Town of Plainfield, NH

Grantham Mountain Road ~ June 17, 2023

Hazard Mitigation Plan Update 2024

Town Adoption Date: _____
FEMA Approval Date: _____

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Original Edition: 2009
2014 Update: August 21, 2014
2019 Update: October 14, 2019
2024 Update:

Chapter 1
INTRODUCTION

Authority

This Hazard Mitigation Plan was prepared in accordance with the Disaster Mitigation Act of 2000 (DMA), Section 322, Mitigation Planning. Accordingly, this Hazard Mitigation Plan will be referred to as the "Plan".

Funding Source

This Plan was funded by the NH Homeland Security and Emergency Management (HSEM) through a Building Resilient Infrastructure and Communities (BRIC) grant, with matching funds by the Town of Plainfield.

Purpose

This Hazard Mitigation Plan is a planning tool to be used by the Town of Plainfield, as well as other local, state and federal governments, in their effort to reduce the effects from natural and man-made hazards.

Introduction

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

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

DMA 2000 amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act by, among other things, adding a new section, 322 – Mitigation Planning. This places new emphasis on local mitigation planning. **It requires local governments to prepare and adopt jurisdiction-wide hazard mitigation plans as a condition of receiving Hazard Mitigation Assistance (HMA) grants.** Local governments must review and if necessary, update the mitigation plan every five years to continue program eligibility. However, it is recommended that this Plan be reviewed/updated annually or after a hazard event to be consistent with Chapter 7.

Why Develop a Mitigation Plan?

The full cost of the damage resulting from natural hazards – personal suffering, loss of lives, disruption of the economy, loss of tax base – is difficult to measure. Our State is subject to many types of natural hazards: floods, hurricanes, severe winter weather, earthquakes, tornadoes, downbursts, and wildfires, all of which can have significant economic and social impacts. Some, such as hurricanes, are seasonal and strike in predictable locations. Others, such as floods, can occur anytime of the year and almost anywhere in the State.

Scope of the Plan

The scope of this Plan includes the identification of natural hazards affecting the town, as identified by the Hazard Mitigation Planning Committee. The hazards reviewed under the scope of this plan include the relevant hazards that are outlined in the State of New Hampshire's Multi-Hazard Mitigation Plan Update 2018. Due to no history or significant risk of solar storms in the Town, the Committee chose not to recognize this hazard in this Plan.

Dam Failure	**Hail**	**Lightning**
Drought	**Human Caused**	**Severe Wind**
Extreme Temps	**Hurricane**	**Winter Weather**
Earthquake	**Infectious Disease**	**Wild/Forest Fire**
Flooding	**Landslide**	

Methodology

During the 2024 Update, the Hazard Mitigation Planning Committee with the assistance of Hubbard Consulting LLC held a total of 4 meetings on July 15, 2024, July 22, 2024, July 29, 2024 and August 19, 2024. Public notices were posted at the Meriden Town Hall and the Town Website inviting members of all town departments and boards, surrounding communities, businesses, academia, State agencies and non-profit agencies. In addition, email notifications were sent to adjacent communities, the Upper Valley Regional Planning Commission, the Chamber of Commerce, the Office of Planning and Development and the NH HSEM. There were two members of the general public that attended the committee meetings. The Emergency Management Directors from surrounding towns were notified of the Plan Update and asked to comment on the Plan (see Appendix B). After acceptance by the committee, the Plan was submitted to the NH HSEM for formal Approval. The Board of Selectmen formally adopted the plan on _____. FEMA approved the plan on _____.

The committee analyzed and revised all Chapters of the Plan and provided input to update them. Noteworthy updates include:

- Added Cyber Attacks as a new hazard and revised Extreme Heat to by Extreme Temperatures in Chapters 2 and 3.

The committee developed this Plan as a result of the above meetings and the following planning process.

Step 1: Form a Hazard Mitigation Planning Committee

Prior to the first public information meeting the Emergency Management Director contacted town department heads to serve on the committee. In addition, a press release was published in both Town Halls and post office inviting residents, businesses, neighboring communities, academia and other private non-profit interests to participate in the planning process. Finally, an email invitation was sent to EMDs of surrounding towns, State Agencies, Regional Planning

Commission and the local Chamber of Commerce (See Appendix B). The Committee Members consisted of town personnel.

Step 2: Set Hazard Mitigation Goals and Objectives

At the first working meeting the committee reviewed and made minor revisions to the town's Hazard Mitigation Goals. The Hazard Mitigation Goals were adapted from the State's Multi-Hazard Mitigation Plan Update 2018. This first step is extremely important in helping the committee understand the purpose of the Plan and the direction it should go. (See the end of this chapter for the "Hazard Mitigation Goals of the Town of Plainfield, NH".)

Step 3: Hazard Identification

The Committee members identified natural hazards and human-caused hazards that have or could potentially affect the Town of Plainfield. The results of this step can be found in Chapters 2 and 3.

Step 4: Critical Facilities Analysis

The committee members updated the Critical Facilities List for the town. The Critical Facilities List is divided into 3 sections: Facilities needed for Emergency Response; Facilities not necessary for emergency response; and places and populations to protect in the event of a disaster. The results of this step can be found in Chapter 4.

Step 5: Capability Assessment

The committee members identified what plans and policies are already in place to reduce the effects of hazards. The results of this step can be found in Chapter 5. Many of these plans and technical reports were reviewed and incorporated during the planning process, including the Plainfield Emergency Operations Plan and the Plainfield Master Plan.

Step 6: Develop Objectives

The Committee identified "Problem Statements" for each of the hazards identified earlier in the planning process. All of the hazards have at least one problem statement associated with them (See Problem Statement in Appendix B). These problem statements were then utilized as objectives in developing mitigation projects, as described in the next step.

Step 7: Develop Specific Mitigation Measures

As a result of the problem statements identified in step 6, the committee brainstormed specific projects or mitigation measures to address each hazard. The Committee Members used the "*Mitigation Project Identification Worksheet*", as shown in Appendix B, to identify mitigation projects that directly address the hazards affecting the community. Finally, the committee prioritized the top priority projects and listed them in the Mitigation Action Plan found at the end of Chapter 6.

Step 8: Adopt and Implement the Plan

After acceptance by the committee the Plan was submitted to the NH Homeland Security and Emergency Management for formal Approval. The Board of Selectmen formally adopted the Plan on _____. The letter of approval from FEMA can be found in Appendix C.

With respect to any ongoing mitigation projects, the lead and support agencies/people for such activity will be tasked with implementing the Plan's mitigation projects. The committee approved the "Prioritized Mitigation Projects" list, which identifies responsibility, funding/support and a timeframe for each of the prioritized projects. The Emergency Management Director should be tasked with requesting annual reports as to the progress of each project. Chapter 7 specifically addresses this issue.

Step 9: Monitor and Update the Plan

It is important that this plan be monitored and updated annually or after a presidentially declared disaster. Chapter 7 specifically addresses this issue.

Incorporation of Existing Plans, Studies, Reports and Technical Information

The planning process included a complete review of the Plainfield Hazard Mitigation Plan of 2018 for updates, development changes and accomplishments. In addition, as noted in the Bibliography and in footnotes located throughout the Plan many other documents were discussed in the development of this mitigation plan, such as the Master Plan, Emergency Operations Plan, Dam Emergency Action Plans and the Town's Stream Crossing Survey Study. Other technical manuals, federal and state laws as well as research data were combined with these elements to produce this integrated hazard mitigation plan. Please refer to the footnotes and the Bibliography in the Appendices.

Hazard Mitigation Goals
Town of Plainfield, NH

Before identifying new mitigation actions, the Team established and adopted the following broad hazard mitigation goals. The goals that are in the 2018 State of New Hampshire Multi-Hazard Mitigation Plan were reviewed and found to mirror the Town's Goals. However, the Committee added a new Goal (#2) in response to an increase in severe weather events over the recent years.

1. To improve upon the protection of the general population, the citizens of the Town of Plainfield and guests, from natural and man-made hazards.

2. To reduce the impact of increased severe weather incidents (flooding, snow and ice storms).

3. To reduce the potential impact of natural and man-made disasters on the Town of Plainfield's:
   - Emergency Response Capability
   - Critical Facilities
   - Infrastructure
   - Private property
   - Economy
   - Natural environment
   - Historic treasures

4. To improve the Town of Plainfield's:
   a. Emergency preparedness and communication network.
   b. Disaster response and recovery capability.

5. To identify, introduce and implement cost effective Hazard Mitigation measures so as to accomplish the Town's Goals and Objectives.

6. To endeavor to operate all the Town's key infrastructure (town office/police station, highway garage and two fire stations) for a period of 14 days without reliance on fuel deliveries or the commercial electric grid. At this time, a solar energy powered micro grid(s), combined with significant battery storage are viewed as the most likely ways to accomplish this goal.

7. To work in cooperation with the State of New Hampshire's Hazard Mitigation Goals, including:

   a. Address the challenges posed by climate change as they pertain to increasing the risk and impacts of the hazards identified within this plan; and

   b. Strengthen Continuity of Operations and Continuity of Government across the State and local levels to ensure continuation of essential services

Hazard Mitigation Planning Committee 2024

The Plainfield Hazard Mitigation Committee was comprised of the following individuals who met from July 2024 to August 2024.

Name	**Title/Affiliation**
Anthony Swett	Plainfield Police Chief
Bill Taylor	Plainfield Fire Chief
Brad Atwater	Plainfield Facilities Director
Evan Oxenham	Plainfield Energy Committee
Jane Hubbard	Hubbard Consulting LLC
Lee Oxenham	Plainfield Energy Committee
Rich Collins	Plainfield Road Agent
Stephanie Schell	Plainfield Emergency Management Director
Stephen Halleran	Plainfield Town Administrator

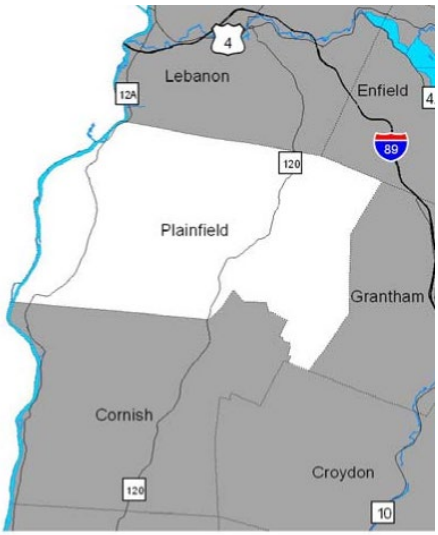
The committee members listed above participated in monthly committee meetings, provided departmental information, contributed in their field of expertise, reviewed and commented on committee meeting minutes, reviewed drafts of the Plan and worked together to identify and prioritize mitigation projects.

