

Town of Wolfeboro, New Hampshire Hazard Mitigation Plan Update, 2025

Prepared by the: Wolfeboro Hazard Mitigation Update Committee

Summer 2025



NH Route 28 July 17, 2023

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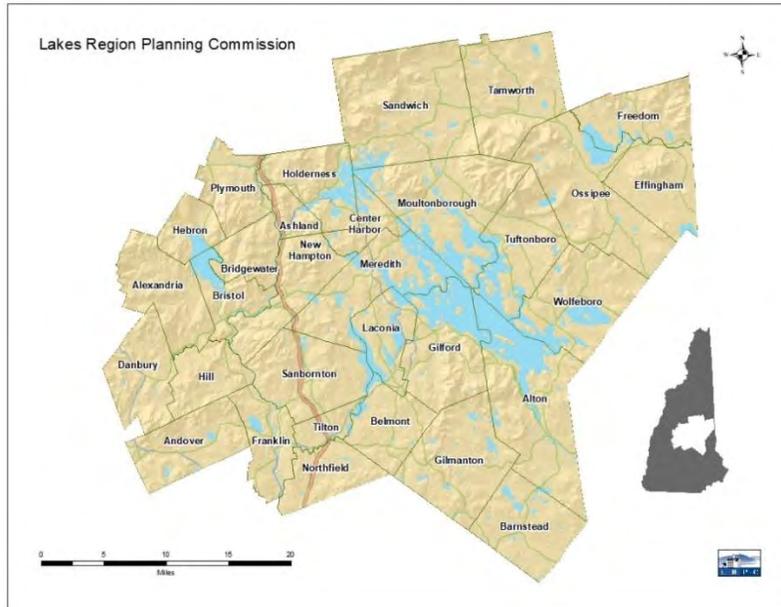
Town of Wolfeboro, New Hampshire Hazard Mitigation Plan Update

Summer 2025
Developed 2007
Updated: 2012, 2019

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Lakes Region Planning Commission

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EXECUTIVE SUMMARY

The *Wolfeboro 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 Wolfeboro 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 Section VI.

The Committee agreed that many of the natural hazards identified in the 2019 Plan continue today. At that time the high- to moderate-risk natural hazards were severe winter weather, conflagration, flooding, infectious diseases, tropical/post-tropical cyclones, and lightning. This Committee's evaluation of past hazards and potential future events, along with their extent and impact resulted in a different assessment than 2019.

There have been a couple of changes to the list of the town's Critical Facilities – renovation and expansion of the library (complete) and Fire Station (in progress). Existing programs related to hazard mitigation, including the following:

Existing Plans, Regulations and Practices Supporting Hazard Mitigation	
Hazard Mitigation Plan 2019	Lakes Region Household Hazardous Product Facility
Code Enforcement	Public Health Emergency Preparedness Plan
Zoning Ordinance	Subdivision Regulations
Floodplain Ordinance	Bridge Repair and Maintenance Plan
Wetlands Conservation Overlay District	Site Plan Review Regulations
Stormwater Drainage	Master Plan
Emergency Action Plans for Dams	School Emergency Evacuation Preparedness Plans
Water Conservation Plan	Capital Improvement Planning
Emergency Power Generation	Emergency Response Training and Drills
Mutual Aid Agreements	

Some of the 22 Actions from the 2019 Plan have either been completed (5) or are considered no longer pertinent (3). The remaining Mitigation Actions are being carried over and considered in this plan along with several new actions. To further reduce the vulnerability of the town to future hazards, new general and hazard-specific mitigation actions were developed and prioritized. based on local criteria. A schedule for implementing proposed mitigation actions was developed.

The latest update to the NH State Hazard Mitigation Plan (HMP) led the committee to consider some adjustment to this plan, including the hazards considered and some of the stated hazard mitigation goals.

SECTION I: PLANNING PROCESS

A. BACKGROUND

To be eligible to receive disaster related Federal Emergency Management Agency (FEMA) grant funding to be used for hazard mitigation projects and actions that will ultimately reduce and mitigate future losses from natural hazard events, FEMA has required that municipalities within the State of New Hampshire establish local hazard mitigation plans. In response to this requirement, the NH Department of Safety's Division of Homeland Security and Emergency Management (HSEM) and the nine regional planning commissions in the state entered into agreements to aid municipalities with plan development and updates. This plan development and update process generally followed the steps outlined in FEMA's *Local Mitigation Planning Policy Guide (2023)*.

B. AUTHORITY

The town of Wolfeboro 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

NH HSEM funded this update through FEMA's Pre-Disaster Mitigation Grant Program with local soft match (participants' time) and additional funds from the Lakes Region Planning Commission.

D. PURPOSE

The Wolfeboro Hazard Mitigation Plan is a planning tool to be used by the town of Wolfeboro, as well as other local, state, and federal government entities, in their efforts to reduce the negative effects from natural hazards. The Plan contains statements of policy as outlined in the Implementation Schedule for Mitigation Actions (Section V.F.) and in Section 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.

Developing a hazard mitigation plan allows for the following:

- Increased education and awareness around threats, hazards, and vulnerabilities.
- Building partnerships for risk reduction which include government, organizations, businesses, and the public.
- Identifying long-term, broadly supported strategies for risk reduction.
- Developing local mitigation efforts that support local mitigation efforts.
- Identifying strategies and activities that focus resources on the greatest risks and vulnerabilities; and,
- Communicating priorities to potential sources of funding.

A FEMA-approved hazard mitigation plan is a requirement for receiving certain types of non-emergency disaster assistance including funding for mitigation projects including:

- Public Assistance (Categories C-G)
- Fire Management Assistance Grants (FMAG)

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- High Hazard Potential Dam (HHPD)
- Building Resilient Infrastructure & Communities (BRIC).

E. SCOPE OF PLAN

The scope of this Plan includes the identification of natural hazards affecting the town of Wolfeboro, assessment of the threats these pose to the town, and the development & prioritization of mitigation actions to be implemented. Supplemental information regarding some human-caused and technological hazards that could impact Wolfeboro and a few preparation/response actions, are included in Appendix G.

In the 2023 State Hazard Mitigation Plan (SHMP), three new areas of focus were introduced: inclusive planning for equitable outcomes, the impacts of climate change, and community lifelines. While these topics are not new, this is the first time that the New Hampshire SHMP addressed them in depth, not only relative to each hazard, but also by incorporating them throughout the Plan into over-arching goals and mitigation actions. While the connections were not always explicit or direct, an effort was made to incorporate these focus areas into the Wolfeboro HMP.

F. METHODOLOGY

The Wolfeboro Emergency Management Director (EMD) reached out to the Lakes Region Planning Commission (LRPC) to initiate the hazard mitigation update process utilizing Hazard Mitigation Planning Grant funds through NHHSEM. Working with the town's Selectboard, the EMD established the Wolfeboro Hazard Mitigation Planning Update Committee consisting of representatives from the departments of Police, Public Works, Fire, Code Enforcement, Welfare Office, Selectboard, Budget Committee, Health Office, Governor Wentworth Regional School District, as well as members of the public and the business community.

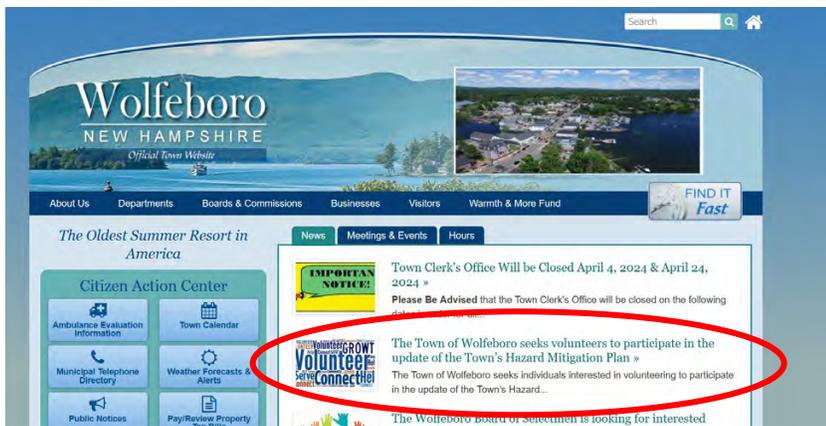
The Committee developed the content of the Plan by following the process set forth in FEMA's *Local Hazard Mitigation Planning Guide (2022)*. Technical and historical information used during the development of this Plan Update was compiled from a variety of sources including local input as well as published information; a list of these resources can be found in Appendix I. Data on property valuation was provided by the Town Assessor. Updated information on hazards in New Hampshire informed discussion of recommended mitigation actions.

Communication with committee members occurred at meetings and through direct correspondence. Meetings with the committee were open to the public. The committee reviewed and rated the risk of natural hazards to the town. They reviewed implementation progress and applicability of actions identified in the last plan. Existing challenges were identified. Additional mitigation actions were developed to address challenges/problems. All mitigation actions were evaluated, and an implementation schedule developed.

Neighboring towns were notified of Wolfeboro’s plan update. Some comments were received from the public during the development of the plan update through surveys, and these were incorporated into the risk analysis and development of mitigation actions phases of the process.

It is important to note that this is Wolfeboro’s Hazard Mitigation Plan (HMP). While all HMPs in the state (and country) must incorporate the elements set forth by FEMA, the plan update, “needs to reflect the unique situation and most effective path...to meet their specific needs”¹. Wolfeboro, a medium-sized rural community has done that by reviewing the existing plan and mitigation actions, considering what has and has not changed in the community since the last plan was adopted, identified problems associated with natural hazards, and developed a prioritized list of mitigation actions to address these problems and a plan to implement them.

G. PUBLIC INVOLVEMENT

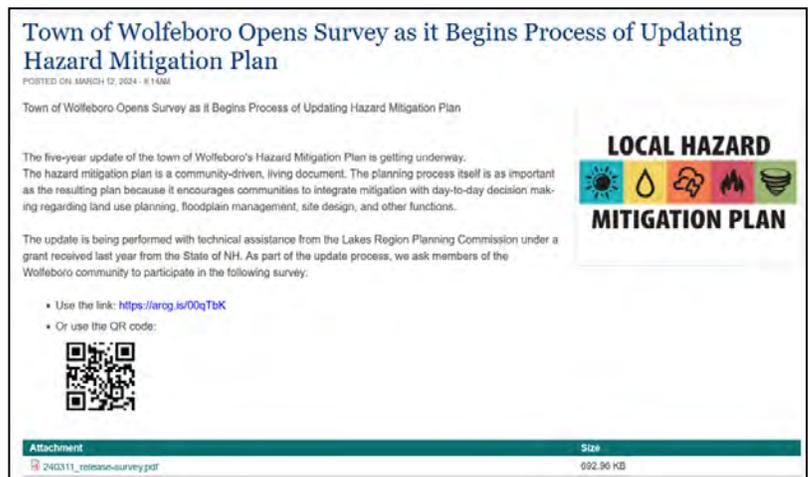


The Wolfeboro EMD invited a variety of Hazard Mitigation Planning stakeholders to join the Hazard Mitigation Planning Committee. The Committee was represented by the Board of Selectmen, several municipal departments, several boards, academia, health and welfare professionals, and the public. The EMD approached the Selectboard to discuss committee

members. He also requested applications for designated slots on the committee for members of the public. Other specific opportunities for public input occurred at each meeting.

EMDs in adjacent communities and organizations working with vulnerable and underserved communities were notified of the update process and encouraged to provide input (see emails and press release Appendix C).

Organizations that work with socially vulnerable communities were invited to provide input during plan development. Local businesses, neighboring communities, academia, and members of the public were encouraged to attend all meetings through press releases and postings (Appendix C & D). A survey was made available to members of the public at



¹ FEMA, *Local Hazard Mitigation Guide (2023)*, Section 3.1 Right-Sizing Plan Development and Update.

the Town Hall and by posting a link <https://arcg.is/00qTbK> and QR Code on the town website (Appendix D).

One additional member of the public attended meetings. She raised questions that helped clarify issues related to hazards.

No comments were received from neighboring communities. Public comments received during the plan development process (nineteen survey responses see Appendix D) were considered by the committee and, where applicable, incorporated into the update. This resulted in refinement of the Risk Rating.

A. ACKNOWLEDGMENTS

Special thanks to those who assisted in the development of this Plan:

Thomas Zotti	<i>Chief, Wolfeboro Fire Department, Wolfeboro EMD</i>
David Senecal	<i>Vice Chair, Wolfeboro Board of Selectman</i>
Brad Harriman	<i>Member, Wolfeboro Board of Selectmen</i>
Christopher Warn	<i>Chief, Wolfeboro Police Department</i>
Steve Randall	<i>Director, Wolfeboro Public Works Department</i>
Steve Petsche	<i>Staff, Wolfeboro Department of Public Works</i>
Jason Durrance	<i>Building/Code Enforcement Official, Building/Code Enforcement</i>
John McDonald	<i>Chair, Wolfeboro Budget Committee</i>
Amy Capone-Muccio	<i>Welfare Director, Wolfeboro Welfare Department</i>
Lisa Rogers	<i>Custodial Supervisor, Governor Wentworth School District, Wolfeboro</i>
Rick Skarinka	<i>Wolfeboro Business Owner</i>
Mary Schillereff	<i>Member of the Public</i>
Reeve Curry	<i>Member of the Public</i>
David Jeffers	<i>Planning Manager, Lakes Region Planning Commission</i>
Christine Marion	<i>Land Use Planner, Lakes Region Planning Commission</i>

SECTION II: COMMUNITY PROFILE

A. GEOGRAPHY

The town of Wolfeboro is in the southwest corner of Carroll County, on the shores of Lake Winnepesaukee, approximately 40 miles northeast of Concord, the state capital. It also contains Lake Wentworth, Crescent Lake, Beech Pond, and Rust Pond and sits in the heart of the Lakes Region of central New Hampshire. The town is bordered by Tuftonboro to the north, Alton and New Durham to the south, and Ossipee, Brookfield, and Wakefield to the east. Wolfeboro has approximately 17 miles of shoreline along the southeastern portion of Lake Winnepesaukee. Wolfeboro's mainland area is 48.3 square miles and contains 10.1 square miles of inland water. Willey Brook is the principal stream within the community. Although not large, the Smith River flows through the village center and forms Back Bay.

The topography of the town ranges from steeper terrain in the north, northeast and far south to flatter areas along the southwest shoreline and Lake Wentworth area. The land area of Wolfeboro consists mainly of well-drained sand and gravel soils, glacial till, seasonally wet, and shallow to bedrock soils.¹ Prominent peaks include Moody Mountain (1,420 ft), Whiteface Mountain (1,339 ft), Trask Mountain (1,320 ft), Batson Hill (1,300 ft), and Long Stack Mountain (1,223 ft).

B. WEATHER CONDITIONS

Characteristic of the New England region, Wolfeboro's temperatures and precipitation vary greatly. January temperatures range from an average high of 30 degrees Fahrenheit to an average low of 10 degrees Fahrenheit. In July, temperatures range from an average high of 82 degrees Fahrenheit to an average low of 60 degrees Fahrenheit. Annual precipitation totals an average of 40.9 inches. Rainfall is fairly evenly distributed throughout the year. The wettest month of the year is November with an average rainfall of 4.2 inches. Wolfeboro averages about 70 to 75 inches of snow per year.² According to FEMA, New Hampshire is in a 160 mile per hour wind zone; the majority of the southern portion of the state (including all of Wolfeboro) is located in a hurricane susceptible region (tropic post-cyclonic).

Several committee members commented on the increased frequency and intensity of rainfall events. Intense rains resulted in washouts along many the roads in town during the past couple of years, impacting infrastructure and water quality.

C. PUBLIC SERVICES

Wolfeboro residents have access to drinking water through both private wells and municipal water supply. The municipal water supply source is Upper Beech Pond. Because the source of the water supply is relatively remote, there are few concerns about contamination of the water supply. However, infrastructure security is a growing threat nationally. While sufficient for current needs, there is some concern that during very long dry spells the water supply system can be taxed. In some places, the

infrastructure is 100 years old; the town has been upgrading this aged infrastructure as opportunities arise.

Many residences rely on septic systems. Wolfeboro has its own public wastewater system serving the downtown core area and several branches extending from it, including several shoreline areas.

The Wolfeboro Department of Public Works (DPW) is responsible for road construction; highway maintenance on 67.5 miles of town roads and adjacent sidewalks; the sewer, stormwater, and water systems; parking lots, docks, and other infrastructure. The DPW also assists the NH Department of Transportation (NH DOT) with winter maintenance on state roads from time to time. These state routes (NH Routes 28, 109, and 109A) serve as the major roads through town and are the primary access roads to most of the town's critical facilities.

The Wolfeboro Municipal Electric system is operated by the town and distributes electricity to most of the town's residents and some in neighboring communities. The Wolfeboro Municipal Electric Department is responsible for maintaining electrical system equipment and conducting a regular tree maintenance program.

The governing body of the town is an elected five-member Board of Selectmen and is assisted by a Town Manager. The Selectmen are responsible for formulating policy, adopting an annual budget, enacting most town ordinances, and approving the use and care of town property including buildings, streets and other infrastructure projects. Wolfeboro has a Planning and Zoning Ordinance, which is developed and implemented by the Planning Board and Planning Director and enforced by the Code Enforcement Officer.

Huggins Hospital, located near the center of town, is a critical access hospital that provides care to Wolfeboro and surrounding communities. Emergency medical (ambulance) services are contracted out by the town. Additional hospitals are also located in Laconia, Dover, and Concord.

The town's fire department has a full-time staff supported by on-call firefighters. The town has a full-time police department with approximately a dozen officers. Wolfeboro has two elementary schools and is home to Kingswood Regional Middle and High Schools. The regional schools serve students from the neighboring communities of Tuftonboro, Ossipee, Effingham, Brookfield, and New Durham. Brewster Academy is a private boarding and day school in the center of town serving about 350 high school students. Several local churches also serve as emergency shelters. The regional schools can also serve as a limited shelter.

D. DEMOGRAPHICS AND POPULATION CHARACTERISTICS

Like many Lakes Region communities, the population of Wolfeboro grew rapidly in the 1980s and 1990s, from about 4,000 to more than 6,000 residents. Growth since 2000 has slowed is projected to continue at a modest pace in the years ahead.

Year-Round Population, 1980-2020 Census and Population Projections* 2030, 2040

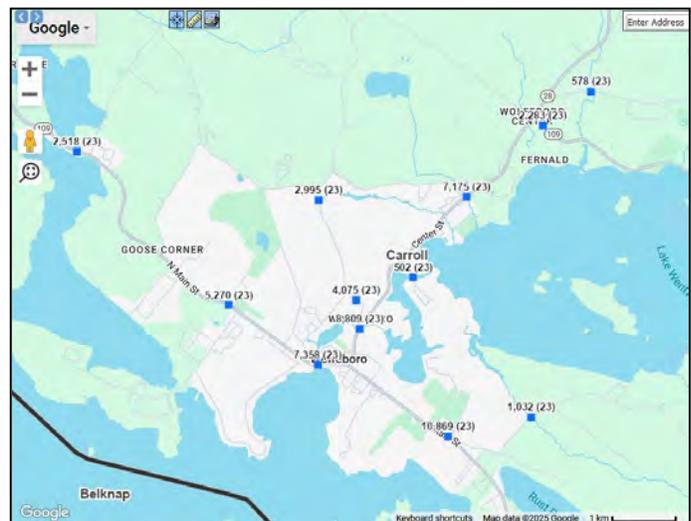
Year	1980	1990	2000	2010	2020	2030*	2040*
Wolfeboro Population	3,968	4,807	6,083	6,269	6,416	6,917	7,034
Wolfeboro Change	---	21%	27%	3%	2%	8%	2%
NH Change	---	20%	11%	7%	5%	7%	3%

Some characteristics of a community’s population can put them at greater risk of being impacted by hazards. Utilizing Census data the NH Department of Health and Human Services (Environmental Public Health Tracking) developed a tool called the [Social Vulnerability Index](#).

In addition to more than one-third of the town’s residents being over 65 years old, more than 20% of Wolfeboro’s residents reported some form of disability. More than one-third of the households with children in Wolfeboro are single parent households. Additionally, nine percent of the population is living below the federal poverty line. All these vulnerability rates are higher than the state average.

Wolfeboro continues to serve as a summer vacation community and its population swells tremendously during the peak seasons, with the population doubling or tripling at times.

State-owned numbered routes carry most of the town’s traffic, both year-round and seasonal. The traffic counts conducted by NH DOT indicate that the average daily traffic along these roads ranges from 2,500 to 11,000 vehicles per day. As this is a projected average over the entire year, there are certainly many summer days when the volume of traffic on any one of these roads far exceeds these figures.



E. LAND USE AND DEVELOPMENT TRENDS

The US Census indicates that during the 2010s there was a decrease in the number of housing units in Wolfeboro and that some of the seasonal (vacant) housing has been converted to year-round (occupied). By 2022 an additional fifty-four housing units were permitted (not necessarily all constructed) as reported to NH OPD.

Housing Units, 2010-2020

	2010	2020	Change	% Change
Total Housing Units	4,443	4,400	-43	0%
Occupied Housing Units	2,839	2,879	40	1%
Vacant Housing Units	1,604	1,521	-83	-5%
% Seasonal (Vacant)	36%	34%		

Residential Permits 2020-2022

	2020 Census	2020	2021	2022	Total
Single Family	3,408	14	8	20	3,450
Two Family	243	7	1	4	255
3-4 Family	338	0	0	0	338
5 or more Family	235	0	0	0	235
Manufactured Housing	176	0	0	0	176
Total Units	4,400	21	9	24	4,454

Source: <https://www.nheconomy.com/getmedia/5c5aa689-e03f-459e-bd1f-f82ceba2c668/2023-Housing-Report.pdf>

Wolfeboro Development Activity: 2019 – 2023

Type	2019	2020	2021	2022	2023
Subdivision applications	1	6	2	1	5
Boundary Line Adjustment Applications	4	8	7	4	2
Lot Merger requests		8	10		
Special Use Permit Applications	7	7	3	2	3
Site Plan Review Applications	10	8	11	7	12
Accessory Dwelling Unit Applications		1	2	2	3

Significant Planning Board Approvals

2019

- Renovation to include a restaurant, offices, retail space and dwelling units at Samuel Avery House, 126 South Main Street
- Property improvements and a storage/office building at 38 Filter Bed Road.
- New storage units on Land Bank Lane
- Property improvements for storage use by the Wright Museum at 65 Trotting Track Road.

2020

- Global Awareness Local Action (GALA) Community Center on Bay Street
- Lakes Region Model Railroad Museum in the Old Freight Station
- Development of 20 single family affordable homes at Harriman Hill
- Improvements at Carry Beach to address water quality and safety issues.

2021

- Assisted Living facility with an amenities building at Taylor Home on Bay Street
- A special use permit to allow the construction of a raised walkway through the wetlands at Harriman Hill on Beck Drive and a new home on Tips Drive
- An addition and outdoor deck on the lakeside of the Rogers Building, Brewster Academy
- New propane tanks at the facility off 109 A and Wickers Drive and a new parking lot for the office building on Grove Street, Eastern Propane
- Two buildings for boat storage, 75 Pine Hill Road

2022

- A special permit for a boathouse at Point Luck Circle & revisions to a property on Forest Rd.
- Reviewed plans for the new Pop Whalen Building and new lights at Abenaki
- Approved several boundary line adjustments and one subdivision for two lots.

2023

- Site plan for new Hunters Grocery Store.
- Special Use permit for a Solar Farm on North Wakefield Road.
- 5-lot subdivision on Sewall Road and a 2-lot subdivision on Furber Lane.
- 30 affordable housing units at Harriman Hill on Beck Drive.
- 2 Accessory Dwelling Units on residential properties.
- Permanent skating rink at Brewster Academy, 80 Academy Drive.

**Wolfeboro Land Use Regulations and Major Activities related to Natural Hazard Mitigation
2019-2024** *Source: 2019 – 2024 Wolfeboro Annual Town Reports and Land Use Regulations*

Changes to Development Regulations

- There have been no significant changes to the zoning ordinance or building codes related to natural hazard mitigation.
- Site Plan Regulations: The Planning Board amended the Stormwater Regulations in 2022.

Town of Wolfeboro Tree Inventory and Management Plan, 2022

In March 2022, the Bartlett Inventory Solutions (BIS) Team from Bartlett Tree Experts conducted an inventory of trees located along the public right-of-way at the Town of Wolfeboro. The information collected included tree latitude and longitude, size, age and condition class, and a visual assessment of tree structure, health, and vigor. Risk mitigation activities were provided for each of the 661 trees with defects or other concerns.

Municipal Electric Department

The Department has undertaken major capital improvements, including the Electrical Distribution Conversion, and construction of the new Substation No. 1.

Planning

Development of Asset Management planning process for Town buildings and facilities.

Public Works

The Department undertakes regular tree trimming and road and drainage upgrade projects and maintenance.

Water & Sewer Utility

There have been major improvements to the water and wastewater treatment facilities and the development of a long-term plan for the wastewater treatment plant.

As noted above, there are many seasonal residential units in Wolfeboro, meaning people from varying geographical areas spend a portion of their time in Wolfeboro. The challenge this presents 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 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 who typically are the most at risk from severe weather events are the elderly and young children. Given the composition age of the town's population, the likelihood of having residents with special medical needs is high. It is expected that calls for emergency assistance for the elderly will continue to increase.

Future Development

Growth and development continue to occur in Wolfeboro. Much of the development is related to the appeal of the town as a tourism and retirement destination. Solid steps have been taken to maintain and upgrade the town's aging infrastructure, but it continues to need attention. Overall, the EMD feels that the town is better protected from natural hazard events than it was at the time of the last plan update.

SECTION III: RISK ASSESSMENT

A. INVENTORY OF ASSETS

Below is the list of critical infrastructure for the town of Wolfeboro with assessed values. This includes four categories, 1) Essential Services; 2) Emergency Shelters; 3) Structures and Services; 4) Populations to Protect. The first category contains facilities essential in a hazard event, including the Emergency Operation Center. The second contains the emergency shelter within the town. The third category includes facilities that have been identified as facilities to protect to minimize additional risk from hazards. The fourth category contains special populations that may require additional attention in the event of a disaster.

Critical Facilities & Values	Wolfeboro		2024	2024	Notes
Facility/Infrastructure	Location	Owner	Assess Value	Land Value	
Essential Services					
Public Safety Complex	251 S Main St	Town			The new facility completed June 2025. \$13.2 M
Town Hall and Annex	84 Main St./ 9 Union St	Town	\$1,165,500	\$144,300	
Highway Department	43 Pine Hill Rd	Town	\$544,800	\$147,800	
Water Treatment Plant	North Line Rd Ext	Town	\$1,312,200	\$504,100	
Wastewater Treatment Plant	Filter Bed Rd	Town	\$2,109,100	\$890,600	
Municipal Electric Department	133 Middleton Rd	Town	\$178,400	\$122,100	
Huggins Hospital & Medical Arts	240 S Main St	Private	\$22,151,500	\$1,781,100	
Electric Substation #1	Filter Bed Rd	Town			
Electric Substation #2	Filter Bed Rd	Town			
New England Telephone substation	Glendon St & School St	Private	\$292,400	\$121,500	
Structures and Services					
Cellular phone tower - Bennet Hill	on Bennett Hill	Private	\$412,000	\$60,500	
Cellular phone tower - Lehner St	Lehner St	Private			
Cellular phone tower	Pierce Camp Birchmont	Private	\$355,000	\$77,200	

Critical Facilities & Values	Wolfeboro		2024	2024	Notes
Facility/Infrastructure	Location	Owner	Assess Value	Land Value	
Cellular phone tower - water tower	5 Main St	Private	\$315,700	\$0	cellular phone arrays and facilities on water tower at 16 McManus Rd.
Crescent Lake Dam		Town			
Rust Pond Dam		Private	\$5,000	\$11	
Sewage Lagoon Dam	Filter Bed Rd	Town			
NH Route 28 (Evacuation)		State			
NH Route 109 (Evacuation)		State			
WASR tower	Varney St	Private	\$117,100		
Water Storage	16 McManus Road		\$378,200	\$0	
Rapid Infiltration Basin (RIB)		Town			
Solid Waste Facility	400 Beach Pond Rd	Town	\$114,600	\$152,000	
LR Hazardous Product Facility	404 Beech Pond Rd	Town	\$15,100	\$198,500	
Pop Whalen/Abenaki Ski Area	NH Route 109A /390 Pine Hill Road	Town	\$2,312,200	\$253,600	
Penn Air Estates	Penn Air Rd	Private			
Emergency Shelters					
Kingswood School Complex	396 South Main Street	GWRSD	\$49,722,200	\$1,038,800	
All Saints Episcopal Church	258 South Main Street	PVT	\$1,395,500	\$198,200	
Brewster Academy Complex	80 Academy Drive	PVT	\$28,769,400	\$12,676,800	
Carpenter School	102 South Main	GWRSD	\$3,264,200	\$84,000	
Crescent Lake School	75 McManus Road	GWRSD	\$4,313,000	\$0	
First Congregational Church	115 South Main	PVT	\$1,869,100	\$157,900	
First Christian Church	83 North Main Street	PVT	\$300,100	\$175,800	
Wolfeboro Public Library	259 S Main St	Town	\$1,720,700	\$270,800	

Critical Facilities & Values	Wolfeboro		2024	2024	Notes
Facility/Infrastructure	Location	Owner	Assess Value	Land Value	
Special Populations					
Christian Ridge	20 Crescent Lake Ave		\$791,000	\$402,500	
Sugar Hill Retirement Community	83 Rolling Wood Dr		\$8,917,800	\$869,700	
Wolfeboro Bay Care and Rehab.	39 Clipper Rd		\$2,758,600	\$689,200	nursing home
Taylor Community	11 Taylor Dr		\$5,091,700	\$833,100	
The Ledges	67 Center St		\$1,640,600	\$315,300	Elderly housing
Wolfeboro Area Children's Center	180 S Main St		\$744,700	\$164,300	
Wolfeboro Nursery School	258 South Main Street				
Pierce Camp Birchmont	693 Gov. Wentworth Hwy		\$1,932,100	\$956,800	
Camp Bernadette	93 Richards Rd		\$1,613,000	\$1,483,200	
Wolfeboro Camp School	Camp School Rd		\$373,900	\$0	
Memory Care/Taylor Community	29 Taylor Dr	private	\$6,538,200	\$0	
Other					
Sawmill Boat Club	33-35 BAY STREET		\$0	\$0	
Fuel stations					
Mast Landing	3 Silver Street St		\$92,400	\$200,000	
Town docks/ Dockside Facility	S Main St & Railroad Ave				
Goodhue & Hawkins Navy Yard	244 Sewall Rd		\$3,735,300	\$2,174,300	
Dock at the Libby Museum	755 N. Main St		\$1,000,200	\$94,200	
Wolfeboro Corinthian Yacht Club/ Irwin Marine	12 Nancys Way		\$2,190,300	\$1,576,700	
Wolfeboro Oil	Lehner St.		\$148,500	\$125,500	

NOTE: * USED FOR STUDENTS AND STAFF DURING SCHOOL YEAR

B. IDENTIFYING NATURAL HAZARDS

The town of Wolfeboro is prone to a variety of natural, human-caused, and technological hazards. The following hazards were identified as posing a risk to Wolfeboro in the 2019 Hazard Mitigation Plan.

