. Public Input

Goals for next meeting:

a. Costs and benefits associated with each Mitigation Action
b. Prioritization of Mitigation Actions

The focus of this process is **mitigation**, which is action taken to reduce or eliminate long-term risk to hazards.
Mitigation is different from preparedness, which is action taken to improve emergency response or operational preparedness.

Name	Position	8/16/18	10/2/2018	4/2/2019	4/23/2019	5/21/2019		Homework
Paul Hempel	Gilmanton Fire Chief & EMD	X	X	X	X	X		X
Paul Perkins	Gilmanton Highway Dept.		X		X			X
Ryan McQuade	Gilmanton Fire Dept.		X	X				X
John Cunningham	Gilmanton Fire Dept.		X					X
Matthew Currier	Gilmanton Police Dept.		X		X	X		X
Heather Carpenter	Ass't. Town Administrator		X	X				X
Patrick Bore	Town Administrator				X	X		X
Lainie Rosato	Gilmanton Homeowner/ Resident					X		X
Kayla Henderson	NH HSEM Mitigation Planner					X		
Shawna-Leigh Morton	NH HSEM Field Rep – Belknap Co.		X					
Julia Chase	NH HSEM Field Rep – Belknap Co.			X				
David Jeffers	LRPC Planner	X	X	X	X	X		

APPENDIX E: HAZARD EVENTS

Hazard	Date	Location	Description	Source*
Drought	1929-1936	Statewide	Regional	FEMA
Drought	1939-1944	Statewide	Sever in Southeast	FEMA
Drought	1947-1950	Statewide	Moderate	FEMA
Drought	1960-1969	Statewide	Longest record continuous period of below normal precipitation.	FEMA
Drought	2001 - 02	Statewide		FEMA
Earthquake	12/20/1940	Carroll County	5.5 on Richter scale - affected region	NHHSEM
Earthquake	12/24/1940	Carroll County	5.5 on Richter scale - affected region	NHHSEM
Earthquake	1/18/1982	Sanbornton/Gaza	4.5 Richter Scale - felt in Nashua	NOAA
Flood	3/14/1977	Central and Southern NH	Peak flow for Soucook River	NHHSEM
Flood	8/19/1991	Statewide	FEMA DR-917-NH: Hurricane Bob struck New Hampshire causing extensive damage in Rockingham and Stafford counties, but the effects were felt statewide.	NHHSEM
Flood	10/15/2005	Statewide	Rainfall amounts ranged from around 3 - 9 inches. This resulting flooding of small rivers and streams caused additional damage to roads that had been damaged earlier in the month. $625 K in damages statewide.	NOAA
Flood	6/1/1998 – 7/31/1998	Central and Southern NH	FEMA DR-1231-NH: A series of rainfall events. Counties Declared: Grafton, Carroll, Belknap, Rockingham, Sullivan, and Merrimack (1 fatality)	NHHSEM
Flood	7/1/1986 – 8/10/1986	Statewide	FEMA DR-771-NH: Severe summer storms with heavy rains, tornadoes; flash flood and severe winds.	NHHSEM
Flood	8/ 7/1990 - 8/11/1990	Statewide	FEMA DR-876-NH: A series of storm events from August 7-11, 1990 with moderate to heavy rains produced widespread flooding in New Hampshire.	NHHSEM
Flood	8/19/1991	Statewide	FEMA DR-917-NH: Hurricane Bob struck New Hampshire causing extensive damage in Rockingham and Stafford counties, but the effects were felt statewide.	NHHSEM
Flood	3/13/1996	Alton	Dam break. $500,000. 1 fatality. Not weather related.	NOAA
Flood	7/4/1996	Laconia	5 inches of rain in Laconia. Roads were washed out and a section of railroad bed was destroyed.	NOAA
Flood	6/1/1998 – 7/31/1998	Central and Southern NH	FEMA DR-1231-NH: A series of rainfall events. Counties Declared: Grafton, Carroll, Belknap, Rockingham, Sullivan, and Merrimack (1 fatality)	NHHSEM
Flood	6/15/1998	Belknap County	3-8 inches of rain. $100,000 in damages. Some homes and campgrounds were evacuated.	NOAA
Flood	6/17/1998	Belknap County	$200,000 in damages.	NOAA
Flood	7/26/1999	Belmont/ Laconia	Thunderstorms produced more than 2 inches of rain in 75 minutes causing flooding of poor drainage areas in Laconia and Belmont.	NOAA

Hazard	Date	Location	Description	Source*
Flood	3/28/2000	Tilton/ Gilford	The rain combined with melting snow to cause small rivers and streams to rise resulting in road washouts in Gilford, Laconia, and Tilton. $15,000.	NOAA
Flood	8/5/2003	Gilford	3 to 4 inches of rain and caused roads and streets to flood in the town of Gilford.	NOAA
Flood	4/3/2005	Statewide	$945,000 Statewide. The Pemigewasset and Smith Rivers were above flood stage.	NOAA
Flood	10/8/2005	Statewide	$5.8 M plus $200,000 in crop damage; 2 deaths. Nine inches of rain in Gilford. Tremendous amount of damage to roads and bridges, and to the infrastructure in general due to flooding of small rivers and streams. Homes and businesses were damaged.	NOAA
Flood	10/15/2005	Statewide	Rainfall amounts ranged from around 3 - 9 inches. This resulting flooding of small rivers and streams caused additional damage to roads that had been damaged earlier in the month. $625 K in damages statewide.	NOAA
Flood	5/13/2006	Belknap County	Over 12 inches of rain in some locations in a 72-hour period. Homes and businesses were damaged extensively. Many roads were washed out and impassable. Some bridges were damaged or destroyed.	NOAA
Flood	7/12/2006	Sanbornton	3-5 inches of rain caused flooding $10,000 in damages	NOAA
Flood	7/22/2006	Sanbornton	3-5 inches of rain caused flooding and washouts: $10,000 in damages	NOAA
Flood	4/16/2007	Laconia/ New Hampton	$700,000 in damages in Laconia, $45,000 to New Hampton roads	NOAA
Flood	8/7/2008	New Hampton, Meredith, Center Harbor, Ashland	Moderate to severe damage to numerous roads and infrastructure estimated at over $1.24 million. One death in Ashland, two injuries.	NOAA
Flood	8/10/2008	Gilford. Laconia, Meredith	3 inches caused small stream flooding.	NOAA
Flood	6/27/2009	Belmont	3 inches, flash flooding. $50,000 in damages	NOAA
Flood	7/26/2011	Laconia	Flash flooding and washout on NH Routes 106 and 107.	NOAA
Flood	8/28/2011	Barnstead	Tropical Storm Irene caused $25,000 in property damages. Statewide damage to roads was extreme with repair costs in the millions.	NOAA
Hail	7/12/1970	Belknap County	2.00-inch diameter	NOAA
Hail	7/11/1976	Belknap County	1.75-inch diameter	NOAA
Hail	8/1/1991	Belknap County	1.0-inch diameter	NOAA
Hail	7/14/1996	Sanbornton/ Gaza	1.0 - 1.5-inch diameter	NOAA
Hail	6/20/2006	Alton	1.75-inch diameter	NOAA
Hail	6/29/2006	New Hampton, Sanbornton	0.75 -1.0-inch diameter	NOAA
Hail	6/5/2007	Alton and Center Harbor	0.75 -1.0-inch diameter	NOAA