Many thanks to all the hard work and effort from each and every one of you. This plan would not exist without your knowledge and experience.

Thank you!

Chapter 2
COMMUNITY PROFILE

Community Description



Plainfield is located in Sullivan County in the northern portion of the Connecticut River Valley. Located in the northern portion of the Connecticut River Valley, Plainfield is situated opposite the confluence of the Ottauquechee and Connecticut Rivers. The Town has markedly varied terrain, including a mix of slopes, wet lowlands, river bottom, upland terraces, and the summit of Croydon Mountain. The Town is divided into three general regions, flat terrace by the River, hilly uplands, and the Croydon Mountain range.

Plainfield's streams and brooks drain four major watersheds: Connecticut River, Mascoma River, Blood's Brooks, and Blow-Me-Down Brook. Ultimately, all of Plainfield's surface water flows into the Connecticut River.

National Flood Insurance Program (NFIP)

Floodplains are defined as the 100-year and 500-year flood hazard zones, as depicted on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM). In order to enable landowners to qualify for federally insured flood insurance, the Town, in its administration of site plan review, subdivision regulations and zoning, must regulate development in the floodplain using federal standards. The Town will continue to adopt and enforce floodplain management requirements, including regulating new construction and substantial improvements in Special Flood Hazard Areas (SFHAs).

The Town joined the National Flood Insurance Program (NFIP) on April 18, 1983 and is currently participating in the NFIP. The community has Digital Flood Insurance Rate Maps (DFIRM) and Flood Insurance Study dated May 23, 2006 and has adopted them as part of the Town's Zoning Ordinance. There are currently 5 NFIP policies and the Town has no repetitive loss properties.

NFIP Policy Data	
Policies in Force	5
Insurance in Force	$1,390,000
Claims Closed with Payment	1
CWP - Residential	1
CWP - Non-Residential	0
Net Total Payments	$45,800
NFIP Repetitive Loss Properties	0

The Town's existing ordinance meets the minimum requirements of the NFIP, according to the latest Community Assistance Visit in 2005 and a general technical assistance visit on May 11, 2009. The Town will continue to maintain procedures

and regulations that are in compliance with the NFIP by conducting Community Assistance Visits (CAVs) and Community Assistance Contacts (CAC) with the Office of Planning and Development (OPD) and updating the Floodplain Ordinance as federal requirements are updated. The Town will continue to hold CAVs/CACs with OPD in the future. In addition, the Town provides NFIP brochures in Town facilities frequented by the public. Flood maps are available on the Town Website and online at www.fema.gov/flood-maps.

The Building Inspector and Planning Board reviews substantial improvements and new developments in the 100-year floodplain. The Town Building Inspector requires builders to abide by the International Building Codes (IBC) and the International Residential Codes (IRC) adopted by the State of New Hampshire.

The Building Inspector and Planning Board are responsible for making determinations of substantial improvement and substantial damage. These determinations are made for all development in a special flood hazard area that proposes to improve an existing structure including alterations, movement, enlargement, replacement, repair, additions, rehabilitations, renovations, repairs of damage from any origin (such as, but not limited to flood, fire, wind, or snow) and any other improvement of or work on such structure including within its existing footprint.

The Building Inspector and Planning Board in coordination with any other applicable community official(s), shall be responsible for the following:

1. Determine if a substantial damage (SD) determination needs to be made and communicate SD and permit requirements to property owners.
2. Verify the cost of repairs to the structure.
3. Verify the market value of the structure.
4. Make the SD determination and issue it to the property owner.
5. Permit development/ensure compliance with community ordinance.
6. Inspect development and maintain as-built compliance documentation post construction."

Disaster Risk

Plainfield is prone to a variety of natural hazards. The following table summarizes the impact and probability of natural and human caused hazards. These include: flooding, dam breach, severe wind, wildfire, drought, earthquake, hurricane, infectious disease, lightning strikes, extreme temperatures and severe winter weather, in addition to human-caused hazards. The Committee utilized local knowledge and historical records to determine the 'Impact and Severity' ratings in the following table. In addition, the Committee utilized a variety of resources to incorporate how climate change may impact the 'Probability' of future events[1]. The following tables summarize the impact and probability of natural and human caused hazards.

[1] [1] www.climate.gov, /www.des.nh.gov/climate-and-sustainability/climate-change

Natural Hazards	Human Impact Probability of death or injury 0: n/a 1: Low 2: Moderate 3: High 4: Catastrophic	Property Impact Physical loss damage 0: n/a 1: Low 2: Moderate 3: High 4. Catastrophic	Business Impact Interruption of service 0: n/a 1: Low 2: Moderate 3: High 4. Catastrophic	Severity *Avg. of Human / Property / Business*	Probability *In 25 years* Likelihood this will occur 0: Improbable 1: Remote 2: Occasional 3: Probable 4: Frequent	Risk *Severity x Probability* 0-3: Low 4-7: Moderate 8-11 High 12-16: Severe
Winter Weather	2	2	2	2	4	**8**
Flooding (Inland)	1	2	2	1.7	4	**6.8**
Severe Wind *(Tornado/ Downburst)*	2	2	2	2	3	**6**
Lightning	1	2	1	1.3	4	**5.2**
Infectious Disease	3	1	2	2	2	**4**
Hurricane/ Tropical Storm	1	2	1	1.3	3	**3.9**
Wild/Forest Fire	1	2	1	1.3	3	**3.9**
Extreme Temps	2	1	1	1.3	3	**3.9**
Earthquake	3	3	3	3	1	**3**
Dam Failure	2	2	2	2	1	**2**
Drought	1	1	1	1	2	**2**
Landslide	1	1	1	1	2	**2**
Hail	1	1	1	1	1	**1**

*Probability Terms are defined as:

Improbable:	Not likely to occur in any 25-year period.
Remote:	Less than 1% probability in the next 25-year period.
Occasional:	Between 1% and 50% probability in the next 25-year period.
Probable:	Between 50% and 99% probability in the next 25-year period.
Frequent:	Near 100% probability in the next year.

Human Caused Hazards	Human Impact Probability of death or injury 0: n/a 1: Low 2: Moderate 3: High 4: Catastrophic	Property Impact Physical loss damage 0: n/a 1: Low 2: Moderate 3: High 4. Catastrophic	Business Impact Interruption of service 0: n/a 1: Low 2: Moderate 3: High 4. Catastrophic	Severity *Avg. of Human / Property / Business*	Probability* *In 25 years* Likelihood this will occur 0: Improbable 1: Remote 2: Occasional 3: Probable 4: Frequent	Risk *Severity x Probability* 0-3: Low 4-7: Moderate 8-11 High 12-16: Severe
Haz Mat (Transport)	3	2	2	2.3	3	6.9
Mass Casualty (Trauma or Medical)	3	1	2	2	3	6
Utility Interruption	1	1	2	1.3	4	5.2
Transport Incident *(plane, cars, etc.)*	1	1	1	1	3	3
Cyber Attack	1	1	2	1.3	2	2.6
Haz Mat (Fixed)	1	1	1	1	2	2
Armed Attack (assault, sniper)	3	1	1	1.6	1	1.6
Biological Terrorism	3	1	1	1.6	1	1.6
Radiological Release	2	1	2	1.6	1	1.6
Urban Fire	2	2	1	1.6	1	1.6
Civil Disorder	1	1	1	1	1	1
Terrorist Attack (WMD)	3	2	1	2	0	0

*Probability Terms are defined as:

Improbable:	Not likely to occur in any 25-year period.
Remote:	Less than 1% probability in the next 25-year period.
Occasional:	Between 1% and 50% probability in the next 25-year period.
Probable:	Between 50% and 99% probability in the next 25-year period.
Frequent:	Near 100% probability in the next year.

CALCULATING POTENTIAL LOSS

It is difficult to determine the amount of damage that could be caused by natural or human-caused hazards because the damage will depend on the hazard's extent and severity, making each hazard event somewhat unique. Therefore, to calculate potential economic loss, we have assumed that structures impacted by hazards could result in damage of either 1% or 5% of the assessed value.

Based on this assumption, the potential loss from any of the identified hazards would range from $3,779,906 (1%) to $18,899,532(5%) to $37,699,064 (10%) based on the 2023 town valuations (See table below). Human loss of life was not included in the potential loss estimates, but could be expected to occur, depending on the severity and type of the hazard.

TOWN WIDE ASSESSED VALUES[2]				
Type	**Total Assessed Value 2023** *(not land)*	Economic Loss		
		Low 1% Damage	**Medium 5% Damage**	**High 10% Damage**
Residential	$255,393,139	$2,553,931	$12,769,657	$25,539,314
Manufactured Housing	$9,040,100	$90,401	$452,005	$904,010
Commercial Industrial	$103,661,700	$1,036,617	$5,183,085	$10,366,170
Electric Utilities	$9,895,700	$98,957	$494,785	$989,570
Total	$377,990,639	$3,779,906	$18,899,532	$37,799,064
Source: NH DRA 2023 MS-1				

Development Trends

According to the Master Plan, Plainfield's land use plan "is based on the premise that Plainfield's natural resources should be conserved" and "future development…should be directed and limited by the ability of the environment to support that development." With its attractive, rural location and proximity to Lebanon and Claremont, Plainfield is experiencing development pressures. Less naturally suitable lands, such as parcels containing wetlands, steep slopes and other features have recently become candidates for development. The Town of Plainfield aims to regulate development so that natural areas with high resource values, such as floodplains and wetlands, are protected.