High Risk	Medium Risk
Natural Hazards	
Severe Winter Weather & Ice Storms	Inland Flooding (local, riverine, ice jams, beaver dams)
	Infectious Diseases (Pandemic/Epidemic)
	Tropical and Post-Tropical Cyclones (Severe Rain and Thunderstorms, Windstorms)
	Lightning
Human-Caused Hazards	
Long-Term Utility Outage (Power Outage)	Hazardous Materials (Surface Water Contamination and Transport)
Conflagration (urban fire)	
Terrorism/Violence	
Hazardous Materials (Potable Water Contamination)	

While updating the Plan, the committee considered the hazards identified in the latest *State of New Hampshire Multi-Hazard Mitigation Plan (2023)*, developed by the New Hampshire Department of Safety’s Division of Homeland Security and Emergency Management, for identification and definition of hazards that might affect the town. Since the last local plan, the State Plan now utilizes a somewhat different hazard nomenclature, grouping some hazard types together, adding several hazards, and deleting some. All winter Weather events have been grouped under Severe Winter Weather. Extreme Temperature now encompasses both heat and cold. Hurricane is now Tropical & Post-Tropical Cyclone. Solar Storms & Space Weather is a newly specified natural hazard.

Following a review of the natural hazards identified in the 2023 State Plan and in Wolfeboro’s 2019 Plan, as well as historical information from internet sources about past hazard events in and near Wolfeboro since 2019, the following natural hazards were identified as posing the greatest risk to the town (See end of Section III for more information on risk ratings).

High Risk	Medium Risk
Natural Hazards	
Severe Winter Weather	Inland Flooding/ Washout/ Erosion
High Wind Events (Tornado/Downburst)	Infectious Diseases (Pandemic/Epidemic)
	Lightning
	Tropical and Post-Tropical Cyclones

Due to topography and geography, coastal flooding, avalanche, and landslides were not considered pertinent by the committee. While there are some steep areas in town, the committee indicated that they are not severe enough to lead to avalanche or landslide nor is there development in that area.

The primary change in risk since the last update is adding High Wind Events to the High Risk category. Human-caused and Technological hazards are acknowledged in the State Hazard Mitigation Plan. They are not, however, required by FEMA to be addressed in local Hazard Mitigation Plans. The potential for terrorism/violence, long-term utility outage, hazardous materials, transportation accident, aging infrastructure, and conflagration events all have the potential to occur in Wolfeboro. In the past much was done by Wolfeboro to mitigate many of these human/technological hazard events as well as setting up robust response mechanisms, especially regarding the school, town office, and public safety facilities. Any of these hazards that the committee felt applicable are addressed in Appendix G.

C. PROFILING NATURAL HAZARD EVENTS

This section of the plan **defines** each of the natural hazards that might impact Wolfeboro. It also describes the **extent** of the hazard, the recent **history** of these events, the likely **location** of each hazard, as well as the **probability** of an occurrence in Wolfeboro. These are listed alphabetically.

The **extent** is a description of “how bad the hazard could get” considering three factors: magnitude, onset, and duration.

- *Magnitude* is the 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 can be around for days.

Within the Risk Assessment completed for this plan, Extent was measured on a scale ranging from Weak through Moderate, Severe, and Extreme.

- Weak: limited magnitude, slow onset, short duration
- Moderate: moderate magnitude, moderate onset speed, moderate duration
- Severe: large magnitude, fast speed of onset, long duration
- Extreme: Extreme magnitude, immediate onset, extended duration

If a hazard event has occurred in the past it is listed under **history**, with a focus on those occurring since the last plan. If some parts of the town are more likely to be impacted by a particular hazard, either based on past events or local knowledge of geography, that is described under **location**.

Probability is a description of how likely it is that an event will occur in town within the next 10 years. Potential hazards were rated on a four-point descriptive scale including unlikely, occasional, likely, and highly likely. These were based mainly on past occurrences in the town, region, and state.

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

- **Low:** Limited structural damage, the town’s ability to respond is not compromised, and residents can handle the hazard event without help from outside sources
- **Moderate:** Some structural damage, the town’s ability to respond is compromised, regional or assistance is needed to survive and/or recover
- **High:** Substantial structural damage, the town’s ability to respond is greatly compromised, state or federal assistance is necessary to survive and/or recover
- **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 would likely be interrupted for days or weeks.

Impact

The assessed value of the Critical Facilities – Essential Services identified in Section A totals \$29M. This does not, however, include the contents of the building. Also not reflected in this assessment is the value of built infrastructure such as streets, bridges, curbs, drainage, and utility transmission lines. These values can also be used to determine potential loss estimates in the event of a natural hazard event that damages a part of or an entire facility. The facilities listed are structures or services that the Committee considered to be essential in terms of mitigating or responding to hazards.

Of course, critical facilities are not the only resources at risk during a hazard event. There are numerous structures in town, both residential and commercial. The total valuation of the structures in Wolfeboro is more than \$1.25 billion dollars. If even a small percentage of those structures are destroyed or damaged during a hazard event, it could be quite costly to repair or replace.

Wolfeboro Structure Assessment	Value - Structures 2023	1%	2%	5%
Manufactured Housing	\$14,153,700	\$141,537	\$283,074	\$707,685
Public Utilities	\$308,900	\$3,089	\$6,178	\$15,445
Buildings	\$1,236,393,125	\$12,363,931	\$24,727,863	\$61,819,656
Total	\$1,250,855,725	\$12,508,557	\$25,017,115	\$62,542,786

Source: Wolfeboro Annual Report Dec. 31, 2023

The *Potential Hazards and Critical Facilities Map* (Appendix F) identifies the location of some of the critical facilities in relation to mapped hazard areas.

Aging infrastructure, local implementation of land use and zoning laws, and various social vulnerabilities may increase the risk to natural hazards. Local jurisdictions are provided with the ability to address zoning through RSAs to adopt ordinances that can reduce risk to infrastructure and

vulnerable individuals within their communities. By taking advantage of federal funding available through NH HSEM, NH DOT, and NH DHHS, Wolfeboro can address the areas of greatest risk in town.

[Social Vulnerability](#) refers to the resilience of communities (the ability to survive and thrive) when confronted by external stresses on human health, stresses such as natural or human-caused disasters, or disease outbreaks. Socially Vulnerable Populations can include those who have special needs, such as, but not limited to, people without vehicles, people with disabilities, older adults, and people with limited English proficiency.²(See Appendix B – Funding Resources.)

The aspects considered in this plan focus on those groups that comprise at least 20% of the residents or households in Wolfeboro according to the State Hazard Mitigation Plan, this includes:

- single parent households (38%),
- those aged 65 or greater (37%),
- those with disabilities (23%)
- under 65 without insurance (14%), and
- households with no vehicle (10%).

² NH State Hazard Mitigation Plan (2023), p. 70.

NATURAL HAZARDS

Below is a list of declared disasters or incidents listed on the HSEM Resource Center page since the last plan for which public assistance was made available.

Declaration ID	Dates	Hazard Type	Area
DR 4761	Dec. 17-21, 2023	Severe Storm & Flooding	Carroll, Coos, Grafton Co.
DR 4740	July 9-17, 2023	Severe Storm & Flooding	Belknap, Carroll, Cheshire, Coos, Sullivan Co.
DR 4693	Dec. 22-25, 2022	Severe Storm & Flooding	Belknap, Carroll, Coos, Grafton Co.
DR 4624	July 29 – Aug. 2, 2021	Flooding	Cheshire & Sullivan Co.
DR 4622	July 17-19, 2021	Flooding	Cheshire Co.
EM 3445 & DR 4516	Jan. 20, 2020 – May 11, 2023	Infectious Disease: COVID-19	Statewide
DR 4457	July 11-12, 2019	Flooding	Statewide

The Wolfeboro EMD supplied the list below of funding received since 2018 either to mitigate natural hazards or in response to hazard events, totaling Over \$1,000,000. This helped to recover costs associated with restoring power to homes, protecting workers against disease transmission, and addressing road washouts.

The screenshot shows the 'My Projects' section of the Grants Portal. The table lists the following projects:

Project #	Category	Title	Type	Process Step	Activity Completion Deadline	# Damages	Best Available Cost	Best Available Federal Share Cost
62652	Z - Direct Administrative Costs	PAAP DAC	Direct Administrative Costs and SMC	Process Discontinued	12/31/2026	0	\$0.00	\$0.00
736987	C - Roads and Bridges	Wolfeboro - Road Washouts	Actual Costs	Project Closed Out	03/14/2025	1	\$1,175,920.65	\$881,940.49
720308	C - Roads and Bridges	Road Washouts	Actual Costs	Project Closed Out	09/15/2024	1	\$167,968.55	\$118,465.16
720314	G - Parks, Recreational Facilities, and Other Items	Lakes Beaches	Estimated Costs	Process Discontinued	09/15/2024	0	\$0.00	\$0.00
720311	O - Parks, Recreational Facilities, and Other Items	Cemeteries	Estimated Costs	Process Discontinued	09/15/2024	0	\$0.00	\$0.00
720310	F - Utilities	Electrical Distribution System	Estimated Costs	Process Discontinued	09/15/2024	0	\$0.00	\$0.00
720303	C - Roads and Bridges	Bickford Rd. Historical Stone Culvert	Actual Costs	Process Discontinued	09/15/2024	0	\$0.00	\$0.00
721860	B - Emergency Protective Measures	Wolfeboro - Emergency Protective Measures	Actual Costs	Process Discontinued	09/15/2023	0	\$0.00	\$0.00
721840	A - Debris Removal	Wolfeboro - Debris Removal	Actual Costs	Process Discontinued	09/15/2023	0	\$0.00	\$0.00
720299	B - Emergency Protective Measures	Emergency Protective Measures	Actual Costs	Process Discontinued	09/15/2023	0	\$0.00	\$0.00

ID	Category	Description	Status	Start Date	End Date	Actual Costs	Estimated Costs	Project Closed Out
720310	F - Utilities	Electrical Distribution System	Process Discontinued	09/15/2024		0	\$0.00	\$0.00
720303	G - Roads and Bridges	Bickford Rd. Historical Stone Culvert	Process Discontinued	09/15/2024		0	\$0.00	\$0.00
721860	B - Emergency Protective Measures	Wolfeboro - Emergency Protective Measures	Process Discontinued	09/15/2023		0	\$0.00	\$0.00
721840	A - Debris Removal	Wolfeboro - Debris Removal	Process Discontinued	09/15/2023		0	\$0.00	\$0.00
720299	B - Emergency Protective Measures	Emergency Protective Measures	Process Discontinued	09/15/2023		0	\$0.00	\$0.00
720292	A - Debris Removal	Debris Removal	Process Discontinued	09/15/2023		0	\$0.00	\$0.00
180970	B - Emergency Protective Measures	Wolfeboro PPE, Sanitation Supplies July 2020 - December 2020	Project Closed Out	07/01/2022		1	\$4,327.96	\$4,327.96
551637	B - Emergency Protective Measures	Wolfeboro COVID Expenses January 2021- September 2021	Project Closed Out	07/01/2022		1	\$9,956.57	\$9,956.57
143723	B - Emergency Protective Measures	Wolfeboro-PPE, Sanitation Supplies, FD/PT/Town OT-January 20, 2020-June 1, 2020	Project Closed Out	07/01/2022		1	\$5,914.58	\$5,914.58
65048	Z - Direct Administrative Costs	*Subrecipient Management Cost	Project Closed Out	06/08/2022		1	\$0.00	\$0.00
43821	F - Utilities	Category - F - Utility	Project Closed Out	07/03/2019		1	\$99,012.93	\$74,259.70
47746	B - Emergency Protective Measures	Category B Town of Wolfeboro Snow Removal Operation	Project Closed Out	12/08/2018		1	\$32,460.72	\$24,345.54
1238	F - Utilities	Utilities: Municipal Electric Dept. Repairs	Project Closed Out	12/01/2018		3	\$7,319.34	\$5,489.51
43473	B - Emergency Protective	Emergency access to utility poles.	Project Closed Out	07/03/2018		1	\$7,418.88	\$5,564.16

The information above was utilized as a guide for further discussion of hazards by the Committee with an emphasis on those most likely to impact Wolfeboro. The following section describes the hazard, its **extent, history, likely location, probability** of occurrence, and its likely **impact** in Wolfeboro. Hazard names are highlighted based on local risk (Orange - high, yellow – medium, blue – low).

AVALANCHE

An avalanche is a slope failure consisting of a mass of rapidly moving, fluidized snow that slides down a mountainside. The flow can be composed of snow, ice, water, soil, rocks, and trees. An avalanche is a large mass of snow and ice, falling, sliding, or flowing under the force of gravity. An avalanche can be comparable to a landslide, only with snow instead of earth.

Natural and human-caused snow avalanches most often result from structural weaknesses of mountainside and unstable snow and ice formations. Factors leading to these conditions include recent heavy snow, temperature, wind direction, snowpack conditions, slope angle, and slope orientation. Heavy snowfall followed by high winds often create areas of unstable snow accumulations that can be set in motion by human activities, such as hiking, ice climbing, skiing, and snowboarding.

There are three categories of avalanches:

- Soft Slab – consists of soft, low-density snow
- Hard Slab – consists of dense, hard-packed snow
- Loose Snow (also called sluffs or point releases) –

North American Public Avalanche Danger Scale		
Avalanche danger is determined by the likelihood, size and distribution of avalanches.		
Danger Level		Travel Advice
5 Extreme		Avoid all avalanche terrain.
4 High		Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.
3 Considerable		Dangerous avalanche conditions. Careful snowpack evaluation, cautious route-finding and conservative decision-making essential.
2 Moderate		Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.
1 Low		Generally safe avalanche conditions. Watch for unstable snow on isolated terrain features.
No Rating		Watch for signs of unstable snow such as recent avalanches, cracking in the snow, and audible collapsing. Avoid traveling on or under similar slopes.
Safe backcountry travel requires training and experience. You control your own risk by choosing where, when and how you travel.		

release from a single point, typically on a very steep slope

Extent: Weak

The North American Public Avalanche Danger Scale (NAPADS) from the National Avalanche Center (www.avalanche.org) is a system that rates avalanche danger and provides general travel advice based on the likelihood, size, and distribution of expected avalanches. It consists of five levels, from least to highest amount of danger: 1 – Low, 2 – Moderate, 3 – Considerable, 4 – High, 5 – Extreme. Danger ratings are typically provided for three distinct elevation bands. Although the danger ratings are assigned numerical levels, the danger increases exponentially between levels. In other words, the hazard rises more dramatically as it ascends toward higher levels on the scale.

History: Records (NOAA Storm Events database) indicate no avalanches have occurred in southern Carroll County. There was no local knowledge of a landslide occurring in Wolfeboro.

Location: The mountainous regions of Carroll, Coos, and Grafton counties are at risk for avalanches, with the highest risk of avalanches occurring in the Presidential Range, particularly on Mount Washington. The committee determined that there are no locations in Wolfeboro where avalanches would occur.

Probability of Occurrence: Unlikely

Avalanches are a common occurrence in high terrain areas in New Hampshire during the winter and spring months. Early warning systems have resulted in less impact lately, however, as more people get involved in outdoor recreation, the number exposed to avalanche threat could increase.

Impact on Vulnerable Communities: As there are no avalanche locations in Wolfeboro, avalanche will have no effect on vulnerable populations.

Impact: Low

Avalanches present a significant threat to hikers, skiers, and other people recreating in the mountains. Falling ice and rocks can cause injury or death. Cracks, holes, and crevasses in the snowpack can cause individuals to become trapped or buried in snow, which can result in extreme cold injuries, suffocation, and possibly death. Twenty-five to thirty people die each year nationally from avalanches.

Due to geography, there is a minimal chance of an avalanche occurring in or impacting Wolfeboro. Assuming less than 1% town-wide damage to buildings, an avalanche would likely result in less than \$12.5 million in damages any given year.

DAM FAILURE

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.

Extent: Moderate

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 in the table below.

Classification	Description
Non-Menace	No Possible loss of Life or Property. Less than six feet in height if it has a storage capacity greater than 50 acre-feet. Less than 25 feet in height if it has a storage capacity of 15 to 50 acre-feet.
Low Hazard	No Possible loss of Life. Low economic loss to structures or property. Potential structural damage to local roads and infrastructure. Potential release of material if the storage capacity is less than 2 acre-ft and is located more than 250 feet from a water body or water course. Reversible environmental losses to environmentally sensitive sites.
Significant Hazard	No Probable loss of Lives. Major economic loss to structures or property. Structural damage to Class I or II roads that could render the road impassable or 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 material if the storage capacity is 2 acre-feet or more; Irreversible environmental losses.
High Hazard	Potential to cause failure of habitable building foundations. Water levels to rise above first floor elevation of habitable structure. Structural damage to an interstate highway that could render the road impassable or interrupt public safety services. The release of a quantity and concentration of "hazardous waste" as defined by RSA 471-A:2 VI. Any other circumstances that would more likely than not cause one or more deaths.

The designations for these dams relate to damage that would occur if a dam were to break, not the structural integrity of the dam itself.

History:

In the Lakes Region, the Town of Alton was impacted by an earthen dam failure on March 12, 1996. Although listed in the NH Hazard Mitigation Plan as a significant hazard, it did result in the loss of one life. There have been no known dam failures in Wolfeboro since the last plan update.

Location: There are 13 active dams in Wolfeboro. Crescent Lake Dam, located between Lake Wentworth and Lake Winnepesaukee near the downtown center is a town-owned High Hazard dam. Rust Pond dam and the Wolfeboro Sewage Lagoon are Significant Hazard dams; the Sewage Lagoon is town-owned, the Rust Pond dam is privately owned. It has an Emergency Action Plan.

Active Dams in Wolfeboro

HAZCL	NAME	RIVER	IMPOUND	HEIGHT	DRAIN AREA
H	CRESCENT LAKE DAM	SMITH RIVER	3,166.00	15	36
S	RUST POND DAM	PERRY BROOK	239	8	2.66
S	WOLFEBORO SEWAGE LAGOON	BLOOD BROOK	14	45	0.06
L	AVERSA DAM	UNNAMED STREAM	1.7	19	0.6
L	WICKERS RECREATION POND DAM	TR HARVEY BROOK	1.2	10	0.3
L	WOLFEBORO LAGOON II	NA	0.41	18	0
L	WOLFEBORO LAGOON I	NA	0.34	18	0
L	TOWNSEND BROOK DAM	TOWNSEND BROOK	0.3	14	0.66
NM	MAGEE DAM	HARVEY BROOK	5	3	0
NM	TROUT POND DAM	UNNAMED STREAM	1.44	7.92	0.28
NM	SMITH RIVER DAM	SMITH RIVER	1.4	17	35.9
NM	RECREATION POND DAM	UNNAMED BROOK	0.2	9	0
NM	TAYLOR COMMUNITY BASIN 1 DAM	RUNOFF	0.2	7.8	5.84

Source: NH Department of Environmental Services, Dam Bureau

Probability: Unlikely

Impacts: Moderate

The Crescent Lake and Sewage Lagoon dams both have Emergency Action Plans, detailing anticipated impacts in the event of dam failure along with details for responding such an event. Failure of either dam would impact the downtown area of Wolfeboro.

Assuming between 1% and 2% town-wide damage to buildings, a dam failure could result in between \$12.5 - \$25 million in damages any given year.

DROUGHT

Drought occurs when less than the normal amount of water is available for extended periods of time. It is often but not always, accompanies elevated temperatures. 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.

Drought is the absence of water due to below-average precipitation over an extended period, resulting in low stream flows, low surface water, and low groundwater levels. According to NOAA, the climatological community has defined four types of droughts to address their cause(s), timeframe, and effects:

- **Meteorological Drought:** Occurs when dry weather patterns dominate an area, resulting in a lack of precipitation
- **Hydrological Drought:** Occurs when low water supply becomes evident, especially in streams, reservoirs, and groundwater levels—usually after many months of meteorological drought
- **Agricultural Drought:** Occurs when crops become affected by drought conditions

- **Socioeconomic Drought:** Effects of supply and demand of commodities affected by drought conditions

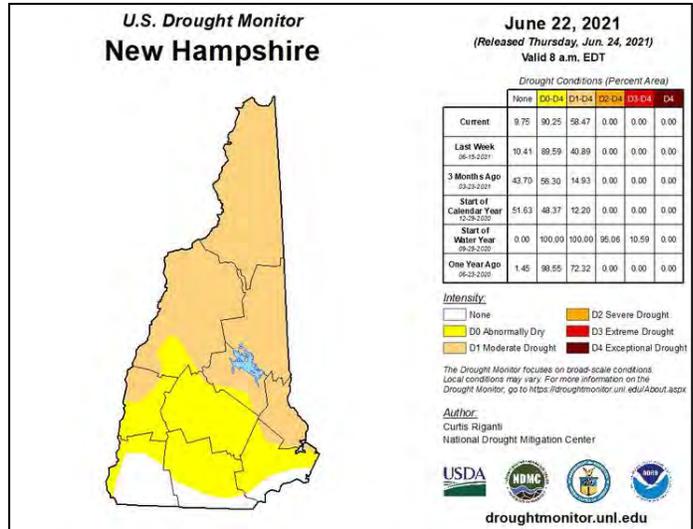
Extent: Moderate

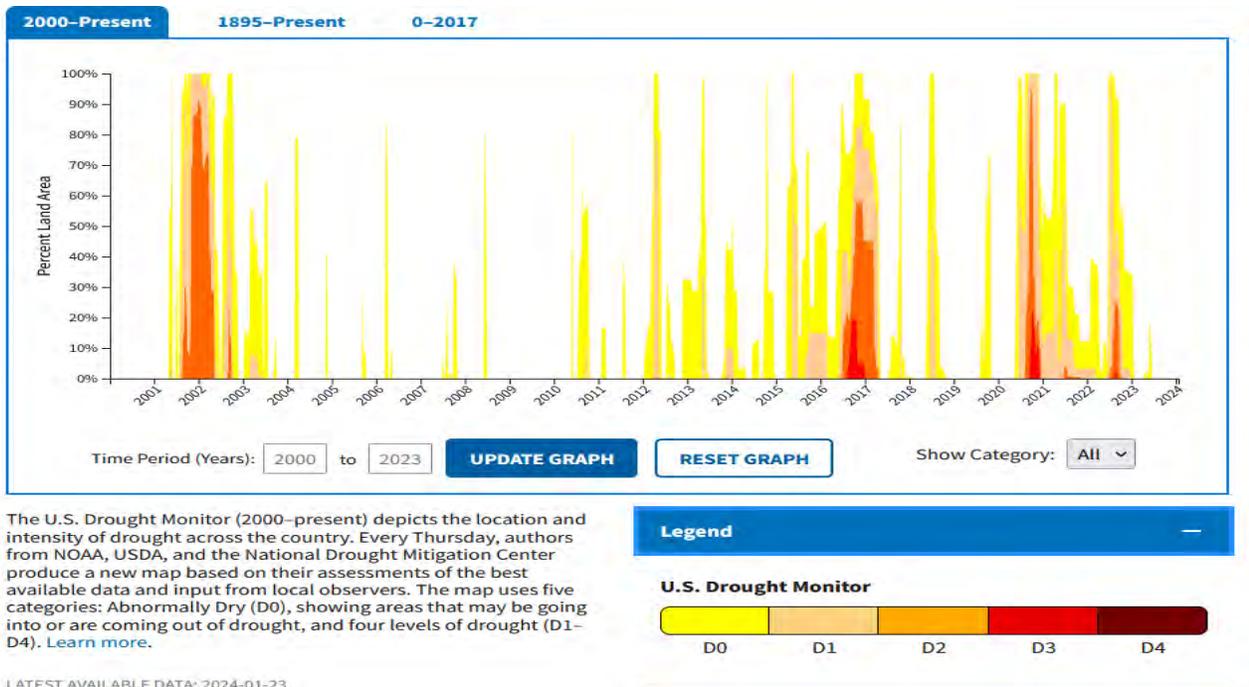
A drought can last for months, or even years. Since 1990 New Hampshire has had a state Drought Emergency Plan, which identifies four levels of action indicating the severity of the drought:

- Alert
- Warning
- Severe
- Emergency

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 precipitation, 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. The US Drought Monitor uses a five-level drought intensity scale ranging from Abnormally Dry to Exceptional Drought.

History: There have been five extended droughts in New Hampshire in the past century: 1929 to 1936, 1939 to 1944, 1947 to 1950, 1960 to 1969, and 2001 to 2002. While much of the country experienced drought conditions in 2012, New Hampshire received adequate precipitation. Moderate drought conditions existed in New Hampshire during parts of 2015, 2016 and into April of 2017. From May through October 2020 the entire state of NH experienced a moderate drought (D2/D3 on the D0 – D4 scale).





Location: Since drought is a state-wide or regional event, it would affect most areas of the town. Those with shallow wells would likely be affected first.

Probability of Occurrence: Unlikely

Impact: Low

Those with shallow wells would be most affected by drought. Due to limited reliance on agriculture in Wolfeboro, limited number of shallow wells, and capacity to supply emergency water, the impact of a drought on Wolfeboro would be minimal; there would be no direct impact to structures. Lower water levels could affect water quality, however, which may have some impacts on the town’s outdoor recreational economy.

Impact of Climate Change on Drought events: Heat waves can exacerbate droughts, leading to negative impacts on the agriculture sector. More intense rain events certainly may reduce drought, conversely because of their intensity, it can be a situation of so much rain coming down in a short period of time that much of the water runs off as stormwater and does not have an opportunity to seep in and replenish the aquifer. More frequent or more intense drought could have negative impacts on the agriculture sector.

Impact on Vulnerable Communities: Potential impacts associated with drought on Wolfeboro’s vulnerable populations include:

- Living in poorly maintained housing with aging infrastructure, such as shallow wells
- May be dependent upon others to travel
- Limited resources for seeking medical assistance

Earthquake > 4.0 Richter

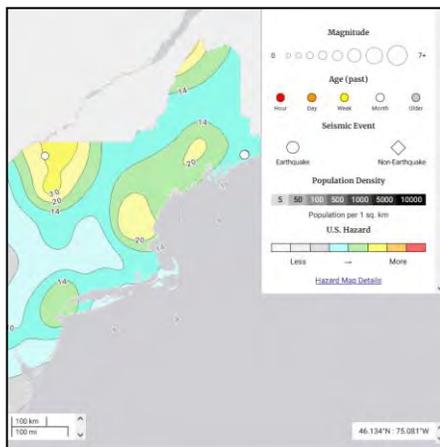
An earthquake is a series of vibrations induced in the Earth’s crust by the abrupt rupture and rebound of rocks in which elastic strain has been slowly accumulating.

Extent: Moderate

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

Richter 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 destroy communities near the epicenter.

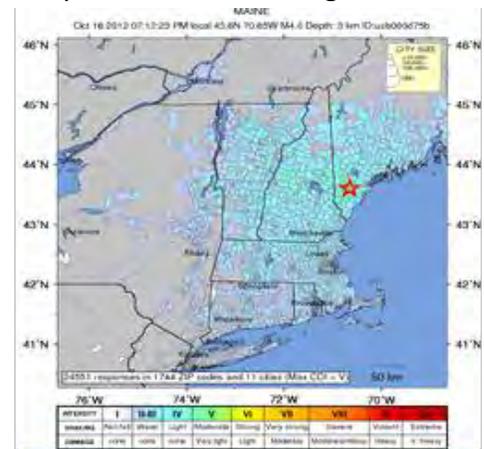
earthquakes, shown in the table below. Note: The 2023 NH State HMP now qualifies this hazard as *Earthquakes>4.0* as opposed to simply *Earthquakes*.



New Hampshire is in an area of moderate seismic activity with respect to other regions of the country. 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.³ 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. The image at left shows the expected number of damaging earthquakes

shaking in 10,000 years.

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 two epicenters in the region.⁴ A search of the USGS National Earthquake Information Center database shows that since 1977 there have been 15 earthquakes with a magnitude of at least 3.0 within a 100 km (62 mi.) radius of Wolfeboro; the largest was magnitude 4.5. Two such earthquakes have occurred since 2006; a 3.4 event in 2010 centered in Penacook, NH and a 4.0 quake in southern Maine shook the region on October 16, 2012. The image at right indicates the communities where people reported feeling this event.⁵



Areas where the October 16, 2012 earthquake

³ <http://www.nh.gov/safety/divisions/hsem/NaturalHazards/index.html>

⁴ <http://des.nh.gov/organization/commissioner/pip/factsheets/geo/documents/geo-3.pdf> , pg. 3

⁵ USGS, Earthquake Archive Search. <https://earthquake.usgs.gov/earthquakes/map/>

Location	Date	Magnitude
Ossipee	December 24, 1940	5.5
Ossipee	December 20, 1940	5.5
Ossipee	October 9, 1925	4
Portsmouth	November 10, 1810	4
Off Hampton	July 23, 1823	4.1
15km SE of Berlin	April 6, 1989	4.1
5km NE of Berlin	October 20, 1988	4
W. of Laconia	January 19, 1982	4.7
Central NH	June 11, 1638	6.5

Location: An earthquake of 4.0 or greater could affect all areas of Wolfeboro, mainly multi-level structures and those that are either constructed of masonry such as Town Hall or have masonry chimneys. Some bridges might be impacted.

Probability of Occurrence: Unlikely

Impact: Moderate

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 would likely impact the roads, including bridges, limiting the ability of emergency services to be rendered. Damages could range from cracked foundations, chimneys, and supports to full collapse. Structures that are taller, older, or built of masonry are most at risk, including Town Hall. Additionally, an earthquake could damage the dams controlling water that passes through Wolfeboro.

Damage from the 1940 earthquakes in Ossipee included some damage to most of the chimneys in the epicenter region of Ossipee, ranging from cosmetic cracks to total collapse. Sections of several foundations collapsed and at least one house rotated on its foundation. In the town of Conway, 15 miles from the epicenter, one house was lost to fire when sparks in a cracked chimney started the blaze. Splits found in the rafters and trusses temporarily closed Ossipee High School. No damages were associated with the October 2012 earthquake, but the potential does exist for some damages to occur.

The fire department could have some response problems if the bridges were impacted, requiring redeployment of apparatus and people or mutual aid assistance. Areas of town with only one egress could become isolated from direct assistance.

All structures in Wolfeboro are susceptible to damage by an earthquake. Assuming between 1% and 2% town-wide damage to buildings, an earthquake could result in \$12.5 - \$25 million in damages any given year.