Hazard	Date	Location	Description	Source*
Hail	7/9/2007	Center Harbor, Gilford, Laconia, Sanbornton	0.88 -1.0-inch diameter	NOAA
Hail	7/15/2007	Belmont	0.88-inch diameter	NOAA
Hail	6/22/2008	Meredith	0.88 -1.0-inch diameter	NOAA
Hail	7/2/2008	Laconia	0.75-inch diameter	NOAA
Hail	7/18/2008	Meredith	0.75-inch diameter	NOAA
Hail	7/19/2008	Meredith	0.75-inch diameter	NOAA
Hail	8/7/2008	Sanbornton	0.75 - 0.88-inch diameter	NOAA
Hail	8/10/2008	Laconia, Meredith	0.75-inch diameter	NOAA
Hail	6/26/2009	Alton	0.88-inch diameter	NOAA
Hail	6/27/2009	Belmont	0.88-inch diameter	NOAA
Hail	7/4/2009	Tilton	0.88-inch diameter	NOAA
Hail	7/21/2010	Barnstead	0.88-inch diameter	NOAA
Hail	7/26/2011	Alton, Gilford, Meredith	0.75 – 1.00-inch diameter	NOAA
Hurricane	9/21/1938	Statewide	13 Deaths, 2 billion feet of marketable lumber blown down, flooding throughout the State, total Direct Losses - $12,337,643 (1938 Dollars)	NHHSEM
Hurricane	9/9/1991	Statewide	Hurricane Bob, severe storms	FEMA
Hurricane	September 18- 19, 1999	Statewide	Heavy Rains associated with tropical storms; Hurricane Floyd affected the area.	FEMA
Ice	1/5/1979	Statewide	Power and Transportation disruptions	NHHSEM
Ice	1/7/1998	Statewide	More than $17 million in damage in NH alone	NHHSEM
Ice	12/11/2008	Statewide	State emergency declaration after major power and transportation disruption. Exceeding $15 million in damages. Over 400,000 without power, 2 fatalities due to carbon monoxide poisoning.	NHHSEM
Ice/Freezing Rain	1/27/1996	Belknap County	Cold road surfaces quickly iced up at the beginning of a heavy rain event, leading to numerous automobile accidents over a short period of time. Multiple vehicle accidents and one fatality	NOAA
Lightning	7/26/1994	Alton	A home was gutted by fire in Alton due to a lightning strike. $500,000.	NOAA
Lightning	7/9/1996	Gilford	Lightning started a fire that caused $20,000 damage to a home in Gilford.	NOAA
Lightning	6/25/2000	Gilmanton	2 injuries.	NOAA
Lightning	7/18/2000	Laconia	Lightning caused a power surge resulting in about $5,000. in damages.	NOAA
Lightning	7/29/2000	Gilford	2 injuries.	NOAA
Lightning	5/31/2002	Franklin/ Laconia	A total of $70,000 in damages.	NOAA
Lightning	8/13/2003	Belmont/ Laconia	Four injuries.	NOAA
Lightning	8/11/2004	Center Harbor	$100,000 in structural damages.	NOAA
Lightning	6/9/2005	New Hampton	$100,000 in structural damages to a lakeside lodge.	NOAA
Lightning	6/10/2005	Laconia	1 injury.	NOAA
Lightning	7/22/2005	New Hampton	Barn fire. $50,000.	NOAA
Lightning	7/27/2005	Sanbornton	$10,000 in property damages.	NOAA
Lightning	10/20/2006	Meredith	Three injuries and $20,000 in damages.	NOAA

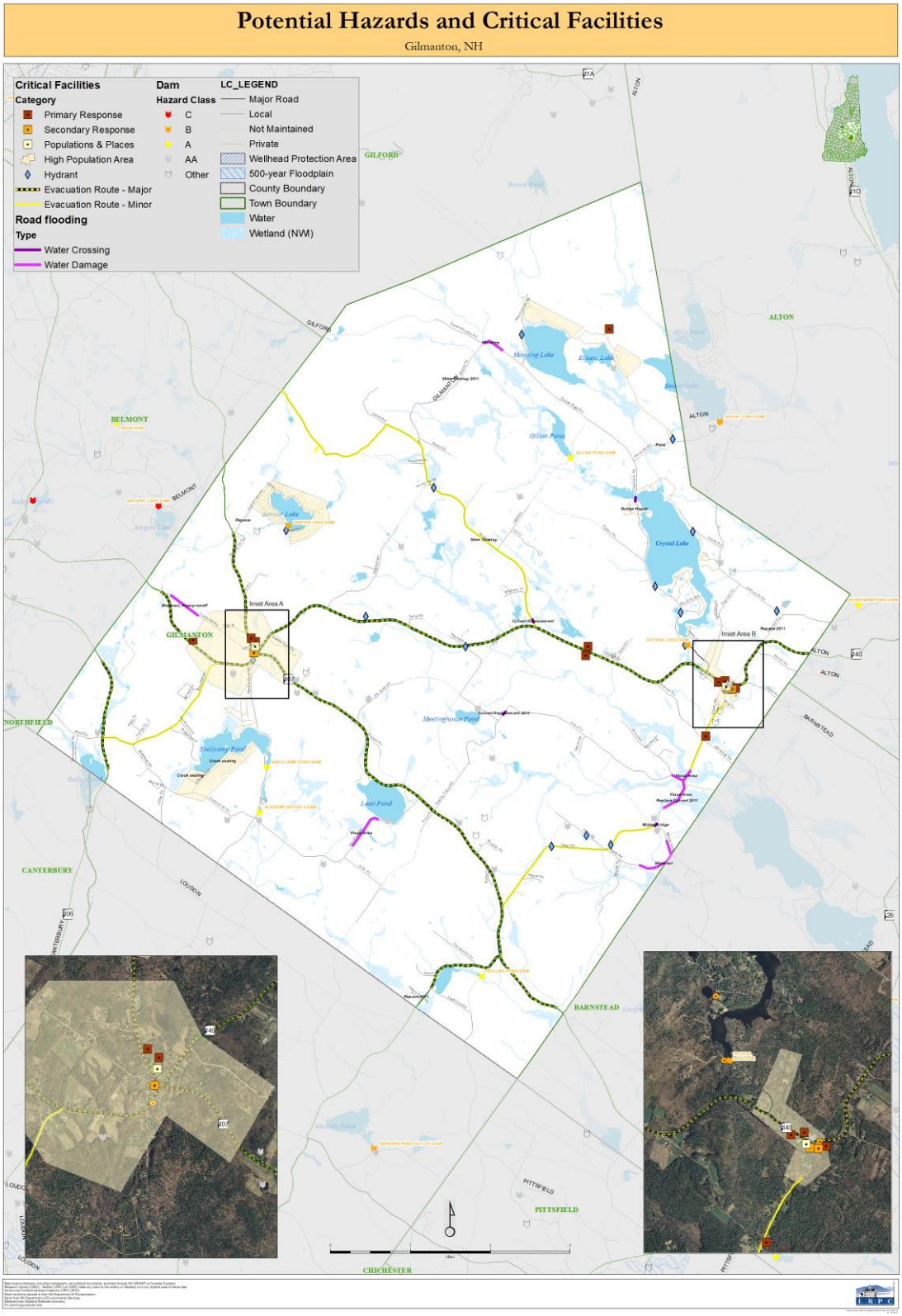
Hazard	Date	Location	Description	Source*
Lightning	9/27/2007	Alton	$200,000 in damage to home.	NOAA
Lightning	8/7/2008	Laconia	$60,000 in damage to hay barn	NOAA
Nor'easter	4/27/2007	Statewide	Nor'easter caused flooding, damage in excess of $25 million s of August 2007.	FEMA
Snow/Blizzard	3/16/1993	Statewide	High winds and record snowfall	FEMA
Heavy Snow	3/28/2001	Statewide		FEMA
Heavy Snow	1/5/2004	Statewide		FEMA
Heavy Snow	2/14/2007	Statewide	6 – 20 inches	NOAA
Heavy Snow	3/2/2007	Statewide	6 – 12 inches	NOAA
Heavy Snow	3/16/2007	Statewide	7 – 12 inches, changed to freezing rain	NOAA
Heavy Snow	4/4/2007	Statewide	8 inches	NOAA
Heavy Snow	4/12/2007	Statewide	8 inches	NOAA
Heavy Snow	4/27/2007	Statewide	Nor'easter caused flooding, damage in excess of $25 million – Federal Disaster Declaration	FEMA
Heavy Snow	12/3/2007	Statewide	6 – 10 inches	NOAA
Heavy Snow	12/16/2007	Statewide	7 inches	NOAA
Heavy Snow	12/19/2007	Statewide	6 – 15 inches	NOAA
Heavy Snow	12/30/2007	Statewide	6 – 14 inches	NOAA
Heavy Snow	1/18/2008	Statewide	8 - 10 inches	NOAA
Heavy Snow	1/14/2008	Statewide	6 – 12 inches	NOAA
Heavy Snow	2/12/2008	Statewide	5 - 8 inches followed by sleet & freezing rain	NOAA
Heavy Snow	2/26/2008	Statewide	6 – 12 inches	NOAA
Heavy Snow	3/1/2008	Statewide	4 - 10 inches	NOAA
Heavy Snow	12/19/2008	Statewide	5 - 10 inches	NOAA
Heavy Snow	12/21/2008	Statewide	10 - 15 inches	NOAA
Heavy Snow	1/18/2009	Statewide	8 - 15 inches	NOAA
Heavy Snow	1/28/2009	Statewide	8 - 14 inches	NOAA
Heavy Snow	2/18/2009	Statewide	6 - 12 inches	NOAA
Heavy Snow	2/22/2009	Statewide	6 – 12 inches	NOAA
Heavy Snow	3/1/2009	Statewide	2 - 5 inches	NOAA
Heavy Snow	12/9/2009	Statewide	6 - 10 inches	NOAA
Heavy Snow	1/17/2010	Statewide	6 - 10 inches	NOAA
Heavy Snow	12/26/2010	Statewide	6 - 16 inches	NOAA
Heavy Snow	1/12/2011	Statewide	10 - 19 inches	NOAA
Heavy Snow	1/18/2011	Statewide	4 - 8 inches followed by sleet & freezing rain	NOAA
Heavy Snow	2/2/2011	Statewide	8 - 12 inches	NOAA
Heavy Snow	2/25/2011	Statewide	8 - 12 inches	NOAA
Heavy Snow	4/1/2011	Statewide	4 - 6 inches	NOAA
Heavy Snow	10/29/2011	Statewide	16 inches, many without power	NOAA
T'storm Wind	7/6/1999	Meredith	Severe winds, downed trees blocked roads, and caused power outages. The winds damaged several buildings, damaged hundreds of trees, closing roads, and damaging homes. 1 fatality, 1 injury	NOAA
T'storm Wind	12/1/2006	Alton	50 knots, trees downed	NOAA
T'storm Wind	7/15/2007	Gilmanton	50 knots, trees downed	NOAA
T'storm Wind	8/16/2007	Tilton	50 knots, trees and wires downed	NOAA
T'storm Wind	9/27/2007	Center Harbor	50 knots, trees downed	NOAA
T'storm Wind	6/26/2008	Gilmanton	50 knots, numerous trees downed	NOAA
T'storm Wind	7/18/2008	Gilmanton	50 knots, numerous trees downed	NOAA
T'storm Wind	7/19/2008	Belmont, Alton	50 knots, trees downed on roads, one car hit	NOAA
T'storm Wind	8/7/2008	Meredith	50 knots, trees downed	NOAA
T'storm Wind	8/10/2008	Sanbornton	50 knots, trees downed, one on a house	NOAA
T'storm Wind	5/9/2009	Laconia, Tilton	50 knots, trees and wires downed	NOAA