In addition, the future land use sections recommends that the "…Planning Board should continue to review, revise and amend regulations and ordinances in order to encourage future growth in Plainfield that is consistent with the community Vision. Looking ahead necessarily involves making assumptions about what the future will be like and adopting guidelines to direct development. It is assumed that Plainfield will continue to be a desirable place to live and that the protection of open space, critical natural resources and scenic vistas should be pursued in equal measure to the potential future development pressures. Plainfield should continue to regulate development so that natural resources are protected. One area of

[2] https://www.revenue.nh.gov/sites/g/files/ehbemt736/files/inline-documents/sonh/2023-tables-by-county-sullivan-county.pdf

interest is protecting surface water and groundwater resources from pollution and planning for possible future community water supply needs."

Year	New Residential Permits
2023	5
2022	6
2021	10
2020	2
2019	5

Plainfield has experienced low to moderate growth, as shown in the number of new housing units over the last 5 years.

Population

Current projections from the New Hampshire Office of Planning & Development show the population growth rate will increase at a low rate in Plainfield over the next twenty years, where the year-round population in 2045 is projected to be 2,463

Plainfield Population Growth

Year	Population
2023	2,542
2020	2,430
2010	2,364
2000	2,236
1990	2,059
1980	1,749

Source: http://www.nhes.nh.gov/elmi/products/cp/profiles-htm/Plainfield.htm

Plainfield Population Projections

Year	Population
2025	2,509
2030	2,537
2035	2,537
2040	2,510
2045	2,463

Source: https://www.nheconomy.com/getmedia/0205c62d-9c30-4b00-9c9e-d81d8f17b8b3/NH-Population-Projections-2020-2050-Final-Report-092022.pdf

The Hazard Mitigation Planning Committee utilized the current Plans to review and incorporate development changes. Many of the programs identified in Chapter 5 address the impact of changes in land use and development, specifically the Town's Master Plan and Subdivision Regulations. However, due to no substantial changes in development, there were no changes in priorities made to the Plan. Consequently, the Town's overall vulnerability to the identified hazards has remained the same.

FUTURE DEVELOPMENT

The Planning Board will follow town building and subdivision regulations to ensure that any building in hazardous areas will be built to minimize vulnerability to the hazards identified in this Plan. The Town recognizes the importance of growth, but also understands the impact that hazards can have on new facilities and homes if built within hazardous areas of the Community. Town officials will continue to monitor any new growth and development, including new critical facilities, with regards to potentially hazardous events.

POTENTIAL IMPACTS ON THE COMMUNITY AND ASSETS

Climate Change:

Although not identified as a specific natural hazard in this Plan, no Plan can be considered complete today without some discussion of the impact that climate change has had on weather patterns. Climate change impacts the frequency and intensity of many of the natural hazards identified in this Plan, such as flooding, drought, wildfire and extreme heat. As FEMA States in the *Local Mitigation*

Planning Policy Guide 2023[3], climate change", increases the frequency, duration and intensity of natural hazards, such as wildfires, extreme heat, drought, storms, heavy precipitation and sea level rise." Communities in New Hampshire, such as Plainfield, should become increasingly aware of the effects of climate change on the natural hazards that are already being experienced. The greatest impact to the Town's assets from climate change would be the frequent and intense flooding events and damage to culverts and roads. Mitigation projects 1, 2, 3, 5, 6, 15, 16, 18 and 22 in Chapter 6 address the potential flooding impacts from climate change.

The Town has taken actions and has future plans to be better prepared for damage from flooding, drought, severe wind, winter weather and extreme heat; all of which are increasing in frequency and intensity. This mitigation plan as a whole approach is attempting to mitigate these trouble spots before disaster strikes.

Plainfield has been proactive in preparing for the short-term and long-term effects of climate change. In the short-term Plainfield is looking to increase its available inventory of emergency repair supplies, such as culverts, gravel and equipment to manage flood and wind events. More long term, the Town will be implementing upgrades to drainage structures as identified in the Stream Crossing Study (identified in Chapter 5), as well increase available inventory for emergency repairs.

Population Patterns and Land Use:

As described earlier, the Town of Plainfield has seen a minor increase in population in the last 5-10 years. New development has not pressured hazard prone or vulnerable areas, as subdivision regulations minimize that risk; therefore there are no mitigation projects to address the impacts from changes in population patterns.

The Hazard Mitigation Planning Committee utilized local knowledge to review development changes. The committee made no changes in priorities to the Plainfield Hazard Mitigation Plan Update 2024.

[3] *https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-policy-guide_042022.pdf*

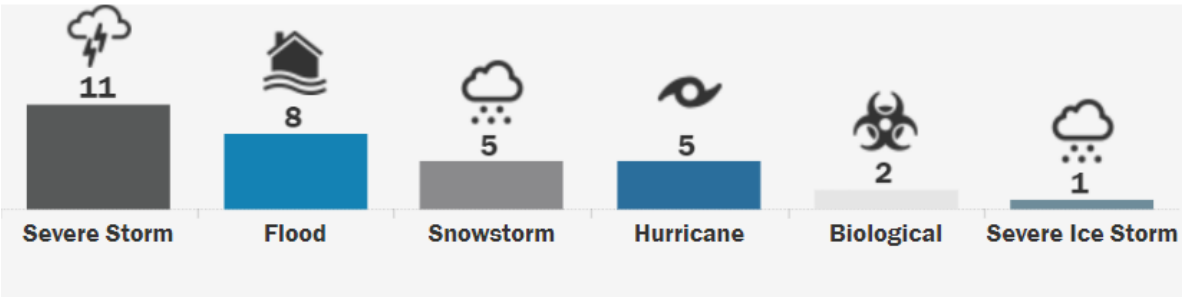
Chapter 3
HAZARD IDENTIFICATION

This Chapter includes a description of the natural hazards that the Committee considered to be a risk to the Town. They are ranked in accordance with their overall risk, as identified in the Risk Matrix in Chapter 2 of this Plan. In addition, Federally Declared Disasters are mentioned below but there have been no State Declared Disasters during this same time period.

FEDERALLY DECLARED DISASTERS 2019-2024 Sullivan County

DR#	Date	Description
4740	July 9-17, 2023	Flood
4624	July 29, - August 2, 2021	Severe Storms and Flooding
4516	January 20, 2020 – May 11, 2023	Covid-19 Pandemic

Sullivan County Disasters by Incident Category[1] 1953-2024



WINTER WEATHER

Probability: Frequent

Definition:
Heavy Snow Storms: A winter storm can range from moderate snow to blizzard conditions. Blizzard conditions are considered blinding wind-driven snow over 35 mph that lasts several days. A severe winter storm deposits four or more inches of snow during a 12-hour period or six inches of snow during a 24-hour period. **Ice Storms**: An ice storm involves rain that freezes upon impact. Ice coating at least one-fourth inch in thickness is heavy enough to damage trees, overhead wires and similar objects. **Extreme Cold:** Extreme temperatures are a period of prolonged and/or excessive hot or cold that presents a danger to human health and life. **Blizzard**: A blizzard is a violent snowstorm with winds blowing at a minimum speed of 35 miles (56 kilometers) per hour and visibility of less than one-quarter mile (400 meters) for three hours. **Nor'Easter**: A Nor'easter is a large weather system traveling from south to north, passing along the coast. As the storm's intensity increases, the resulting counterclockwise winds impacted the coast and inland areas in a Northeasterly direction. Winds from a Nor'easter can exceed hurricane force winds.

[1] https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties

Location:
There is a town-wide vulnerability to severe winter weather. Nor'easters (wind), Ice Storms, Heavy Snow Accumulations and Severe Cold can occur at any place within the town and generally affect the entire town when it happens. The higher elevations are more likely to experience snow or ice before the lower terrain.

Impact:
Heavy snow accumulations (generally considered one that deposits six or more inches of snow in a 12-hour period) especially those associated with nor'easters can have a significant affect on the Town, including extended power outages, road closures, collapsed roofs and increased snow removal costs. During ice storms, ice forms on cold surfaces, such as trees and power lines, and may continue to form until the ice is quite deep, as much as several inches thick. Ice damage results in power outages, road closures and forest damage. Ice on the roads can be the most difficult for a rapid emergency response. Private roads are difficult for emergency response vehicles due to restricted access during winter.

Extent:
NOAA's National Climatic Data Center produced the *Regional Snowfall Index* (RSI) for significant snowstorms that impact the eastern two thirds of the U.S. The RSI ranks snowstorm impacts on a scale from 1 to 5, similar to the Fujita scale for tornadoes or the Saffir-Simpson scale for hurricanes. In addition, the National Weather Service developed and utilizes the Sperry-Piltz Ice Accumulation Index (SPIA) to forecast the impact of an ice storm. The index below ranges from an ice storm rated as "0" which has little impact, to an index rating of 5 that has catastrophic damage to exposed utility systems.

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

Previous Occurrence:
December of 1929: Ice Storm caused disruption and damage to telephone, telegraph, and power system.
December 1942: Ice storm has severe intensity for Sullivan County.
Dec.- Jan. 1969: Ice storm with power disruption to many communities.
February 8-10, 1969: Snow accumulations up to 27" in southeastern New Hampshire and up to 42" in northeastern New Hampshire.
January 20, 1978: 20inch snowstorm leaving 20' high snowdrifts
January 7-9, 1998 (NOAA): A severe Ice Storm hit sections of New Hampshire from January 7 through January 9 1998. Statewide, the storm knocked out power to about 55,000 customers, an estimated 125,000 people. During the time without power, residents and those involved with the

ICE DAMAGE INDEX	DAMAGE AND IMPACT DESCRIPTIONS
0	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
2	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
3	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
4	Prolonged & widespread utility interruptions with extensive damage to main distribution feeder lines & some high voltage transmission lines/structures. Outages lasting 5 – 10 days.
5	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.

restoration efforts had to contend with snow, additional freezing rain, rain, slippery roads, falling ice and other debris, sub-zero temperatures, strong winds, and dangerous wind chills. Debris cleanup from the storm was expected to last into the summer. Within the state, there were no deaths directly attributed to the storm, although one utility worker was partially paralyzed when struck by a falling tree while making repairs to a line. Carbon monoxide poisoning was a problem and many residents were treated at area hospitals. Long-term effects from the ice storm are expected to persist for many years.