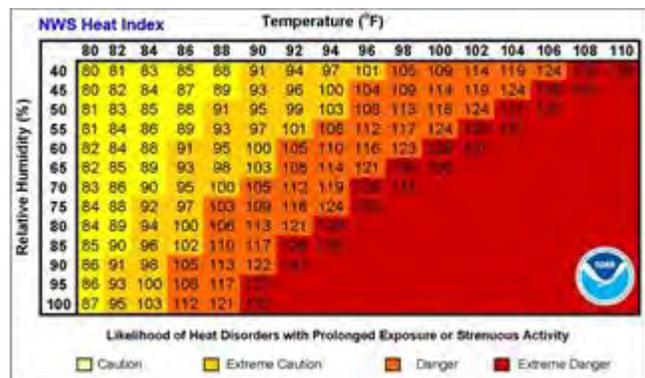
Impact of Climate Change on Earthquake events: The impacts to Wolfeboro associated with an earthquake would not be affected by climate change.

Impact on Vulnerable Communities: Potential impacts associated with earthquakes on Wolfeboro’s vulnerable populations include:

- Emergency warning and message systems may not be available in formats that are accessible.
- Living in poorly maintained housing with aging infrastructure
- May have limited mobility for getting assistance, dependence upon others to travel
- Limited resources for seeking medical assistance

EXTREME TEMPERATURES

Extreme temperatures are a period of prolonged and/or excessive heat or cold that presents a danger to human health and life. Extreme Heat events occur because 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. High heat and humidity can also adversely affect air quality, leading to respiratory problems. Extreme heat can also damage or kill crops and animals (wild, farm, or domesticated), potentially presenting a risk to the economy.

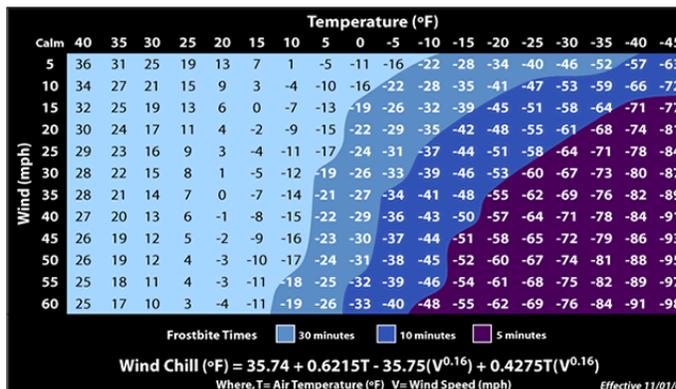


Extreme Cold events are caused by the southern transport of arctic airmasses into the Northeast. This effect is exacerbated when there are winds present that effectively lower the temperature that is perceived by the human body, known as the wind chill. The risk comes from when the body is losing heat 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 to 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.

Extent: Moderate

- 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.
- 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: The National Weather Service (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 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.



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 3 rd through July 5 th , 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
2/3-4/2023	Wind Chill	Most areas recorded the 3 coldest wind chill readings on record.	S. Carroll Co.	Wind chill of -30F or colder

Wolfeboro has experienced regular extreme hot and cold temperatures annually since the last plan update. In February 2023 severe windchill conditions were reported throughout Carroll County. No damage was reported in Wolfeboro.

Location:

Extreme temperatures can occur anywhere throughout the town of Wolfeboro. Those at higher elevation, out on the lakes in winter, and greater exposure to wind are most likely to be impacted by cold.

Probability of Occurrence: Unlikely

Impact: Low

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.

Frostbite occurs when uncovered skin and extremities are exposed to extreme cold and body tissue is either injured or killed. Hypothermia occurs 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 and 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.

While most of the impact from extreme temperatures is on people and animals, there can also be structural impacts, especially from freezing and expansion of water in pipes and the resulting damages. Assuming a 1% town-wide damage to buildings, an earthquake could result in \$12.5 million in damages any given year.

Impact of Climate Change on Extreme Temperature events: An increase in extreme temperatures will create ecosystem stress based on more intense heat waves and more extreme cold weather waves. The extreme temperatures will create additional health impacts due to high heat/extreme cold exposure, and poor outdoor air quality during extreme heat events. Heat waves can exacerbate droughts and wildfire, which can lead to negative impacts on the agriculture sector.

Impact on Vulnerable Communities: Potential impacts associated with extreme temperature events on Wolfeboro's vulnerable populations include:

- May have limited access to early warning alerts
- Living in poorly maintained housing with aging infrastructure
- Older adults are more likely to have health conditions that make them more sensitive to heat and air quality conditions.
- May have limited mobility for getting assistance/evacuation, dependence upon others to travel
- Limited resources for seeking medical assistance

HIGH WIND EVENT (THUNDERSTORM/TORNADO/DOWNBURST)

Wolfeboro is likely to experience either of two types of high wind events that usually result from other severe storms and can occur at any time of the year: tornadoes and straight-line winds. A **tornado** is a narrow, violently rotating column of air that extends from the base of a thunderstorm to the ground. It is hard to see a tornado unless it forms a condensation funnel made up of water droplets, dust and debris. Tornadoes are the most violent of all atmospheric storms. **Straight-line winds** describe any thunderstorm wind that is not associated with rotation and is usually used to differentiate from tornadic winds. There are several sub-types of



Image source: NH HSEM

straight-line winds, including **downdraft**, which is a small-scale column of air that rapidly sinks towards the ground; and **downburst**, which is the result of a downdraft, referred to as a **macroburst** when the area affected is greater than 2.5 miles and **microburst** when less than 2.5 miles.⁶

Extent: Moderate

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. 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.

The Enhanced Fujita Scale is used to categorize tornadoes based on a combination of wind speed and the type of damage that is observed.

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)

History:

The most recent damaging tornado to touch down in New Hampshire was on July 24, 2008 rendering around 100 homes “uninhabitable” and killing one person. This event traveled from Epsom to Effingham. Some parts of southeastern Wolfeboro experienced a great deal of tree damage from this event with downed trees, electrical lines, and some damage to buildings. Since 2019 there have been seven reported high wind events in southern Carroll County.

⁶ <http://ww.nssl.noaa.gov/education/svrwx101/wind/types>

History of High Wind Events

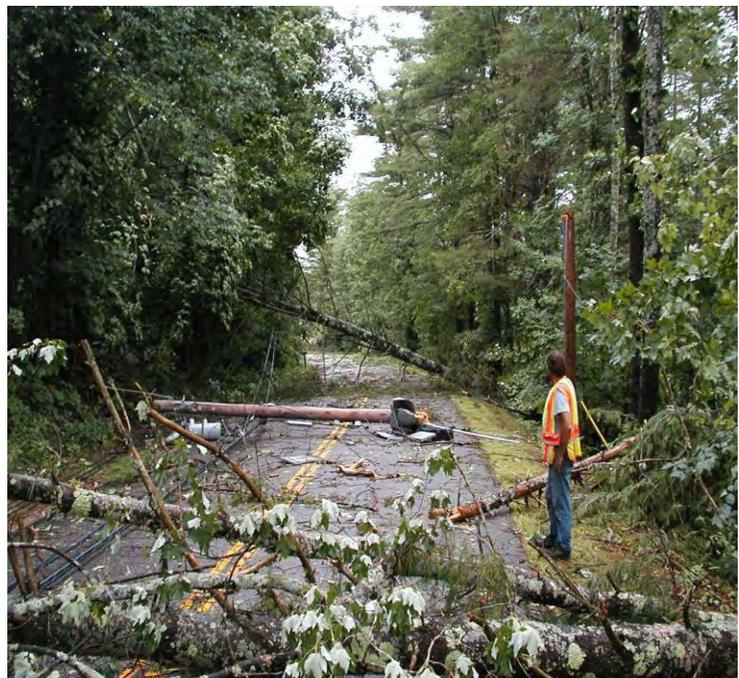
	Events	Dates	Location	Extent	General Impacts	Source
High Wind Event	1	6/6/2020	Wakefield	Wind>60 kts Rain 2-5 in.	Damages Prop. \$200K	NOAA Events
High Wind Event	1	8/22/2020	Mirror Lake - Wolfeboro, Ossipee	Wind>70 kts	Microburst. Downed 14 trees. Damage to four camps & 2 vehicles \$155K.	NOAA Events
High Wind Event	1	3/26/2021	Ossipee, Wakefield	Wind>50 kts., 0.5 in. hail		NOAA Events
High Wind Event	1	7/20/2021	Brookfield	Wind>50 mph	Downed Trees and wires	NOAA Events
High Wind Event	1	7/23/2021	Effingham	Wind>50 mph	Downed Trees and wires	NOAA Events
High Wind Event	1	7/21/2022	Moultonborough, Tuftonboro, Effingham	Wind>70 kts Macroburst	Downed >500 trees. Damaged at least five buildings \$110K.	NOAA Events
High Wind Event	1	11/4/2022	Effingham, Ossipee	Wind>50 mph	Downed Trees and wires. Damages Prop. \$5K	NOAA Events

Location: While thunderstorms can be localized, they often hit the whole town. 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.

Probability of Occurrence: Occasional

Impact: Catastrophic

In Wolfeboro, the major damage from downbursts or tornados would come from falling limbs and trees, which may take down power lines, block roads, or damage structures and vehicles. Damage can occur to most structures in town because of downed trees in any high wind event, including the common thunderstorm. 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. Trees and wires down across evacuation routes could



Downed lines and trees in Wolfeboro from the July 2008

slow evacuation efforts and draw limited emergency response personnel away from other safety efforts.

Tornados and downbursts could strike anywhere in town with little 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.

Damage can occur to most structures in town due to 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.

All structures in Wolfeboro, including most critical facilities, are susceptible to damage by high wind events, whether through downburst, tornado, or hurricane. Assuming between 1% and 5% town-wide damage to buildings, an earthquake could result in \$12.5 - \$62.5 million in damages any given year.

Impact of Climate Change on High Wind Events: Changes in New Hampshire's climate could potentially lead to an increase in any of the high wind events. This will lead to additional damage being created from these storms, including more extreme and widespread power outages statewide due to increased sustained wind speeds and gusts, downing trees and wires. This will result in greater damage to natural resources, property, and infrastructure. The increased damage and loss will also lead to larger, more complex, and longer lasting restoration efforts for each storm that occurs.

Impact on Vulnerable Communities: Potential impacts associated with high wind events on Wolfeboro's vulnerable populations include:

- Living in poorly maintained housing with aging infrastructure
- May have limited mobility for getting assistance, dependence upon others to travel
- May have limited access to early warning alerts
- Limited resources for seeking medical assistance

INFECTIOUS DISEASES

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 common, so that only deviations from the norm (i.e. seeing more cases than expected) warrants investigation.

Extent: Severe

Experience with the Covid-19 pandemic has dramatically changed views on the risk of infectious diseases as compared to risk mitigation planning for the 2019 Plan. 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 occurrence of the disease:

- 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

The NH Department of Health and Human Services (DHHS) developed an epidemic response plan so that communities can be prepared and respond to outbreaks. The school district has an up-to-date Emergency Operations Plan with policies for addressing epidemics.

History: The 2012-13 flu season was much more severe in New Hampshire than in the previous decade; 35 deaths occurred statewide, the most since 1997. In 2016, the DHHS responded to a total of 102 outbreaks: 73 gastrointestinal illnesses, 23 respiratory illnesses, and 6 other types of illness.

Since March of 2020, the Covid-19 pandemic has had a significant impact on all facets of life, including on emergency medical responders and the operations of municipal services and local schools. While there certainly have been minor outbreaks of flu in town, other outbreaks of infectious disease haven't compared to the coronavirus pandemic.

Date	Description	Impacts	Location	Additional Info
Fall 2014	Enterovirus D-68	>40 ill children in New Hampshire	Statewide	A rare strain of enterovirus resulting in infections nationwide.
2016	Gonorrhea	465 people infected	Statewide	465 cases reported; 250% higher than previous years
2017-2018	Seasonal Influenza Outbreak	As of 2018, 63 influenza related deaths were identified in NH	Statewide	In 2018 the overall effectiveness of the flu vaccine at this time was 36%
2020-23	COVID-19 or Coronavirus pandemic	Hospitals, schools, municipalities, & businesses have taken extra precautions, cancelled many events, and adjusted policies	Worldwide	Respiratory disease >379K cases and 3,177 deaths in NH >23,510 cases and 111 deaths in Carroll Co.

Date	Description	Impacts	Location	Additional Info
Annually	Foodborne outbreaks	Ill individuals associated with outbreaks	Statewide	5-10 outbreaks per year
Annually	Influenza and other respiratory virus outbreaks	Ill individuals associated with outbreaks	Statewide	25-50 outbreaks per year primarily to vulnerable populations
Annually	Norovirus and other gastrointestinal virus outbreaks	Ill individuals associated with outbreaks	Statewide	60-80 outbreaks a year primarily to vulnerable populations

Location: An epidemic is an outbreak of a disease, generally isolated to one area. The disease spreads easily person-to-person and can cause serious illness, with long-lasting side effects and deaths. An outbreak could impact anyone in town. Transmission of germs and diseases between people is accelerated in a close living and socializing environment. Schools, and congregate care centers for the elderly are places where transmission is likely to occur. Huggins Hospital is the primary medical facility serving the community and neighboring towns and has an emergency operations plan that addresses response to epidemics. Huggins Hospital staff partners with Carroll County Coalition for Public Health.

Probability of Occurrence: Unlikely

Epidemics do occur in Wolfeboro and other Lakes Region communities from time to time. Regional Health representatives note that it is likely that a future epidemic could involve multiple outbreaks at once.

Impact: High

The concerns associated with an infectious disease include the local capacity to respond to not only the residents of Wolfeboro but also any visitors. The cost of infectious diseases in Wolfeboro is difficult to calculate as any cost would primarily result from health care response. Experience with COVID-19 pandemic has revealed the human and economic costs resulting from the shut down or slowdown of many businesses in town and the region.

Impact of Climate Change on Infectious Disease events: Changes in New Hampshire’s climate could potentially lead to an increase in precipitation. Increased precipitation may lead to more flooding. This could lead to increased impacts from mold in affected areas including homes and businesses. This could also result in greater instances of stagnant water, leading to more vector-borne diseases. In Wolfeboro this would be of particular concern during the summer seasons when there are many extra visitors to the area.

Impact on Vulnerable Communities: Potential impacts associated with infectious disease on Wolfeboro’s vulnerable populations include:

- Limited resources for seeking medical assistance
- Living in poorly maintained housing with aging infrastructure
- May have limited mobility for accessing attention
- More likely to have compromised immune systems

INLAND FLOODING

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 rarely associated with lakeshore properties, especially if there are appropriate setbacks.

The DPW Director stressed the distinction between flooding and erosion or washout of roads that can accompany heavy rainfall events, noting that he sees far more erosion occurring in Wolfeboro than flooding.

Flooding is most associated with structures and properties located within the 1% annual (or 100-year) floodplain. Areas in this floodplain have been identified as having a 1% 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 100 years.

The town of Wolfeboro actively participates in the **National Flood Insurance Program** through the administration of a floodplain ordinance. The Flood Insurance Rate Maps (DFIRM) were updated in 2012 and the town's Floodplain Ordinance was revised accordingly. Flood maps are available at Town Hall and in digital form (DFIRM) at <http://msc.fema.gov/portal>. Compliance is managed through the town's floodplain permit process and is incorporated into the town's subdivision and site plan review regulations. The Code Enforcement Officer also is responsible for maintaining floodproofing and elevation certificates. Much of the floodplain in Wolfeboro is undeveloped except for some of the Back Bay commercial properties.

From the Wolfeboro Floodplain Management Ordinance (2012), with subsequent noted amendments.

Definitions:

SUBSTANTIAL DAMAGE

Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.

SUBSTANTIAL IMPROVEMENTS

Any combination of repairs, reconstruction, alteration or improvements to a structure in which the cumulative cost equals or exceeds 50% of the market value of the structure. The market value of the structure should be the appraised value prior to the start of the initial repair or improvement or, in the case of damage, the value of the structure prior to the damage occurring. For the purposes of this definition, substantial improvement is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include any project for improvement of a structure required to comply with existing health, sanitary or safety code specifications which are solely necessary to assure safe living conditions or any alteration of a structure listed on the National Register of Historic Places.

New construction or substantial improvement in flood-prone areas.

The Code Enforcement Officer shall review all building permit applications for new construction or substantial improvements to determine whether proposed building sites will be reasonably

safe from flooding. If a proposed building site is in a flood-prone area, all new construction or substantial improvement shall be:

A. Designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

B. Constructed with materials resistant to flood damage.

C. Constructed by methods and practices that minimize flood damages.

D. Constructed with electrical, heating, ventilation, plumbing and air-conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

By actively participating in the NFIP property owners can purchase flood insurance through the FEMA program.

According to information provided by the NH Office of Planning and Development, there are 34 buildings with flood insurance policies in force (three less than in 2019). There have been five NFIP losses in Wolfeboro, all have been paid for a total payment of \$55,144. One single family home in the A zone has had two losses and is therefore considered a repetitive loss property.

The town participates in trainings offered by the State and FEMA and communicates NFIP information to the community annually. The town has adopted a steep slopes ordinance to minimize erosion and has adopted subdivision and site plan regulations that address stormwater runoff.

Extent: Moderate

There are no US Geological Survey (USGS) stream gauges in Wolfeboro or any of the waterbodies entering Wolfeboro. The nearest gauge is in Laconia on the Winnepesaukee River, the outfall of Lake Winnepesaukee. Recent studies of weather records show that the number of heavy precipitation events (> 4" in 48 hours) in New Hampshire has been increasing over the past several decades and models indicate that this will continue.⁷ The extent for flooding was seen as moderate.

Land development can contribute to flood hazards and erosion. As areas are covered with additional impervious surfaces, less water is allowed to infiltrate, evaporate, or be transpired by vegetative growth, resulting in more water runoff directly into surface drainages and water bodies. This increases the likelihood of flash floods and substantial overland flow. Erosion is being experienced more and more on and near both state and local roads in town.

History: Historically, the state's two largest floods occurred in 1936 and 1938. The 1936 flood was associated with snowmelt and heavy precipitation. Flooding was caused by the Great New England Hurricane of 1938. Those floods prompted the construction of a series of flood control dams throughout New England, built in the 1950s and 1960s. They continue to be operated by the US Army Corps of Engineers.

⁷ <https://www.des.nh.gov/climate-and-sustainability/climate-change> and <https://www.des.nh.gov/climate-and-sustainability/climate-change>

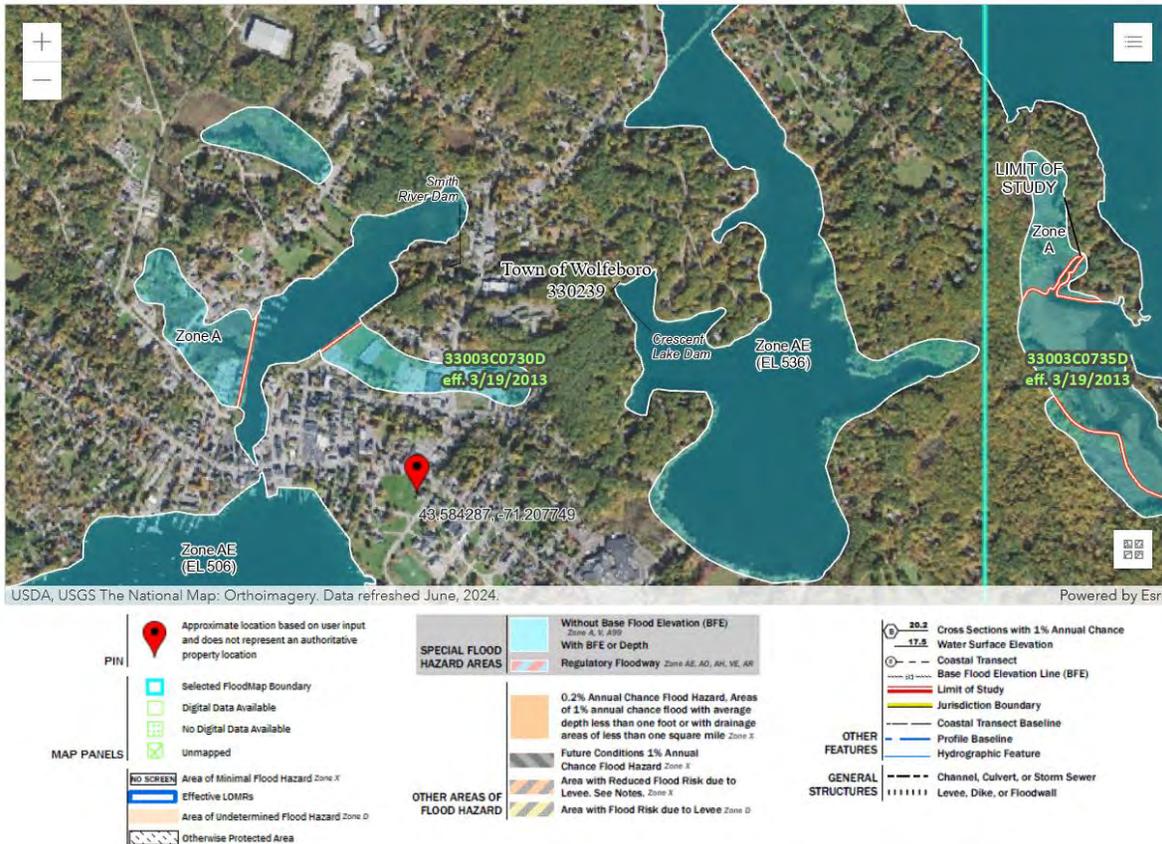
Type	Events	Dates	Location	Extent	General Impacts
Flooding	1	6/28/2020	S. Wolfeboro, Sanbornville, Middleton	Flood, 3-5 in rain	Flooding on Middleton and Springfield Pt. Rd (Wolfe.), Walsh and Lovell Lake Rd. (Sanb.) One-inch hail. (Middle.) Damage Prop. \$10K
Flooding	1	12/23/2022	Sanbornville	> 2 in rain	Flooding on NH 109 (Governor's Rd. to Brice Dr.)
Flooding	1	5/1/2023	Tamworth, Ossipee, Eaton	Flood, Flash Flood	Flooding and damage to NH 113, NH 153, and NH 16B.
Flooding	1	6/28/2023	Moultonborough	Flood, Flash Flood	Saturated ground. Flooding on NH 109, ditch erosion, partial washout near Bald Peak.
Flooding	1	7/4/2023	Ossipee, Wakefield	Flash Flood >3in./hr	Youngs Brook overflow, flooding Brown's Ridge Rd. & Young's Rd.
Flooding	1	7/16/2023	Madison, Wolfeboro, Alton, Barnstead	Flash Flood >3in./hr	Suncook R. 3.5 above flood stage. Flooding on NH 153, led to closure. Washout on So. Main St., NH 109, & NH 28 in Wolfeboro. Extensive flooding and washouts in Alton - NH 140, and several local roads.
Flooding	1	12/8/2023	Effingham, Wakefield, Sandwich	Flood, Flash Flood	Heavy rain & snowmelt. Flooded Ossipee R. with closure on NH 153, section on NH 109, and NH 25.

Source: NOAA Events

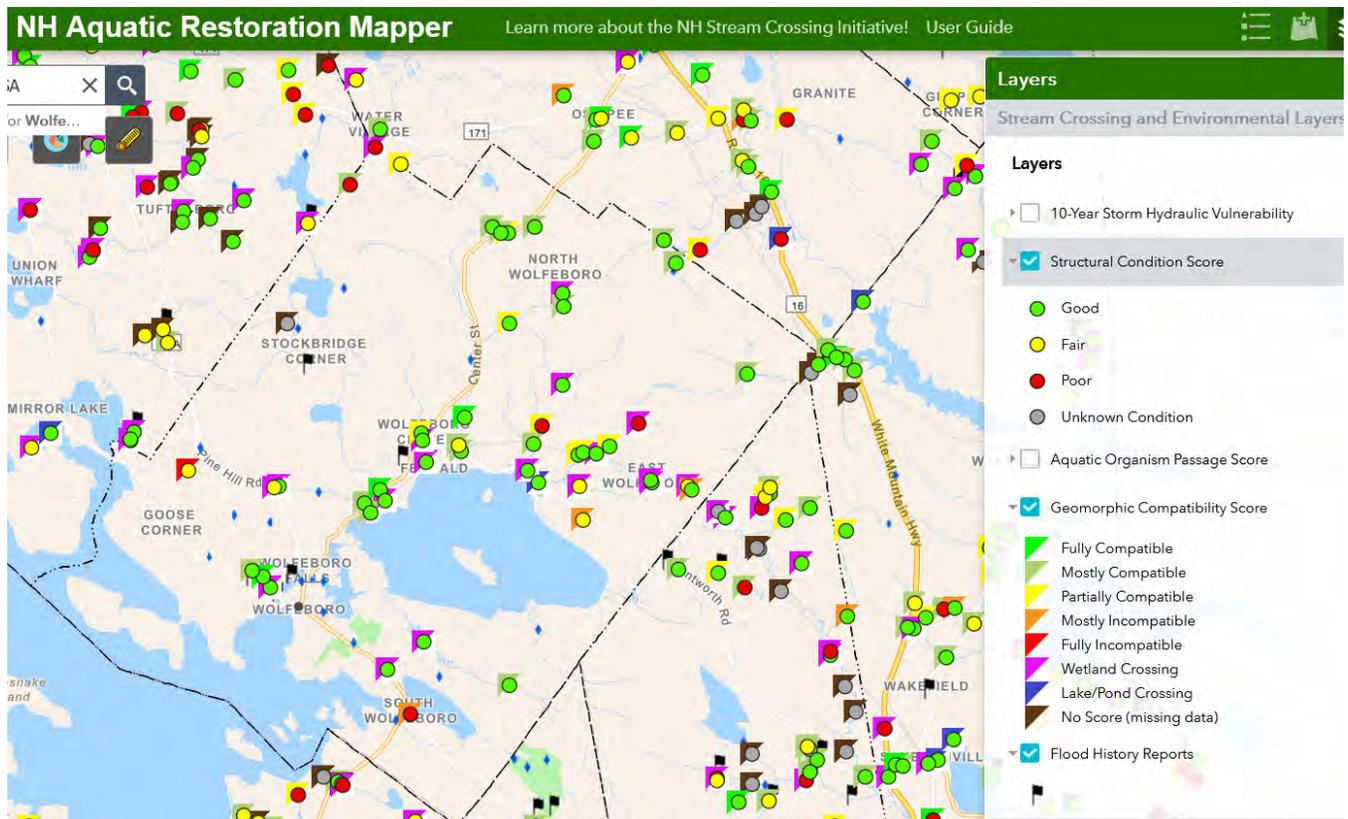
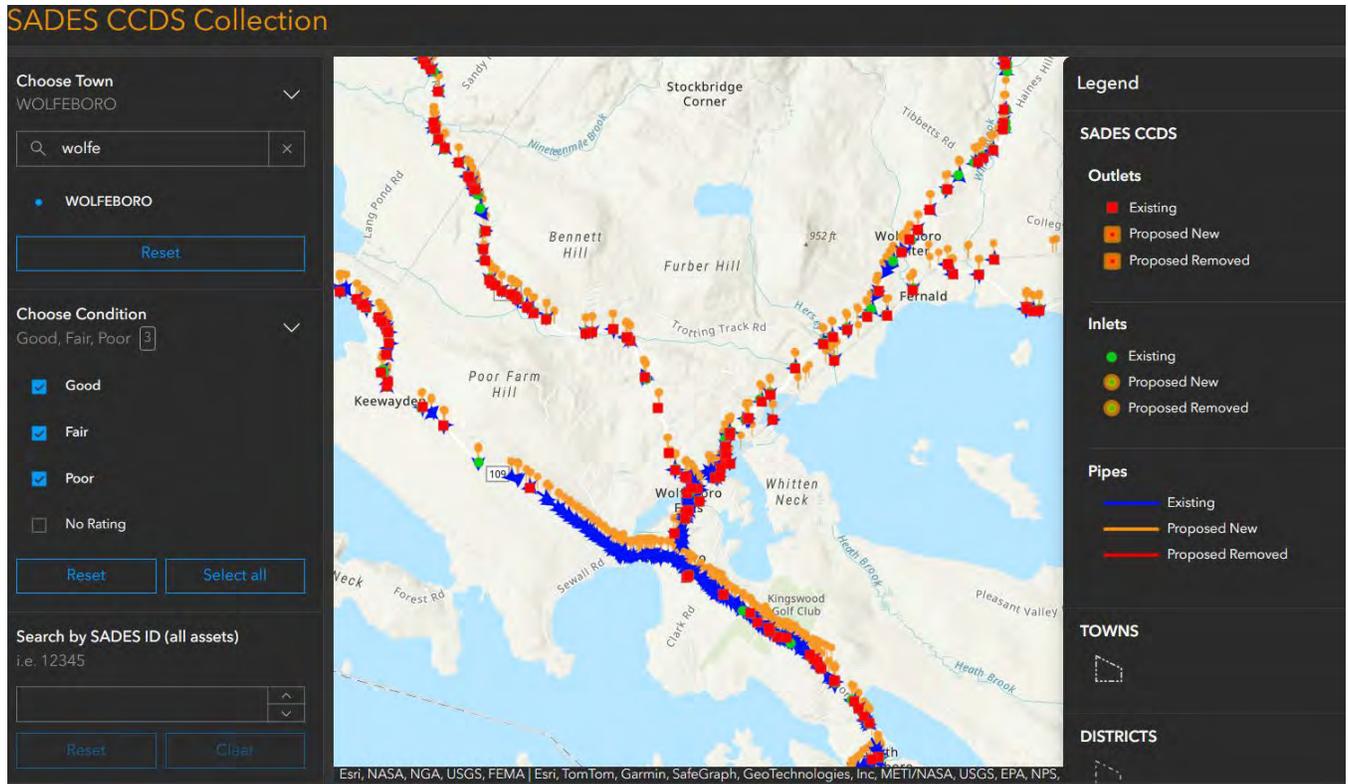
A series of floods in New Hampshire began in October 2005 with a flood that primarily affected the southwest corner of the state and devastated the town of Alstead. The flood killed seven people. It was followed by floods in May 2006 and April 2007 and a series of floods during the late summer and early fall of 2008, one caused substantial flash flooding and washouts in Ashland, New Hampton, Center Harbor, and Meredith. In addition to property damages, one young girl died in Ashland because of the floodwaters from this storm.

Flooding in the region was associated with Tropical Storm Irene in September 2011 and Tropical Storm Sandy in October 2012.

Location: Committee members and survey responses noted flooding along hilly, upland areas including Beech Pond Road, North Main Street, Clarke Plaza, Sewer Pumps, NH Route 28/109 (Center Street), Downtown. The [FEMA Flood maps](#) identify floodplains in several parts of town. In the downtown area (see image below) this includes the Back Bay and Clarke Plaza/sewer pumps.



The [SADES CCDS Mapper](#) coordinated by UNH T2 can be useful resources for tracking the location and status of bridges and culverts. In Wolfeboro state roads have been mapped. Mapping of local drainage features is usually done through a regional planning commission. Larger drainage structures containing flowing water are mapped in detail as “stream crossings” on the NH Aquatic Restoration Mapper.