Hazard	Date	Location	Description	Source*
T'storm Wind	7/27/2009	Barnstead	50 knots, trees downed, one on a building	NOAA
T'storm Wind	7/29/2009	Belmont	50 knots, trees and wires downed	NOAA
T'storm Wind	6/24/2010	Sanbornton	50 knots, trees downed	NOAA
T'storm Wind	7/19/2010	New Hampton	50 knots, trees downed across NH Route 132	NOAA
T'storm Wind	6/9/2011	Laconia	50 knots, trees downed, 45,000 homes without power in southern part of state	NOAA
T'storm Wind	7/4/2011	Gilmanton	50 knots, trees downed	NOAA
T'storm Wind	7/26/2011	Meredith	50 knots, 10 trees downed	NOAA
Tornado	6/24/1960	Belknap County	F1	NOAA
Tornado	5/31/1972	Belknap County	F1 $250K in damages	NOAA
Tornado	7/3/1972	Belknap County	F2 $25K in damages	NHHSEM
Tornado	7/23/1978	Belknap County	F1, $25,000 in damages	Tornado
Tornado	7/23/1995	Meredith	F1	NHHSEM
Tornado	7/6/1999	Belknap County	F1	NHHSEM
Tornado	7/24/2008	Five counties, including Belknap, Merrimack, Carroll	50-mile swath cut through south-central part of NH. Nineteen homes destroyed. One death. State and federal disaster declared in five counties.	NHHSEM NOAA
Wildfire	1947	Farmington	7,335 acres burned	NHHSEM
Wildfire	1947	Freedom	1,225 acres burned	NHHSEM
Wildfire	1953	Tuftonboro	1,794 acres burned	NHHSEM
Wildfire	3/31/2006	Alton	Brush fire	Alton Fire
Wildfire	5/5/2007	Alton	Brush fire	Alton Fire
Wildfire	4/25/2008	Alton	39 acres burned	Alton Fire
Wildfire	2009	Belknap County	16 fires burned 13 acres	Gilm AR
Wildfire	2010	Belknap County	Eight fires burned five acres	Gilm AR
Wildfire	2011	Belknap County	One fire, half an acre	Gilm AR

***Sources:**
The Tornado Project: http://www.tornadoproject.com (Tornado)
New Hampshire Homeland Security and Emergency Management (NHHSEM)
http://www.nh.gov/safety/divisions/hsem/NaturalHazards/index.html
National Oceanic and Atmospheric Administration (NOAA) http://www.noaa.gov/
Federal Emergency Management Agency (FEMA) http://www.fema.gov/
Northeast States Emergency Consortium (NESEC) http://www.nesec.org/
Alton Fire Department website (Alton Fire) http://www.altonfire.org/
Gilmanton Annual Report, Forest Fire Warden Report (Gilm AR)

Hazard	Date	Location	Remarks/Description	Source
Hurricane	8/28/2011	Belknap Co.	Tropical Storm Irene caused the Pemigewasset River to crest at 21.7 feet in Plymouth, 8.7 feet above flood stage. Nearby Barnstead sustained $25,000 in property damages due to flooding. **Declared Disaster DR-4026**	NOAA
Hurricane	10/26 – 11/6/2012	Belknap County	**Declared Disaster DR-4095** Remnants of Hurricane Sandy	NOAA

APPENDIX F: MAP



APPENDIX G:

HAZARDS – SUPPLEMENTARY HAZARD INFORMATION

This section provides statewide or regional information regarding hazards. Some information is about hazards mentioned in the NH Hazard Mitigation Plan. Other information either provides context or extra detail which supplements the locally important information addressed in Chapter III.