December 11-12, 2008 (NOAA): A major winter storm brought a mixture of snow, sleet, and freezing rain to New Hampshire from the morning of December 11th to the morning of December 12th. The greatest impact in the state was in southern and central New Hampshire where a significant ice storm occurred. Precipitation amounts across the southern and central part of the state ranged from 1 to 3 inches, ice accretion to trees and wires in these areas generally ranged from about a half inch to about an inch. The weight of the ice caused branches to snap, and trees to either snap or uproot, and brought down power lines and poles across the region. About 400 thousand utility customers lost power during the event, with some customers without power for two weeks. Property damage across northern, central and southeastern New Hampshire was estimated at over $5 million. In Plainfield the local EOC was activated and the local shelter opened for 3 days. Emergency responders and town officials canvassed neighborhoods to determine needs (shelter, medical, transportation, etc.). The Town received $15,500 in emergency grant funds.

February 24, 2010 (NOAA) - Sullivan County Declared Disaster: A major storm system affected the northeastern U.S. from February 23rd through March 2nd. Areas of surface low pressure rotating around an upper level atmospheric system brought high winds, heavy snow, heavy rain, inland and coastal flooding, and coastal erosion to the area during the period. The intensifying low brought a continuation of the high winds, heavy rain, heavy snow, coastal flooding, and coastal erosion to the northeast. The high winds brought down trees and branches throughout the area and caused widespread power outages and blocked many roadways. Snowfall ranged from 12 to 24 inches in Sullivan County. The Town of Plainfield experienced a large number of damaged and downed trees, leaving 600 cubic yards of debris scattered throughout town.

March 6, 2011 (NOAA): Light rain, associated with the approaching cold front began to fall Sunday morning. The precipitation became heavy by late afternoon as the intensifying area of low pressure approached New Hampshire from the south. At the same time, colder air started funneling into the state from the north and changed the rain to snow across Coos County. As the colder air continued to move southward late Sunday afternoon and evening, the rain changed to freezing rain across Grafton County and the higher elevations of Sullivan and Merrimack Counties. Across the state, heavy snow, freezing rain and rain continued through the night and finally ended early Monday afternoon, March 7th. In addition to the precipitation, strong and gusty winds developed across the region Sunday night and continued Monday. Winds gusted to about 20 to 25 mph across much of southern New Hampshire during the storm with gusts of about 30 to 45 mph as the storm moved east Monday afternoon. In Grafton and Sullivan Counties, ice accretion in combination with the wind, brought down trees and tree limbs across Grafton and Sullivan Counties leading to numerous power outages and more than $700,000 in damage. In Plainfield, voting day logistics had to be changed to the town hall with backup power, as the regular voting location at the school had no power. Kimball Union Academy and the elementary school were without power for several days.

February 8-9, 2013 (FEMA Disaster Declaration DR-4105): An historic winter storm deposited tremendous amounts of snow over all of southern New England from February 8 to Saturday, February 9. The storm brought heavy snow, high winds, and blizzard

conditions to the southeastern part of the state. Snowfall amounts were generally 18 inches or more in the southeast where blizzard conditions caused considerable blowing and drifting snow. In western and northern sections, snowfall amounts were in the 4 to 18 inch range. Southeastern New Hampshire had blizzard conditions for about 3 to 10 hours

March 12, 2014 (NOAA): Low pressure moving east from the Ohio Valley on the morning of the 12th and a developing low off the mid-Atlantic coast caused heavy snow across much of western and northern New Hampshire. Snow and mixed precipitation continued through much of the day on the 13th as the low moved through the Gulf of Maine and into the Canadian Maritimes. The northern half of the State generally saw between 6 and 18 inches of snow with lesser amounts to the south.

November 26-27, 2014 (NOAA): An area of low pressure developed off the Carolina coast on the morning of the 26th and raced rapidly up the eastern seaboard during the day to Nova Scotia by the morning of the 27th. The low brought heavy snow to all of New Hampshire with a mixture of precipitation along the coast. Snowfall amounts generally ranged from 4 to 8 inches in the northern mountains, including the Town of Plainfield, to 10 to 15 inches across portions of Sullivan, Grafton, Belknap, and Carroll Counties, to 4 to 8 inches across the southeastern part of the state.

December 29-30, 2016 (NOAA): An area of low pressure moving northeast from the Carolinas on the morning of the 29th combined with a low dropping southeast from Canada to form an intense area of low pressure that moved through the Gulf of Maine during the early morning hours of the 30th. Much of New Hampshire, including the Town of Plainfield, received between 6 and 16 inches of snow with lesser amounts along the Connecticut River Valley. Along the Seacoast, most of the precipitation fell as rain with only an inches or two of snowfall accumulation. Inland from the coast and across southern areas, the rain changed to a heavy, wet snow which clung to trees and wires which resulted in scattered power outages. Statewide, more than 11,000 homes and businesses saw outages due to the storm. Power was out for about a week in Plainfield as a result of this storm. EOC was opened and emergency personnel conducted house checks.

March 14, 2017 (FEMA Disaster Declaration #4316): The storm brought heavy snow to all of New Hampshire with high winds leading to blizzard or near blizzard conditions across much of central and southern portions of the State. High winds and/or heavy wet snow downed trees and created numerous power outages across southeastern portions of the State. The snow became very heavy throughout the State during the late morning and afternoon. Winds also increased during the afternoon leading to blizzard conditions in parts of the State. Snowfall amounts across New Hampshire ranged from about 12 to 20 inches. The heavy snow combined with the strong winds lead to whiteout conditions in many areas. Town meeting was held despite the bad weather.

January 4, 2018 (NOAA): The energy from a storm slipping southeast from the Great Lakes merged with the energy from low pressure off the southeast U.S. coast to form an intense area of low pressure off the mid-Atlantic coast by the morning of January 4th. The intense low brought heavy snow and high winds to much of the region, with blizzard conditions to the Seacoast area. In addition, the storm brought coastal flooding and erosion along the coast. The storm brought 10 to 15 inches of snow to much of New Hampshire will lesser amounts along the Connecticut River Valley.

March 13, 2018 (FEMA Disaster Declaration #4371): Low pressure off the Southeast U.S. coast on the morning of the 12th intensified rapidly as it moved slowly northeast to just southeast of Cape Cod by the morning of the 13th. The low continued its slow movement to Nova Scotia by the morning of the 14th. The storm brought heavy snow to the almost the entire State with the heaviest snow falling in a strip just inland from the coast. Snowfall amounts ranged from about 6 inches across Coos County to more than

24 inches across portions of Hillsborough, Rockingham, Belknap, and Carroll Counties. Town meeting was held despite the bad weather.

November 20 and 26 2018 (NOAA): Two early snowstorms occurred this November. Early on the morning of the 20th a band of snow developed over central New Hampshire, just to the north of the mid-level warm front. Snow persisted under this feature into the midafternoon, where a narrow swath received 6 to 8 inches of snow. As temperatures aloft cooled in the mid-afternoon, the snow to liquid ratios became very high for the last 1 to 2 inches of snow. On November 26th surface temperatures near freezing made for a heavy, wet snow and scattered power outages due to downed tree limbs. Total snowfall in Plainfield ranged from 6 inches to a foot or more in the higher elevations.

December 17, 2020: Snow began just after midnight on the 17th. Snow quickly became heavy as an intense band of snow moved through the area. While the band became stationary north of the area, as it moved through snowfall rates of 3 to 4 inches per hour were observed. A weakening trough aloft quickly brought an end to snow by midafternoon. Snowfall totals ranged from 12 to 24 inches. There were several reports in excess of 40 inches, breaking the county snowfall record and challenging the state record for a 24-hour snowfall.

December of 2022: There were 2 storms back-to-back in early December. Numerous roads were closed, power lines down, home visits conducted by Fire/EMS and delivered water to home. Lost power every weekend in December due to ice and snow. The shoulder seasons with heavy wet snow or ice tends to happen every year. The EOC was not officially activated.

March 24, 2024: The highest amount of snow fall had 32 inches. which varied from one side of town to another. Whitaker Road and the north of town had more.

FLOODING

Probability: Frequent

Definition:

Flooding is the temporary overflow of water onto land that is not normally covered by water. Flooding results from the overflow of major rivers and tributaries and/or inadequate local drainage. Flooding events considered in this Plan include 100-year and 500-year floodplain events, rapid snowpack melt, short but intense rainstorms and ice jams.

Location:

Flooding occurs in the 100-year floodplain as designated on the FEMA Flood Insurance Rate Map. These areas primarily include Connecticut River and Mascoma River and other minor tributaries. Ice Jams also occur along the Connecticut River. Roads most commonly affected are River Road, Penniman Road and Willow Brook Road. The potential is moderate but the impact historically is minimal. (See map on following page.)