[NH Aquatic Restoration Mapper](#)

Probability of Occurrence: Occasional**Impact – Moderate**

Floods could impact dams and bridges and have the potential to cause damage to roads, properties, and structures, as well as loss of life.

In Wolfeboro, despite the large areas of surface water and low slopes relative to the region, there are relatively few low-lying areas susceptible to flooding. The areas depicted by the rate maps indicate areas of floodplain on either side of Back Bay, including the Clarke Plaza and associated with wetlands scattered around town. The Clarke Plaza shopping areas on both sides of NH Routes 28/109 are built over what used to be a small bay that was filled during the first half of the 20th century; and has flooded frequently in the past. This is also the site of the pumps for the municipal sewer system. In recent years the DPW has kept ahead of any flooding using pumps. Wolfeboro does not have large flowing rivers and is not particularly susceptible to the catastrophic riverine erosion associated with such bodies of water. The potential for shoreland flooding to occur on the largest lakes in Wolfeboro – Lake Winnepesaukee and Lake Wentworth, is reduced using State operated dams that regulate lake water levels.

Assuming between 1% and 2% town-wide damage to buildings, flooding and erosion could result in \$12.5 - \$25 million in damages any given year.

Impact of Climate Change on Flooding: Flooding is influenced by how much water enters the watershed upstream. With warmer temperatures, more water evaporates and then falls as precipitation. Increased precipitation is likely to increase stream flow. Increased stream flow can increase soil erosion, impair water quality, and disrupt ecosystems. Increased temperatures could also impact the amount of snowpack and timing of snowmelt & ice out. With an increase in heavy rain events more of the erosion events noted above can be expected.

Impact on Vulnerable Communities: Potential impacts associated with flooding on Wolfeboro's vulnerable populations include:

- May have limited access to early warning alerts
- May live in areas prone to flooding
- Living in poorly maintained housing with aging infrastructure
- May have limited mobility for getting assistance/evacuation, dependence upon others to travel
- Limited resources for seeking medical assistance

LANDSLIDE

A landslide is the downward or outward movement of earth materials on a slope that is reacting to a combination of the force of gravity and a predisposed weakness in the material that allows the sliding process to initiate. The broad classification of landslides includes mudflows, mudslides, debris flows, rockslides, debris avalanches, debris slides and earth flows. Landslides may be formed when a layer of soil on a slope becomes saturated by significant precipitation and slides along a more cohesive layer of soil or rock. Although gravity becomes the primary reason for a landslide once a slope has become weak through a process such as the one just described, other causes can include: ¹

- Erosion by rivers or the ocean that creates over-steepened slopes through erosion of the slope's base. In the case of rivers, this can occur because of flash flooding
- Rock and soil slopes are weakened through saturation by snowmelt or heavy rains
- Earthquake creates stress that makes weak slopes fail—earthquakes of 4.0 magnitude and greater have been known to trigger landslides
- Wildfires (loss of vegetation)
- Excess weight from accumulation of rain or snow, stockpiling of rock or ore, the formation of waste piles, or building of man-made structures may stress weak slopes to the point of failure.

Extent: Weak

While no universally accepted standard or scientific scale has been developed for measuring the severity of all landslides, severity can be measured several other ways:

- Steepness/grade of the Slope (measured as a percent)
- Geographical Area
 - o Measured in square feet, square yards, etc.
 - o More accurately measured using LiDAR/GIS systems
- Earthquake, either causing the event or caused by the event measured using the Moment Magnitude Intensity or Mercalli Scale

There are also multiple types of landslides:

- Falls: A mass detaches from a steep slope or cliff and descends by free-fall, bounding, or rolling
- Topples: A mass tilts or rotates forward as a unit
- Slides: A mass displaces on one or more recognizable surfaces, which may be curved or planar
- Flows: A mass moves downslope with a fluid motion. A significant amount of water may or may not be part of the mass

Like flooding, landslides are unique in how they affect different geographic, topographic, and geologic areas. Therefore, consideration of a multitude of measurements is required to determine the severity of the landslide event.

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 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 in the steeply sloped areas of the state, increasing the risk of landslides. In addition to being susceptible to this freeze/thaw process, the Ossipee Mountain Range, Squam Range, and other mountains throughout the Lakes Region are also close to

seismic faults and at risk to increased pressure on development.

Consideration should be given to the vulnerability of man-made structures in these areas due to seismic- and/or soils saturation-induced landslide activity. Landslide activities are also often attributed to other hazard events. For example, during a recent flood event, a death occurred when a mass of saturated soil collapsed. This death was attributed to the declared flood event.⁸ Also, during the 2007 Nor'easter a landslide occurred in Milton, NH resulting in the temporary closure of NH Route 101.

History: There are no known occurrences of landslide nor were there any damages or injuries in Wolfeboro.

Location: 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 along the Connecticut and Merrimack Rivers also create potential landslide conditions.

The highest peak in town is Whiteface Mountain in North Wolfeboro. There are eight peaks in Wolfeboro with an elevation of greater than 1,000 feet. However, as with much of the mountainous landscape in New Hampshire, it is relatively stable. Exposure to the risk of landslide is generally limited to areas in northern Carroll County and other parts of the state.

Probability of Occurrence: Unlikely

Impact: Low

The primary impacts of a landslide are the damage and destruction to property and infrastructure located in the area where the landslide occurred. The land material moved during a landslide can cause damage to roads, buildings, and infrastructure at the base of the slope on which the landslide occurred. Buildings or infrastructures that are atop the slide, or on the side of the slope where the slide occurs, can be severely damaged or destroyed through its consumption by the slide. The hazard of death and injury to individuals atop, on, or at the base of a slide exists if such individuals are present in those locations when the landslide occurs.

Landslides that occur adjacent to a waterbody, such as a river or lake, can introduce excess sediment, increase the turbidity of the receiving waterbody, and impact water quality if the sediment is of sufficient quantity. A very large landslide into a river could cause an obstruction that acts like a dam, creating an impoundment of water which leads to sediment and woody material deposition within it. This could also further create an additional risk of a "dam failure" at some future time when the natural dam breaks down, resulting a rapid release of the stored water from upstream.

As there are no significant steep slopes near structures nor adjacent to rivers or lakes, the potential impact to Wolfeboro is minimal.

⁸ <http://www.nh.gov/safety/divisions/hsem/NaturalHazards/index.html> visited February 8, 2011.

Impact on Vulnerable Communities: Potential impacts associated with landslide on Wolfeboro’s vulnerable populations include:

- May have limited access to early warning alerts
- Living in poorly maintained housing with aging infrastructure
- May have limited mobility for getting assistance/evacuation, dependence upon others to travel
- Limited resources for seeking medical assistance

LIGHTNING

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.

Extent: Moderate

All thunderstorms have the potential to create lightning, which can cause death, injury, and property damage and have great potential to cause damage to electronic equipment as well as structure and wildfires. Although the numbers have trended downward in recent decades, during the last half of the twentieth century more people were killed in the United States each year by lightning than by any other weather event. It can also wreak havoc with electrical and communications systems.

The National Weather Service does utilize 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.

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 of Lightning Events

Hazard	Date	Location	Magnitude/Description	Damage	Source
Lightning	7/4/2012	<u>BELKNAP – WEIRS BEACH</u>	3 Injuries	Two Men and a Woman struck by lightning	NOAA
Lightning	6/24/2013	<u>BELKNAP – WEST ALTON</u>	30 Injuries	Full Boy Scout troop struck by lightning	NOAA
Lightning	5/15/2020	<u>Meredith</u>	0 injury/fatality \$20K property	House struck by lightning	NOAA

There have not been any known impacts from lightning in Wolfeboro since the last plan update.

Location: Lightning can strike anywhere in town, although boats on open water people on athletic fields can be at particular risk. Exactly where and when lightning will strike is unknown.

Probability of Occurrence: Likely

In the Lakes Region, fewer than two lightning strikes occur per square kilometer annually. While this value is not particularly high compared with other parts of the country, the frequency of storms with lightning is a local concern, especially during the summer months.

Impact: Low

Lightning can injure or kill people near the strike. Structures that are not grounded are the most susceptible to damage. Forest fires or structural fires can result from lightning strikes.

Power outages, associated with natural hazards like lightning, high winds, inland flooding, severe winter weather have the potential to cause disruption to residents and the functioning of the town. The elderly and disabled who rely on powered medical devices are at risk.

All structures in Wolfeboro are susceptible to damage by lightning and resulting fires. There is back-up power for most municipal facilities. Assuming 1% town-wide damage to buildings, an lightning could result in \$12.5 million in damages any given year.

Impact of Climate Change on Lightning events: Climate change is beginning to shift seasons resulting in longer, warmer summer months, and an earlier spring onset, which may create more intense heat waves. Lightning is mostly observed during the warmer summer months, and the longer the season becomes, the opportunity for damaging lightning increases. The impact of any individual lightning strike would remain the same, but they may become more frequent with a warmer, wetter climate.

Impact on Vulnerable Communities: Potential impacts associated with lightning on Wolfeboro's vulnerable populations include:

- May have limited access to early warning alerts
- Living in poorly maintained housing with aging infrastructure
- Limited resources for seeking medical assistance

SEVERE WINTER WEATHER (SNOWSTORMS, ICE STORMS)

Wolfeboro experiences four types of severe winter weather: heavy snow, blizzards, nor'easters, and ice storms.

Extent: Moderate

A heavy snowstorm can be defined as one that deposits four or more inches of snow in a 12-hour period. Snowstorms are a common occurrence throughout the Lakes Region. Blizzards, which may dump 12 to 36 inches or more of snow in a one- to three-day period are less frequent, but can have a serious impact on structures, utilities, and services. The region typically receives greater than 66 inches of snow annually. Records indicate that eight or more inches have fallen in a single day on most dates

from late November through mid-March but the average snowfall on any day from November through April is less than an inch.

CATEGORY	NESIS VALUE	DESCRIPTION
1	1–2.99	Notable
2	2.5–3.99	Significant
3	4–5.99	Major
4	6–9.99	Crippling
5	10.0+	Extreme

A couple of scales have been adopted by NOAA for comparing snowstorms that incorporate the number of inches of snow that accumulate, the area of the storm, and the number of people that could be impacted by the storm. The Northeast Snowfall Impact Scale (NESIS) applies specifically to the northeastern United States. It groups high-impact snowstorms into five categories. 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- to 90-year return period for an event with a uniform ice thickness of between 0.75 and 1.25 inches. In 2008, just 10 years later, however, New Hampshire was struck again by another severe ice storm.

The Sperry-Piltz Ice Accumulation (SPIA) Index is 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.

Snow load in severe winter storms is of concern as well. This is particularly true for flat roofed structures. Several small storms can produce the same snow load as a single larger storm and the combined weight of the snow load can damage rooftops. Ice adds additional weight as well. It is not uncommon in New Hampshire to experience mixes of winter precipitation as temperatures fluctuate above and below the freezing mark. While not widespread, instances of collapsed roofs are not uncommon.

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

ICE DAMAGE INDEX	* AVERAGE NWS ICE AMOUNT (in inches) <small>*Revised-October, 2011</small>	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.)

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 12 hours to three days, while the duration of hurricanes ranges from 6 to 12 hours. A nor'easter also has the potential to sustain hurricane force winds, produce torrential rain, and create blizzard conditions in winter months.

In the winter months, the state may experience the additional coincidence of blizzard conditions with many of these events. 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 reduces visibility to less than a quarter mile.

History: The 1998 ice storm was the costliest FEMA/Presidential Declared disaster in New Hampshire's history. The ice load bent trees and power lines and led to massive power outages throughout the state. The December 2008 ice storm surpassed the 1998 storm, in terms of state-wide damage. The President declared this storm as a major disaster and the state received \$15 million in federal aid for recovery.

The NOAA Storm database lists 27 severe winter storm events since 2019. Severe winter weather disaster and states of emergency declarations have been issued in New Hampshire several times since 2019, including:

- December 21-25, 2022
- December 17-21, 2023
- January 9-14, 2024

Location: Severe winter weather occurs frequently in the northeast and the possibility exists for Wolfeboro residents to have to withstand several days without power. There are segments of the population that are more at risk. These include the elderly, people that need regular medical care, and young children. 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. Snow and ice storms can affect the entire town.

Probability of Occurrence: Likely

Impact: High/Catastrophic

Major roads, essential services, and flat-roofed buildings are all likely to be impacted by winter storms. While the town is accustomed to seasonal heavy snowfall, any particularly severe event with significant accumulations, especially combined with severe cold can be a burden. These events often lead to ice accumulation, and power loss, significantly increasing the vulnerability of populations and facilities.

Heavy snow can cause damage to property, disrupt services, and make travel unsafe, even for emergency responders. Due to poor road conditions, residents may be stranded for several days. Extra pressure is placed on road crews and emergency services under these conditions.

The major threats to a community due to ice storms include structural damage due to heavy loads on roofs, interruptions of services such as electricity, fuel, water, and communications, as well as hazardous road conditions. Downed limbs and wires and unplowed or untreated roads can severely limit emergency access to many residences.

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. A severe ice storm struck central and southern New Hampshire and New England on December 11, 2008. Over 400,000 people were without power, some for over two weeks, and overall damages exceeded \$15 million.

The fact that Wolfeboro is home to the regional middle, high, and vocational schools as well as to the hospital puts added pressure on DPW crews to clear the local roads and to assist during emergencies on state roads. The resources for the DPW to trim trees over municipal roadways are limited.

The primary critical facilities in Wolfeboro were identified as being moderately vulnerable to snow or ice events. Flat-roofed buildings are all susceptible to damage from snow and ice loads if not properly maintained.

While maintenance on the major arteries through town (NH 28, NH 109, and NH 109A) falls to NH DOT, most of the other roads in Wolfeboro are the town's responsibility. The precipitation from some storms, especially multi-day nor'easters, can outpace the capacity of equipment and staff. As more people choose to live here and build homes further out on these roads, services may be impacted.

All structures in Wolfeboro are susceptible to damage by winter weather events, whether through ice storms, blizzards, or the heavy, wet snow often associated with a nor'easter. Town facilities are not particularly at risk to Severe Winter Weather. Assuming between 1% and 5% town-wide damage to buildings, severe winter weather could result in \$12.5 - \$62.5million in damages any given year.

Impact of Climate Change on Winter Weather Events: Changes in New Hampshire's climate could potentially lead to an increase in any of the four types of winter precipitation. This possible increase could result in an increase of unsafe structures due to increased weight due to snow, ice, and rain accumulating on rooftops. It could also lead to roof collapses, compromising personal safety. An increase of winter precipitation also creates unsafe travel conditions throughout the state. These events also use a considerable amount of resources to deal with the clean-up.

In Wolfeboro the impacts may include changes to expected snow & ice loads on roofs and different patterns for clearing winter weather debris. It was also noted that impacts are already being seen in the timing and length of ice covering lakes with potential impacts to the lake's ecosystem and potentially the town's outdoor recreation economy.

Impact on Vulnerable Communities: Potential impacts associated with severe winter weather on Wolfeboro's vulnerable populations include:

- May have limited access to early warning alerts
- Living in poorly maintained housing with aging infrastructure
- May have limited mobility for getting assistance/evacuation, dependence upon others to travel
- Limited resources for seeking medical assistance

SOLAR STORMS & SPACE WEATHER

The term space weather is relatively new and describes conditions in the Earth’s outer space environment. Space weather includes conditions and events on the sun, in the solar wind, in near-Earth space, and in Earth’s upper atmosphere that can affect space-borne and ground-based technological systems.⁹ Although space weather has occurred since the beginning of time, little was understood about the causes and impacts of these instances on the planet. It has only been in the last 200 or so years where multiple science fields have come together to study space weather.¹⁰ Not all space weather is damaging or effects humans or technology. Perhaps one of the most well-known effects of space weather on the Earth’s atmosphere is the Aurora Borealis (aka Northern Lights – northern hemisphere) and the Aurora Australis (southern hemisphere). Aurora displays are a result of solar wind where some of the charged particles become trapped in the Earth’s atmosphere.

Extent: Weak

The State of New Hampshire Hazard Mitigation Plan (2023) 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. A solar storm may exacerbate radio communications problems. The Radio Blackout Scale¹¹ offers a measure of the extent of solar storms on radio communications.

Scale	Description	Effect	Physical measure	Average Frequency (1 cycle = 11 years)
R 5	Extreme	HF Radio: Complete HF (high frequency) radio blackout on the entire sunlit side of the Earth lasting for a number of hours. This results in no HF radio contact with mariners and en route aviators in this sector. Navigation: Low-frequency navigation signals used by maritime and general aviation systems experience outages on the sunlit side of the Earth for many hours, causing loss in positioning. Increased satellite navigation errors in positioning for several hours on the sunlit side of Earth, which may spread into the night side.	X20 (2×10^3)	Less than 1 per cycle
R 4	Severe	HF Radio: HF radio communication blackout on most of the sunlit side of Earth for one to two hours. HF radio contact lost during this time. Navigation: Outages of low-frequency navigation signals cause increased error in positioning for one to two hours. Minor disruptions of satellite navigation possible on the sunlit side of Earth.	X10 (10^3)	8 per cycle (8 days per cycle)
R 3	Strong	HF Radio: Wide area blackout of HF radio communication, loss of radio contact for about an hour on sunlit side of Earth. Navigation: Low-frequency navigation signals degraded for about an hour.	X1 (10^4)	175 per cycle (140 days per cycle)
R 2	Moderate	HF Radio: Limited blackout of HF radio communication on sunlit side, loss of radio contact for tens of minutes. Navigation: Degradation of low-frequency navigation signals for tens of minutes.	M5 (5×10^5)	350 per cycle (300 days per cycle)
R 1	Minor	HF Radio: Weak or minor degradation of HF radio communication on sunlit side, occasional loss of radio contact. Navigation: Low-frequency navigation signals degraded for brief intervals.	M1 (10^5)	2000 per cycle (950 days per cycle)

History: Nearby events include Quebec, Canada, which experienced a 9-hour blackout in March 1989 when solar winds caused a fluctuation in the Earth’s magnetic field and caused Hydro-Quebec’s transmission to go down.¹² There have not been any known occurrences in Wolfeboro of solar storms or space weather, and no significant events have been reported statewide.

Location: All of Wolfeboro and the entire State of New Hampshire are at risk of solar storms and space weather. 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.

Probability of Occurrence: Unlikely

⁹ https://www.nasa.gov/mission_pages/sunearth/spaceweather/index.html#q12

¹⁰ https://www.nasa.gov/mission_pages/sunearth/spaceweather/index.html#q12

¹¹ https://prd.blogs.nh.gov/dos/hsem/wp-content/uploads/2015/11/State-of-New-Hampshire-Multi-Hazard-Mitigation-Plan-Update-2018_FINAL.pdf, p. 141

¹² 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.

Impact: Moderate

Solar storms and space weather impact the Earth daily, although the effects are not often felt. It is difficult to estimate the impact of this hazard on Wolfeboro as knowledge of this hazard is evolving, but committee members acknowledge that while human and property impacts are low, compromised communications could impact coordination and response during other types of hazards, including reaching out for mutual aid.

Probability and Impact of Climate Change on Solar Storm events: The probability and impacts associated with a solar storm would not likely be affected by climate change.

Impact on Vulnerable Communities: Potential impacts associated with solar storms and space weather on Wolfeboro's vulnerable populations all are related to compromised electronic communication and response associated with some other emergency.

TROPICAL & POST-TROPICAL CYCLONES

Tropical and Post-Tropical cyclones are large storms with winds rotating in a counterclockwise manner. Tropical depressions and hurricanes form over the Atlantic Ocean and often come ashore in the southeastern United States, frequently moving up the Eastern Seaboard. Occasionally such storms come ashore along the northeast coast. Sustained high winds and heavy rains for 12 to 36 hours are characteristic of tropical depressions and hurricanes. 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 flare up over the tropics. These are 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 possesses 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.

Extent: Moderate

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. Because hurricanes form over the ocean and move relatively slowly, people usually have time to prepare for the event. However, this also means that once the storm arrives, heavy rain and wind can be expected for a couple of days.

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.
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>

History: 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. The Merrimack River rose nearly 11 feet above its flood stage, in New Hampshire, 60,000 people were reported homeless, and many areas were without power. Damages were estimated at \$22 million. New Hampshire has not experienced a severe hurricane directly since 1938.

Hurricane Bob, a category 2 storm, in 1991, was declared a major federal disaster in New Hampshire and is recorded as a severe storm. By the time that a hurricane reaches central New Hampshire, it is rare that it 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.

In the past five years no hurricanes have hit the region. A tropical depression hit the state in 2020 resulting in downed trees and loss of power. There was no damage specific to Wolfeboro. Wind and rain storms in July of 2023 and July 2024 left many downed trees and wires in Wolfeboro and adjacent communities. The July 2024 storm resulted in a great deal of erosion along roadways throughout town.

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

Probability of Occurrence: Occasional

Impact: Moderate

Hurricanes in the Lakes Region could produce heavy rain and strong winds that could lead to flooding and damage to property and infrastructure. Tropical and post-tropical cyclones can cause the same damage that high wind events cause, with the added hazard of possible flooding.

All structures in Wolfeboro are susceptible to damage by cyclonic events, whether through tropical depression or hurricane. Assuming between 1% and 2% town-wide damage to buildings, through a combination of high winds and flooding & erosion could result in \$12.5 - \$25 million in damages any given year.

Impact of Climate Change on Tropical & Post-Tropical Cyclone events: An increase in temperature could potentially lead to stronger, and more frequent storms. Storms that produce a higher level of precipitation will lead to an increase in flooding and potential flooding and washout damage.

Impact on Vulnerable Communities: Potential impacts associated with cyclonic events on Wolfeboro’s vulnerable populations include:

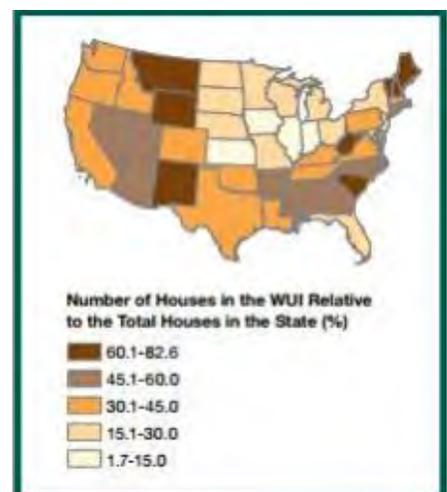
- May have limited access to early warning alerts
- May live in areas prone to flooding
- Living in poorly maintained housing with aging infrastructure
- May have limited mobility for getting assistance/evacuation, dependence upon others to travel
- Limited resources for seeking medical assistance

WILDFIRE

Wildfire is defined as a fire in wooded, potentially remote areas that may endanger lives. A wildfire is any non-structural fire, other than prescribed fire, that occurs in wildland areas consisting of vegetation or natural fuels. Wildfires can be referred to as brush fires, wildland fires, or grass fires depending on the location and what is burning.

Extent: Moderate

New Hampshire has about 500 wild land fires each year; most burn less than half an acre. Much of the Lakes Region (and Wolfeboro) is forested and susceptible to fire.



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:

From 2014-2018 there were 724 wildfires statewide amounting to 2,007 acres burned. Since the last plan, no wildfires have been reported in Southern Carroll County.

Location: Several areas in the region are relatively remote in terms of access and firefighting capacity. Of greatest concern are those areas characterized by steep slopes and vast woodlands, with limited vehicular access. In Wolfeboro, these areas are found in the northern section of town, away from the downtown center, and bordering Tuftonboro, Ossipee, and Brookfield. As these once remote areas begin to see more development (the urban-wildfire interface), care should be taken to ensure that adequate fire protection and buffers are established.

Probability of Occurrence: Unlikely

Impact: High

Due to the heavily wooded nature of the town, all properties in town have the potential to be impacted by a wild land fire. Assuming between 1% and 2% town-wide damage to buildings, wildfire could result in \$12.5 - \$25 million in damages any given year.

Impact of Climate Change on Wildfire events: Increased precipitation from severe thunderstorms, hurricanes, wind events, ice storms may damage trees and forests. This can lead to insect or disease outbreaks that may result in a significant amount of woody debris in the forests which may increase the risk of wildfires. Increased temperatures associated with climate change increase the likelihood of drought, enhancing the chance of wildfire.

Impact on Vulnerable Communities: Potential impacts associated with wildfire on Wolfeboro's vulnerable populations include:

- May have limited access to early warning alerts
- Living in poorly maintained housing with aging infrastructure
- May have limited mobility for getting assistance/evacuation, dependence upon others to travel
- Likely to be more prone to the effects of air pollutants (smoke) associated with wildfire
- Limited resources for seeking medical assistance

Summary of Risk

A matrix was created to determine an overall hazard risk assessment rating (next page). Each criterion (**Probability** of occurrence, **Extent**, and **Impact** – an average of three types) was given a rating to show which hazards are the greatest threat to the community, based ratings from the 2019 plan, historic events, local knowledge, the town’s ability to respond, along with economic and environmental issues.

These ratings were transformed into numerical values 4, 3, 2, and 1, with 4 as high and 1 as low. The overall risk rating associated with each hazard was determined by multiplying the three factors. For Natural Hazards, a total score of 16 or more was deemed to be High Risk, a total of between 8 and 15 was deemed to be Medium Risk, and a score of less than 8 was deemed Low Risk.

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 woodland fire may be greater. In combination, hazard events may have the impact of overwhelming existing emergency response systems.

	Magnitude or Strength of Event Scale 1-4	How often does it occur? Scale 1-4	What is the probability of death or injury?	What is the probability of physical losses and damages?	What is the probability of interruption of service	Average of Human Property & Business Impact	
	Extent	Probability	Human Impact	Property Impact	Business Impact	Avg. Impact	Risk = Probability x Extent x Impact
Severe Winter Weather	2	3	3	4	4	3.67	22.00
High Wind Events (Tornado/Downburst)	2	2	4	4	4	4.00	16.00
Infectious Diseases	3	1	4	1	3	2.67	8.00
Inland Flooding/ Washout/ Erosion	2	2	1	2	3	2.00	8.00
Lightning	2	3	2	1	1	1.33	8.00
Tropical & Post-Tropical Cyclones	2	2	2	2	2	2.00	8.00
Wildfires	2	1	3	4	2	3.00	6.00
Earthquake	2	1	2	3	3	2.67	5.33
Dam Failure/ Sewer Lagoon	2	1	1	3	3	2.33	4.67
Drought	2	1	1	1	1	1.00	2.00
Extreme Temperatures	2	1	1	1	1	1.00	2.00
Landslides	1	1	1	2	1	1.33	1.33

Definitions of scales on next page.

Probability of Future Events

- **Unlikely:** <10% probability of occurrence in the next year or a recurrence interval of more than every ten years
- **Occasional:** 10 - 25% probability of occurrence in the next year or a recurrence interval of three to ten years
- **Likely:** 25 - 80% probability of occurrence in the next year or a recurrence interval of two to three years
- **Highly Likely:** 80-100% probability of occurrence in the next year or a recurrence interval of nearly every year

Extent - How bad could it get?

- **Weak:** limited magnitude, slow onset, short duration, little damage.
- **Moderate:** moderate magnitude, moderate onset speed, moderate duration, some damage/loss of service for days.
- **Severe:** Severe magnitude, fast speed of onset, long duration, devastating damage and loss of service for weeks
- **Extreme:** Extreme magnitude, immediate onset, extended duration, catastrophic damage, uninhabitable conditions.

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 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.

SECTION IV: VULNERABILITY ASSESSMENT

Critical Facilities and Infrastructure were assessed for their vulnerability to natural hazards. Key: Low – 1, Medium – 2, High – 3.