SOLAR STORMS & SPACE WEATHER

The term space weather is relatively new and describes the dynamic conditions in the Earth's outer space environment, similar to how the terms "climate" and "weather" refer to the conditions in the Earth's lower atmosphere. Space weather includes any and all conditions and events on the sun, in the solar wind, in near-Earth space, and in our upper atmosphere that can affect space-borne and ground-based technological systems.

As society becomes increasingly reliant on electronics and technology, the hazards presented by space weather are not to be underestimated. The magnetic disturbances that solar storms can bring can disrupt communications, damage or destroy electronic components, corrode gas and oil pipelines, and cause significant damage to spacecraft and satellites outside the Earth's protective atmosphere.

Solar storms and space weather are always impacting the Earth and its atmosphere and are therefore an ongoing threat to New Hampshire. While the Earth is somewhat protected from solar storms and space weather by its upper atmosphere, the potential for a loss of communications, power, and GPS exists on a daily basis.

Extent: The State of New Hampshire Multi-Hazard Mitigation Plan Update (2018) describes three different types of events: Geomagnetic Storms, Solar Radiation Storms, and Radio Blackout. Each of these is then rated on a five-level scale (minor, moderate, strong, severe, extreme), with descriptions of increasing impacts on power, spacecraft, biological, satellite, high frequency radio, and navigation systems. https://www.swpc.noaa.gov/noaa-scales-explanation

History: No significant events reported in New Hampshire. Nearby events include Quebec, Canada, which experienced a 9-hour blackout in March of 1989 when solar winds caused a fluctuation in the Earth's magnetic field and caused Hydro-Quebec's transmission to go down.[35]

Impacts: While there have not been any known impacts to Gilmanton due to solar or space activity, there is a recognition by the committee that there may be some interruption of communication and other electronic services in the coming years, even to a small, rural town. The potential impact to the town was rated as moderate, but as the major impact would be through interruption of services.

[35] Adapted from the *State of New Hampshire Multi-Hazard Mitigation Plan Update (2018),* https://prd.blogs.nh.gov/dos/hsem/wp-content/uploads/2015/11/State-of-New-Hampshire-Multi-Hazard-Mitigation-Plan-Update-2018_FINAL.pdf.

Flooding due to Dam Failure - Extent

Dam failure results in rapid loss of water that is normally held back by a dam. These types of floods can be extremely dangerous and pose a threat to both life and property. Dam classifications in New Hampshire are based on the degree of potential damages that a failure or disoperation of the dam is expected to cause. The classifications are designated as non-menace, low hazard, significant hazard, and high hazard and are summarized in greater detail below.

New Hampshire Dam Classifications[36]

Classification	Description
Non-Menace	A dam that is not a menace because it is in a location and of a size that failure or mis operation of the dam would not result in probable loss of life or loss to property, provided the dam is: • Less than six feet in height if it has a storage capacity greater than 50 acre-feet; or • Less than 25 feet in height if it has a storage capacity of 15 to 50 acre-feet.
Low Hazard	A dam that has a low hazard potential because it is in a location and of a size that failure or mis operation of the dam would result in any of the following: • No possible loss of life. • Low economic loss to structures or property. • Structural damage to a town or city road or private road accessing property other than the dam owner's that could render the road impassable or otherwise interrupt public safety services. • The release of liquid industrial, agricultural, or commercial wastes, septage, or contaminated sediment if the storage capacity is less than two-acre-feet and is located more than 250 feet from a water body or water course. • Reversible environmental losses to environmentally sensitive sites.
Significant Hazard	A dam that has a significant hazard potential because it is in a location and of a size that failure or mis operation of the dam would result in any of the following: • No probable loss of lives. • Major economic loss to structures or property. • Structural damage to a Class I or Class II road that could render the road impassable or otherwise interrupt public safety services. • Major environmental or public health losses, including one or more of the following: • Damage to a public water system, as defined by RSA 485:1-a, XV, which will take longer than 48 hours to repair. • The release of liquid industrial, agricultural, or commercial wastes, septage, sewage, or contaminated sediments if the storage capacity is 2 acre-feet or more. • Damage to an environmentally sensitive site that does not meet the definition of reversible environmental losses.
High Hazard	A dam that has a high hazard potential because it is in a location and of a size that failure or mis-operation of the dam would result in probable loss of human life as a result of: • Water levels and velocities causing the structural failure of a foundation of a habitable residential structure or commercial or industrial structure, which is occupied under normal conditions. • Water levels rising above the first-floor elevation of a habitable residential structure or a commercial or industrial structure, which is occupied under normal conditions when the rise due to dam failure is greater than one foot. • Structural damage to an interstate highway, which could render the roadway impassable or otherwise interrupt public safety services. • The release of a quantity and concentration of material, which qualify as "hazardous waste" as defined by RSA 147-A:2 VII. • Any other circumstance that would more likely than not cause one or more deaths.

[36] NH DES Fact Sheet WD-DB-15 "Classification of Dams in New Hampshire", http://des.nh.gov/organization/commissioner/pip/factsheets/db/documents/db-15.pdf. Accessed October 1, 2012.

LANDSLIDE

A landslide is the downward or outward movement of slope-forming materials reacting to the force of gravity, including mudflows, mudslides, debris flows, rockslides, 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. Seismic activity may play a role in the mass movement of landforms also. Although New Hampshire is mountainous, it consists largely of relatively old geologic formations that have been worn by the forces of nature for eons. Consequently, much of the landscape is relatively stable and the exposure to this hazard type is generally limited to areas in the north and north central portion of the state. Formations of sedimentary deposits and along the Connecticut and Merrimack Rivers also create potential landslide conditions.

Although the overall vulnerability for landslides in the state is low, there is considerable terrain susceptible to landslide action. This was exemplified in May of 2003 when the Old Man of the Mountain collapsed. The continuous action of freezing and thawing of moisture in rock fissures causes it to split and separate. This action occurs frequently on the steeply sloped areas of the state, increasing the risk of landslides.

AVALANCHE

A snow avalanche is a slope failure, similar to a landslide, consisting of a mass of rapidly moving, fluidized snow that slides down a mountainside. The flow can be composed of ice, water, soil, rock, and trees.[37] Most avalanches result from structural weaknesses in the snowpack caused by temperature fluctuations or multiple snowfall events. Avalanches occur on steep slopes averaging 25-50 degrees and are triggered by both natural events (thermal changes, blizzards, seismic activity) and human activities (i.e. skiers, hikers, snowmobilers, sound waves). While avalanches are more common in the Presidential Range in Northern New Hampshire, conditions exist in a few mountain ranges within the Lakes Region as well.

From the 2012 Plan – Not addressed during the 2019 update process:

Other Human-Related Events

Interruption of utilities, events involving hazardous materials, armed and terrorist attacks are all events that could have an impact to the region.

Interruption of utilities is a secondary impact, frequently resulting from natural hazard events such as ice storms or downbursts. All areas of the state are susceptible to this; those living at higher elevations or in more remote locations may be more likely to experience such interruptions. Since electricity often comes from regional substations, a hazard event in one part of the state may result in power outages in other parts of the state.

UTILITY INTERRUPTION

Location: Local or regional
Specific Areas of Concern: Academy Building, oxygen-dependent individuals
Critical Facilities: Essential Services
Impact: Moderate

[37] http://www.nh.gov/safety/divisions/HSEM/HazardMitigation/, visited August 15, 2007.

Probability of Occurrence: High
Overall Risk: Moderate

Interruption of utilities, power, communications services, and fuel is a relatively frequent occurrence. It is a secondary hazard, brought on by another hazard event. It can impact facilities that have limited back up power generation. It can also have an impact on individuals, especially those that rely heavily upon these services, such as those requiring oxygen systems.