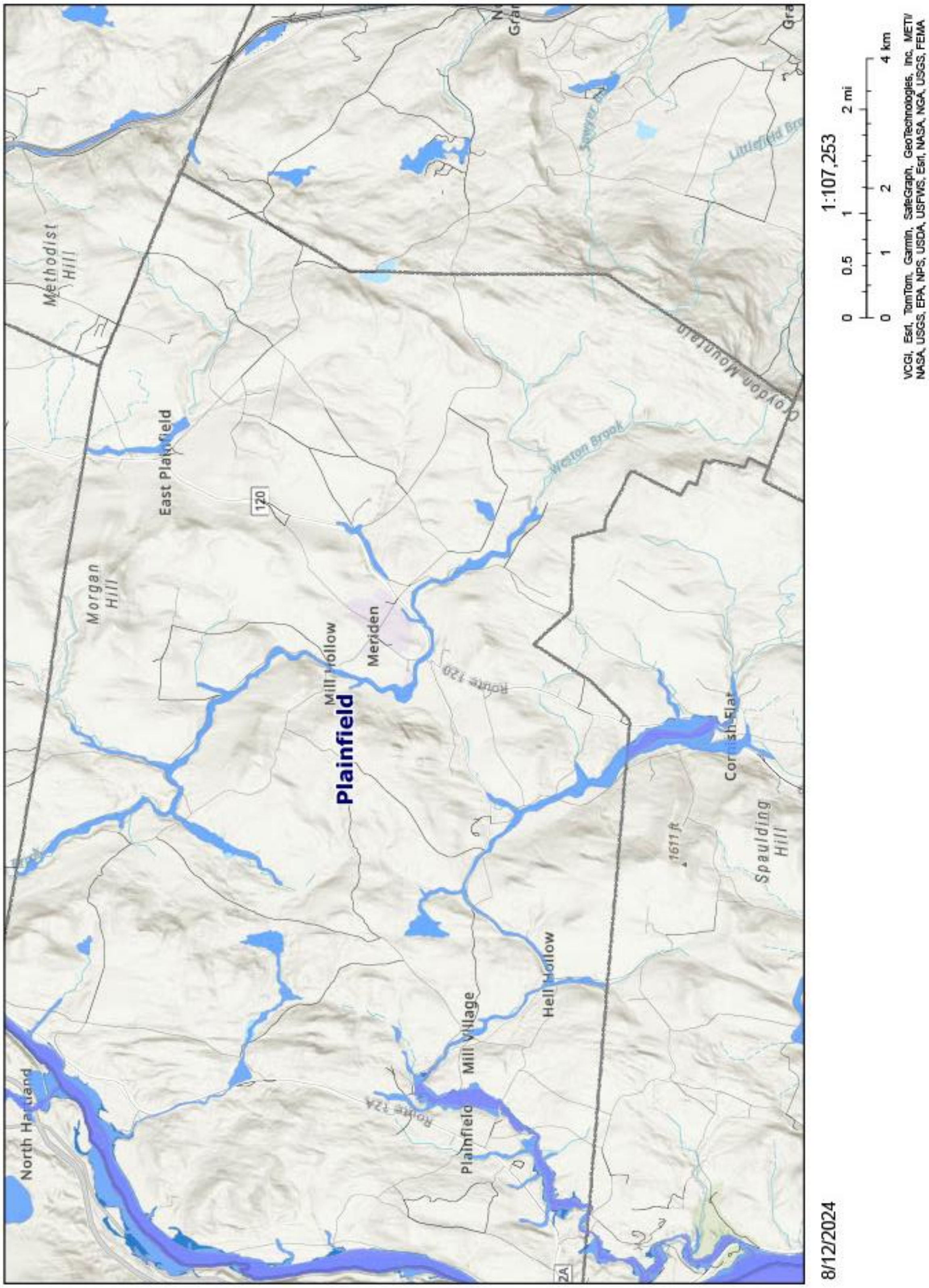
Impact:

The extent of damage caused by any flood depends on the depth and duration of flooding, the topography of the area flooded, velocity of flow, rate of rise, and the amount and form of development in the floodplain. Most of the past flooding events result in erosion and damage to culverts and roads throughout town.

Extent:

FEMA defines flood hazards by the 100-year and 500-year flood events. A 100-year flood event is defined as flood event having a 1% chance of being equaled or exceeded in any given year. The 500-year flood12yr event is defined as flood event having a .2% chance of being equaled or exceeded in any given year. The Town of Plainfield Flood Insurance Rate Maps (FIRM) identify both an A and AE zones. A-zones are subject to the 100-year flood, however because there have been no detailed hydraulic studies, there is no Base Flood Elevation (BFE) determined for these zones. The AE zones are subject to the 100-year flood and have BFEs delineated on the FIRM.

Plainfield, NH 100yr Floodplain Map 2024



8/12/2024

Previous Occurrence:

March 11-21, 1936: Double flood; first due to rains and snowmelt; second, due to large rainfall.
August 1955: Heavy rains caused extensive damage throughout the river basin.
June 30 - July 5 1973: Flood damage to culverts, bridges, streambeds, and drainage facilities.
July - August 1986 Statewide flooding from severe summer storms, heavy rains, flash flooding and severe winds.
August 7-11, 1990: A series of storm events with moderate to heavy rains.
August 7-11, 1991: FEMA DR-917-NH: Hurricane Bob struck New Hampshire causing extensive damage in Rockingham and Stafford counties, but the effects were felt statewide.
January 3, 1996 FEMA DR-1077-NH – Storms and flooding
October 29, 1996 FEMA DR-1144-NH – Severe storms and flooding
July 2, 1998: FEMA DR-1231-NH – Severe storms and flooding
October 8, 2005 FEMA DR- 1610 Rainfall amounts ranged from around 3 inches in southern New Hampshire up to 9.26 inches at Pinkham Notch. This resulting flooding of small rivers and streams caused additional damage to roads that had been damaged earlier in the month. Tragically, two young people lost their lives in the nearby Town of Unity when they attempted to drive over a bridge that had already been washed away.
April 15-23, 2007: A Nor'easter came through New Hampshire and left behind another round of flooding for many of the state's communities. For many of these communities it was the second time within a year that they were affected by flooding that met or exceeded the 100-year flood. In Plainfield the flooding damaged River Road and Willow Brook Road. The town received $35,000 in HMGP money.
August 28, 2011 (NOAA) - Sullivan County Declared Disaster
Heavy rain from Tropical Storm Irene caused widespread flooding of small rivers and streams across many counties in New Hampshire. Damage to roads and bridges was extreme with repair costs in the millions. Heavy rain from Tropical Storm Irene caused flooding on small rivers and streams throughout Sullivan County.
May 29, 2012 (FEMA Declare Disaster #4065) A warm front moved through southern NH early Tuesday morning, leaving the area in a very moist, warm, and unstable airmass. The front set off showers and thunderstorms across much of eastern New York, western Massachusetts and parts of southern New Hampshire.
June 28, 2013 (FEMA Declaration Disaster #-4139): The storm brought heavy snow to all of New Hampshire with high winds leading to blizzard or near blizzard conditions across much of central and southern portions of the State. High winds and/or heavy wet snow downed trees and created numerous power outages across southeastern portions of the State. Snow began around 4 am in the southwestern corner of the State on the 14th and spread rapidly northeast. By 11 am, snow was falling throughout the entire state. The snow became very heavy throughout the State during the late morning and afternoon. Winds also increased during the afternoon leading to blizzard conditions in parts of the State.
October 30, 2017 (FEMA Declared Disaster DR#4355): An area of low pressure over the southeastern United States on the morning of Sunday, October 29th, intensified rapidly Sunday night and Monday, October 30, as it moved northward and moisture and energy from the remnants of Tropical Storm Philippe merged with the storm. The combined system brought high winds to much of New Hampshire Sunday night into Monday morning, with the highest winds in southern and central sections of the State. In addition, heavy rain accompanied the high winds over New Hampshire leading to both flash flooding and main-stem river flooding. The highest rainfall amounts were observed in the White

Mountains. While the high winds and heavy rain ended during the morning of the 30th, flooding persisted into the late afternoon of November 1st. FEMA Disaster they got about $20,000 in reimbursement funds. The Town of Plainfield experienced moderate flooding. Stage Road was closed and some areas of Town were without power for a week. The Town received approximately $20,000 in FEMA Disaster Declaration funds.

April 21, 2019: A portion of the Connecticut riverbank off Route 12A in Plainfield washed out from high water and ice jams, undercutting the integrity of the roadway near the intersection with River Road and plucking the guardrail from its soil.

June 17, 2023: The headwaters of Blood's Brook at Grantham Mt. Road near Cricket Song Farm experienced a 5" rain event that occurred in Meriden Village. The flood washed out over 300 feet of road material, including asphalt, with crevices of as much as 10-feet deep in some places. This event was repeated again on July 10th when an additional 4" of rain fell throughout town. Unbelievably, again on July 22nd another deluge of rain, this time focused on the Plainfield Plain side of town washed away Jordan Road, Hell Hollow Road and a section of Hayward Road. All totaled, parts of Plainfield received more than 23" of rain during the period of June to August. More than 11" of rain fell on Plainfield in July alone. Other roads affected by the June and July rains were Hell Hollow Road, Hayward Road, Willow Brook, Underhill Road, Jordan Road and Eaton Road. The town is pursued FEMA reimbursements for the damage that occurred between July 9th and 17th, a declared disaster in Sullivan County. However, much of our damage occurred outside of these dates and was not eligible for reimbursement. In the end the Town received $62,000 for Grantham Mountain Road. The Select Board is pursuing a FEMA hazard mitigation grant to replace the clearly undersized culvert on Grantham Mountain Road with a professionally engineered bridge structure. As climate change now dominates our reality, building resiliency into our town infrastructure has become a priority.

SEVERE WIND (TORNADO/DOWNBURST)

Probability: Probable

Definition:
A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. These events are spawned by thunderstorms and occasionally by hurricanes. They may also occur singularly or in multiples. A downburst is a severe, localized wind blasting down from a thunderstorm. These "straight line" winds are distinguishable from tornadic activity by the pattern of destruction and debris. Downbursts fall into two categories: Microburst which covers an area less than 2.5 miles in diameter; and Macroburst which covers an area at least 2.5 miles in diameter.

Location:
Severe wind events (downburst, tornadoes or high winds associated with thunderstorms) can occur anywhere in Plainfield. Generally, the higher elevations are more susceptible as well as more vulnerable due to the fact that they are home to emergency response/mutual aid towers. Due to the sporadic nature of tornados and severe wind events, they could occur anywhere in the Town of Plainfield.

Impact:
Depending on the size and location of these events, the destruction to property may be devastating. Several of the more significant and recent events within southern New

Hampshire have caused several millions of dollars in damage and at least 5 fatalities. An F-2 Tornado, according to the Fujita scale, maintains wind speeds from 13-157 mph. A tornado occurring in Plainfield would cause considerable damage. Roofs could be torn off frame houses; mobile homes demolished; large trees snapped or uprooted; and light object missiles would be generated as a result of an F-2 Tornado.

Extent:
According to the Enhanced Fujita scale, which rates tornado intensity, an EF-2 tornado maintains wind speeds from 111-135 mph and can cause considerable damage. There has been 4 F1 tornadoes recorded for Sullivan County. The highest magnitude tornado anticipated by the Plainfield Hazard Mitigation Committee would be an EF1.