Critical Facilities & Population Vulnerability	Avalanche	Drought	Earthquake	Extreme Temperatures	High Wind Events (Tornado/Downburst)	Infectious Diseases	Inland Flooding	Dam Failure	Landslides	Lightning	Severe Winter Weather	Solar Storms & Space Weather	Tropical & Post-Tropical Cyclones	Wildfires	Total
Facility/Infrastructure/Population															
Essential Services															
Public Safety Complex	1	1	2	1	1	1	1	1	1	2	2	2	2	1	19
Town Hall and Annex	1	1	2	2	1	1	1	1	1	2	2	1	2	1	19
Highway Department	1	1	2	1	1	1	1	1	1	2	2	2	2	1	19
Water Treatment Plant	1	2	2	2	1	1	2	1	1	2	2	1	2	1	21
Wastewater Treatment Plant	1	2	2	2	1	1	2	1	1	2	2	1	2	1	21
Municipal Electric Department	1	1	2	1	2	1	1	1	1	2	2	1	2	1	19
Huggins Hospital & Medical Arts	1	2	2	2	1	2	1	1	1	2	2	2	2	1	22
Electric Substation #1	1	1	2	2	2	1	1	1	1	2	2	1	2	1	20
Electric Substation #2	1	1	2	2	2	1	1	1	1	2	2	1	2	1	20
New England Telephone substation	1	1	2	1	2	1	1	1	1	2	2	1	2	1	19
Structures and Services															
Cellular phone tower - Bennet Hill	1	1	2	1	2	1	1	1	1	3	2	2	2	1	21
Cellular phone tower - Lehner Street	1	1	2	1	2	1	1	1	1	3	2	2	2	1	21
Cellular tower - Pierce Camp Birchmont	1	1	2	1	2	1	1	1	1	3	2	2	2	1	21
Cellular phone tower - water tower	1	1	2	1	2	1	1	1	1	3	2	2	2	1	21
Cellular phone tower - Center St.	1	1	2	1	2	1	1	1	1	3	2	2	2	1	21
Crescent Lake Dam	1	2	3	1	1	1	2	3	1	1	1	1	2	1	21
Rust Pond Dam	1	2	3	1	1	1	2	3	1	1	1	1	2	1	21
Sewer Pump Station	1	2	3	1	1	1	2	3	1	2	1	1	2	1	22
Sewage Lagoon Dam	1	2	3	1	1	1	2	3	1	1	1	1	2	1	21
NH Route 28 (Evacuation)	1	1	2	1	1	1	3	1	1	1	2	1	2	1	19
NH Route 109 (Evacuation)	1	1	2	1	1	1	3	1	1	1	2	1	2	1	19
WASR tower	1	1	2	1	2	1	1	1	1	3	2	2	2	1	21

Critical Facilities & Population Vulnerability	Avalanche	Drought	Earthquake	Extreme Temperatures	High Wind Events (Tornado/Downburst)	Infectious Diseases	Inland Flooding	Dam Failure	Landslides	Lightning	Severe Winter Weather	Solar Storms & Space Weather	Tropical & Post-Tropical Cyclones	Wildfires	Total
Facility/Infrastructure/Population															
Water Storage	1	1	2	2	1	1	1	1	1	2	2	1	2	1	19
Rapid Infiltration Basin (RIB)	1	1	1	2	1	1	2	1	1	1	1	1	2	1	17
Solid Waste Facility	1	2	1	1	1	1	1	1	1	2	2	1	2	1	18
LR Hazardous Product Facility	1	1	1	1	1	1	1	1	1	2	1	1	2	1	16
Pop Whalen/Abenaki Ski Area	1	2	2	1	1	1	1	1	1	2	1	1	2	1	18
Emergency Shelters															
Kingswood School Complex	1	2	2	2	1	1	1	1	1	2	2	1	2	1	20
All Saints Episcopal Church	1	1	1	2	1	1	1	1	1	2	1	1	2	1	17
Brewster Academy Complex	1	2	2	2	1	1	1	1	1	2	2	1	2	1	20
Carpenter School	1	2	2	2	1	1	1	1	1	2	2	1	2	1	20
Crescent Lake School	1	2	2	2	1	1	1	1	1	2	2	1	2	1	20
First Congregational Church	1	1	1	2	1	1	1	1	1	2	1	1	2	1	17
First Christian Church	1	1	1	2	1	1	1	1	1	2	1	1	2	1	17
Wolfeboro Public Library	1	2	2	2	1	1	1	1	1	2	2	1	2	1	20
Special Populations															
Christian Ridge	1	2	1	2	1	3	1	1	1	2	2	1	2	1	21
Sugar Hill Retirement Community	1	2	1	2	1	3	1	1	1	2	2	1	2	1	21
Wolfeboro Bay Care and Rehabilitation	1	2	1	2	1	3	1	1	1	2	2	1	2	1	21
Taylor Community	1	2	1	2	1	3	1	1	1	2	2	1	2	1	21
The Ledges	1	2	1	2	1	3	1	1	1	2	2	1	2	1	21
Wolfeboro Area Children's Center	1	2	1	2	1	3	1	1	1	2	2	1	2	1	21
Wolfeboro Nursery School	1	2	1	2	1	3	1	1	1	2	2	1	2	1	21
Pierce Camp Birchmont	1	2	1	2	1	3	1	1	1	2	2	1	2	2	22

Critical Facilities & Population Vulnerability	Avalanche	Drought	Earthquake	Extreme Temperatures	High Wind Events (Tornado/Downburst)	Infectious Diseases	Inland Flooding	Dam Failure	Landslides	Lightning	Severe Winter Weather	Solar Storms & Space Weather	Tropical & Post-Tropical Cyclones	Wildfires	Total
Facility/Infrastructure/Population															
Camp Bernadette	1	2	1	2	1	3	1	1	1	2	2	1	2	2	22
Wolfeboro Camp School	1	2	1	2	1	3	1	1	1	2	2	1	2	2	22
Memory Care/Taylor Community	1	2	1	1	1	3	1	1	1	2	2	1	2	1	20
Other															
Sawmill Boat Club	1	2	1	1	1	1	2	1	1	2	1	1	2	1	18
Fuel stations	1	1	2	1	1	1	1	1	1	2	2	1	2	1	18
Mast Landing	1	2	1	1	1	1	2	1	1	2	1	1	2	1	18
Town docks/ Dockside Facility	1	2	1	1	1	1	2	1	1	2	1	1	2	1	18
Goodhue & Hawkins Navy Yard	1	2	1	1	1	1	2	1	1	2	1	1	2	1	18
Dock at the Libby Museum	1	2	1	1	1	1	2	1	1	2	1	1	2	1	18
Wolfeboro Corinthian Yacht Club/ Irwin Marine	1	2	1	1	1	1	2	1	1	2	1	1	2	1	18
Wolfeboro Oil	1	1	2	1	1	1	1	1	1	2	2	1	2	1	18
Total	54	85	89	80	64	77	71	62	54	108	92	63	108	57	

*Vulnerability is susceptibility to damage or economic loss. It includes how exposed or susceptible to damage an asset is and depends on:
a) location (floodplain, steep slope), b) construction (elevated, meets codes), and c) contents (haz. mat.)

Low (1) - not particularly exposed to hazard, constructed to code or hardened against hazard, contents are not particularly hazardous or exposed.

Medium (2) - some exposure to hazard, some deficiencies in construction or could be hardened against hazard, some contents are exposed or hazardous.

High (3) - site or structure is exposed to the hazard, structure is not up to code or should be hardened against hazard, contents are exposed or hazardous.

Overall, the town’s critical facilities are most vulnerable to Tropical and Post-Tropical Cyclones, Lightning, and Severe Winter Weather. Huggins Hospital, youth and camps were considered most vulnerable closely followed by communications, sewage, and water infrastructure.

SECTION V: MITIGATION STRATEGIES

A. CURRENT PLANS, POLICIES, AND REGULATIONS

The planning decisions that affect community growth patterns have evolved over the years as Wolfeboro 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 2019 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.

Type of Existing Protection	Description	Area	Enforcement	Source
Building and Fire Codes				
	Construction must conform to the following: the International Building, Residential, Energy Conservation, Plumbing, and Mechanical Codes with amendments, the National Electrical Code, and the Life Safety Code and Uniform Code NFPA 1.	Town wide	Code Enforcement Officer Fire Dept.	RSA 153:5
Zoning Ordinance				
	Prohibits land use or structure from generating hazardous and toxic waste without permit from the Planning Board.	Town wide	Planning Board	Zoning Chapter 175-48
	All construction new, remodeled, or renovated shall maintain a setback of 75 ft from very poorly drained soils, 30 feet from poor drained soils, and 50 feet from surface water.	Town wide	Planning Board & Code Enforcement Officer	Zoning Chapter ARTICLE II, Wetlands Conservation Overlay District Section 175-3 -10
	Specific characteristics identifying hazardous conditions involving excessive slope, where development is prohibited.	Site specific	Planning Board	Steep slope ordinance was amended in 2018.
	Ensure that development projects comply with the existing mitigation strategies of the subdivision regulations, site plan review, and building codes.	Town-wide	Planning Board	

Flood Hazard Mitigation

Regulations to minimize the impact of flooding of structures, utilities, and other facilities, which can occur in identified Special Flood Hazard Areas (SFHA). Site Specific; Refer to flood maps

Type of Existing Protection	Description	Area Covered	Enforcement	Source
	The High Hazard and Significant Hazard dams are evaluated on a regular basis and during high water events.	Areas near and downstream from dams	Operations Director (Public Works)	NHDES Water Resources Division
	Dam Emergency Action Plans are reviewed annually and updated as needed.	Areas near and downstream from dams	Operations Director (Public Works)	NHDES Water Resources Division

National Flood Insurance

Member since 1989.	34 policies written	Board & Code Enforcement Officer	Revisions were adopted in 2012
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Wetlands Conservation Overlay District

Regulating the use of land and development to prevent the destruction of or significant changes to wetlands.	Soil-specific	Planning Board & Code Enforcement Officer	Zoning Chapter ARTICLE II, Wetlands Conservation Overlay District Section 175-3 -10
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Storm Water Drainage

Calculations comparing Pre- and Post-Development stormwater runoff rates (cubic feet per second) and volumes (cubic feet) based on a 1-inch rainstorm, and the 2-year, 10-year, 25- year and 100-year 24-hour frequency storms based on current design depths from the Northeast Regional Climate Center or NHDES. Post-development equal to or less than pre-development run-off.	Project specific	Planning Board	Site Plan Review Regulations and Subdivision Regulations
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Municipal Electric Department

Right-of-way tree clearing of power lines to reduce risk of power outages; one-tenth of town's lines are cleared annually; NESC 2017 construction standards	Town-wide	Municipal Electric Department
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Emergency Operations Plan

The Wolfeboro Emergency Operations Plan (EOP) establishes a framework for local government to provide assistance in an expeditious manner to save lives and to protect property in the event of a disaster.		Emergency Management Director
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Fire-Rescue Department

Members attending training that included firefighter certification, technical rescue, infection control, hazardous material decontamination, building/fire code seminars, emergency medical services, responding to terrorist attacks, and incident	Town-wide	Chief of Fire-Rescue Department
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management

Fire Warden, Fire Department, and the NH Division of Forests & Fire Lands work collaboratively to reduce the risk and frequency of wildland fires.	Town-wide	Chief of Fire-Rescue Department and Fire Warden
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Treated Effluent Storage Pond

Measures taken to reduce the volume in the lagoon; Rapid Infiltration Basin to become primary effluent disposal system with sprayfields as redundancy	Town-wide	Department of Public Works
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Drinking Water Management

Inspections are conducted to identify leaks in the municipal water network.	site-specific	Department of Environmental Services
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There is a Water Conservation Plan in place for low water years.	Town-wide	Department of Water
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Backup Power

Require periodic testing of all Essential Services backup power systems.	Town Departments	Department heads
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Education/Outreach		
Proactively educate the public in best practice methods to help themselves and neighbors in a post-hazard scenario.	Town-wide	EMD
Preparedness Training		
Emergency Services personnel participate in NIMS training.	Town-wide	EMD
Regional and Departmental Coordination		
Mutual Aid agreements are maintained for Police, Highway, Building Officials, Water, Sewer, and Municipal Electric, and Fire assistance.	Town-wide	EMD
All Health Hazard Planning		
The Carroll County Coalition for Public Health provides regional-based training for the public and CERT teams.	Town-wide	EMD
Review and update of Plans		
<p>The CERT meets quarterly to review the HMP and update the EOP each spring.</p> <hr/> <p>Annual Concurrence is completed for both the EOP and Hazard Mitigation Plan in September.</p>		

The primary planning mechanism in Wolfeboro addressing land use development is the master plan (2007). The town's Zoning Ordinance (2022) along with Subdivision (2002) and Site Plan Review Regulations (1998) are the tools for implementing the vision and goals of the master plan (which may include hazard mitigation goals). These various planning documents are generally responsible for promoting the health, safety, and welfare of the community.

The Site Plan Review Regulations have not updated since the last HMP. NH RSA 674:2(e) does allow for the inclusion of a natural hazards Section in a local master plan. The town should consider adopting this Hazard Mitigation Plan as part of the master plan by reference.

Wolfeboro does have a Code Enforcement Officer who works with the Selectboard to implement and enforce the town's various ordinances, including the State Building Code (<https://www.nh.gov/safety/boardsandcommissions/bldgcode/nhstatebldgcode.html>).

How the town appropriates its funds is another form of planning, indicating local priorities. In Wolfeboro, the Selectmen and Budget Committee are responsible for the development of annual and long-term town budgets, which would include most hazard mitigation expenses.

A Capital Improvements Program (CIP) is a tool that can be useful in helping a community budget for a variety of expensive capital projects, including those that mitigate hazards (NH RSA 674.5). Wolfeboro does have an active CIP.

B. STATUS OF 2019 ACTIONS

The 2019 HMP contained 22 recommended actions addressing natural hazards; some were mitigation actions, others enhanced local preparedness or response. The status of the natural hazards mitigation actions recommended in the 2019 plan is indicated in Table V-2 as either Completed (C), Deleted (X), or Deferred (D). Some of the deleted Actions may now be listed above as “Current Plans, Policies, and Regulations” (Table V-1). A review of the status of these actions reveals that five have been completed and three others are no longer considered pertinent. Deferred Actions (or portions of deferred Actions) were carried forward to be considered along with new Mitigation Actions (Table V-3).

Table V-2: Status of Mitigation and Response Actions from the 2019 Plan (C-Completed, X – Delete, D – Deferred)

Hazard	Project	Status/Comments 2024	Status 2024 - (X, C, D)
All Hazard	Promote use of NH Alerts (or equivalent) and notify residents of emergency preparedness steps and mitigation techniques that they can take to reduce the likelihood of loss of life or property (various methods of notification)	Links and information added to town website, creation of Wolfeboro Emergency Management Facebook page. <ul style="list-style-type: none"> • Completed. • Maintain. • April 2024 Reverse 911 was utilized. 	C
Flooding	Study improvements and recommend amendments to stormwater regulations	Completed: Comprehensive stormwater management regulations were adopted in 2022.	C
Flooding	Make FEMA floodplain maps available on town’s website	Completed. A link to FEMA Flood Map Service Center is on the Forms & Permits page of Building/Code Enforcement.	C
Flooding	Map locations of beaver dams and develop SOP for regular inspection	Utilized grant to purchase GPS as part of this program.	C
Severe Winter Weather	Ongoing hardening of Public Safety Facility	Complete rebuilding/renovation ongoing during 2024 for 2025 completion. Completion is slated for May 2025.	C
All Hazard	Determine a process of coordinating and updating annual progress on mitigation actions	Already part of Section VI of this plan (annual meeting for review) and tracking matrix Appendix (J).	X
Severe Winter Weather	Work with private road associations on ensuring agreements in place for winter road maintenance	Delete - Not a town responsibility.	X
Water Contamination	Study and implement water supply security improvements near Upper Beech Pond Road	Delete. No longer a priority/issue.	X

Hazard	Project	Status/Comments 2024	Status 2024 - (X, C, D)
All Hazard	Implement an Asset Management system for tracking the condition and planning the maintenance of bridges and culverts.	Purchased software April 2024. Management plan in place for bridges. DPW wide asset management to be in place by hopefully by the end of 2024.	D
All Hazard	Upgrade generator at Town Fueling Station to automatic.	Have two new pump stations. Looking to repurpose a generator from one of our pump stations for this purpose. Likely 2025.	D
Drought	Educate the public on water conservation methods.	Coordinate with Wolfeboro Waters Committee.	D
Flooding	Drainage study to determine the adequacy of culverts in Townsend Brook area (Pleasant Valley Road)	<ul style="list-style-type: none"> • Townsend Brook Dam outfall project is complete. • Starting conversation for fire pond reconstruction for a later time. 	D
Flooding, Washout, Erosion	Upgrade drainage system along North Main Street from Lakeview to Mill Street due to the age of the system.	Nothing at this time. Work with NHDOT to explore potential solutions and within the next five years prepare for submission to NHDOT's Ten Year Plan.	D
Flooding, Washout, Erosion	Upgrade the drainage system on Beech Pond Road from Boucher Hill to Nelson Hill. This is a 2,000' gravel section between two paved hills. Need to upgrade drainage and pave.	This section is scheduled for work in 2025 and 2026.	D
Flooding, Washout, Erosion	Mitigate flooding issues on Center Street from Pickering Corner to Grove Street through ongoing annual maintenance on pump	Town is in process of taking over this system, including Lehner Street. Routine catch basin maintained. New drainage system being planned for next phase of construction.	D
Flooding, Washout, Erosion	Ensure that roads on which there is new development meet town road standards.	<ul style="list-style-type: none"> • New town Road Standards - PB responsibility enforced through bonds & surety • Older roads are being offered to the town. 	D
Flooding, Water Contamination	Conduct outreach to local businesses regarding floodproofing, especially those that may be storing hazardous materials. Outreach from EMD with DES guidelines for storage and containment.	FD handles frequent requests for info, especially related to Underground Storage Tanks. Occasional posts on social media. Need to step it up.	D

Hazard	Project	Status/Comments 2024	Status 2024 - (X, C, D)
High Winds	Implement a tree trimming policy for road right-of-way purposes and to eliminate hazards.	The Tree Inventory and Management Plan was completed in 2022. Trees were identified for removal. DPW undertakes regular tree trimming. How many identified trees were removed? Hundreds of trees have been taken down. DPW and Municipal Electric. Ongoing. Focus is on dead and dying hazard trees. Funding is available.	D
Infectious Diseases	Coordinate public outreach, utilizing social media and other methods, to raise awareness of vaccination programs, tick prevention, and other public health issues	Integrated into regular messaging after COVID.	D
Lightning	Regular maintenance of surge protection systems on critical electronic equipment	Ongoing by department. This is done through the town's IT vendor.	D
Severe Winter Weather	Monitor and follow SOPs for ensuring severe winter weather does not compromise existing flat roofs on critical facilities.	Ongoing. Dept. by dept. Ex. FD and DPW monitor and maintain portions of the Town Hall and Train Station roofs.	D
Water Contamination	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	<ul style="list-style-type: none"> • Cross Rd. plans (set of check dams associated with Rust Pond) are complete, bid process to proceed Fall 2024. • Erosion near Rust Pond is also an issue - the issue is water pollution 	D

C. MITIGATION GOALS AND TYPES OF ACTIONS

GOALS

The Wolfeboro Hazard Mitigation Planning Committee concurs with the New Hampshire State Hazard Mitigation Plan 2023 Update overarching goals and has determined that the town goals from the 2019 plan are still appropriate, with some minor additions. Based on the hazards studied, and the assessment of current and proposed mitigation strategies, the Committee recommends the following hazard mitigation goals for the town of Wolfeboro:

Goal I: Community and Resources Protection: Reduce the potential impact of natural and man-made hazards on the town’s residents, workers, and visitors, as well as its critical facilities, property, economy, and natural and cultural resources, while improving the emergency communication, alert, and response systems.

Goal II: Public Education: Improve public awareness and knowledge of the threats and hazards which face the Town and impacts of potential hazards, while increasing the public’s involvement, including vulnerable populations, in hazard preparedness, emergency response and recovery.

Goal III: Inter/Intra Departmental Coordination: To build an awareness of hazard mitigation efforts through coordination within Wolfeboro, its schools and hospital, and between other communities, the region, county, state, and federal government agencies, and related organizations, while engaging in planned prevention through further consideration of hazard mitigation in the local land use process.

Goal IV: Damage Prevention and Reduction: Continue to develop methods to identify specific hazard areas and populations vulnerable to hazards to minimize the resultant public and private expenditures and damage and identify how climate change impacts natural hazards, as well as mitigation strategies.

Goal V: Fire Protection: Ensure adequate fire protection exists in all areas of the community.

Types of Mitigation Actions

There are **six types of actions** that communities may take to reduce the likelihood that a hazard might impact the community. Below each **mitigation action type** are several examples of those actions.

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. Targeted at residents and businesses in hazard-prone areas
 - ii. Set up displays in public areas, or homeowners associations.
 - iii. Give educational programs in schools.
 - iv. 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. MITIGATION ACTIONS

Through a review of the risk assessment and local vulnerabilities, several Problem Statements were identified and refined by the Committee. Through discussion an updated list of mitigation strategies was developed to address these current problems. Hazards are listed alphabetically. ID letters/numbers do not indicate any prioritization.

Table V-3: Problem Statements and Potential Mitigation Actions

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Status/Comments
All Hazard	AH 1	Notifying all community members of impending hazards and some of their options can help reduce the impact of an event on people and property.	Promote use of NH Alerts (or equivalent) and notify residents of emergency preparedness steps and mitigation techniques that they can take to reduce the likelihood of loss of life or property (various methods of notification).	Links and information added to town website, creation of Wolfeboro Emergency Management Facebook page.... <ul style="list-style-type: none"> • Completed. • Maintain. • April 2024 Reverse 911 was utilized.
All Hazard	AH 2	Improperly sized or maintained infrastructure can fail during hazard events resulting in harm to people, property, and services.	Implement an Asset Management system for tracking the condition and planning the maintenance of bridges and culverts. Water System Infrastructure. Town Infrastructure (Sewer)	Management plan in place for bridges. DPW wide asset management to be in place by hopefully by the end of 2024... Purchased software April 2024. Have DES grant for WS Asset Management. Ongoing
Drought	D 1	Drought could impact some people's health and services. Especially those with dug wells and farms.	Educate the public on water conservation methods.	...Coordinate with Wolfeboro Waters Committee.
Drought	D 2 New	Drought could impact some people's health and services. Especially those with dug wells and farms.	Make information available to residents regarding the town plans for Emergency Water Supply and access	
Earthquake	EQ 1	While Wolfeboro has not been directly impacted by an earthquake recently, the town is in one of the most active seismic areas in New Hampshire.	Post outreach materials to residents and business owners regarding the risks posed by earthquakes and steps that building owners can take to mitigate those risks.	

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Status/Comments
Extreme Temps.	ET 1	There are times when extreme heat or cold make it difficult for some people to keep cool or stay warm.	Distribute information (electronic & hard copies) on improving weatherproofing homes as well as accessing cooling/heating centers.	
Flooding, Washout, Erosion	FEW 2	Heavy rains could lead to washouts along this road, potentially putting people, property, and services at risk.	Upgrade the drainage system on Beech Pond Road from Boucher Hill to Nelson Hill. This is a 2,000' gravel section between two paved hills. Need to upgrade drainage and pave.	This section is scheduled for work in 2025 and 2026.
Flooding, Water Contamination	FWC 1	In a heavy rain event, flooding or erosion may move objects (such as tanks) and materials, leading to contaminated land or water.	Conduct outreach to local businesses regarding floodproofing, especially those that may be storing hazardous materials. Outreach from EMD with DES guidelines for storage and containment.	Occasional posts on social media. Need to step it up. Perhaps utilize Chamber of Commerce... FD handles frequent requests for info, especially related to Underground Storage Tanks.
Flooding, Washout, Erosion	FWE 1	The infrastructure along North Main Street is aging and susceptible to failure, especially during heavy rainfall. Note: This is a state road.	Upgrade drainage system along North Main Street from Lakeview to Mill Street due to the age of the system.	Nothing at this time... Work with NHDOT to explore potential solutions and within the next five years prepare for submission to NHDOT's Ten Year Plan.
Flooding, Washout, Erosion	FWE 3	Portions of Center Street can get inundated with water.	Mitigate flooding issues on Center Street from Pickering Corner to Grove Street through ongoing annual maintenance on pump	Routine catch basin maintained. New drainage system being planned for next phase of construction...Town is taking over this system, including Lehner Street.

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Status/Comments
High Winds	HW 1	Dead limbs and trees can fall across wires and roads, damaging property or blocking roads.	Implement a tree trimming policy for road right-of-way purposes and to eliminate hazards.	The Tree Inventory and Management Plan was completed in 2022. Trees were identified for removal. DPW undertakes regular tree trimming. How many identified trees were removed?... Hundreds of trees have been taken down. DPW and Municipal Electric. Ongoing. Focus is on dead and dying hazard trees. Replanting is expensive but much desired. Funding is available.
Infectious Diseases	ID 1	An epidemic can harm people and impact services.	Coordinate public outreach, utilizing social media and other methods, to raise awareness of vaccination programs, tick prevention, and other public health issues	Integrated into regular messaging after COVID.
Lightning	L 1	Lightning can cause power surges, damaging equipment, potentially putting people, property, and services at risk.	Regular maintenance of surge protection systems on critical electronic equipment	Ongoing by department...This is done through the town's IT vendor.
Severe Winter Weather	SWW 1	Heavy snow loads can compromise roofs, especially those with low slope.	Monitor and follow SOPs for ensuring severe winter weather does not compromise existing flat roofs on critical facilities. Outreach from EMD regarding Safety issues, including vents.	Ongoing.... Dept. by dept. Ex. FD and DPW monitor and maintain portions of the Town Hall and Train Station roofs Pop Whalen, also.
Severe Winter Weather	SWW 2	The Public Safety Facility is susceptible to damage due to natural hazards, such as snow loads.	Ongoing hardening of Public Safety Facility	Complete rebuilding/renovation ongoing during 2024 for 2025 completion... Completion slated for May 2025.

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Status/Comments
Tropical & Post-Tropical Cyclones	TC 1	A warmer, wetter climate may result in more tropical storms impacting the town with extended periods of wind & intense rain. This can put pressure on infrastructure and DPW and other local resources.	Update Design Standards (roads & Drainage) to reflect a changing climate and more intense rainfall events.	
Water Contamination (due to dam failure or erosion)	WC 1	If local water bodies are impacted by dam failure or erosion, water supplies could be impacted, leading to service interruptions.	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	cyanobacteria concern noted... • Cross Rd. plans (set of check dams associated with Rust Pond) are complete, bid process to proceed Fall 2024.
Water Contamination (due to dam failure or erosion)	WC 2	If local water bodies are impacted by dam failure or erosion, water supplies could be impacted, leading to service interruptions.	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	cyanobacteria concern noted... • Erosion near Rust Pond is also an issue - the issue is water pollution
Wildfire	WF 1	More homes are being developed in more remote areas of town. While there have not been recent instances of wildfire damage, there are steps that homeowners can take to reduce the impact of wildfire to their property.	Make information about the FireWise program (or similar programs) available to residents in these areas.	

The Committee identified the various costs and benefits associated with each action. The estimated cost represents what the town estimates it will cost in terms of dollars or staff hours to implement each action. Table V-4 shows the costs as well as the various benefits associated with each action. This table also includes notes whether the action addresses existing structures/infrastructure or future (new) structures/infrastructure as well as the type of mitigation action each represents. The ID letters are used simply for tracking purposes; they do not indicate any sort of prioritization.

Table V-4: Actions indicating Hazard, Cost, Structure, and Type of Action

Hazard	Project ID	Project - Mitigation Actions	Type of Mitigation Action	New or Existing Structure	Cost	Status/Comments
Drought	D 1	Educate the public on water conservation methods.	Public Education and Awareness	N/E	<20 hours	Coordinate with Wolfeboro Waters Committee.
All Hazard	AH 2	Implement an Asset Management system for tracking the condition and planning the maintenance of bridges and culverts. Water System Infrastructure. Town Infrastructure (Sewer)	Protect Emergency Services (long-term continuity)/ Prevention	E	<100 hours/ year	Management plan in place for bridges. DPW wide asset management to be in place by hopefully by the end of 2024... Purchased software April 2024. Have DES grant for WS Asset Management. Ongoing
Flooding, Washout, Erosion	FEW 2	Upgrade the drainage system on Beech Pond Road from Boucher Hill to Nelson Hill. This is a 2,000' gravel section between two paved hills. Need to upgrade drainage and pave.	Control the hazard (Structural Projects)	E	\$100,000	This section is scheduled for work in 2025 and 2026.
Flooding, Washout, Erosion	FWE 3	Mitigate flooding issues on Center Street from Pickering Corner to Grove Street through ongoing annual maintenance on pump	Protect Emergency Services (long-term continuity)/ Prevention	E	\$200,000	Routine catch basin maintained. New drainage system being planned for next phase of construction...Town is taking over this system, including Lehner Street.
Flooding, Washout, Erosion	FWE 1	Upgrade drainage system along North Main Street from Lakeview to Mill Street due to the age of the system.	Protect Emergency Services (long-term continuity)	E	\$1,000,000	Nothing at this time... Work with NHDOT to explore potential solutions and within the next five years prepare for submission to NHDOT's Ten Year Plan.
Tropical & Post-Tropical Cyclones	TC 1	Update Design Standards (roads & Drainage) to reflect a changing climate and more intense rainfall events.	Protect Emergency Services (long-term continuity)	N	<100 hours	

Hazard	Project ID	Project - Mitigation Actions	Type of Mitigation Action	New or Existing Structure	Cost	Status/Comments
Water Contamination (due to dam failure)	WC 1	Work with NHDES and the Public Works Department on addressing the dams near Cross Rd. and Rust Pond.	Protect Emergency Services (long-term continuity)	E	<100 hours	cyanobacteria concern noted... • Cross Rd. plans (set of check dams associated with Rust Pond) are complete, bid process to proceed Fall 2024.
Water Contamination (due to erosion)	WC 2	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	Protect Emergency Services (long-term continuity)		<100 hours	cyanobacteria concern noted... • Erosion near Rust Pond is also an issue - the issue is water pollution
Earthquake	EQ 1	Post outreach materials to residents and business owners regarding the risks posed by earthquakes and steps that building owners can take to mitigate those risks.	Public Education and Awareness	N/E	<20 hours	
Infectious Diseases	ID 1	Coordinate public outreach, utilizing social media and other methods, to raise awareness of vaccination programs, tick prevention, and other public health issues	Public Education and Awareness	NA	40 hours/year	Integrated into regular messaging after COVID.
Lightning	L 1	Regular maintenance of surge protection systems on critical electronic equipment	Protect Emergency Services (long-term continuity)	N/E	< 20 hours/year	Ongoing by department...This is done through the town's IT vendor.
Severe Winter Weather	SWW 1	Monitor and follow SOPs for ensuring severe winter weather does not compromise existing flat roofs on critical facilities. Outreach from EMD regarding Safety issues, including vents.	Protect Emergency Services (long-term continuity)	E	< 40 hours/year	Ongoing.... Dept. by dept. Ex. FD and DPW monitor and maintain portions of the Town Hall and Train Station roofs Pop Whalen, also.
Wildfire	WF 1	Make information about the FireWise program (or similar programs) available to residents in these areas.	Public Education and Awareness	E	< 20 hours/year	

Hazard	Project ID	Project - Mitigation Actions	Type of Mitigation Action	New or Existing Structure	Cost	Status/Comments
Drought	D 2 New	Make information available to residents regarding the town plans for Emergency Water Supply and access	Public Education and Awareness	E	< 20 hours/year	
Extreme Temps.	ET 1	Distribute information (electronic & hard copies) on improving weatherproofing homes as well as accessing cooling/heating centers.	Public Education and Awareness	E	< 20 hours/year	
Flooding, Water Contamination	FWC 1	Conduct outreach to local businesses regarding floodproofing, especially those that may be storing hazardous materials. Outreach from EMD with DES guidelines for storage and containment.	Public Education and Awareness	N/E	< 20 hours/year	Occasional posts on social media. Need to step it up. Perhaps utilize Chamber of Commerce... FD handles frequent requests for info, especially related to Underground Storage Tanks.
Severe Winter Weather	SWW 2	Ongoing hardening of Public Safety Facility	Protect Emergency Services (long-term continuity)	N	On going maint. of new facility	Complete rebuilding/renovation ongoing during 2024 for 2025 completion... Completed June 2025.
High Winds	HW 1	Implement a tree trimming policy for road right-of-way purposes and to eliminate hazards.	Property Protection	E	approx. \$10K/ yr	The Tree Inventory and Management Plan was completed in 2022. Trees were identified for removal. DPW undertakes regular tree trimming. How many identified trees were removed?... Hundreds of trees have been taken down. DPW and Municipal Electric. Ongoing. Focus is on dead and dying hazard trees. Replanting is expensive but much desired. Funding is available.

E. PRIORITIZATION OF ACTIONS

After considering the various merits and limitations of each project, the Committee prioritized the projects which had been identified. Committee members agreed to the standard STAPLEE prioritization tool to reflect the concerns of the community. The tool asks the committee to consider seven separate aspects for each Action. There was much discussion during this prioritization process and the final scores were reached through group consensus. Table V-5 shows the Actions and their scores. Total scores range from a high of 7 to a low of -2. See Appendix H for further details regarding the STAPLEE prioritization method and the detailed scores.