Motor Vehicle Accident involving Hazardous Materials
The Lakes Region, as its name suggests, is comprised of many surface waterbodies. Many of the towns in the region depend on a portion of this resource to provide public drinking water to the community. Area tourism and water recreation are also highly dependent on the availability of clean and attractive water resources. For these reasons the protection of surface waters in the Lakes Region is highly valued both as a necessity and for economic reasons. The leading potential sources of water contamination include in-transit and fixed hazardous materials.

Hazardous materials, i.e., chemicals and chemical compounds in many forms, are found virtually everywhere - in common household products; agricultural fertilizers and pesticides; carried by vehicles as fuels, lubricants, and transported products; and, used in business and industrial processes. When improperly used, released, or spilled, they can burn or explode, diffuse rapidly through the air or in water, and endanger those who come in contact with them.

Chemicals, of all types are used, stored, and transported throughout the Lakes Region. The types and locations of many of these hazardous materials are unknown. While the New Hampshire Department of Environmental Services maintains a database of hazardous waste generators and underground storage tanks located in the state, detailed information on the types and volume of hazardous materials that are transported through the region is not documented. Likewise, only a small portion of the stored hazardous materials are reported and cataloged. Thus, there is a potential of a hazardous material incident at every transportation accident or fire in the area. Further, there is extensive use of liquefied gases for heating in the area, which means that significant amounts are transported, by both vehicle and major gas pipelines, and stored in the region.


Oil Spill from Motor Vehicle Accident

Several major north-south and east-west transportation connections to points throughout central New Hampshire and beyond are found in the Lakes Region. These major roadways and a passenger railway are in many places located in close proximity to local water resources. The region is at risk of an over-land hazardous material spill that could cause infiltration of spilled hazardous materials into the water resources. The potential for water resources to be contaminated is increased by the miles of storm drains that outlet directly into surface water bodies.

MOTOR VEHICLE ACCIDENT INVOLVING HAZARDOUS MATERIALS
Location: Localized
Specific Areas of Concern: waterbodies, roads/evacuation routes, water supplies, fuel stations
Critical Facilities: Structures and Services, Essential Services, Evacuation Routes
Impact: Moderate
Probability of Occurrence: Moderate
Overall Risk: Moderate

Hazardous material spill is a non-intentional event where hazardous chemicals can pollute the environment, including surface water, ground water, and/or air and can have a negative, potentially life-threatening impact on people. The costs associated with a hazardous material spill can vary greatly dependent on the substance, quantity, and resources threatened. Costs associated with spill containment and clean up that involve water resources are certain to be higher.

Terrorism, Armed Attack, and Civil Disorder
Terrorism is the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom.[38] Armed attack is violence with a weapon against another person with the intent to do harm. Civil disorder is a disturbance caused by a group of people. All of these are rare events in the Lakes Region; however, any individual or group could attempt to carry out one of these acts.

ARMED ATTACK
Location: Localized
Specific Areas of Concern:
Critical Facilities: Academy Building, Gilmanton Elementary School, Public Safety Building
Impact: Moderate
Probability of Occurrence: Moderate
Overall Risk: Moderate

While no one wants to think that it could happen in their small town, the potential exists that there are some few individuals that wish to do harm to others in the community. The Gilmanton Elementary School is visible, accessible, and home to the town's most vulnerable population. Both the Academy Building and the Public Safety Building are quite visible; access to the Academy Building is not limited.

[38] State of New Hampshire Hazard Mitigation Plan (2010) http://www.nh.gov/safety/divisions/hsem/HazardMitigation/documents/hmp-chapter-3.pdf.

APPENDIX H: PRIORITIZATION DETAILS

As the Committee began the process of prioritizing these actions, the group was introduced to the standard STAPLEE Prioritization Tool. This utilizes the standard STAPLEE categories (Social, Technical, Administrative, Political, Economic, and Environmental).

This section contains a summary of rankings for each of the proposed Mitigation Actions by the Gilmanton Hazard Mitigation Committee. For each action, the benefits and costs of implementing the action (under each of the seven categories) was considered and scored -1, 0, 1 with a 'minus one' indicating that the costs outweighed the benefits in a particular category, a 'one' meant that the benefits were greater that the costs, and a 'zero' meant that the while there are costs associated with the project, they are balanced out by the benefits. The seven category scores were summed for an overall project total. A maximum total score is 7, the minimum is -7. Actual results ranged from 7 to -2. Blue highlighted items indicate that the Action is either a "partially completed action" that the committee felt could be improved upon or a Deferred Action, which in some cases has been modified to enhance the likelihood of implementation. Red highlights indicate mitigation actions (as opposed to response actions).

Hazard Type	Action	Total	Social	Technical	Admin-istrative	Political	Legal	Environ-mental	Economic
Severe Winter weather	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of severe winter weather on their properties.	7	1	1	1	1	1	1	1
Infectious Diseases	Work with PPH to provide information and public outreach regarding steps that residents and visitors can take to reduce the likelihood of being impacted by infectious diseases.	7	1	1	1	1	1	1	1
High Wind Event	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of high winds on their properties.	7	1	1	1	1	1	1	1
Drought	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of drought on their properties.	7	1	1	1	1	1	1	1
All	Obtain and install and appropriately sized generator for the facility to meet the various purposes that it serves.	6	1	0	1	1	1	0	1
All	Update and implement the School Emergency Prevention Plan.	5	1	1	0	1	1	0	1

Hazard Type	Action	Total	Social	Technical	Admin-istrative	Political	Legal	Environ-mental	Economic
Flood	Document the Storm Drain/Culvert Maintenance Program.	4	0	1	0	1	1	0	1
Flood	Repair and widen the bridge along Crystal Lake Rd. near Places Mill Rd.	3	0	0	1	1	1	1	-1
Flood	Repair and widen the bridge along Stage Rd. near Beauty Hill Rd.	3	0	0	1	1	1	1	-1
Flood	Replace and enlarge culverts along Stage Rd. near Stone Rd., along Stone Rd. near Meetinghouse Pond.	3	0	0	1	1	1	1	-1
Flood	Improve drainage conditions along Allen's Mills Rd. (Evacuation Route) at NH Rte. 106.	3	0	0	1	1	1	1	-1
Fire	Implement the recommendations of the 2010 Water Resources Plan.	3	0	1	0	0	1	0	1
All	Include the Gilmanton Hazard Mitigation Plan in the town Master Plan.	3	0	1	0	0	1	0	1
All	Reduce the number of "dead zones" for radio communication.	3	0	0	1	1	1	0	0
All	Develop a plan to enable residents to bring pets to a shelter and publicize this plan.	2	1	1	0	0	0	0	0
Flood	Make needed improvements to roads and drainage to reduce washouts along Currier Hill Rd. west of High St.	1	0	1	0	0	0	-1	1
All	Conduct a table-top exercise	1	0	1	0	0	0	0	0
All	Improve pavement conditions along Stage Rd. (Evacuation Route).	1	0	1	1	0	0	0	-1
Wildfire	Conduct educational outreach regarding mitigation strategies for wildfire, including information about Fire Permits and the FireWise program. Include this information on the town website.	0	0	0	0	0	0	0	0