EF 0	65-85 mph
EF 1	86-110 mph
EF 2	111-135 mph
EF 3	136-165 mph
EF 4	166-200 mph
EF 5	Over 200 mph

Previous Occurrence:
July 18, 2006: Severe winds downed several trees in town.
August 16, 2007: A severe thunderstorm downed numerous trees and power lines in Plainfield. Numerous severe thunderstorms produced damaging winds and large hail during the evening of August 16th.
May 9, 2009: Severe downburst downed many trees and closed some roads for two days.
August 15, 1999: F1 tornado hit Ledieu Hill to 120. Caused damage to timber lots and minor building damage.
August 21, 2011 (NOAA): A strong upper trough and associated cold front pushed into the region on the afternoon of the 21st. Good low level moisture and instability combined with an impressive wind field aloft to produce numerous severe thunderstorms during the afternoon and evening hours. All reports of damage were due to strong winds. A severe thunderstorm downed trees on Route 12a near Freeman Road in Plainfield.
November 24, 2013 (NOAA): Strong winds developed behind an arctic cold front during the afternoon of the 24th. Winds gusted to between 40 and 50 mph across much of New Hampshire. Snapped trees and branches caused power outages throughout the region. Power companies reported that about 30,000 customers lost electrical service. In Concord where winds gusted to 58 mph, a large fiber communications cable fell across I-93 blocking the interstate highway for three hours.
July 1, 2017 (NOAA): A very strong cold front approached from the west on the morning of July 1st. Ahead of the front, a very warm and moist air mass was in place over New England with values of precipitable water around 2 inches. Numerous supercells produced damaging winds, large hail, and 5 confirmed tornadoes across the border in Maine. In addition, very heavy rain associated with these cells produced extensive flash flooding to many area roads, with damage totaling in the millions. This thunderstorm downed trees and wires on Route 120, Black Hill Road and Route 12A in Plainfield.
November 30, 2022: On November 30th a strong low-level jet developed over the state ahead of a strong cold front. As the front approached southerly winds reached the surface with wind gusts up to 50 mph with locally higher gusts. Post frontal winds from the west were also strong immediately after frontal passage with wind gusts in the 45-mph range. Numerous trees were reported down across the State with 10,000 plus power outages.
June 15-16, 2023: Plainfield village had a tree fall on a roof and numerous trees were uprooted.
June 19, 2024: Thunderstorm associated winds took down power lines and trees on Stage Road.

LIGHTNING

Probability: Frequent

Definition:
By definition, all thunderstorms contain 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 50,000 F, considerably hotter than the surface of the Sun.

Location:
The entire town is at moderate risk to lightning hazard. The higher elevation areas have an increased probability, however lightning strikes can occur anywhere in the Town.

Impact:
Residents and visitors to the New Hampshire area are more vulnerable to being struck by lightning because of the activities with which they are involved, particularly on those warm summer days when lightning is most likely to occur. Often, many people are outside enjoying the variety of recreational activities that attract people to New England during the summer when the vulnerability to lightning strike is highest. More likely to be affected are structures and utilities, often resulting in structure fires and power outages.

Extent:
The National Oceanographic Atmospheric Administration (NOAA) defines the extent of lightning activity with a LAL scale as shown in the table below.

LAL 1	No Thunderstorms
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent. 1 to 5 cloud ground strikes in a 5-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.

Previous Occurrence:
Plainfield experiences annual lightning events that can range up to an LAL 5. The congregational church on Meriden Hill has been struck by lightning twice in the last 100 years and was rebuilt. Several residential properties have been partially damaged by fire from lightning strikes. There have been no significant lightning strikes in the last five years.

HURRICANE/TROPICAL STORM

Probability: Probable

Definition:
A hurricane is a tropical cyclone in which winds reach speeds of 74 miles per hour or more and blow in a large spiral around a relatively calm center. The eye of the storm is usually 20-30 miles wide and the storm may extend over 400 miles. High winds are a primary cause of hurricane-inflicted loss of life and property damage. The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage. Hurricanes reaching Category 3 and higher are considered major hurricanes because of their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous, however, and require preventative measures.

Location:
When hurricane events occur in Plainfield they affect the entire town. Certainly, the heavy rainfall associated with hurricanes will impact the 100-year floodplain, but the high winds can have an impact on the whole town.

Impact:
New Hampshire's exposure to direct and indirect impacts from hurricanes is real, but modest, as compared to other states in the region. That being said, the probability of hurricanes occurring in Plainfield is possible. The largest impact is on the floodplain areas due to heavy rains. High winds cause trees to fall thereby causing power outages, structural damage to buildings, road closures and debris management issues.

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

Category	Wind Speed (mph)	Damage at Landfall
1	74-95	Minimal
2	96-110	Moderate
3	111-130	Extensive
4	131-155	Extreme
5	> 155	Catastrophic

Previous Occurrence:
September 21, 1938 - The Great New England Hurricane: Statewide there were 13 Deaths, 1,363 families received assistance. Disruption of electric and telephone services for weeks. 2 Billion feet of marketable lumber blown down. Flooding occurred throughout the State, in some cases equaling and surpassing the Flood of 1936. Total Direct Losses - $12,337,643
August 19, 1991 - Hurricane Bob: Extensive amount of trees blown down and property damage Statewide and localized flooding.
August 28, 1971 - Tropical Storm Doria's center passed over New Hampshire resulting in heavy rain and damaging winds.
August 28, 2011: Heavy rain from Tropical Storm Irene caused widespread flooding of small rivers and streams across many counties in New Hampshire. Damage to roads and bridges was extreme with repair costs in the millions. Heavy rain from Tropical Storm Irene

caused flooding on small rivers and streams throughout Sullivan County. The Town received almost $20,000 as result of a Presidential Declaration DR-4026-NH.
August 4, 2020: Tropical Storm Isaias: Tropical Storm Isaias brought moderate impacts to Sullivan County with scattered reports of trees and branches down leading to scattered power outages. Isolated wind damage occurred during the evening hours when Isaias made its closest approach. Overall power outages for the county remained low with less than 15% of the county without power. The impact to Plainfield was minimal.

WILDFIRE

Probability: Probable

Definition:
Any free burning uncontainable wild land fire not prescribed for the area which consumes the natural fuels and spreads in response to its environment.

Location:
The Ice Storms of 1998 and 2008 left a significant amount of woody debris in the forests of the region and may fuel future Wildfires similar to the debris caused by the Hurricane of 1938. Fires in New Hampshire are predominantly human-caused, and roughly half of the total fire activity is in the most populous three southern counties. The proximity of many populated areas to the forested lands exposes these areas and their populations to the potential impact of wildfire. Wildfires are most likely to occur along areas traveled by humans, such as roads, rail trails and recreational areas.

Impact:
Fires in New Hampshire are predominantly human-caused, and roughly half of the total fire activity is in the most populous three southern counties. The proximity of many populated areas to the forested lands exposes these areas and their populations to the potential impact of wildfire. The estimated impact to structures could be derived from the information included in the critical facilities in Chapter 4. In addition, climate change has and will continue to increase the intensity, frequency and duration of wildfire incidents.

Extent:
The extent of damage to structures and the general populations will vary depending on climate, warning, and the time of year. Even the time of day could affect the extent, as there is an increase of recreational hikers and tourists during the daytime. The National Wildfire Coordinating Group (NWCG) classifies a wildfire into one of several ranges of fire, based upon the number of acres burned. The following list provides NWCG's scale for wildfire values:

Previous Occurrence:
There have been 83 major fires (both structure and wildfires) in Plainfield since 1785. The three biggest fires are noted below:
June 1953: Corbin Park fire started by lightning and burned until late fall. Some areas were not out until snow flew. This event cost the town of Plainfield $6,534.37 and cost the State of NH over $1 million. No homes were destroyed in this forest fire.
October 23, 1982: The Plainfield Town Highway Garage was destroyed by fire.
November 29, 1984: fire in Plainfield Village: Northern New England Storage, Inc., steel frame building, two businesses, and an apartment burned. People were evacuated from the area because of toxic fumes. There have been no other significant wildfires in Plainfield since the 1984 fire.

Value	Description
A	Up to .25 acres
B	0.26 to 9.9 Acres
C	10.0 to 99.9 Acres
D	100 to 299 Acres
E	300 to 999 Acres
F	1000 to 4999 Acres
G	5000 to 9999 Acres
H	10000 to 49999 Acres
I	50000 to 99999 Acres
J	100000 to 499999 Acres
K	500000 to 999999 Acres
L	1000000 + Acres

INFECTIOUS DISEASE

Probability: Occasional

Definition:
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.

Location:
The entire State of New Hampshire, including the Town of Plainfield, is at risk for Infectious Diseases. The prevalent diseases can change based on the time of year, such as the influenza virus in the winter and foodborne disease in the summer.

Impact:
Public health incidents and infectious diseases may occur suddenly or with a slow onset. Incidents that occur suddenly may have extraordinary and/or overwhelming medical resource needs. Incidents may occur with a slow onset and/or with advance warning will allow for a more coordinated response. During sudden onset incidents, many victims may reach healthcare facilities on their own without the use of Emergency Medical Services (EMS), which means that victims may arrive to find unprepared or inadequate facilities.

According to NH DHHS's 2007 Influenza Pandemic Public Health Preparedness and Response Plan, it is estimated that an influenza pandemic will cause nearly 16,000 hospitalizations and nearly 4,000 deaths.

Extent:
The magnitude and severity of infectious diseases is described by its speed of onset (how quickly people become sick or cases are reported) and how widespread the infection is.

Some infectious diseases are inherently more dangerous and deadly than others, but the best way to describe the extent of infectious diseases relates to the disease occurrence:

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

Previous Occurrence:
January 20, 2020 to May 11, 2023 (DR-4516): The State of New Hampshire declared a State of Emergency on March 13, 2020 due to Covid-19. From March 1 through November 1, 2020, the State had 11,290 cases of Covid and by March 1, 2021 there were 75,504 cases of Covid-19. By August 2022, the State had over 339,766 cumulative cases. There was a total of 492 reported official cases in Town, through May of 2023. The following is an excerpt from the 2021 Town Report:

"As news of what was then called the Corona Virus became more widespread and serious, changes happened quickly. The voting portion of Town Meeting happened as usual on Tuesday, March 10 in the Plainfield Elementary School gym. By the following Saturday, it became clear that it would be ill-advised to hold our Town Meeting as scheduled on Saturday, March 14. The terms "quarantine" and "lock-down" quickly became part of our lived experience. Town Meeting was postponed and ultimately held outdoors in July under tents provided by Smith's Auction Gallery. Family or household groups were able to sit together, but people not in the same household were asked to sit six feet apart. "Social Distancing" was now part of our everyday conversation. Public health officials informed us that in addition to social distancing, wearing of masks was the most effective way to control the spread of the virus. With little guidance on the federal level, there was a national controversy about the seriousness of the virus and the benefits of mask wearing. In August, Plainfield was one of the first towns in the state to pass a mask ordinance. The state of New Hampshire followed suit in November.