Scoring: 3 = Highly effective of feasible, 2 = Neutral, 1 = Ineffective or not feasible

Table V-5: Recommended Actions in Ranked Order

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Total
Drought	D 1	Drought could impact some people's health and services. Especially those with dug wells and farms.	Educate the public on water conservation methods.	7
All Hazard	AH 2	Improperly sized or maintained infrastructure can fail during hazard events resulting in harm to people, property, and services.	Implement an Asset Management system for tracking the condition and planning the maintenance of bridges and culverts. Water System Infrastructure. Town Infrastructure (Sewer)	5
Flooding, Washout, Erosion	FEW 2	Heavy rains could lead to washouts along this road, potentially putting people, property, and services at risk.	Upgrade the drainage system on Beech Pond Road from Boucher Hill to Nelson Hill. This is a 2,000' gravel section between two paved hills. Need to upgrade drainage and pave.	2
Flooding, Washout, Erosion	FWE 3	Portions of Center Street can get inundated with water.	Mitigate flooding issues on Center Street from Pickering Corner to Grove Street through ongoing annual maintenance on pump	2
Flooding, Washout, Erosion	FWE 1	The infrastructure along North Main Street is aging and susceptible to failure, especially during heavy rainfall. Note: This is a state road.	Upgrade drainage system along North Main Street from Lakeview to Mill Street due to the age of the system.	1
Tropical & Post-Tropical Cyclones	TC 1	A warmer, wetter climate may result in more tropical storms impacting the town with extended periods of wind & intense rain. This can put pressure on infrastructure and DPW and other local resources.	Update Design Standards (roads & Drainage) to reflect a changing climate and more intense rainfall events.	1

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Total
Water Contamination (due to dam failure or erosion)	WC 1	If local water bodies are impacted by dam failure or erosion, water supplies could be impacted, leading to service interruptions.	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	1
Water Contamination (due to dam failure or erosion)	WC 2	If local water bodies are impacted by dam failure or erosion, water supplies could be impacted, leading to service interruptions.	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	1
All Hazard	AH 1	Notifying all community members of impending hazards and some of their options can help reduce the impact of an event on people and property.	Promote use of NH Alerts (or equivalent) and notify residents of emergency preparedness steps and mitigation techniques that they can take to reduce the likelihood of loss of life or property (various methods of notification).	0
Earthquake	EQ 1	While Wolfeboro has not been directly impacted by an earthquake recently, the town is in one of the most active seismic areas in New Hampshire.	Post outreach materials to residents and business owners regarding the risks posed by earthquakes and steps that building owners can take to mitigate those risks.	0
Infectious Diseases	ID 1	An epidemic can harm people and impact services.	Coordinate public outreach, utilizing social media and other methods, to raise awareness of vaccination programs, tick prevention, and other public health issues	0
Lightning	L 1	Lightning can cause power surges, damaging equipment, potentially putting people, property, and services at risk.	Regular maintenance of surge protection systems on critical electronic equipment	0
Severe Winter Weather	SWW 1	Heavy snow loads can compromise roofs, especially those with low slope.	Monitor and follow SOPs for ensuring severe winter weather does not compromise existing flat roofs on critical facilities. Outreach from EMD regarding Safety issues, including vents.	0
Wildfire	WF 1	More homes are being developed in more remote areas of town. While there have not been recent instances of wildfire damage, there are steps that homeowners can take to reduce the impact of wildfire on their property.	Make information about the FireWise program (or similar programs) available to residents in these areas.	0
Drought	D 2 New	Drought could impact some people's health and services. Especially those with dug wells and farms.	Make information available to residents regarding the town plans for Emergency Water Supply and access	-1

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Total
Extreme Temps.	ET 1	There are times when extreme heat or cold make it difficult for some people to keep cool or stay warm.	Distribute information (electronic & hard copies) on improving weatherproofing homes as well as accessing cooling/heating centers.	-1
Flooding, Water Contamination	FWC 1	In a heavy rain event, flooding or erosion may move objects (such as tanks) and materials, leading to contaminated land or water.	Conduct outreach to local businesses regarding floodproofing, especially those that may be storing hazardous materials. Outreach from EMD with DES guidelines for storage and containment.	-1
Severe Winter Weather	SWW 2	The Public Safety Facility is susceptible to damage due to natural hazards, such as snow loads.	Ongoing hardening of Public Safety Facility	-1
High Winds	HW 1	Dead limbs and trees can fall across wires and roads, damaging property or blocking roads.	Implement a tree trimming policy for road right-of-way purposes and to eliminate hazards.	-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. This implementation schedule is a matrix (Table V-6) indicating the estimated cost of implementation, potential funding sources, the parties responsible for bringing about these actions, and implementation time frame. The time frame used fits within the 5-year term of this plan (Short 1 yr, Medium 2-3 yr, Long 4-5 yr). 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 and a record of this process and progress documented in Appendix K.

Table V-6: Implementation Schedule for Mitigation Actions by Time Frame

Hazard	Project ID	Project - Mitigation Actions	Cost	Potential Funding	Responsible Party	Time
Drought	D 1	Educate the public on water conservation methods.	<20 hours	DPW budget	DPW	M
All Hazard	AH 2	Implement an Asset Management system for tracking the condition and planning the maintenance of bridges and culverts. Water System Infrastructure. Town Infrastructure (Sewer)	<100 hours/ year	DPW budget	DPW	M
Flooding, Washout, Erosion	FEW 2	Upgrade the drainage system on Beech Pond Road from Boucher Hill to Nelson Hill. This is a 2,000' gravel section between two paved hills. Need to upgrade drainage and pave.	\$100,000	DPW budget, FEMA grant	DPW	S
Flooding, Washout, Erosion	FWE 3	Mitigate flooding issues on Center Street from Pickering Corner to Grove Street through ongoing annual maintenance on pump	\$200,000	DPW budget, FEMA grant	DPW	M

Hazard	Project ID	Project - Mitigation Actions	Cost	Potential Funding	Responsible Party	Time
Flooding, Washout, Erosion	FWE 1	Upgrade drainage system along North Main Street from Lakeview to Mill Street due to the age of the system.	\$1,000,000	Town Budget	DPW	L
Tropical & Post-Tropical Cyclones	TC 1	Update Design Standards (roads & Drainage) to reflect a changing climate and more intense rainfall events.	<100 hours	Town Budget	Planner & DPW	L
Water Contamination (due to dam failure)	WC 1	Work with NHDES and the Public Works Department on addressing the dams near Cross Rd. and Rust Pond.	<100 hours	Town Budget, DES Source Water grant	DPW	S
Water Contamination (due to erosion)	WC 2	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	<100 hours	Town Budget, DES Source Water grant	DPW	M
Earthquake	EQ 1	Post outreach materials to residents and business owners regarding the risks posed by earthquakes and steps that building owners can take to mitigate those risks.	<20 hours	Town Budget	EMD	L
Infectious Diseases	ID 1	Coordinate public outreach, utilizing social media and other methods, to raise awareness of vaccination programs, tick prevention, and other public health issues	40 hours/year	Town Budget	Health Office	M
Lightning	L 1	Regular maintenance of surge protection systems on critical electronic equipment	< 20 hours/year	Town Budget	EMD	S
Severe Winter Weather	SWW 1	Monitor and follow SOPs for ensuring severe winter weather does not compromise existing flat roofs on critical facilities. Outreach from EMD regarding Safety issues, including vents.	< 40 hours/year	FD Budget	DPW, EMD	S
Wildfire	WF 1	Make information about the FireWise program (or similar programs) available to residents in these areas.	< 20 hours/year	FD Budget	Fire Chief	M
Drought	D 2 New	Make information available to residents regarding the town plans for Emergency Water Supply and access	< 20 hours/year	Town Budget	DPW	M
Extreme Temps.	ET 1	Distribute information (electronic & hard copies) on improving weatherproofing homes as well as accessing cooling/heating centers.	< 20 hours/year	Town Budget	EMD	M

Hazard	Project ID	Project - Mitigation Actions	Cost	Potential Funding	Responsible Party	Time
Flooding, Water Contamination	FWC 1	Conduct outreach to local businesses regarding floodproofing, especially those that may be storing hazardous materials. Outreach from EMD with DES guidelines for storage and containment.	< 20 hours/ year	Town Budget	EMD	M
Severe Winter Weather	SWW 2	Ongoing hardening of Public Safety Facility	On going maint. of new facility	Town Budget & grants	Fire	S
High Winds	HW 1	Implement a tree trimming policy for road right-of-way purposes and to eliminate hazards.	approx. \$10K/ yr	DPW Budget	DPW	S

SECTION VI: PLAN ADOPTION AND MONITORING

A. IMPLEMENTATION

The Wolfeboro Hazard Mitigation Plan Update Committee, established by the Emergency Management Directors/Selectboard, 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, NH HSEM, state agencies, and other sources such as those listed in Appendix B. The EMD will coordinate with the department heads to ensure that funds and staff time for these projects are available. The EMD and Hazard Mitigation Committee will work with the Selectmen to incorporate the various projects into subsequent budgets where appropriate. 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 updates to the Master Plan, Zoning, or the Subdivision or Site Plan 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 2025 update to the Hazard Mitigation Plan, an attempt will be made to have hazard mitigation strategies integrated into existing mechanisms and into all other ongoing town planning activities.

B. PLAN MAINTENANCE & PUBLIC INVOLVEMENT

Plan Evaluation

To track progress and evaluate the mitigation strategies identified in Section V.F., the Wolfeboro Hazard Mitigation Planning Committee and the Selectboard will review the Hazard Mitigation Plan **every year (by the end of April) or after a major hazard event**. The **Selectboard/Emergency Management Director** is responsible for initiating this review and shall consult with members of the HMP Committee identified in this Plan. Responsible parties identified for specific mitigation actions will be asked to submit a status report of those actions in advance of the meeting. Tables A and B in Appendix K may be used for recording this plan evaluation.

Meetings will entail the following actions:

- Documentation of natural hazard events during the past year, local damages (and costs) associated with these events, costs associated with mitigation actions (and any match or

reimbursement). Documentation could include a brief description, any associated costs and funding sources, as well as images.

- Track progress toward implementation of the current mitigation plan based on status reports from responsible parties. Refer to Section V.B. for an applicable evaluation scale.
- Assess the effectiveness of the plan at achieving the plan's stated purpose (Section I.D.) and goals (Section V.C.). Refer to Section V.A. for an applicable evaluation scale.
- Other activities and discussions may include:
 - Review previous hazard events to discuss and evaluate major issues and possible mitigation for future events.
 - Assess how the mitigation strategies of the plan can be integrated with other Town plans and operational procedures, including the zoning ordinance and local Emergency Operations Plan.

Plan Update

The Emergency Management Director is also responsible for updating and resubmitting the plan to FEMA to be re-approved every five years. The EMD will convene a plan update committee in mid-2028 to begin updating this plan before it expires. The plan update process will follow the same planning process used in this plan update. If modifications have been made either to the FEMA Local Mitigation Planning Policy Guide or the NH State Hazard Mitigation Plan, these will be incorporated into the planning process. Administrative staff may be utilized to assist, especially with the public involvement process.

Public Participation

For annual monitoring/evaluation process and for the five-year update, techniques that will be utilized for public involvement include:

- ❖ Provide invitations to municipal department heads as well as the Planning Board;
- ❖ Post notices of meetings at the Town Office and on the town website;
- ❖ Submit press releases for publication in the *Granite State News* and other appropriate newspapers or media outlets.
- ❖ Additional steps to consider include conducting a public survey, holding an evening meeting, or providing for remote participation in meetings.

Entities to invite to future Hazard Mitigation monitoring/evaluation meetings and plan updates include the Emergency Management Directors of the neighboring communities of Alton, Tuftonboro, Ossipee, Brookfield, and New Durham. Additionally, the Emergency Preparedness Planner from Carroll County Public Health Network, social service providers such as Tri-County CAP, and others working with socially vulnerable communities in Wolfeboro.

C. SIGNED CERTIFICATE OF ADOPTION

BOARD OF SELECTMEN
A RESOLUTION ADOPTING THE
WOLFEBORO, NH
HAZARD MITIGATION PLAN UPDATE 2025

WHEREAS, the Town of Wolfeboro, NH has historically experienced damage from natural hazards, and it continues to be vulnerable to the effects of those natural hazards as profiled in this plan, potentially resulting in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Town of Wolfeboro, NH has developed and received approval pending adoption from the Federal Emergency Management Agency (FEMA) for its Hazard Mitigation Plan Update 2025 under the requirements of 44 CFR 201.6; and

WHEREAS, public and committee meetings were held between July 15, 2024 and September 23, 2024 regarding the development and review of the Wolfeboro, NH Hazard Mitigation Plan Update 2025; and

WHEREAS, the Plan specifically addresses hazard mitigation actions and Plan maintenance procedures for the Town of Wolfeboro, NH, and

WHEREAS, the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that could impact the Town of Wolfeboro, NH, 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 Wolfeboro, NH eligible for funding to mitigate 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 Wolfeboro, NH;
2. The respective officials identified in the mitigation actions 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 plan's mitigation action items shall be presented to the Selectboard by the Emergency Management Director.

IN WITNESS WHEREOF, the undersigned has affixed his/her signature and the town seal of the Town of Wolfeboro this

Date: 9/8/2025

Seal:

WOLFEBORO, NH SELECTBOARD

John Thurston (Signature) John Thurston (Printed)

Paul Senecal (Signature) Paul Senecal (Printed)

Linda T. Murray (Signature) Linda T. Murray (Printed)

Paul O'Brien (Signature) Paul O'Brien (Printed)

Brian S Deshaies (Signature) Brian S Deshaies (Printed)

ATTEST:

Amy Capone-Murphy (Signature) Amy Capone-Murphy (Printed)

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>

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

NH Governor’s Office of Energy and Planning 271-2155
<http://www.nh.gov/oep/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 Natural and Cultural Resources 271-2411
<https://www.dncr.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, Tauton, 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/	
Eversource	(800) 662-7764
http://www.eversource.com/	
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. Two lists of state and federal resources are provided below. Some of these may not apply or be appropriate for Wolfeboro. The NH Homeland Security and Emergency Management Field Representative for Carroll 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 OPD, also refer to LRPC
- Dam Safety Program..... NH Department of Environmental Services
- Emergency Watershed Protection (EWP) Program..... USDA, Natural Resources Conservation Service
- Flood Mitigation Assistance Program (FMAP)..... NH Homeland Security and Emergency Management
- Highway Safety Improvement Program..... NH Department of Transportation
- Mitigation Assistance Planning (MAP) NH Homeland Security and Emergency Management
- NH Public Works Mutual Aid UNH Technology Transfer (T2)
- National Flood Insurance Program (NFIP)NH Office of Planning & Development
- Project Impact NH Homeland Security and Emergency Management
- Roadway Repair & Maintenance Program(s)NH Department of Transportation
- Shoreland Protection Program NH Department of Environmental Services
- Various Forest and Lands Program(s).....NH Department of Division of Forests and Land
- Wetlands Programs NH Department of Environmental Services
- State Aid Bridge Program for Municipalities NH Department of Transportation (and LRPC)
- Contribution to Damage Losses (RSA 235:34)NH Department of Transportation

FEMA’s Public Assistance (PA) grant program is authorized through the Stafford Act to provide federal assistance to government organizations and certain Private Nonprofit (PNP) organizations following a Presidential Disaster Declaration. This funding is provided at a 75%/25% cost share to allow government and certain PNP entities to respond and recover from major disasters or emergencies. The Public Assistance program returns damages to their pre-disaster condition. Through the PA program, FEMA provides supplemental assistance in the following categories:

- Emergency Work
 - o Debris Removal
 - o Emergency Protective Measures
- Permanent Work
- Roads and Bridges
- Water Control Facilities

- Public Buildings and Contents
- Public Utilities
- Parks, Recreational, and other facilities

Section 406 of the Stafford Act provides FEMA with the authority to fund cost-effective mitigation measures to repair, restore, or replace eligible damaged facilities, and allows for those structures to be rebuilt or repaired to better than pre-disaster conditions to make them less vulnerable to future hazards. Unlike other hazard mitigation grant programs, Section 406 mitigation is only available in the counties declared in the presidential declaration and only for eligible damaged facilities.¹³

¹³ NH State Hazard Mitigation Plan, 2023, p. 26.

Federal Emergency Management Agency (FEMA)

FEMA makes funds available for mitigation efforts to reduce future costs associated with hazard damage.

Mitigation Funding Sources Program	Details	Notes
Flood Mitigation Assistance Program (FMA)	Provides funding to implement measures to reduce or eliminate the long-term risk of flood damage http://www.fema.gov/government/grant/fma/index.shtml	States and localities
Hazard Mitigation Planning Grant (HMPG)	Provides grants to implement long-term hazard mitigation measures after a major disaster declaration http://www.fema.gov/government/grant/hmpg/index.shtml	Open
National Flood Insurance Program (NFIP)	Enables property owners to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages http://www.fema.gov/business/nfip/	States, localities, and individuals
Pre-Disaster Mitigation Program (PDM)	Provides funds for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event http://www.fema.gov/government/grant/pdm/index.shtml	States, localities, and tribal governments

Environmental Protection Agency (EPA)

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

Mitigation Funding Sources Program	Details	Notes
Clean Water Act Section 319 Grants	Grants for water source management programs including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and regulation. http://www.epa.gov/OWOW/NPS/cwact.html	Funds are provided only to designated state and tribal agencies
Clean Water State Revolving Funds	State grants to capitalize loan funds. States make loans to communities, individuals, and others for high-priority water-quality activities. http://www.epa.gov/owow/wetlands/initiative/srf.html	States and Puerto Rico

Wetland Program Development Grants	Funds for projects that promote research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution. http://www.epa.gov/owow/wetlands/initiative/#financial	See website
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Floodplain, Wetland and Watershed Protection Programs

US Army Corps of Engineers (USACE) and the U.S. Fish and Wildlife Service offer funding and technical support for programs designed to protect floodplains, wetlands, and watersheds.

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

Bureau of Land Management

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

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

Housing and Urban Development

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

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

U.S. Department of Agriculture

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

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

USDA Natural Resources Conservation Service Watershed Protection and Flood Prevention	Funds for soil conservation; flood prevention; conservation, development, utilization and disposal of water; and conservation and proper utilization of land. http://www.nrcs.usda.gov/programs/watershed/index.html	See website
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Health and Economic Agencies

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

Federal Loans and Grants for Disaster Relief

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

APPENDIX C: PUBLICITY AND INFORMATION

Committee meetings were announced on the town of Wolfeboro and Lakes Region Planning Commission webpages. Press releases like the one below were sent to the weekly *Granite State News* as well as the daily *Conway Daily Sun* and statewide *Concord Monitor* prior to the Committee meetings. Several informational handouts and the 2019 Hazard Mitigation Plan were distributed to the committee and available at all meetings and at the LRPC webpage.

LAKES REGION PLANNING COMMISSION

July 30, 2024

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



For Immediate Release

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

Town of Wolfeboro Hazard Mitigation Plan Meeting

The Wolfeboro Hazard Mitigation Plan Committee is in the process of updating its 2019 Hazard Mitigation Plan. The committee is represented by a variety of local interests including the Fire, Police and Highway departments, along with the Budget Committee and Select Board, the town Health Officer, Code Enforcement, Welfare Officer, a school representative, and residents. The group will review the various natural hazards that put Wolfeboro at risk as well as the development of recommendations to protect the safety and well-being of town residents.

The committee will meet on Monday August 26 at 2:00 PM at the Wolfeboro Public Library (Beaver Room) 259 Main Street.

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 natural hazards. Community leaders want the town to be a disaster resistant community and believe that updating the Hazard Mitigation Plan will bring Wolfeboro one step closer to that goal.

This five-year update will follow the process established by FEMA (Federal Emergency Management Agency) and meet their requirements, work in coordination with the State of NH Hazard Mitigation Plan, yet also reflect the needs of the town. Maintaining a FEMA approved HMP enables the town to apply for several types of mitigation funding.

Residents of Wolfeboro and representatives from neighboring communities are encouraged to provide input about natural hazard events and the impacts that they have had on the town utilizing the online survey found at <https://arcg.is/00qTbK> or use the QR code:



For more information, please contact Chief Thomas Zotti, Wolfeboro Emergency Management Director tzotti@wolfeboronh.us or David Jeffers, Regional Planner, Lakes Region Planning Commission at djeffers@lakesrpc.nh.gov 279-5341. The 2019 Wolfeboro Hazard Mitigation Plan can be found at <https://www.lakesrpc.nh.gov/Pages/Index/228297/hazard-mitigation>.

Information

Hazard Mitigation:

"Hazard Mitigation means any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards"

Questions to address:

- Where are potential hazards?
- What are the risks?
- What are we already doing?
- Where are the gaps?
- What actions can be taken?
- What actions are feasible?
- What are our priorities?
- How will these actions be implemented?
- How will the plan be monitored?

Local Hazard Mitigation Planning

What is a Hazard Mitigation Plan?

In cooperation with the NH Bureau of Emergency Management (BEM), the Lakes Region Planning Commission (LRPC) is working with several of its member communities each year to develop local Hazard Mitigation Plans.



The Hazard Mitigation Plans are designed to address each particular community's vulnerability to natural and man-made hazards. The local plan serves as a means to reduce future losses from hazard events before they occur. This local initiative is guided by a community-based Hazard Mitigation Planning Committee, with the LRPC providing technical support. The structure for plan development is provided through the *Guide to Hazard Mitigation Planning for New Hampshire Communities* which ensures that the community has considered the content of the State of New Hampshire Hazard Mitigation (409) Plan.

MITIGATION PROCESS

- IDENTIFY HAZARDS
- PROFILE HAZARD EVENTS
- INVENTORY ASSETS
- ESTIMATE LOSSES
- PRIORITIZE ACTION STEPS
- ADOPT THE PLAN
- IMPLEMENTATION

Why create a plan?

Development of a local Hazard Mitigation Plan is a chance for the community to assess the hazards that have the potential to threaten residents and their property. It also gives the community an opportunity to identify at-risk populations as well as resources within the community that might be at risk. The committee can then explore a variety of steps that might be put into place to help the community reduce damage and loss.

Having a Hazard Mitigation Plan in place, enables many communities to allocate their resources more effectively. It can also be a useful tool for leveraging additional sources of funding in the event of a disaster.

Federal Emergency Management Agency (FEMA) Requirement:

In order for communities to be eligible for the full spectrum of mitigation program funding, local hazard mitigation plans must be approved by FEMA. The staff of LRPC attend semi-annual hazard mitigation meetings and training programs that are designed to expedite the approval process.

Lakes Region Planning Commission
103 N. Main St., Suite #3
Meredith, NH 03253

(603) 279-8171 - phone
(603) 279-0200 - fax



Frequently asked questions

- **What will a Hazard Mitigation Plan cost?**

Since this project is funded by the NH Bureau of Emergency Management, the only cost to the community is the dedication of committee members' time and energy.

- **How is a Hazard Mitigation Plan different from an Emergency Action Plan?**

Although there is some overlap, these are different plans, each serving a different function in helping a community to minimize the potential for damage and loss in a community.

Emergency Action Plans (EAP) identifies potential hazard events and the resources available to address them; it also addresses how a community responds to an emergency.

A Hazard Mitigation Plan (HMP) also identifies potential hazard events and community resources. However, an HMP looks at the situation in terms of prevention instead of response. Gaps in coverage, programs, and structural needs are analyzed and specific mitigation steps are recommended and potential funding sources are identified.

- **Is this a community plan, a state plan, or a federal plan?**

The state of New Hampshire does require that each community develop an HMP. Once a plan is approved by FEMA and adopted by the community, should there be a need for Federal Mitigation money, more funding would be available. However, local public involvement is required. The local Emergency Management Director or a committee of citizens should help in plan development; there should also be several public presentations where citizens can make recommendations, provide input, and participate in development of the plan. In the end, the Board of Selectmen need to approve the plan.



Alton dam breach, 1996



The Essentials

At a minimum, each local Hazard Mitigation Plan should contain the following sections:

- An evaluation of the potential hazards within the community
- A description and analysis of local, state, and federal hazard mitigation policies, programs, and capabilities to mitigate the identified hazards in the area
- Goals, objectives, strategies and actions to reduce long-term vulnerability to hazards
- An evaluation of the costs and benefits of the recommended mitigation projects.



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

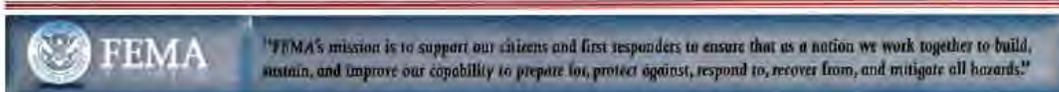
- **Public involvement** – In addition to government agencies involved in incident management, floodplain management and economic development, the planning process usually involves a range of stakeholders, including representatives of neighborhood groups, civic organizations, academia, environmental 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.



Fact Sheet

State and Local Mitigation Planning



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’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: MEETINGS, AGENDAS, PARTICIPATION, and SURVEY

Invitations to participate in meetings were sent to committee members, neighboring EMDs, various state agencies, and stakeholders including those who work with socially vulnerable communities.

This section also contains copies of the Committee meeting agendas and a summary of participation. Agendas were developed by the LRPC planner who also facilitated the meetings. Committee meetings were open to the public. At each meeting there was an opportunity for public input.

Invitations

Wolfeboro HMP Update meeting 7/15

David Jeffers
To: David Jeffers
Cc: Chief/EMD Thomas Zotti; Christine Marion
Bcc: richardskarinka@gmail.com; Mary Schillereff; christopher.szatynski@dos.nh.gov; info@c3ph.org; businessoffice@tccap.org; steve.doyon@des.nh.gov; Adam Thompson; Dana Cullen, Jr.; fmitchell@farmingtonfd.net; administrator@alton.nh.gov

You forwarded this message on 7/12/2024 7:45 AM.

0.Agenda, Wolfe.pdf
170 KB

Open PDFs in Adobe Acrobat

Wolfeboro HMP Committee members and Stakeholders,

Hello,

The **Wolfeboro Hazard Mitigation Plan Committee** will hold its initial meeting **Monday July 15 from 2:00 PM – 3:30 PM at the Wolfeboro Public Library** (Beaver Room). Please plan to attend.

The meeting agenda is attached. Wolfeboro’s 2019 HMP can be found [here](#).

We look forward to seeing you there.

Dave

Note - As part of the update process, we ask the public to participate in the following survey:
Link <https://arcg.is/00qTbK> or use the QR code:



David Jeffers
Regional Planner
Lakes Region Planning Commission
603.279.5341
103 Main Street Suite #3

Lakes Region Planning Commission website:

The screenshot shows the homepage of the Lakes Region Planning Commission website. The browser address bar displays 'https://www.lakesrpc.nh.gov'. The page is organized into several columns:

- WELCOME:** Includes a 'Stay Connected | Contact Us' link and a list of departments with phone numbers: Administration (603-279-5334), Finance (603-279-5338), GIS and Maps (603-279-5341), Household Hazardous Waste (603-279-5341), Land Use Planning (603-279-5339), Solid Waste (603-279-5336), Transportation (603-279-5335), and Grant Administration (603-279-5340). A link to the 'Staff Directory' is provided.
- UPCOMING EVENTS:** Lists 'IAC Meeting' (TBD), 'Executive Board Meeting' (September 11, 2024 @ 9 AM, LRPC, 1st Fl Conf Rm - Humiston Bldg), and 'Commissioner Meeting/Annual Meeting' (September 23, 2024 @ 6:00 PM, Location: TBD). A 'Full Calendar' link is also present.
- ABOUT US:** Describes the commission as a unique association of local governments providing comprehensive planning services. A map of the Lakes Region is shown.
- DONATE - HHW PROGRAM:** Encourages donations to the Household Hazardous Waste (HHW) Program via PayPal, with a 'Donate' button.
- NEWS & ANNOUNCEMENTS:**
 - Wolfeboro Hazard Mitigation Plan Meeting:** A meeting on Monday, July 15th at 2:00 PM at the Wolfeboro Public Library. A red circle highlights this section.
 - LRPC ANNUAL MEETING 2024:** Held on Monday, June 17th, with a press release link.
 - Cyanobacteria Alert!** A warning about cyanobacteria blooms in New Hampshire waterbodies.
 - Grant Opportunity:** Information about the Safe Streets and Roads for All (SS4A) Grant Program.

The screenshot shows the official website for Wolfeboro, New Hampshire. At the top, there is a navigation bar with links for 'About Us', 'Departments', 'Boards & Commissions', 'Visitors', 'Subscribe to News / Alerts', and 'Warmth & More Fund'. A search bar and a 'FIND IT Fast' button are also present. The main content area features a 'Home' link and a prominent notice titled 'Notice of Hazard Mitigation Committee to meet' in the library beaver room, posted on July 9, 2024. The notice includes contact information for David Jeffers and details about a meeting on Monday, July 15, at 2:00 PM at the Wolfeboro Public Library. It also explains the purpose of the committee's work to update the town's Hazard Mitigation Plan and encourages community input. At the bottom of the page, there is an attachment table listing a PDF file named 'july2024notice.pdf' with a size of 209.55 KB.

Wolfeboro
NEW HAMPSHIRE
Official Town Website

Search

Home

About Us Departments Boards & Commissions Visitors Subscribe to News / Alerts Warmth & More Fund FIND IT Fast

Home

Notice of Hazard Mitigation Committee to meet

library beaver room
POSTED ON: JULY 9, 2024 - 9:32AM

July 8, 2024 -For Immediate Release

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

Town of Wolfeboro Hazard Mitigation Plan Meeting



The Wolfeboro Hazard Mitigation Plan Committee is beginning the process of updating its 2019 Hazard Mitigation Plan. The committee is represented by a variety of local interests including the Fire, Police, EMS, and Highway departments, along with the Planning and Select Boards, the town Health Officer, a school representative, and residents. The group will review the various natural hazards that put Wolfeboro at risk as well as the development of recommendations to protect the safety and well-being of town residents.

Th committee will meet on Monday July 15 at 2:00 PM at the Wolfeboro Public Library (Beaver Room) 259 Main Street.

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 natural hazards. Community leaders want the town to be a disaster resistant community and believe that updating the Hazard Mitigation Plan will bring Wolfeboro one step closer to that goal.

This five-year update will follow the process established by FEMA (Federal Emergency Management Agency) and meet their requirements, work in coordination with the State of NH Hazard Mitigation Plan, yet also reflect the needs of the town. Maintaining a FEMA approved HMP enables the town to apply for several types of mitigation funding.

Residents of Wolfeboro and representatives from neighboring communities are encouraged to provide input about natural hazard events and the impacts that they have had on the town utilizing the online survey found at <https://arq.is/00qTbK> or use the QR code:

For more information, please contact Chief Thomas Zotti, Wolfeboro Emergency Management Director tzotti@wolfeboronh.us or David Jeffers, Regional Planner, Lakes Region Planning Commission at djeffers@lakesrpc.nh.gov 279-5341. The 2019 Wolfeboro Hazard Mitigation Plan can be found at <https://www.lakesrpc.nh.gov/Pages/Index/228297/hazard-mitigation>.