Hazard Type	Action	Total	Social	Technical	Admin-istrative	Political	Legal	Environ-mental	Economic
Tropical or Post-tropical Cyclone	Provide information and public outreach on steps that people can take to keep themselves safe and mitigate the effects of the high winds and rain on their homes and businesses.	0	0	0	0	0	0	0	0
Lightning	Investigate the best options for the town to mitigate the effects of lightning **on critical records**, especially those in the Town offices.	0	0	0	0	0	0	0	0
Flood	Actively participate in and adopt recommendations of Geofluvial Assessment.	0	0	0	0	0	0	0	0
Extreme Temperature	Provide information and public outreach regarding steps that residents and visitors can take to protect themselves in extreme temperatures.	0	0	0	0	0	0	0	0
Extreme Temperature	Provide information and public outreach on measures that property owners can take to mitigate the effects on their homes and businesses, such as keeping pipes from freezing in cold temperatures.	0	0	0	0	0	0	0	0
Earthquake	Learn more about how susceptible the dams and bridge in town are to earthquakes (NH DES & NH DOT)	0	0	0	0	0	0	0	0
Terror/Armed Attack/Civil Disobedience	Develop and implement an employee identification system that will allow for proper security during an emergency.	-1	0	0	0	-1	1	0	-1
Other (Contamination)	Consider developing a health ordinance against the spreading of BioSolids in Gilmanton.	-1	0	0	0	-1	0	0	0
Lightning	Investigate the best options for the town to mitigate the effects of lightning **on critical facilitie**s, especially the Town Hall and offices.	-1	0	0	0	0	0	0	-1
Flood	Develop and implement a system for maintaining Elevation Certificates for properties within the floodplain.	-1	-1	-1	0	-1	1	0	1

Hazard Type	Action	Total	Social	Technical	Admin-istrative	Political	Legal	Environ-mental	Economic
Earthquake	Work with Gilmanton Elementary School on retrofitting & hardening the school building against earthquakes and other events that might damage the structure.	**-1**	**0**	**0**	**0**	**0**	**0**	**0**	**-1**
Flooding	Work with NH Fish & Game and NH DES to reduce the flooding on Meadow Pond Rd near Shellcamp Rd. associated with beaver dams.	**-2**	**0**	**0**	**0**	**0**	**0**	**-1**	**-1**
Dam/ Flood	Develop regular correspondence with State and private dam owners regarding dam maintenance.	**-2**	**-1**	**-1**	**0**	**-1**	**1**	**0**	**0**

APPENDIX I: EXISTING PLANS, STUDIES, REPORTS, AND TECHNICAL INFORMATION

Gilmanton Hazard Mitigation Plan, 2012
Gilmanton Master Plan, 2018
Gilmanton Zoning Ordinance, 2019
Gilmanton Subdivision Regulations, 2011
Gilmanton Site Plan Regulations, 2013
FEMA Community Information System
Gilmanton MS-1 Report (2018)
State of New Hampshire Multi-Hazard Mitigation Plan, Update 2018
National Oceanic and Atmospheric Administration website
NH Division of Forests and Lands website
NH Department of Transportation Traffic Volume Reports

APPENDIX J: MONITOR, EVALUATE, & UPDATE

Table A: Periodic Hazard Mitigation Plan Review Record

Meeting Schedule (dates)	Tasks Accomplished	How well (or not-so-well) is implementation progressing?	Lead Parties	Public Involvement (citizens, neighboring communities)

The Action Tracker is a data system FEMA is using to document mitigation ideas and progress for all communities. Check this link to obtain and set up a profile to follow and maintain your community's selected mitigation actions/projects: http://www.starr-team.com/starr/Pages/default.aspx

Table B: Project Implementation Checklist Time Frame Key: Short = 1-2 years, Medium = 2-4 years, Long = at least 4 years

ID	Hazard Type	Action	Potential Funding	Responsible Party	Time Frame:	Status 2020	Status 2021	Status 2022	Status 2023
1	Severe Winter Weather	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of severe winter weather on their properties.	Town Budget	EMD	Short				
2	Infectious Diseases	Work with PPH to provide information and public outreach regarding steps that residents and visitors can take to reduce the likelihood of being impacted by infectious diseases.	Town Budget & PPH	EMD	Short				
3	High Wind Event	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of high winds on their properties.	Town Budget	EMD	Short				
4	Drought	Provide information and public outreach regarding steps that property owners can take to mitigate the impacts of drought on their properties.	Town Budget	Fire Chief	Short				
5	All	Update and implement the School Emergency Prevention Plan.	Department Budgets	School Super., Fire & Police Chiefs	Short				
5A	All Hazards	Obtain and install and appropriately sized generator for the facility to meet the various purposes that it serves.	HSEM/FEMA grants	EMD/ School Principal	Short				
6	Flood	Repair and widen the bridge along Crystal Lake Rd. near Places Mill Rd.	State Bridge Aid/ Town Budget	RA/Select	Short				
7	Flood	Repair and widen the bridge along Stage Rd. near Beauty Hill Rd.	State Bridge Aid/ Town Budget	RA/Select	Short				

ID	Hazard Type	Action	Potential Funding	Responsible Party	Time Frame:	Status 2020	Status 2021	Status 2022	Status 2023
8	Flood	Replace and enlarge culverts along Stage Rd. near Stone Rd., along Stone Rd. near Meetinghouse Pond.	Town Budget and FEMA grants	RA	Short				
9	Flood	Improve drainage conditions along Allen's Mills Rd. (Evacuation Route) at NH Rte. 106.	Town Budget	RA	Short				
10	Fire	Implement the recommendations of the 2010 Water Resources Plan.	Grant/ Dept. Budget	Fire Chief	Short				
11	All	Include the Gilmanton Hazard Mitigation Plan in the town Master Plan.	N/A	PB	Short				
12	All	Develop a plan to enable residents to bring pets to a shelter and publicize this plan.	Grant/ Dept. Budget	Select. & School Super.	Short				
13	All	Conduct a table-top exercise	Department Budgets	EMD	Short				
14	All	Improve pavement conditions along Stage Rd. (Evacuation Route).	Town Budget	RA	Short				
15	Wildfire	Conduct educational outreach regarding mitigation strategies for wildfire, including information about Fire Permits and the FireWise program. Include this information on the town website.	Town Budget	Fire Chief	Short				
16	Tropical or Post-tropical Cyclone	Provide information and public outreach on steps that people can take to keep themselves safe and mitigate the effects of the high winds and rain on their homes and businesses.	Town Budget	EMD	Short				

ID	Hazard Type	Action	Potential Funding	Responsible Party	Time Frame:	Status 2020	Status 2021	Status 2022	Status 2023
17	Extreme Temperature	Provide information and public outreach regarding steps that residents and visitors can take to protect themselves in extreme temperatures.	Town Budget	EMD	Short				
18	Extreme Temperature	Provide information and public outreach on measures that property owners can take to mitigate the effects on their homes and businesses, such as keeping pipes from freezing in cold temperatures.	Town Budget	EMD	Short				
19	Other (Contamination)	Consider developing a health ordinance against the spreading of BioSolids in Gilmanton.	Town Budget	BoS, TA	Short				
20	Earthquake	Work with Gilmanton Elementary School on retrofitting & hardening the school building against earthquakes and other events that might damage the structure.	Dept. of Education, Town Budget	EMD, TA, School Principal	Short				
21	Flooding	Work with NH Fish & Game and NH DES to reduce the flooding on Meadow Pond Rd near Shellcamp Rd. associated with beaver dams.	Town Budget	Road Agent	Short				
22	Dam/ Flood	Develop regular correspondence with State and private dam owners regarding dam maintenance.	Department Budget	Select	Short				
23	Flood	Document the Storm Drain/Culvert Maintenance Program.	Grant/ Dept. Budget	RA	Medium				
24	All	Reduce the number of "dead zones" for radio communication.	Grants/ County & Town Budgets	Fire & Police Chiefs	Medium				