"Plainfield's local government has, using teleconferencing technology and recommended safety protocols remained open throughout the pandemic. Likewise, the Plainfield School has done an extraordinary job of continuing with the education of our children, offering both an online virtual program and in person education."

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EARTHQUAKE

Probability: Remote

Definition:
An earthquake is a rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. Larger earthquakes usually begin with slight tremors but rapidly take the form of one or more violent shocks, and end in vibrations of gradually diminishing force called aftershocks. The magnitude and intensity of an earthquake is determined by the use of scales such as the Richter scale and Mercalli scale.

Location:
According to the State of New Hampshire Multi-Hazard Mitigation Plan, New Hampshire is considered to lie in an area of "Moderate" seismic activity with respect to other areas of the United States and is bordered to the North and Southwest by areas of "Major" activity. Generally, the entire Town is at risk to earthquakes.

Impact:
Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and often cause landslides, flash floods, fires, and avalanches. It is assumed that all the buildings in the Town have not been designed to withstand seismic activity. More specifically, the older historic buildings that are constructed of non-reinforced masonry are especially vulnerable to any moderate sized earthquake. In addition, utilities (water, sewer, etc.) are susceptible to earthquake damage. Plainfield has experienced the effect of small to moderate earthquakes that had minor to no effect on the town's infrastructure.

Extent:
Earthquakes with a magnitude of 2.0 to 4.9 on the Richter scale are considered minor to light, and those 5.0 to 6.9 are considered moderate to strong. However, if a large (6+ on the Richter Scale) occurred in or around the town, it is assumed that structural damage would be moderate to severe.

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

Previous Occurrence:
The Town of Plainfield has not experienced any significant earthquakes. The following table summarizes earthquakes of 2.5 magnitude or greater that have occurred in New Hampshire and New England:

Location	Date	Magnitude
Ossipee, NH	December 20, 1940	5.5
Ossipee, NH	December 24, 1940	5.5
Dover-Foxcroft, ME	December 28, 1947	4.5
Kingston, RI	June 10, 1951	4.6
Portland, ME	April 26, 1957	4.7
Middlebury, VT	April 10, 1962	4.2
Near NH Quebec Border, NH	June 15, 1973	4.8
West of Laconia, NH	Jan. 19, 1982	4.5
Ontario-Quebec Border	June 23, 2010	5.0
Boscawen, NH	September 26, 2010	3.1
Virginia	August 23, 2011	5.8
Southern Maine	October 16, 2012	4.0
Contoocook, NH	March 21, 2016	2.9
East Kingston, NH	February 15, 2018	2.7
Gorham, NH	February 4, 2022	2.9
Chichester, NH	December 23, 2023	2.7
Haverhill, NH	June 18, 2024	2.4

DAM FAILURE

Probability: Remote

Definition:
According to the NH Department of Environmental Services (DES), a dam is any artificial barrier which impounds or diverts water which: has a height of 6 feet or more; or is located at the outlet of a great pond, regardless of height or storage; or is an artificial barrier which impounds liquid Industrial or liquid commercial wastes, or septage or sewage, regardless of height or storage.

Location:
There are no dams located in Plainfield with a significant risk. However, Wilder Dam and Moore Dam, both upstream on the Connecticut River, are High Hazard Dams that could impose a great risk to people and infrastructure in Plainfield. The Emergency Action Plan for this Plan is available through the NH Department of Environmental Services and on file at the Town Office.

Impact:
A dam failure or breach could occur due to extreme rainfall amounts and/or a human caused incident. A failure or breech would result in rapid loss of water that is normally held by the dam resulting in an inundation downstream.

Extent:
NH Department of Environmental Services categorizes Dams into one of four classifications, which are differentiated by the degree of potential damages that a failure of the dam is expected to cause. The classifications are designated as non-menace, low hazard, significant hazard and high hazard. A **High Hazard** dam means 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: 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; and Any other circumstance that would more likely than not cause one or more deaths.

Previous Occurrence:
There is no history of significant dam failures in Plainfield.

DROUGHT

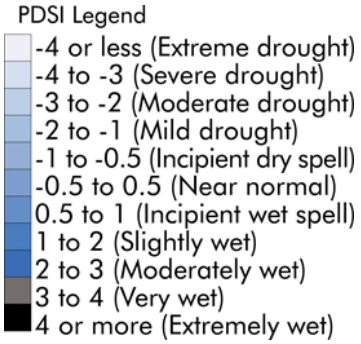
Probability: Occasional

Definition:
Drought is a deficiency in precipitation over an extended period, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people.

Location:
Droughts are difficult to define geographically. Due to their widespread nature a drought would affect the entire Town. However, a drought can affect fire suppression in those areas that do not have access to water for fire suppression.

Impact:
A drought is defined as a long period of abnormally low precipitation, especially one that adversely affects growing or living conditions. Droughts are not as damaging to the Town as floods or winter weather. However, a severe drought can affect public water supply, increase the probability of fires, and impede fire suppression. Those areas with minimal fire protection are at a higher risk because of a prolonged drought.

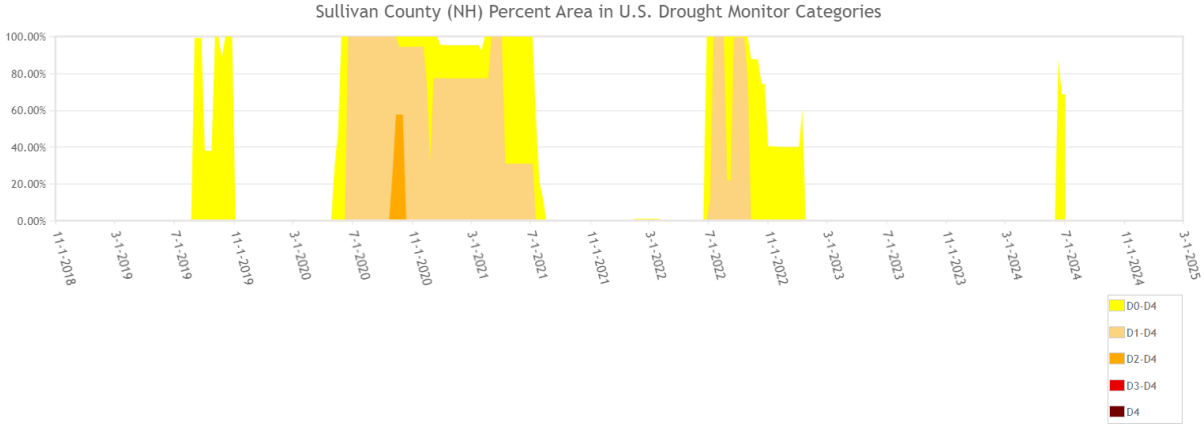
Extent:
The Palmer Drought Severity Index (PDSI) was devised in 1965 and was the first drought indicator to assess moisture status comprehensively. It uses temperature and precipitation data to calculate water supply and demand, incorporates soil moisture, and is considered most effective for un-irrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief. It is more complex than the SPI and the Drought Monitor.



Previous Occurrence:
According to the State of New Hampshire Multi-Hazard Mitigation Plan, the southern portion of NH experienced droughts in 1957, 1963, 1965, 1966, 1970, 2001, and 2010. The statewide drought of 2001/02 had a minimal impact on water sources for fire protection in Plainfield.
2020-2021: Dry conditions developed rapidly across New Hampshire starting in the middle of May, 2020. The period May 16 to June 25 was exceedingly dry. By the middle of August, dry conditions set in again with September being exceedingly dry with some locations reporting their driest September on record. The drought peaked in intensity during the first week of October before beneficial widespread rains impacted the state towards the middle of October, 2020. An estimated 1000 private residents in NH had dry wells with state agencies reporting over 100 applicants fore well assistance. Corn, potatoes, barley fruit crops and forage crops were the most affected. Farmers were concerned about having enough forage for their livestock to get through the winter. Dairy industry was especially impacted due to low grass yields.
August 2022: In July of 2022, 100% of Sullivan County was in a moderate drought and 94% moderate drought. The deterioration was the result of spotty shower activity with most of the county receiving between 1 and 2 inches of rainfall. Most of the reported water

quantity issues were from southern and coastal areas. Several families came to fill up water jugs at the Plainfield Town Office.

Sullivan County Drought Monitor Categories[2]



LANDSLIDE

Probability: Occasional

Definition:
A Landslide is the downward or outward movement of slope forming materials reacting under the force of gravity. These include mudflows, mudslides, debris flows, rockslides, debris avalanches, debris slides and earth flows. Landslides may be formed when a layer of soil atop a slope becomes saturated by significant precipitation and slides along a more cohesive layer of soil or rock.

Location:
According to the Plainfield Hazard Mitigation Committee, there is landslide potential on River Road, Willow Brook Road and portions of Rt. 12A along the Connecticut River.

Impact:
The impact of landslides in Plainfield is going to impact roads and the traffic on those roads. Willow Brook Road and Rt 12A are high through-commuter road and road closures can impact commuter traffic as well as impact local traffic control. Lastly, damage to roads from landslides is a cost to the Town and to the State to repair local and State roads.

Extent:
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.; or Earthquake, either causing the event or caused by the event (measured using the Moment Magnitude Intensity or Mercalli Scale)

[2] https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx

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.

Previous Occurrence
April 21, 2019: A portion of the Connecticut riverbank off Route 12A in Plainfield washed out, undercutting the integrity of the roadway near the intersection with River Road and plucking the guardrail from its soil.

EXTREME TEMPERATURES

Probability: Probable

Definition:
Extreme Heat: A Heat Wave is a "Prolonged period of excessive heat, often combined with excessive humidity." Heat kills by pushing the human body beyond its limits. In extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature.
Extreme Cold: Low temperatures and wind chill can reduce the body's core temperature. Cold disorders can include frostbite and hypothermia. Extreme cold can also damage or kill crops and animals (wild, farm, or domesticated), potentially presenting a risk to the economy.