Attachment	Size
 july2024notice.pdf	209.55 KB

Wolfeboro Hazard Mitigation Plan Update

Monday July 15, 2024 2:00 – 3:30 PM

Wolfeboro Public Library (Beaver Room)

259 South Main Street

Wolfeboro, NH

Meeting 1 - AGENDA

1. Introductions
2. Mitigation planning vs. emergency response planning
3. Changes to Plan Development
 - a. FEMA Guidance/Checklist (2022)
 - b. State HMP (2023)
4. Process
 - a. Plan Update Process
 - b. Methods for Gathering Information
 - c. Community Outreach & Opportunities for Public Input
5. Information – Changes since last plan
 - a. Natural hazards
 - i. History of events
 - ii. Locations
 - iii. Impacts
 - b. Critical Facilities
 - c. Development Trends
 - d. Community Capabilities
 - e. Goals
6. Schedule for Meetings
7. Public Input



FEMA



Wolfeboro Hazard Mitigation Plan Update

Monday September 23, 2024

1:00 – 2:30 PM

Via Zoom

Join Zoom Meeting

<https://us02web.zoom.us/j/89634890084?pwd=9ZwFxmZpP8vhQA8I4cG2CxYb4FPNTI.1>

Meeting ID: 896 3489 0084

Passcode: 460747

Meeting 3 - AGENDA

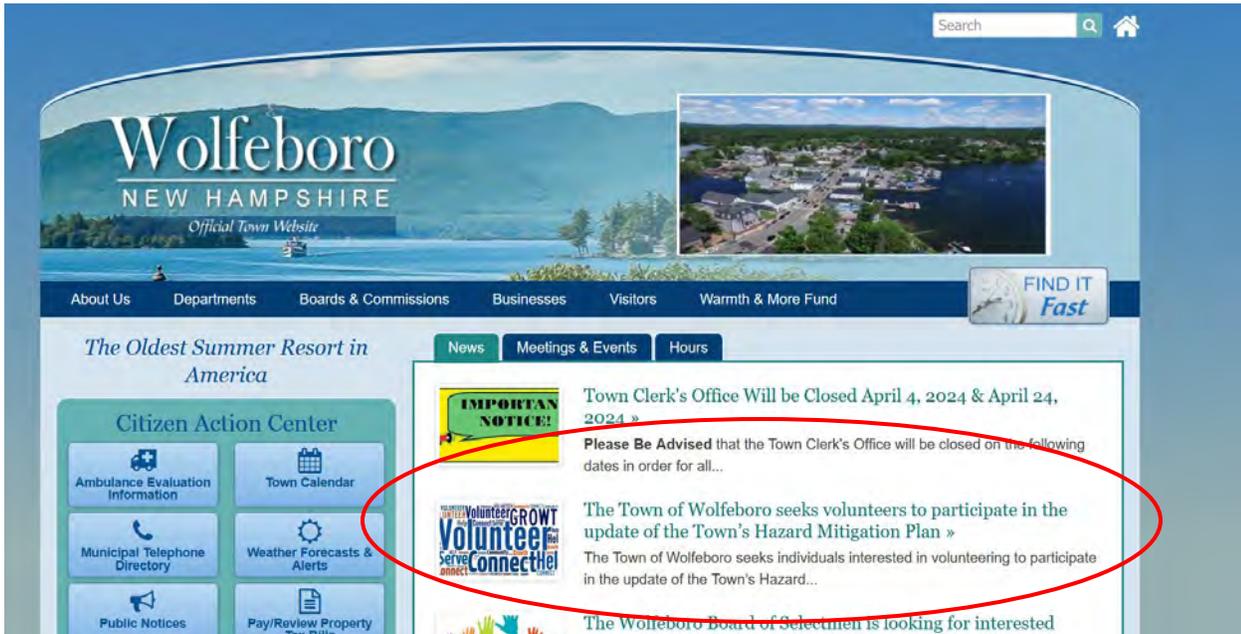
1. Problem Identification
Confirm Problem Statements. Identify any new ones.
2. Identify Mitigation Actions
Confirm Mitigation Actions. Identify any new ones.
3. Prioritization of Mitigation Actions
Based on the Risk Analysis and Vulnerability assessment and Wolfeboro's capabilities, rate the proposed Mitigation Actions by looking at Benefits and Cost under each of the STAPLEE Criteria.
4. Implementation
Discuss the steps needed to implement the Mitigation Actions.
5. Any other Business
6. Schedule for Meetings
7. Public Input



FEMA



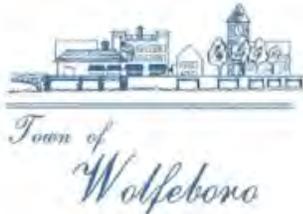
Participants



							Town:	Town Name: Wolfeboro
	7/15/24	8/26/24	9/23/24				Title	Name
Purpose	Meeting #1	Meeting #2	Meeting #3	Homework /Corre-spondence	Review & BoS Meeting	Adoption		
	1.5	1.5		8.0			EMD (Emergency Management Director)	Thomas Zotti, Fire Chief/EMD
	1.5	1.5		1.0			Police	Christopher Warn, Police Chief
	1.5	1.5					Public Works/Highway/Road Agent	Steve Randall, Public Works Director
	1.5	1.5	2.0	2.0			Selectboard	Brad Harriman
	1.5	1.5	2.0	2.0			Selectboard	Dave Senecal
							Planner/Planning Board member	Tavis Austin, Director of Planning
	1.5	1.5	2.0	2.0			Code Enforcement	Jason Durrance, Building Official
	1.5	1.5	2.0	2.0			Budget Committee or CIP representative	John MacDonald, Budget Comm. Chair
			2.0	1.0			School representative	Lisa Rogers, Custodial Director
							Health Services representative	Shelley Rondeau, Health Officer (send
	1.5	1.5	2.0	2.0			Local Welfare officer	Amy Capone-Muccio, Welfare Officer
	1.5		2.0	2.0			Business owners	Rick Skarinka
	1.5	1.5		3.0			Local Residents	Mary Schillereff
	1.5	1.5		1.0			Local Residents	Reeve Curry
		1.5	2.0	1.0			Public Works	Steve Petsche
			2.0				Capital Improvements Program Committee	Paul Whalen, member

Public Input - Survey

In addition to postings and press releases requesting public input at meetings, members of the public were also encouraged to complete an on-line survey to provide input to the hazard mitigation planning process.



Fire Chief/EMD
Thomas Zotti

Deputy Fire Chief
Nate Nichols

For Immediate Release
March 11, 2024
Contact: Fire Chief/EMD Tom Zotti

Town of Wolfeboro Opens Survey as it Begins Process of Updating Hazard Mitigation Plan

(Wolfeboro, NH) – The five-year update of the town of Wolfeboro’s Hazard Mitigation Plan is getting underway.

The hazard mitigation plan is a community-driven, living document. The planning process itself is as important as the resulting plan because it encourages communities to integrate mitigation with day-to-day decision making regarding land use planning, floodplain management, site design, and other functions.

The update is being performed with technical assistance from the Lakes Region Planning Commission under a grant received last year from the State of NH.

As part of the update process, we ask members of the Wolfeboro community to participate in the following survey:

- Link <https://arcg.is/00dTbK>

Or use the QR code:



231 South Main Street Post Office Box 629 Wolfeboro, New Hampshire 03894
(603) 369-5400 Emergency 911 Fax (603) 369-8170



Mitigation planning includes the following elements:

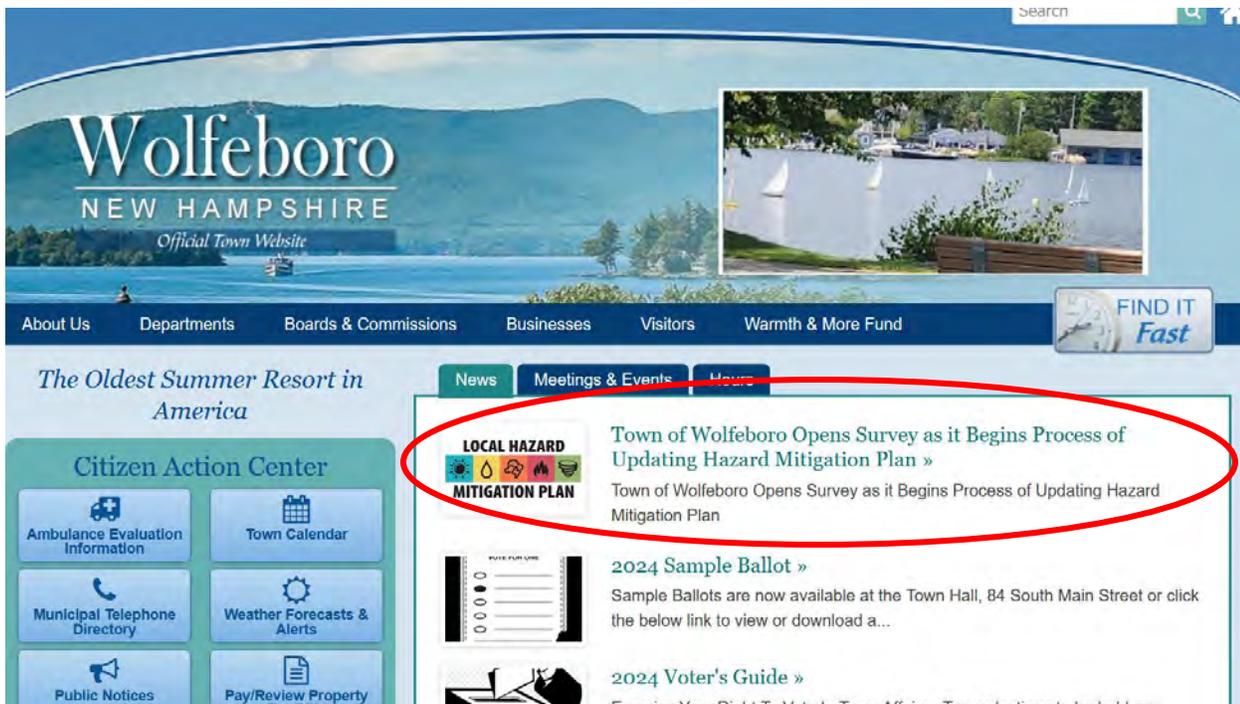
Public Involvement – Planning creates a way to solicit and consider input from diverse interests, and promotes discussion about creating a safer, more disaster-resilient community. Involving stakeholders is essential to building community-wide support for the plan. In addition to emergency managers, the planning process involves other government agencies, businesses, civic groups, environmental groups, and schools.

Risk Assessment – Mitigation plans identify the natural hazards and risks that can impact a community based on historical experience, estimate the potential frequency and magnitude of disasters, and assess potential losses to life and property. The risk assessment process provides a factual basis for the activities proposed in the mitigation strategy.

Mitigation Strategy – Based on public input, identified risks, and available capabilities, communities develop mitigation goals and objectives as part of a strategy for mitigating hazard-related losses. The strategy is a community’s approach for implementing mitigation activities that are cost effective, technically feasible, and environmentally sound as well as allowing strategic investment of limited resources.

If you would like to review the town’s current Hazard Mitigation Plan, please see it on the Town’s website here:

https://www.wolfeboronh.us/sites/g/files/vyhlf8406/f/uploads/wolfeboro_hmp_final_2019.pdf



Town of Wolfeboro Opens Survey as it Begins Process of Updating Hazard Mitigation Plan

POSTED ON: MARCH 12, 2024 - 8:14AM

Town of Wolfeboro Opens Survey as it Begins Process of Updating Hazard Mitigation Plan

The five-year update of the town of Wolfeboro’s Hazard Mitigation Plan is getting underway. The hazard mitigation plan is a community-driven, living document. The planning process itself is as important as the resulting plan because it encourages communities to integrate mitigation with day-to-day decision making regarding land use planning, floodplain management, site design, and other functions.

The update is being performed with technical assistance from the Lakes Region Planning Commission under a grant received last year from the State of NH. As part of the update process, we ask members of the Wolfeboro community to participate in the following survey:



- Use the link: <https://arcg.is/00qTbK>
- Or use the QR code:



Attachment	Size
240311_release-survey.pdf	692.96 KB

Results: Nineteen responses were received and shared with the committee at meetings as local risk was considered and problems/mitigation actions discussed.

Hazards of Concern:

- High – Flooding, Winter Weather, High Wind events,
- Medium – Extreme Temperatures, Hurricane/Tropical Depression, Public Health Emergency

Priorities for mitigating hazards

- Protecting critical facilities (such as transportation networks, fire stations, medical facilities)
- Protecting and reducing damage to utilities
- Limiting development in hazard areas

Effective means of reaching me

- Phone, email, text, Town website

Comments

1. **Which road(s) or areas** are you most concerned about in Wolfeboro when severe weather occurs? (List the road segment or area of town. Why are you concerned?)
 - 28 / Main St. There are no alternate routes for much of this road
 - Brewster Heights - washout due to flooding.
 - dirt rds off College Rd up into North W'boro & Beech Pond
 - East Wolfeboro Stoneham Road
 - Forest Road

- Haines Hill Road, not being properly maintained, unusable due to rocks left behind 2 ruined tires in the last 2 years) when repairing and washboard surfaces
 - Lakeview Drive, because high winds are going to topple some of the dead, town owned trees adjacent to the cemetery, which will cause property damage and downed electric lines.
 - Main St. flooding due to low elevation from lake. Flooding in this area would severely impact vehicle travel in both directions, with potentially dangerous impedance to emergency services.
 - Main Street as a result of fallen trees, weather or accidents closing the road.
 - Major roads, coming into Wolfeboro by Weston Auto Body and anything where there are a lot of seniors (Taylor, Christian Ridge, Ledges, Genesis etc)
 - Pleasant Valley Road and surroundings, Route 28 / S Main
 - Pleasant Valley; Brackett
 - Portion of 28 that washed out in 2023 just south of the 90 degree turn leaving WB going South toward Alton. When that road goes out, it's quite a long detour.
 - Rt 109, Rt 28.
2. *Can you **describe any hazard events that impacted Wolfeboro**, especially ones that occurred in the last five years? (Up to three events).*
- Flooding of Rt.28 near Alton and Governor Wentworth Hwy toward New Durham in the summer of 2023.
 - Four-day power outage over thanksgiving.
 - Heavy rains of 2023, tornado and microburst 2008 at Lake Wentworth,
 - High winds downing trees that blocked roads and took down utility lines; flooding damaging roads
 - July 19, 2023 rain event, Rt 28 So W'boro/109 near Brookfield line. March & April 2024 snow events w/trees down & rds impassable
 - Last year's flooding, could not use washed out roads in North Wolfeboro, Emergency vehicles lost access to area
 - Road washouts on 28 to Alton
 - Road flooding and closing in 2023 due to heavy rains; tornado that cut through Lake Wentworth/Rt 109 (think that was in 2015 or so but happened so quickly during summer and without any warning. Kids were outside and it was only when the skies turned yellow, sound of a train, and then total silence...we weren't far from the path and had all been outside. We didn't even have time to go into the basement. Never heard any sirens or warnings.
 - Severe winds April 2024 High number of downed trees. Flooding summer 2023. Major travel disruptions
 - Significant snow (about 3 feet) left Forest Road impassable & residents at risk. Since the area is on a peninsula there is only one road in/out.
 - The floods last year with destruction of roads (near the Isaac Springfield House). This last April with the tree damage creating impassable roads and power outages (thankfully WME is great).

- There was a drought in 2020, and a small fire occurred at my neighbor's house, being ignited by dry leaves. Last Fall, high winds caused large limbs from dead trees to fall into the road, temporarily blocking it. It was reported, and a tree company came and cut the tree down, leaving part of it in the road. My neighbor has a tractor, and together we chain sawed the fallen tree to get it off the road. During the same storm, one of my neighbor's dead trees fell on my property, and he wouldn't have it removed, so I had to cut it up myself.
- Tornado
- Washout of Main Street last year cut off exit to Alton

APPENDIX E: HAZARD EVENTS PRIOR TO 2019

Hazard	Date	Location	Remarks/Description	Source
Aircraft Crash	31-Aug-89	Wolfboro	Nonfatal	4
Aircraft Crash	10-Aug-94	Wolfboro	Nonfatal	4
Aircraft Crash	27-Aug-94	Wolfboro	Nonfatal	4
Aircraft Crash	9-May-96	Wolfboro	Nonfatal	4
Aircraft Crash	2-Jul-96	Wolfboro	Nonfatal	4
Aircraft Crash	5-Apr-97	Wolfboro	Nonfatal	4
Aircraft Crash	28-Feb-99	Wolfboro	Nonfatal	4
Aircraft Crash	2-Oct-99	Wolfboro	Nonfatal	4
Aircraft Crash	14-Aug-04	Wolfboro	Nonfatal	4
Aircraft Crash	4-Nov-04	Wolfboro	Nonfatal	4
Drought	1929-1936	Statewide	Regional	5
Drought	1939-1944	Statewide	Severe in Southeast	5
Drought	1947-50	Statewide	Moderate	5
Drought	1960-69	Statewide	Longest recorded continuous period of below normal precipitation	5
Drought	1-Jun-99	Most of NH	Governor's Office declaration, moderate drought for most of the state	5
Earthquake	20-Dec-40	Ossipee	Magnitude 5.5	6
	December 24, 1940	Ossipee	Magnitude 5.5	6
Earthquake	19-Jan-82	West of Laconia	Magnitude 4.5	6
Fire - Conflagration	Winter 1956	Wolfboro	Block fire	
Fire (woodland)	October, 1947	Freedom, NH to Atlantic Ocean	205,678 acres burned; 16 fatalities	7
Flood	7/1/1986 – 8/10/1986	Statewide	FEMA DR-771-NH: Severe summer storms with heavy rains, tornadoes; flash flood and severe winds.	2
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 were felt statewide.	2
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	2
Flood	3/13/1996	Alton	Dam break. \$500,000. 1 fatality. Not weather related.	3

Hazard	Date	Location	Remarks/Description	Source
Flood	14-Jun-98	Carroll County	FEMA DR-1231-NH: Damage estimate - \$550,000	3
Flood	October, 2005	Wolfboro	Town reported flood	8
Flood	May, 2006	Wolfboro	Town reported flood	8
Flood	4/16/2007	Wolfboro	FEMA funds were made available in Wolfboro	8
Flood	3/9/2008	Conway		3
Flood	4/29/2008	Conway		3
Flood	8/28/2011	Ossipee, Moultonborough, Sandwich	Tropical Storm Irene \$575K in damages to roads and bridge	3
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
Hail	13-Jun-87	Carroll County	Hail accumulation ~ 1.0 inches	3
Hail	1-Aug-05	Wolfboro	Hail accumulation ~ 1 inch	3
Hail	6/20/2006	Alton	1.75 inch diameter	3
High Winds	15-Jul-74	Carroll County	winds > 56 knots	3
High Winds	26-Jul-94	Carroll County	T-storm and winds caused 1 injury; damage estimate - \$5 million	3
High Winds	8/25/2007	Moultonborough	Winds > 50 knots	3
High Winds	6/22/2008	Tamworth	Winds > 50 knots	3
High Winds	7/9/2008	Water Village	Winds > 50 knots	3
High Winds	7/19/2010	Melvin Village	Winds > 50 knots	3
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)	2
Hurricane	9/9/1991	Statewide	Hurricane Bob, severe storms	5
Hurricane Floyd	18-Oct-99	Carroll and other counties	Reported damages - \$800,000	3
Lightning	2-Aug-93	Carroll County	Lightning caused 3 injuries	3
Lightning	12-Aug-98	Wolfboro	Lightning; damage estimate \$22,000	3
Lightning	9-Jun-04	Wolfboro	Lightning; damage estimate \$50,000	3
Lightning	10/20/2006	Meredith	Three injuries and \$20,000 in damages.	3

Hazard	Date	Location	Remarks/Description	Source
Lightning	9/27/2007	Alton	\$200,000 in damage to home.	3
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 Winnepesaukee.	NOAA
Macroburst	July 26,1994	Moultonborough	Left 1,800 people without power	2
Tornado	18-Jul-63	Carroll County	F2	1
Tornado	28-Jul-70	Carroll County	F1	1
Tornado	9-Aug-72	Carroll County	F1	1
Tornado	25-Aug-72	Carroll County	F1	1
			F1 - Two F1 tornadoes were reported; damage estimate - \$2.75 million	
Tornado	7-Aug-86	Carroll County		1 & 3
Tornado	7/24/2008	Five counties, including Belknap, Strafford, and Carroll	F2 - 50-mile swath cut through south-central part of NH. Nineteen homes destroyed. One death. State and federal disaster declared in five counties.	2, 8
Tornado	7/4/2014	Gilford, Center Harbor	A waterspout touched down on Lake Winnepesaukee briefly. No damage was reported.	NOAA
Tornado	7/30/2015	Warner	An EF0 touched down briefly in Warner. It snapped about 25 trees and tore a 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 down in multiple locations.	NOAA
Winter - Heavy Snow	16-Mar-93	Statewide	High winds and record snowfall	2
Winter - Ice Storm	7-Jan-98	Carroll and other counties	67,586 without power; damage estimate - \$17 million to NH Public Services	2
Winter - Heavy Snow	15-Jan-04	Carroll and other counties		2
Winter - Nor'easter	4/27/2007	Statewide	Nor'easter caused flooding, damage in excess of \$25 million	5

Hazard	Date	Location	Remarks/Description	Source
Winter - 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.	2
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	1/26-28/2015	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	3/14-15/2017	Statewide	Primary impact was damage to utilities. Two counties received public assistance totaling \$1,687,439.45. Declared Disaster, DR-4316.	FEMA
Blizzard	3/13-14/2018	Statewide	Declared Disaster, DR-4371	HSEM
Nor'easter	4/27/2007	Statewide	Nor'easter caused flooding, damage in excess of \$25 million	FEMA
Ice Storm	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.	NH HSEM

Table Sources:

1 = <http://www.tornadoproject.com>

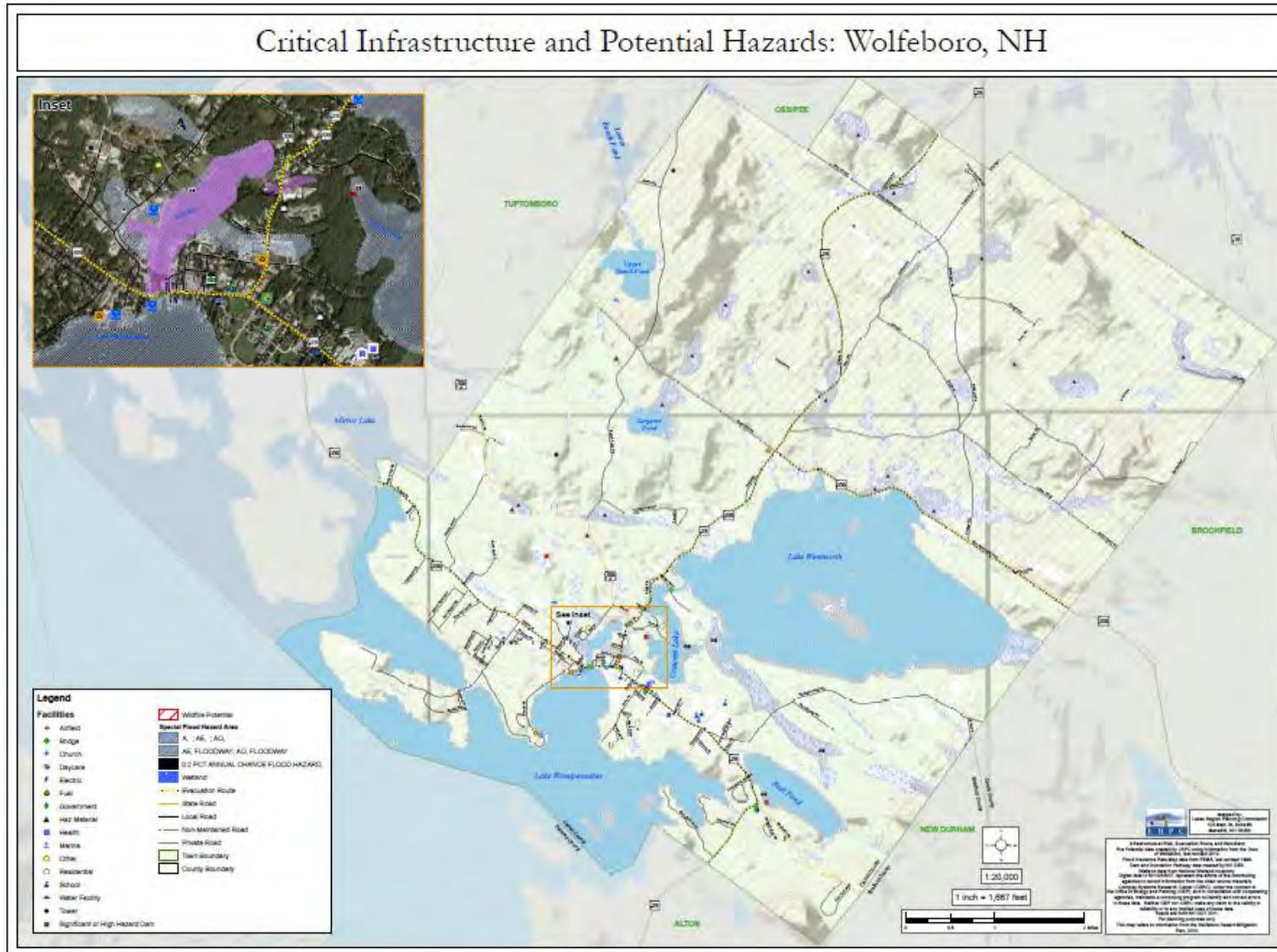
2 = New Hampshire Homeland Security and Emergency Management (NHHSEM)

3 = National Oceanic and Atmospheric Administration (NOAA)

4 = National transportation Safety Board (NTSB)

5 = Federal Emergency Management Agency (FEMA)

APPENDIX F: CRITICAL FACILITIES & POTENTIAL HAZARDS MAP



TOWN OWNED PROPERTY

DECEMBER 31, 2023

MAP LOT LOCATION/DESCRIPTION ACRES VALUE

16 1 CENTER STREET - BROWN LOT 42.30 131,000
 25 2 TRASK MOUNTAIN ROAD 97.26 204,500
 27 6 BROWNS RIDGE ROAD 0.21 500
 34 1 PENN AIR ROAD 11.60 26,600
 36 1 TRASK MOUNTAIN ROAD 45.00 83,300
 37 4-1 TRASK MOUNTAIN ROAD 52.00 92,300
 37 5 BROWNS RIDGE ROAD (OFF) 28.10 51,100
 37 7 411 BROWNS RIDGE ROAD 9.00 83,000
 37 8 BROWNS RIDGE ROAD 0.77 1,900
 41 1 1 BEACH POND ROAD - GRAHAM LOT 21.00 80,500
 41 1 BEACH POND ROAD 14.00 73,600
 STOCKBRIDGE/WENTWORTH LOT
 52 1 555 NORTH LINE ROAD 328.14 1,816,300
 WATER TREATMENT PLANT
 77 33 BROWNS RIDGE ROAD 25.00 51,900
 82 19 400 BEACH POND ROAD 32.00 266,600
 SOLID WASTE FACILITY
 82 20 404 BEACH POND ROAD 80.00 213,600
 82 21 BEACH POND ROAD 0.93 14,700
 96 13 PINE HILL RD 40.55 38,600
 98 16 NORTH LINE RD 32.94 108,100
 98 17 SARGENTS POND ROAD 1.04 150,300
 99 3 1 SARGENTS POND CROSSING 3.18 58,300
 99 3 7 SARGENTS POND CROSSING 26.29 169,000
 107 9 NORTH WAKEFIELD ROAD 5.96 7,100
 113

TOWN OWNED PROPERTY

DECEMBER 31, 2023

MAP LOT LOCATION/DESCRIPTION ACRES VALUE

109 3 NORTH WAKEFIELD ROAD 6.50 34,500
 113 1 15 YORK ROAD - CHLORINATOR 1.40 50,800
 115 12 NORTH LINE ROAD - CEMETERY 1.37 0
 116 17 COLLEGE ROAD 0.29 13,900
 118 9 COLLEGE ROAD - CLOW LOT 14.70 97,500
 133 7 39 GOV WENTWORTH HIGHWAY 1.50 133,700
 133 18 GOV WENTWORTH HIGHWAY 0.19 5,000
 GOV WENTWORTH HWY -WILLEY BROOK
 133 27 GOV WENTWORTH HIGHWAY 53.01 123,100
 PRESCOTT LOT
 137 9 COTTON VALLEY RD 6.30 60,200
 142 2 NORTH MAIN STREET 0.79 1,378,800
 142 58 755 NORTH MAIN STREET 1.60 1,094,400
 LIBBY MUSEUM
 142 59 NORTH MAIN STREET 0.30 25,500
 144 6 390 PINE HILL ROAD 25.60 2,113,700

ABENAKI RECREATION AREA
 144 8 PINE HILL ROAD 12.40 73,900
 148 6 ALLEN ROAD 1.79 59,600
 TOWN HOUSE CEMETERY
 148 8 CENTER STREET - TUTT LOT 4.12 22,800
 151 32 GOV WENWORTH HIGHWAY 61.00 134,000
 RYFIELD MARSH
 151 38 GOV WENTWORTH HIGHWAY 0.84 2,100
 151 47 GOV WENTWORTH HIGHWAY 0.46 14,400
 153 3 COTTON VALLEY ROAD 5.20 17,900
 114

TOWN OWNED PROPERTY

DECEMBER 31, 2023

MAP LOT LOCATION/DESCRIPTION ACRES VALUE

161 1 PINE HILL RD 4.70 64,100
 161 11 PINE HILL ROAD 6.04 60,600
 161 14 6 WICKERS DRIVE EXT 6.70 133,500
 163 6 1 TROTting TRACK RD 0.89 53,800
 164 32 57 ALBEE BEACH RD 9.59 974,700
 ALLEN ALBEE BEACH
 164 40 GOOSE ISLAND 0.10 37,500
 172 49 58 KEEWAYDIN RD 1.41 213,700
 187 28 PORT WEDELN ROAD 0.28 81,000
 188 65 300 NORTH MAIN ST - WATER TOWER 1.00 59,500
 189 8 46 FILTER BED ROAD 300.73 2,999,700
 WASTE WATER TREATMENT FACILITY
 190 3 ELM STREET 8.67 444,800
 190 8 117 BAY STREET 2.05 75,300
 190 30 45 PINE HILL ROAD - TOWN GARAGE 2.79 692,600
 190 89 CENTER ST 0.46 119,400
 190 90 CENTER ST 2.50 115,800
 190 108 3 SILVER STREET - MAST LANDING 0.25 292,400
 197 3 GOV WENTWORTH HIGHWAY 0.92 52,100
 203 74 GLENDON STREET - PARKING LOT 0.55 202,900
 203 105 1 VARNEY RD 1.10 43,500
 204 18 98 GLENDON STREET 4.62 1,643,600
 BRIDGE FALLS PATH
 204 36 LEHNER STREET - FOSS FIELD 5.94 222,900
 204 60 CENTER STREET 0.50 73,300
 115

TOWN OWNED PROPERTY

DECEMBER 31, 2023

MAP LOT LOCATION/DESCRIPTION ACRES VALUE

208 1 EAST OF BASS ISLAND 0.12 15,900
 215 28 CHIPMUNK LANE 2.77 5,500
 216 23 STANARD ROAD 0.60 17,100
 217 43 32 & 36 CENTRAL AVENUE 0.92 653,000
 RR STATION

217 46 61 RAILROAD AVENUE 0.27 188,300
 RR FREIGHT HOUSE
 217 71 22 & 32 LEHNER STREET 0.37 1,439,900
 POWER PLANT & COMMUNITY CENTER
 217 94 DOCKSIDE - TOWN DOCK AREA 2.00 2,172,700
 217 95 11 DOCKSIDE - RESTAURANT 0.42 1,800,800
 217 201 27 MILL STREET - PUMPING STATION 0.22 126,000
 218 1 95 GLENDON ST - PARKING LOT 0.94 82,100
 218 6 74 LEHNER ST 0.24 59,000
 218 7 80 LEHNER ST 0.32 127,500
 218 8 88 LEHNER ST 0.39 77,100
 FOSS FIELD WARMING HUT
 218 12 5 VALLEY LN - PUMPING STATION 0.13 121,300
 218 144 84 SOUTH MAIN ST - TOWN HALL 0.78 1,309,800
 228 48 FOREST ROAD - OLD INDIAN CARRY 0.04 120,600
 228 52 FOREST ROAD - OPP CARRY BEACH 0.30 84,500
 228 54 201 FOREST ROAD - CARRY BEACH 1.40 1,614,300
 231 20 87 CLARK ROAD 4.10 133,400
 BREWSTER BEACH PARKING LOT
 231 47 GOODRICH ROAD - TOWN GARDENS 6.68 76,100
 231 54 233 SOUTH MAIN ST - CLARK PARK 2.82 388,900
 116

TOWN OWNED PROPERTY

DECEMBER 31, 2023

MAP LOT LOCATION/DESCRIPTION ACRES VALUE

231 57 251 SOUTH MAIN STREET 1.95 1,097,000
 PUBLIC SAFETY BUILDING
 231 60 259 SOUTH MAIN STREET - LIBRARY 2.83 1,991,500
 242 9 167 CLARK ROAD - MCKINNEY PARK 0.30 748,400
 242 10 CLARK ROAD - MCKINNEY PARK 0.30 939,000
 244 63 16 MCMANUS ROAD - WATER TOWER 0.09 431,700
 260 71 SOUTH MAIN STREET 0.20 56,000
 PARK NEXT TO WESTON AUTO BODY
 265 3 LAKE WINNIPESAUKEE 0.01 7,100
 LITTLE KENISTON ISLAND II
 265 4 LAKE WINNIPESAUKEE 0.80 19,300
 LITTLE KENISTON ISLAND
 268 16 133 MIDDLETON ROAD 27.98 300,500
 273 1 MIDDLETON ROAD 1.18 80,200
 273 13 ALPINE MEADOWS ROAD 0.26 8,800
 273 22 MIDDLETON ROAD 1.35 80,900
 UNK 1 UNKNOWN 1.00 8,500
 TOTALS 1522.50 33,699,100

APPENDIX G: HAZARDS – SUPPLEMENTARY INFORMATION (Hazards, Other Actions)

This section provides statewide or regional information regarding hazards. Some information is about hazards mentioned in the NH Hazard Mitigation Plan. The end of this Appendix includes information about items mentioned in the previous plan that either address non-natural hazards or are Preparedness/Response Actions (not Mitigation Actions)

I. FLOOD, WILDFIRE, DROUGHT

Flooding due to Dam Failure

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 in Table G-1.