ID	Hazard Type	Action	Potential Funding	Responsible Party	Time Frame:	Status 2020	Status 2021	Status 2022	Status 2023
25	Flood	Make needed improvements to roads and drainage to reduce washouts along Currier Hill Rd. west of High St.	Town Budget and FEMA grants	RA	Medium				
26	Lightning	Investigate the best options for the town to mitigate the effects of lightning **on critical records**, especially those in the Town offices.	Town Budget	TA	Medium				
27	Earthquake	Learn more about how susceptible the dams and bridge in town are to earthquakes (NH DES & NH DOT)	Town Budget	EMD & RA	Medium				
28	Terror/Armed Attack/Civil Disobedience	Develop and implement an employee identification system that will allow for proper security during an emergency.	Grant/ Town Budget	Select	Medium				
29	Lightning	Investigate the best options for the town to mitigate the effects of lightning **on critical facilitie**s, especially the Town Hall and offices.	Town Budget	TA	Medium				
30	Flood	Actively participate in and adopt recommendations of Geofluvial Assessment.	N/A	CC/PB	Long				
31	Flood	Develop and implement a system for maintaining Elevation Certificates for properties within the floodplain.	Department Budget	CEO	Long				

APPENDIX K: FEMA WEBLIOGRAPHY

DISASTERS AND NATURAL HAZARDS INFORMATION

FEMA-How to deal with specific hazards	http://www.ready.gov/natural-disasters
Natural Hazards Center at the University of Colorado	http://www.colorado.edu/hazards
National Oceanic and Atmospheric Administration (NOAA): Information on various projects and research on climate and weather.	http://www.websites.noaa.gov
National Climatic Data Center active archive of weather data.	http://lwf.ncdc.noaa.gov/oa/ncdc.html
Northeast Snowfall Impact Scale	http://www.erh.noaa.gov/rnk/Newsletter/Fall%202007/NESIS.htm
Weekend Snowstorm Strikes the Northeast Corridor Classified As A Category 3"Major"Storm	http://www.publicaffairs.noaa.gov/releases2006/feb06/noaa06-023.html

FLOOD RELATED HAZARDS

FEMA Coastal Flood Hazard Analysis & Mapping	http://www.fema.gov/national-flood-insurance-program-0/fema-coastal-flood-hazard-analyses-and-mapping-1
Floodsmart	http://www.floodsmart.gov/floodsmart/
National Flood Insurance Program (NFIP)	http://www.fema.gov/nfip
Digital quality Level 3 Flood Maps	http://msc.fema.gov/MSC/statemap.htm
Flood Map Modernization	http://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/map-modernization
Reducing Damage from Localized Flooding: A Guide for Communities, 2005 FEMA 511	http://www.fema.gov/library/viewRecord.do?id=1448

FIRE RELATED HAZARDS

Firewise	http://www.firewise.org
NOAA Fire Event Satellite Photos	http://www.osei.noaa.gov/Events/Fires
U.S. Forest Service, USDA	http://www.fs.fed.us/land/wfas/welcome.htm
Wildfire Hazards - A National Threat	http://pubs.usgs.gov/fs/2006/3015/2006-3015.pdf

GEOLOGIC RELATED HAZARDS

USGS Topographic Maps	http://topomaps.usgs.gov/
Building Seismic Safety Council	http://www.nibs.org/?page=bssc
Earthquake hazard history by state	http://earthquake.usgs.gov/earthquakes/states/
USGS data on earthquakes	http://earthquake.usgs.gov/monitoring/deformation/data/download/
USGS Earthquake homepage	http://quake.wr.usgs.gov
National Cooperative Geologic Mapping Program (NCGMP)	http://ncgmp.usgs.gov/
Landslide Overview Map of the Conterminous United States	http://landslides.usgs.gov/learning/nationalmap/
Kafka, Alan L. 2008. Why Does the Earth Quake in New England? Boston College, Weston Observatory, Department of Geology and Geophysics	http://www2.bc.edu/~kafka/Why_Quakes/why_quakes.html
Map and Geographic Information Center, 2010, "Connecticut GIS Data", University of Connecticut	http://magic.lib.uconn.edu/connecticut_data.html
2012 Maine earthquake	http://www.huffingtonpost.com/2012/10/17/maine-earthquake-2012-new-england_n_1972555.html

WIND-RELATED HAZARDS

ATC Wind Speed Web Site	http://www.atcouncil.org/windspeed/index.php
U.S. Wind Zone Maps	http://www.fema.gov/safe-rooms/wind-zones-united-states
Tornado Project Online	http://www.tornadoproject.com/
National Hurricane Center	http://www.nhc.noaa.gov
Community Hurricane Preparedness Tutorial	http://meted.ucar.edu/hurrican/chp/hp.htm
National Severe Storms Laboratory, 2009, "Tornado Basics",	http://www.nssl.noaa.gov/primer/tornado/tor_basics.html

GEOGRAPHIC INFORMATION SYSTEMS (GIS) AND MAPPING

The National Spatial Data Infrastructure & Clearinghouse (NSDI) and Federal Geographic Data Committee (FGDC) Source for information on producing and sharing geographic data	http://www.fgdc.gov
The OpenGIS Consortium Industry source for developing standards and specifications for GIS data	http://www.opengis.org
Northeast States Emergency Consortium (NESEC): Provides information on various hazards, funding resources, and other information	http://www.nesec.org
US Dept of the Interior Geospatial Emergency Management System (IGEMS) provides the public with both an overview and more specific information on current natural hazard events. It is supported by the Department of the Interior Office of Emergency Management.	http://igems.doi.gov/
FEMA GeoPlatform: Geospatial data and analytics in support of emergency management	http://fema.maps.arcgis.com/home/index.html

DETERMINING RISK AND VULNERABILITY

HAZUS	http://www.hazus.org
FEMA Hazus Average Annualized Loss Viewer	http://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=cb8228309e9d405ca6b4db6027df36d9&extent=-139.0898,7.6266,-48.2109,62.6754
Vulnerability Assessment Tutorial: On-line tutorial for local risk and vulnerability assessment	http://www.csc.noaa.gov/products/nchaz/htm/mitigate.htm
Case Study: an example of a completed risk and vulnerability assessment	http://www.csc.noaa.gov/products/nchaz/htm/case.htm

DATA GATHERING

National Information Sharing Consortium (NISC): brings together data owners, custodians, & users in the fields of homeland security, public safety, & emergency management and response. Members leverage efforts related to the governance, development, & sharing of situational awareness & incident management resources, tools, & best practices	http://nisconsortium.org/
The Hydrologic Engineering Center (HEC), an organization in the Institute for Water Resources, is the Center of Expertise for the US Army Corps of Engineers	http://www.hec.usace.army.mil/

National Water & Climate Center	http://www.wcc.nrcs.usda.gov/
WinTR-55 Watershed Hydrology	http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/?&cid=stelprdb1042901
USACE Hydrologic Engineering Center (HEC)	http://www.hec.usace.army.mil/software/
Stormwater Manager's Resource Center SMRC	http://www.stormwatercenter.net
USGS Current Water Data for the Nation	http://waterdata.usgs.gov/nwis/rt
USGS Water Data for the Nation	http://waterdata.usgs.gov/nwis /
Topography Maps and Aerial photos	http://www.terraserver.com/view.asp?tid=142
National Register of Historic Places	http://www.nps.gov/nr/about.htm
National Wetlands Inventory	http://www.fws.gov/wetlands/
ICLUS Data for Northeast Region	http://www.epa.gov/ncea/global/iclus/inclus_nca_northeast.htm

SUSTAINABILTY/ADAPTATION/CLIMATE CHANGE

Planning for a Sustainable Future: The Link Between Hazard Mitigation and Livability	http://www.fema.gov/media-library-data/20130726-1454-20490-3505/fema364.pdf
Why the Emergency Management Community Should be Concerned about Climate Change: A discussion of the impact of climate change on selected natural hazards	http://www.cna.org/sites/default/files/research/WEB%2007%2029%2010.1%20Climate%20Change%20and%20the%20Emergency%20Management%20Community.pdf
NOAA RISA for the Northeast (Regional Integrated Sciences and Assessments)	http://ccrun.org/home
Resilient Sustainable Communities: Integrating Hazard Mitigation& Sustainability into Land Use	http://www.earth.columbia.edu/sitefiles/file/education/documents/2013/Resilient-Sustainable-Communities-Report.pdf
U.S. EPA	http://www.epa.gov/climatechange/
NOAA National Ocean Service (NOS)	http://oceanservice.noaa.gov/
The Northeast Climate Research Center (NRCC) were heavily involved in climate data in the NCA, below. They have a wealth of historic climate data and weather information, trends, etc.	http://www.nrcc.cornell.edu/
Community and Regional Resilience: Perspectives from hazards, disasters, and emergency management	http://www.resilientus.org/library/FINAL_CUTTER_9-25-08_1223482309.pdf
National Fish, Wildlife and Plants Climate Adaptation Strategy	www.wildlifeadaptationstrategy.gov
ICLEI Local Governments for Sustainability	http://www.icleiusa.org/
Kresge Foundation Survey	http://www.kresge.org/news/survey-finds-communities-northeast-are-trying-plan-for-changes-climate-need-help-0
New England's Sustainable Knowledge Corridor	http://www.sustainableknowledgecorridor.org/site/
The Strategic Foresight Initiative (SFI)	http://www.fema.gov/pdf/about/programs/oppa/findings_051111.pdf
Northeast Climate Choices	http://www.climatechoices.org/ne/resources_ne/nereport.html
Northeast Climate Impacts Assessment	http://www.northeastclimateimpacts.org/
Draft National Climate Assessment Northeast Chapter released early 2013	http://ncadac.globalchange.gov/
Northeast Chapter of the National Climate Assessment of 2009:	http://www.globalchange.gov/images/cir/pdf/northeast.pdf
NEclimateUS.org	http://www.neclimateus.org
ClimateNE	www.climatenortheast.com

Scenarios for Climate Assessment and Adaptation	http://scenarios.globalchange.gov/
Northeast Climate Science Center	http://necsc.umass.edu/
FEMA Climate Change Adaptation and Emergency Management	https://www.llis.dhs.gov/content/climate-change-adaptation-and-emergency-management-0
Climate Central	http://www.climatecentral.org
EPA State and Local Climate and Energy Program	http://www.epa.gov/statelocalclimate/index.html

PLANNING

American Planning Association	http://www.planning.org
PlannersWeb - Provides city & regional planning resources	http://www.plannersweb.com

OTHER FEDERAL RESOURCES

U.S. Army Corps of Engineers: Provides funding for floodplain management planning and technical assistance and other water resources issues.	www.nae.usace.army.mil
Natural Resources Conservation Service: Technical assistance to individual landowners, groups of landowners, communities, and soil and water conservation districts.	www.nrcs.usda.gov
NOAA Coastal Services Center	http://www.csc.noaa.gov/
Rural Economic and Community Development: Technical assistance to rural areas & smaller communities in rural areas on financing public works projects.	www.rurdev.usda.gov
Farm Service Agency: Manages the Wetlands Reserve Program (useful in open space or acquisition projects by purchasing easements on wetlands properties) and farmland set aside programs	www.fsa.usda.gov
National Weather Service: Prepares and issues flood, severe weather and coastal storm warnings. Staff hydrologists can work with communities on flood warning issues; can give technical assistance in preparing flood-warning plans.	www.weather.gov
Economic Development Administration (EDA): Assists communities with technical assistance for economic development planning	www.osec.doc.gov/eda/default.htm
National Park Service: Technical assistance with open space preservation planning; can help facilitate meetings and identify non-structural options for floodplain redevelopment.	www.nps.gov
Fish and Wildlife Services: Can provide technical & financial assistance to restore wetlands & riparian habitats.	www.fws.gov
Department of Housing & Urban Development	www.hud.gov
Small Business Administration: SBA can provide additional low-interest funds (up to 20% above what an eligible applicant would qualify for) to install mitigation measures. Can also loan the cost of bringing a damaged property up to state or local code requirements.	www.sba.gov/disaster
Environmental Protection Agency	www.epa.gov

OTHER RESOURCES

New England States Emergency Consortium (NESEC): NESEC conducts public awareness and education programs on natural disaster and emergency management activities throughout New England. Resources are available on earthquake preparedness, mitigation, and hurricane safety.	www.nesec.org
Association of State Floodplain Managers (ASFPM): ASFPM has developed a series of technical and topical research papers, and a series of Proceedings from their annual conferences.	www.floods.org
National Voluntary Organizations Active in Disaster (VOAD) is a non-profit, nonpartisan membership organization that serves as the forum where organizations share knowledge and resources throughout the disaster cycle—preparation, response, recovery and mitigation.	http://www.nvoad.org

FEMA RESOURCES

Federal Emergency Management Agency (FEMA)	www.fema.gov
National Mitigation Framework	http://www.fema.gov/national-mitigation-framework
Federal Insurance and Mitigation Administration (FIMA)	http://www.fema.gov/fima
Community Rating System (CRS)	http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-rating-system
FEMA Building Science	http://www.fema.gov/building-science
National Flood Insurance Program (NFIP)	http://www.fema.gov/national-flood-insurance-program
Floodplain Management & Community Assistance Program	http://www.fema.gov/floodplain-management
Increased Cost of Compliance (ICC): ICC coverage provides up to $30,000 for elevation and design requirements to repeatedly or substantially damaged property.	http://www.fema.gov/national-flood-insurance-program-2/increased-cost-compliance-coverage
National Disaster Recovery Framework	http://www.fema.gov/national-disaster-recovery-framework
Computer Sciences Corporation: contracted by FIMA as the NFIP Statistical Agent, CSC provides information and assistance on flood insurance to lenders, insurance agents and communities	www.csc.com
Integrating the Local Natural Hazard Mitigation Plan into a Community's Comprehensive Plan: A Guidebook for Local Governments	https://www.fema.gov/ar/media-library/assets/documents/89725
Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning	http://www.fema.gov/media-library/assets/documents/4317

Mitigation Best Practices Portfolio http://www.fema.gov/mitigation-best-practices-portfolio

FEMA Multi-Hazard Mitigation Planning Website	http://www.fema.gov/multi-hazard-mitigation-planning
FEMA Resources Page	http://www.fema.gov/plan/mitplanning/resources.shtm
Local Mitigation Plan Review Guide	http://www.fema.gov/library/viewRecord.do?id=4859

Local Mitigation Planning Handbook complements and liberally references the Local Mitigation Plan Review Guide above	http://www.fema.gov/library/viewRecord.do?id=7209
HAZUS	http://www.fema.gov/protecting-our-communities/hazus
Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards	http://www.fema.gov/library/viewRecord.do?id=6938
Integrating Hazard Mitigation into Local Planning: Case Studies and Tools for Community Officials	http://www.fema.gov/library/viewRecord.do?id=7130
IS-318 Mitigation Planning for Local and Tribal Communities Independent Study Course	http://training.fema.gov/EMIWeb/IS/is318.asp