The designations for these dams relate to damage that would occur if a dam were to break, not the structural integrity of the dam itself. In the Lakes Region, the Town of Alton was impacted by an earthen dam failure on March 12, 1996. Although listed in the NH Hazard Mitigation Plan as a significant hazard, it did result in the loss of one life.

Table G-1: New Hampshire Dam Classifications¹⁴

Classification	Description
Non-Menace	A dam that is not a menace because it is in a location and of a size that failure or misoperation of the dam would not result in probable loss of life or loss to property, provided the dam is: <ul style="list-style-type: none"> • 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 misoperation of the dam would result in any of the following: <ul style="list-style-type: none"> • 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 misoperation of the dam would result in any of the following: <ul style="list-style-type: none"> • 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

¹⁴ 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.

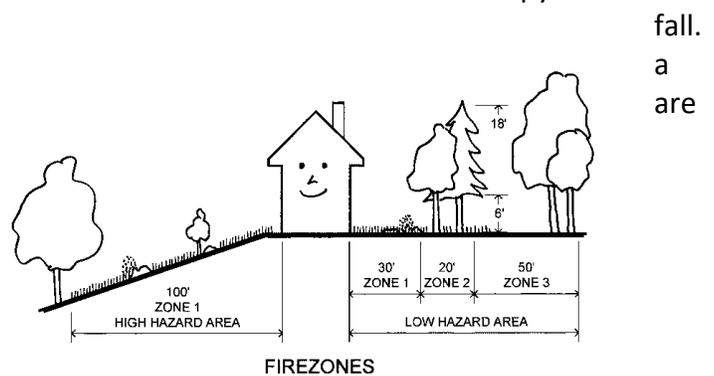
	<p>48 hours to repair.</p> <ul style="list-style-type: none"> • The release of liquid industrial, agricultural, or commercial wastes, septage, sewage, or contaminated sediments if the storage capacity is 2 acre-feet or more. • Damage to an environmentally-sensitive site that does not meet the definition of reversible environmental losses.
High Hazard	<p>A dam that has a high hazard potential because it is in a location and of a size that failure or misoperation of the dam would result in probable loss of human life as a result of:</p> <ul style="list-style-type: none"> • 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.

Wildfire

Several areas in the region are relatively remote in terms of access and firefighting abilities. Of greatest concern are those areas characterized by steep slopes and vast woodlands, with limited vehicular access. These areas include the Ossipee, Squam, Belknap, and Sandwich Mountain Ranges. As these once remote areas begin to see more development (the urban wildfire interface), care should be taken to ensure that adequate fire protection and buffers are established. Techniques include increased buffers between wooded areas and residential buildings, requirements for cisterns or fire ponds, a restriction on the types of allowable building materials such as shake roofs, and special considerations for landscaping. While historically massive wildfires have been western phenomena, each year hundreds of woodland acres burn in New Hampshire.

The greatest risk exists in the spring when the snow has melted and before the tree canopy has developed, and in the late summer – early fall. Appropriate planning can significantly reduce community’s vulnerability to wildfires. There are four-zone suggestions from the Firewise community program that could be potentially helpful for Wolfeboro’s homeowners.¹⁵

ZONE 4 is a natural zone of native or naturalized vegetation. In this area, use selective thinning to reduce the volume of fuel. Removing highly flammable plant species offers further protection while maintaining a natural appearance.



fall.
a
are

¹⁵ <http://www.firewise.org> accessed September 21, 2012.

ZONE 3 is a low fuel volume zone. Here selected plantings of mostly low-growing and fire-resistant plants provide a decreased fuel volume area. A few well-spaced, fire resistant trees in this zone can further retard a fire's progress.

ZONE 2 establishes a vegetation area consisting of plants that are fire resistant and low growing. An irrigation system will help keep this protection zone green and healthy.

ZONE 1 is the protection area immediately surrounding the house. Here vegetation should be especially fire resistant, well irrigated and carefully spaced to minimize the threat from intense flames and sparks.

Conflagration

Conflagration is an extensive, destructive fire in a populated area that endangers lives and affects multiple buildings. Historically, many New Hampshire towns were settled in areas along waterways in order to power the mills. Often the town centers were at a low point in the topography, resulting in dense residential development on the steeper surrounding hillsides. Hillsides provide a natural updraft that makes firefighting more difficult. In particular, structural fires spread more readily in hillside developments because burning buildings pre-heat the structures that are situated above them.



Alton Bay Christian Conference Center,
2009

Within the Lakes Region the city of Laconia was the site of one of the most devastating structural fires to occur in the state of New Hampshire. The 1903 Great Lakeport Fire consumed more than 100 homes; two churches, two factories, a large mill, a power plant, and a fire station. Wolfeboro's history includes a significant fire in the winter of 1956. This event is recognized as the last block fire in town and is considered a small conflagration. On April 12, 2009 the Alton Bay Christian Conference Center complex caught fire, resulting in an 11-alarm fire and destroying more than 40 structures.

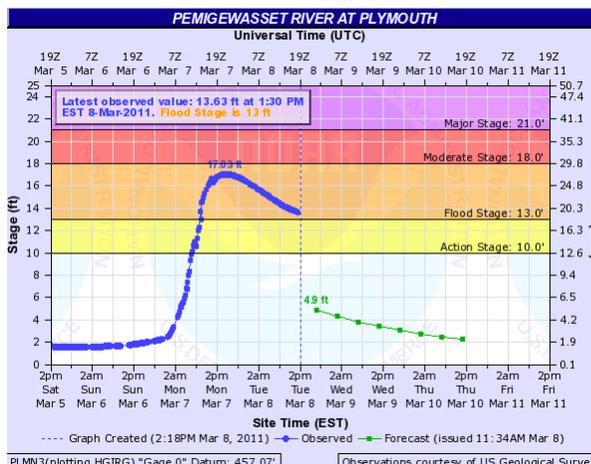
II. GEOLOGICAL HAZARDS

ICE JAM

Ice forming in riverbeds and against structures often presents significant hazardous conditions for communities. Meltwater or stormwater may encounter these ice formations and apply lateral and/or vertical force upon structures. Moving ice may scour abutments and riverbanks. Ice may also create temporary dams. These dams can create flood hazard conditions where none previously existed. As indicated by the stream gauge record (below right), ice jams can lead to very rapid changes in river levels (in this case a fifteen foot increase in twelve hours).



March 2011 Ice Jam at NH Route 175A bridge across the Pemigewasset River

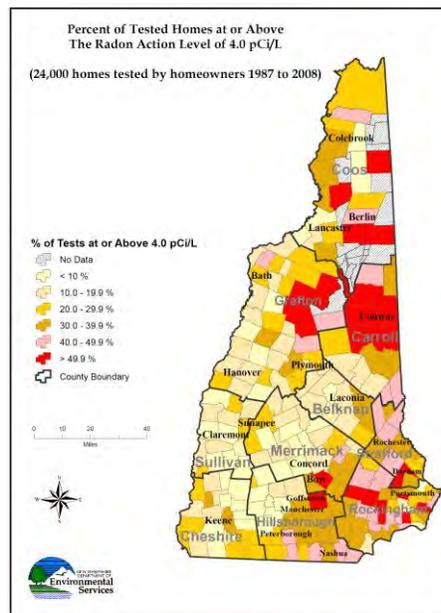


Stream gauge at bridge indicating change in river level in early March 2011.

Between 1835 and 2008 there were 42 ice jams reported in the Holderness/Plymouth area of the Pemigewasset. According to the Corps of Engineers Cold Regions Research and Engineering Laboratory (CRREL), 43% of New Hampshire ice jams have occurred in March and April during the ice breakup on the rivers, while 47% of ice jams occurred in January and February during either ice freeze up or ice break up periods.¹⁶

RADON

Radon is a naturally occurring colorless, odorless radioactive gas usually associated with granite rock formations. The gas can seep into basements through the air. It can also be transported via water and is released once the water is aerated, such as during a shower. Extended exposure to radon can lead to higher rates of cancer in humans. Radon is not a singular event – it can take years or decades to see the effects. The NH Office of Community and Public Health’s Bureau of Radiological Health indicates that one third of homes in New Hampshire have indoor radon levels that exceed the US Environmental Protection Agency’s “action level” of 4 pCi/l.¹⁷ The map at the right indicates that 20-29.9% of the homes in Wolfeboro exceeded the recommended limit of 4.0 pCi/l in state-wide testing conducted over the past twenty years.¹⁸



HAIL

¹⁶ “Ice Jams in New Hampshire,” CRREL, <http://icejams.crrel.usace.army.mil/tectran/IERD26.pdf> Visited July 25, 2013

¹⁷ <http://www.nh.gov/safety/divisions/hsem/NaturalHazards/index.html> visited February 8, 2011.

¹⁸ NH DES Radon Program <http://des.nh.gov/organization/divisions/air/pehb/ehs/radon/index.htm>, accessed October 9, 2012.

Hail can cause damage to crops and structural damage to vehicles. Hail is measured by the TORRO intensity scale, shown in Table G-5. Although hailstorms are not particularly common in the Lakes Region, which averages fewer than two hailstorms per year, several have occurred in New Hampshire in the last decade. In 2007 and 2008 nearby Laconia experienced hail storms with no resulting damage, though reported hail sizes were as large as 1.25 inches (H4).

Table G-5: TORRO Hailstorm Intensity Scale

Code	Diameter	Description	Typical Damage
H0	5-9 mm*	Pea	No damage
H1	10-15 mm	Mothball	Slight damage to plants, crops
H2	16-20 mm	Marble, grape	Significant damage to fruit, crops, vegetation
H3	21-30 mm	Walnut	Severe damage to fruit/crops, damage to glass/plastic structures, paint & wood scored
H4	31-40 mm	Pigeon's egg	Widespread glass damage, vehicle bodywork damage
H5	41-50 mm	Golf ball	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	51-60 mm	Hen's egg	Aircraft bodywork dented, brick walls pitted
H7	61-75 mm	Tennis ball	Severe roof damage, risk of serious injuries
H8	76-90 mm	Large orange	Severe damage to aircraft bodywork
H9	91-100 mm	Grapefruit	Extensive structural damage. Risk of severe or fatal injuries to exposed persons
H10	>100 mm	Melon	Extensive structural damage. Risk of severe or fatal injuries to exposed persons

*mm = millimeters (Approximate range since other factors (e.g. number, density of hailstones, hail fall speed, surface wind speed) affect severity
 Source: <http://www.torro.org.uk/torro/severeweather/hailscale.php>

Preparation or Response Actions

Hazard	Project ID	Project - Mitigation Actions	Type of Mitigation Action	Priority H - high M - medium L -low	Responsible Party	Status/Comments
All Hazard	AH 1	Promote use of NH Alerts (or equivalent) and notify residents of emergency preparedness steps and mitigation techniques that they can take to reduce the likelihood of loss of life or property (various methods of notification).	Public Education and Awareness	H	EMD	Links and information added to town website, creation of Wolfeboro Emergency Management Facebook page.... <ul style="list-style-type: none"> • Completed. • Maintain. • April 2024 Reverse 911 was utilized.
Flooding	22	Drainage study to determine adequacy of culverts in Townsend Brook area (Pleasant Valley Road)	Prevention	H	DPW	Complete...• Townsend Brook Dam outfall project is complete. • Starting conversation for fire pond reconstruction for a later time.
Flooding	23	Study improvements and recommend amendments to stormwater regulations	Prevention	H	Planner, Planning Board	Complete....Comprehensive stormwater management regulations were adopted in 2022.
Water Contamination	25	Study and implement water supply security improvements near Upper Beech Pond Road	Prevention	H	EMD	Delete...No longer a priority/issue.
All Hazard	14	Upgrade generator at Town Fueling Station to automatic.	Protect Emergency Services (long-term continuity)	M	DPW	Complete...Looking to repurpose a generator from one of our pump stations for this purpose. Likely 2025. Have two new pump stations.
All Hazard	20	Determine a process of coordinating and updating annual progress on mitigation actions	Prevention	M	BoS, EMD, Town Manager	Complete....Already part of Section VI of this plan (annual meeting for review) and tracking matrix Appendix (J).

Hazard	Project ID	Project - Mitigation Actions	Type of Mitigation Action	Priority H - high M - medium L -low	Responsible Party	Status/Comments
Flooding, Washout, Erosion	12	Ensure that roads on which there is new development meet town road standards.	Prevention/ Protect Emergency Services (long-term continuity)	L	CEO, Planner	Complete... • New town Road Standards - PB responsibility enforced through bonds & surity • Older roads are being offered to the town.
Flooding	18	Make FEMA floodplain maps available on town's website	Public Education and Awareness	L	Town Manager, Planner	Complete...A link to FEMA Flood Map Service Center is on the Forms & Permits page of Building/Code Enforcement.
Flooding	26	Map locations of beaver dams and develop SOP for regular inspection	Prevention	L	DPW, Planner	Complete...Utilized grant to purchase GPS as part of this program.

APPENDIX H: PRIORITIZATION DETAILS

As the Committee began the process of prioritizing these actions, the group utilized the standard STAPLEE project prioritization. The committee reviewed each mitigation action in the standard STAPLEE categories (**Social, Technical, Administrative, Political, Environmental, and Economic**). Below is the STAPLEE Criteria Sheet used by the Committee. It was noted that the ‘Economic’ category could include the cost of the project, potential outside funding sources, and the potential impacts on the local economy. Detailed project scores follow.

STAPLEE Criteria

Committee members are asked to consider both the costs and benefits of implementing identified mitigation actions. The starting point is to consider all actions as positive steps towards making the community a safer place. Any of the STAPLEE criteria that would hinder the action from moving to implementation should be noted. When evaluating the mitigation actions, the following questions are designed to help identify potential obstacles to implementation for each criterion.

Social

- Will the action unfairly affect any one segment of the population?
- Will it disrupt established neighborhoods or adversely affect cultural resources?
- Is it compatible with present and future community values?

Technical

- Is the proposed action technically feasible?
- Will it reduce losses in the long term with minimal secondary impacts?

Administrative

- Does the community have the capability to implement the action? (staff, technical expertise, funding)
- Can the community provide the necessary maintenance?
- Can it be accomplished in a timely manner?

Political

- Is there local/regional support for this sort of mitigation activities or program?

Legal

- Does the community have the authority to implement the action?
- Is enabling legislation necessary? (ordinance, resolution, etc.)

Environmental

- Are there likely to be positive or negative impacts to the environment if this action is implemented?
- Does the action comply with local, state, and federal environmental regulations?
- Is it consistent with community environmental goals?

Economic

- Can the cost of this action be managed by the community? (operating budget or capital improvements)
- Are state/federal grant programs applicable?
- Will this reduce costs, for example improving insurance ratings?
- How does this action fit in with existing economic development plans?
- Is it likely that this action will result in economic benefits for the community?

Note: Some HMP Committees choose not to use the “Political” category for rating. Some committees choose to combine the “Economic” and “Costs” categories.

This table shows the detailed scoring of the Mitigation Actions by the Wolfeboro Hazard Mitigation Committee. For each action, the benefits and costs of implementing the action (under each of the seven categories) were considered and scored -1, 0, or 1 with a ‘minus one’ indicating that the costs outweighed the benefits in a particular category, a ‘positive one’ meant that the benefits were greater than the costs, and a ‘zero’ meant that 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. The maximum total score is 7, the minimum is -7. Actual results ranged from 7 to -2. These ratings were arrived at through committee discussion and group consensus.

Scoring: 1 = Highly effective or feasible, 2 = Neutral, -1 = Ineffective or not feasible

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Social	Technical	Administrative	Political	Legal	Cost (Economics)	Environmental	Total
Drought	D 1	Drought could impact some people's health and services. Especially those with dug wells and farms.	Educate the public on water conservation methods.	1	1	1	1	1	1	1	7
All Hazard	AH 2	Improperly sized or maintained infrastructure can fail during hazard events resulting in harm to people, property, and services.	Implement an Asset Management system for tracking the condition and planning the maintenance of bridges and culverts. Water System Infrastructure. Town Infrastructure (Sewer)	0	1	1	1	0	1	1	5
Flooding, Washout, Erosion	FEW 2	Heavy rains could lead to washouts along this road, potentially putting people, property, and services at risk.	Upgrade the drainage system on Beech Pond Road from Boucher Hill to Nelson Hill. This is a 2,000' gravel section between two paved hills. Need to upgrade drainage and pave.	1	1	-1	1	0	-1	1	2

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Social	Technical	Administrative	Political	Legal	Cost (Economics)	Environmental	Total
Flooding, Washout, Erosion	FWE 3	Portions of Center Street can get inundated with water.	Mitigate flooding issues on Center Street from Pickering Corner to Grove Street through ongoing annual maintenance on pump	1	1	-1	1	0	-1	1	2
Flooding, Washout, Erosion	FWE 1	The infrastructure along North Main Street is aging and susceptible to failure, especially during heavy rainfall. Note: This is a state road.	Upgrade drainage system along North Main Street from Lakeview to Mill Street due to the age of the system.	1	0	-1	1	0	-1	1	1
Tropical & Post-Tropical Cyclones	TC 1	A warmer, wetter climate may result in more tropical storms impacting the town with extended periods of wind & intense rain. This can put pressure on infrastructure and DPW and other local resources.	Update Design Standards (roads & Drainage) to reflect a changing climate and more intense rainfall events.	0	0	0	1	0	-1	1	1
Water Contamination (due to dam failure or erosion)	WC 1	If local water bodies are impacted by dam failure or erosion, water supplies could be impacted, leading to service interruptions.	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	1	0	0	0	0	-1	1	1
Water Contamination (due to dam failure or erosion)	WC 2	If local water bodies are impacted by dam failure or erosion, water supplies could be impacted, leading to service interruptions.	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	1	0	0	0	0	-1	1	1

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Social	Technical	Administrative	Political	Legal	Cost (Economics)	Environmental	Total
All Hazard	AH 1	Notifying all community members of impending hazards and some of their options can help reduce the impact of an event on people and property.	Promote use of NH Alerts (or equivalent) and notify residents of emergency preparedness steps and mitigation techniques that they can take to reduce the likelihood of loss of life or property (various methods of notification).	0	0	0	0	0	0	0	0
Earthquake	EQ 1	While Wolfeboro has not been directly impacted by an earthquake recently, the town is in one of the most active seismic areas in New Hampshire.	Post outreach materials to residents and business owners regarding the risks posed by earthquakes and steps that building owners can take to mitigate those risks.	1	0	-1	0	0	0	0	0
Infectious Diseases	ID 1	An epidemic can harm people and impact services.	Coordinate public outreach, utilizing social media and other methods, to raise awareness of vaccination programs, tick prevention, and other public health issues	0	0	0	0	0	0	0	0
Lightning	L 1	Lightning can cause power surges, damaging equipment, potentially putting people, property, and services at risk.	Regular maintenance of surge protection systems on critical electronic equipment	0	0	0	0	0	0	0	0
Severe Winter Weather	SWW 1	Heavy snow loads can compromise roofs, especially those with low slope.	Monitor and follow SOPs for ensuring severe winter weather does not compromise existing flat roofs on critical facilities. Outreach from EMD regarding Safety issues, including vents.	0	0	0	1	0	-1	0	0

Hazard	Project ID	Problem Statement	Project - Mitigation Actions	Social	Technical	Administrative	Political	Legal	Cost (Economics)	Environmental	Total
Wildfire	WF 1	More homes are being developed in more remote areas of town. While there have not been recent instances of wildfire damage, there are steps that homeowners can take to reduce the impact of wildfire to their property.	Make information about the FireWise program (or similar programs) available to residents in these areas.	0	0	0	0	0	0	0	0
Drought	D 2 New	Drought could impact some people's health and services. Especially those with dug wells and farms.	Make information available to residents regarding the town plans for Emergency Water Supply and access	1	-1	-1	0	0	-1	1	-1
Extreme Temps.	ET 1	There are times when extreme heat or cold make it difficult for some people to keep cool or stay warm.	Distribute information (electronic & hard copies) on improving weatherproofing homes as well as accessing cooling/heating centers.	1	0	-1	0	0	-1	0	-1
Flooding, Water Contamination	FWC 1	In a heavy rain event, flooding or erosion may move objects (such as tanks) and materials, leading to contaminated land or water.	Conduct outreach to local businesses regarding floodproofing, especially those that may be storing hazardous materials. Outreach from EMD with DES guidelines for storage and containment.	0	0	0	-1	0	0	0	-1
Severe Winter Weather	SWW 2	The Public Safety Facility is susceptible to damage due to natural hazards, such as snow loads.	Ongoing hardening of Public Safety Facility	0	0	0	0	0	-1	0	-1
High Winds	HW 1	Dead limbs and trees can fall across wires and roads, damaging property or blocking roads.	Implement a tree trimming policy for road right-of-way purposes and to eliminate hazards.	0	0	0	-1	-1	-1	1	-2

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

Wolfeboro Master Plan, 2007

Zoning Ordinance, 2022

Subdivision Regulations, 2002

Site Plan Regulations, 1998

Wolfeboro Hazard Mitigation Plan, 2019

Census 2020 and American Community Survey

FEMA Community Information System

Homeland Security & Emergency Management, New Hampshire Department of Safety
- *New Hampshire State Hazard Mitigation Plan, 2023 Update*

NH Department of Transportation Traffic Volume (TDMS),

<https://nhdot.public.ms2soft.com/tcds/tsearch.asp?loc=Nhdot&mod=TCDS>

FEMA Flood Map Service Center - <https://msc.fema.gov/portal/home>

National Flood Insurance Program through NH Office of Planning and Development

<https://www.nh.gov/osi/planning/programs/fmp/index.htm>

[FEMA's Map Changes Viewer](#)

National Oceanic and Atmospheric Administration website, <http://www.ncdc.noaa.gov/>

NH Division of Forests and Lands, <https://www.nh.gov/nhdfl/>

NH Department of Transportation Traffic Volume Reports,

<https://nhdot.public.ms2soft.com/tcds/tsearch.asp?loc=Nhdot&mod=TCDS>

APPENDIX J: 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/MS/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/main-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/hurricane/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	http://www.csc.noaa.gov/products/nchaz/html/

for local risk and vulnerability assessment	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, and users in the fields of homeland security, public safety, and emergency management and response. Members leverage efforts related to the governance, development, and sharing of situational awareness and incident management resources, tools, and best practices	http://nisconsortium.org/
The Hydrologic Engineering Center (HEC), an organization within the Institute for Water Resources, is the designated 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/detail/full/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

SUSTAINABILITY/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) folks were heavily involved in climate data in the NCA,	http://www.nrcc.cornell.edu/

below. They have a wealth of historic climate data and weather information, trends, etc.	
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.climate-northeast.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 and 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 land owners, 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 and 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 and financial assistance to restore wetlands and 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. They 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	http://www.nvoad.org

organizations share knowledge and resources throughout the disaster cycle—preparation, response, recovery and mitigation.	
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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	http://www.fema.gov/library/viewRecord.do?id=

Natural Hazards	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

APPENDIX K: MONITOR, EVALUATE, & UPDATE

Table A: Periodic Hazard Mitigation Plan Review Record (Assessing overall plan effectiveness: Poor, Fair, Good, Excellent)

Meeting Schedule (dates)	Tasks Accomplished	How well is plan achieving stated purpose and goals?	Lead Parties	Public Involvement (citizens, neighboring communities)
April, 2026	<input type="checkbox"/> Documentation <input type="checkbox"/> Track implementation <input type="checkbox"/> Assess effectiveness <input type="checkbox"/> Other			
April, 2027	<input type="checkbox"/> Documentation <input type="checkbox"/> Track implementation <input type="checkbox"/> Assess effectiveness <input type="checkbox"/> Other			
April, 2028	<input type="checkbox"/> Documentation <input type="checkbox"/> Track implementation <input type="checkbox"/> Assess effectiveness <input type="checkbox"/> Other			
April, 2029	<input type="checkbox"/> Documentation <input type="checkbox"/> Track implementation <input type="checkbox"/> Assess effectiveness <input type="checkbox"/> Other			

Table B: Project Implementation Checklist (Action Status: C-Completed, X – Delete, D – Deferred)

Hazard	Project ID	Project - Mitigation Actions	Potential Funding	Responsible Party	Time	Status April 2026	Status April 2027	Status April 2028	Status April 2029
Drought	D 1	Educate the public on water conservation methods.	DPW budget	DPW	M				
All Hazard	AH 2	Implement an Asset Management system for tracking the condition and planning the maintenance of bridges and culverts. Water System Infrastructure. Town Infrastructure (Sewer)	DPW budget	DPW	M				
Flooding, Washout, Erosion	FEW 2	Upgrade the drainage system on Beech Pond Road from Boucher Hill to Nelson Hill. This is a 2,000' gravel section between two paved hills. Need to upgrade drainage and pave.	DPW budget, FEMA grant	DPW	S				
Flooding, Washout, Erosion	FWE 3	Mitigate flooding issues on Center Street from Pickering Corner to Grove Street through ongoing annual maintenance on pump	DPW budget, FEMA grant	DPW	M				
Flooding, Washout, Erosion	FWE 1	Upgrade drainage system along North Main Street from Lakeview to Mill Street due to the age of the system.	Town Budget	DPW	L				
Tropical & Post-Tropical Cyclones	TC 1	Update Design Standards (roads & Drainage) to reflect a changing climate and more intense rainfall events.	Town Budget	Planner & DPW	L				

Hazard	Project ID	Project - Mitigation Actions	Potential Funding	Responsible Party	Time	Status April 2026	Status April 2027	Status April 2028	Status April 2029
Water Contamination (due to dam failure)	WC 1	Work with NHDES and the Public Works Department on addressing the dams near Cross Rd. and Rust Pond.	Town Budget, DES Source Water grant	DPW	S				
Water Contamination (due to erosion)	WC 2	Work with NHDES and the Public Works Department on upgrading and implementing the town's policy for protecting its water supply.	Town Budget, DES Source Water grant	DPW	M				
Earthquake	EQ 1	Post outreach materials to residents and business owners regarding the risks posed by earthquakes and steps that building owners can take to mitigate those risks.	Town Budget	EMD	L				
Infectious Diseases	ID 1	Coordinate public outreach, utilizing social media and other methods, to raise awareness of vaccination programs, tick prevention, and other public health issues	Town Budget	Health Office	M				
Lightning	L 1	Regular maintenance of surge protection systems on critical electronic equipment	Town Budget	EMD	S				
Severe Winter Weather	SWW 1	Monitor and follow SOPs for ensuring severe winter weather does not compromise existing flat roofs on critical facilities. Outreach from EMD regarding Safety issues, including vents.	FD Budget	DPW, EMD	S				
Wildfire	WF 1	Make information about the FireWise program (or similar programs) available to residents in these areas.	FD Budget	Fire Chief	M				

Hazard	Project ID	Project - Mitigation Actions	Potential Funding	Responsible Party	Time	Status April 2026	Status April 2027	Status April 2028	Status April 2029
Drought	D 2 New	Make information available to residents regarding the town plans for Emergency Water Supply and access	Town Budget	DPW	M				
Extreme Temps.	ET 1	Distribute information (electronic & hard copies) on improving weatherproofing homes as well as accessing cooling/heating centers.	Town Budget	EMD	M				
Flooding, Water Contamination	FWC 1	Conduct outreach to local businesses regarding floodproofing, especially those that may be storing hazardous materials. Outreach from EMD with DES guidelines for storage and containment.	Town Budget	EMD	M				
Severe Winter Weather	SWW 2	Ongoing hardening of Public Safety Facility	Town Budget & grants	Fire	S				
High Winds	HW 1	Implement a tree trimming policy for road right-of-way purposes and to eliminate hazards.	DPW Budget	DPW	S				