Location:
Extreme heat and cold events are difficult to define geographically. Due to their widespread nature, a period of extreme heat or cold would affect the entire town.

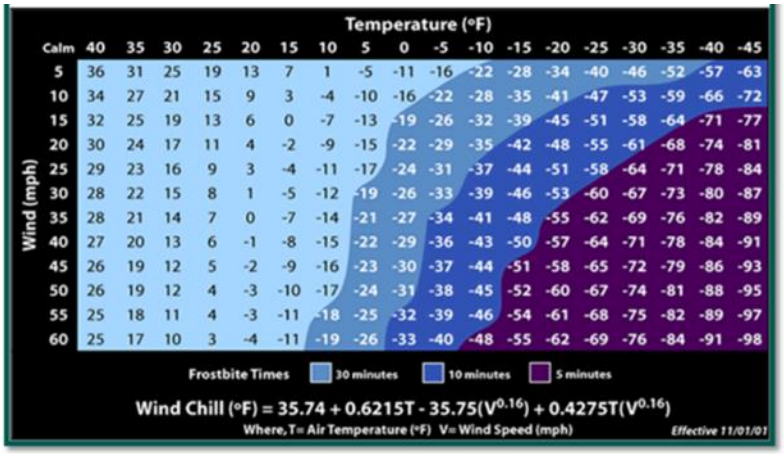
Impact:
A heat wave is defined as 3 or more consecutive days of 90 degrees or higher. Extreme heat conditions may impact the health of residents and visitors. Facilities without generators for air-conditioners that house the elderly and disabled are very susceptible to human health issues. Utilities are also vulnerable as the demand for air-condition rises. Prolonged high temperature has also been associated with civil unrest.

Extremely cold conditions may also impact the health of residents and visitors. Facilities without generators and back-up sources of heat are very susceptible to human health issues. Transportation infrastructure and energy utilities are also vulnerable. In addition, climate change has and will continue to increase the intensity, frequency and duration of extreme temperature incidents.

Extent:

According to OSHA, the risk of heat-related illness becomes greater as the weather gets hotter and more humid. This situation is particularly serious when hot weather arrives suddenly early in the season, before workers have had a chance to adapt to warm weather. This table provides guidelines for the risk related to extreme heat. The nearby City of Lebanon has a record high of 99 degrees in 1977 and -30 degrees in 1968 for a record low.[3]

Heat Index	Risk Level	Protective Measures
Less than 91°F	Lower (Caution)	Basic heat safety and planning
91° to 103°F	Moderate	Implement precautions and heighten awareness
103° to 115°F	High	Additional precautions to protect workers
Greater than 115°F	Very High to Extreme	Triggers even more aggressive protective measures



Wind chill chart. *(Source-NOAA)*

Previous Occurrence:

Summer of 1999 was one of the hottest summers on record. As of 7/27/99, there had been 13 days with temperatures recorded above 90 degrees, 5 days above 95 degrees and 2 above 97 degrees. There was a large increase in emergency response calls, however there were no deaths associated with this event. The Town of Plainfield experiences extreme heat temperatures several days during the summer but with little impact to the population. The Town has not experienced a significant heat wave since the last Plan update. On occasion, elderly populations seek public cooling spaces.

February 3, 2023: Temperatures fell throughout the day, with wind chills reaching -30 or colder by the afternoon for most locations. Wind chill warning criteria were met at many locations for 12 to 24 hours. Hundreds of warming shelters were opened during the event. While the cold air remained until the 5th, diminishing winds and temperatures climbing back above freezing allowed wind chills to warm above thresholds during the first half of the day on the 4th. Most areas reported a top 3 coldest wind chill reading on record for this event. Mount Washington Observatory reported the coldest ever wind chill reading since the observatory has been open with a reading of -108.4 degrees Fahrenheit. Ambient air temperatures continued to fall into the double digits below zero with winds gusting in excess of 35 mph. The coldest wind chill values approached -40 degrees early on the 4th before winds gradually began to diminish. Two telephone poles near the Plainfield fire station snapped off due to severe cold. The downed pole blocked the fire station and tore the electric service off the building.

July 6-18, 2024: Many communities throughout New Hampshire saw temperatures at or above 90 degrees. Plainfield experienced similar temperatures where the Town encouraged members of the public to visit the Meriden Town Hall or either library for air conditioning.

[3] https://www.plantmaps.com/en/us/climate/extremes/f/new-hampshire-record-high-low-temperatures

HAIL

Probability: Remote

Definition: Hail is defined as a showery precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter, falling from a cumulonimbus cloud.

Location:
Due to its widespread nature a hail event could affect any part of Town.

Impact:
Hail can damage communications and IT functions and can damage agricultural crops. Due to the complexities and various factors involved in the formation of hail particle size and weight, the impact can vary tremendously.

Extent:
The bigger the diameter of the hailstone, the bigger the impact on agriculture, infrastructure and other objects.

Hail Size Description Chart

Hailstone size	Measurement	
	in.	cm.
bb	< 1/4	< 0.64
pea	1/4	0.64
dime	7/10	1.8
penny	3/4	1.9
nickel	7/8	2.2
quarter	1	2.5
half dollar	1 1/4	3.2
golf ball	1 3/4	4.4
billiard ball	2 1/8	5.4
tennis ball	2 1/2	6.4
baseball	2 3/4	7.0
softball	3.8	9.7
Compact disc / DVD	4 3/4	12.1

Previous Occurrence:
July 19, 2010: Thunderstorms produced large hail about 1” in size. There has been no other significant Hail events since 2019.

SOLAR STORMS

Due to no history or significant potential of solar storms within the Town of Plainfield, the Committee chose not to recognize this hazard in this Plan.

CLIMATE CHANGE

Although not identified as a specific natural hazard in this Plan, no Plan can be considered complete today without some discussion of the impact that climate change has had on weather patterns. Climate change impacts the frequency and intensity of many of the natural hazards identified in this Plan, such as flooding, drought, severe wind, winter weather and extreme heat. As FEMA States in the *Local Mitigation Planning Policy Guide 2023*[4], climate change", increases the frequency, duration and intensity of natural hazards, such as wildfires, extreme heat, drought, storms, heavy precipitation and sea level rise." Communities in New Hampshire, such as Plainfield, should become increasingly aware of the effects of climate change on the natural hazards that are already being experienced.

[4] *https://www.fema.gov/sites/default/files/documents/fema_local-mitigation-planning-policy-guide_042022.pdf*

Chapter 4
CRITICAL FACILITIES

Introduction

The Critical Facilities section is divided into four categories. The first category contains critical facilities needed for emergency response in the event of a disaster. The second category contains critical facilities that are not utilized for emergency response. The third category contains populations and facilities the Committee wishes to protect in the event of a disaster. The fourth category includes areas of town that are generally prone to hazard events.

1. Critical Facilities Necessary for Emergency Response

1. Police Dept. Vehicles (Not a facility, but most critical equipment for Police)
2. Plainfield Fire Station
3. Meriden Fire Station
4. Meriden Town Hall Offices
5. Highway Garage
6. Meriden Wastewater Treatment Facility
7. Plainfield and Meriden Water Districts
8. Cornish Rescue Squad Headquarters (Cornish)
9. Primary Emergency Shelter: Singing Hills
10. Potential Emergency Shelters: Kimball Union Academy (KUA) Dining Hall Christ Community Church, Meriden Congregational Church

2. Facilities Not Necessary for Emergency Response

11. Plainfield Old Town Hall
12. Plainfield Post Office
13. Meriden Post Office
14. Philip Read Memorial Library
15. Meriden Public Library

3. Facilities & Populations to Protect

16. Plainfield Elementary School
17. Runnemede School
18. Kimball Union Academy (and daycare)
19. Singing Hills Retreat
20. 7th Day School

4. Critical Areas

21. River Road
22. Penniman Road
23. Willow Brook Road
24. Methodist Hill

Critical Facilities in Plainfield, NH

Facility Name	Generator	In 100-Year Flood	Type of Hazard Impact Most Vulnerable To	Assessed Value 2023
Meriden Fire Station	Yes	Yes	Flooding, HazMat (gas station across street)	$347,100
Plainfield Fire Station	Yes	No	Wind (metal building)	$472,400
Meriden Town Hall Offices	Yes	No	KUA Water Tank breach, wind events (slate roof)	$524,000
Plainfield Highway Garage	Yes	No	Fire, Snow, Severe Wind	$556,000
Meriden WWT Facility	Yes and Solar	No	Flood (greater than 100yr flood)	$1,059,800
Plainfield Water District (municipal)	No	No	Flooding if it bursts, Drought, Sever Wind, Terrorism	$525,100
Meriden Water District (private)	No	No	Drought	$625,000
Plainfield Old Town Hall (HISTORICAL)	No	No	None	$891,100
Plainfield Post Office	No	No	Terrorism/HazMat	$137,200
Meriden Post Office	No	No	Terrorism/HazMat	$154,200
Philip Read Memorial Library	No	No	None	$1,421,400
Meriden Public Library	No	No	None	$1,068,100
Plainfield Community Baptist Church	No	No	Earthquake (Structural cracks)	$1,336,400
Christ Community Church (Shelter)	Yes	No	Wind	$7,271,100
Meriden Congregational Church (Shelter)	No	No	Earthquake (Structural cracks) – undergoing an assessment and will have renovations in the future	$2,459,400
Plainfield Elementary	No	No	Human Caused Hazards / Acts of violence	$8,781,300
Singing Hills (Shelter)	Yes	No	Wind and Wildfire	$5,348,300
Esterbrook School	No	No	None	$2,931,600
Kimball Union Academy (Shelter)	Yes (student center, dining hall)	No	Earthquake, Terrorism, Public Health, HazMat	$7,074,000
Plainfield Country Store	Yes	No	Hurricane, Winter Weather	$479,200
Meriden Deli-Mart	No	Yes	Flood	$487,900

Chapter 5
CAPABILITY ASSESSMENT

The table on the following page is a list of current policies and regulations adopted by the Town of Plainfield that protect people and property from natural and human cased hazards. The table includes a description of the policy/regulation, the responsible agent, the policy's effectiveness and recommended strategies to improve mitigation efforts.

The Town of Plainfield maintains a full complement of Town Departments, Town personnel and a comprehensive budgeting process that supports its ability to expand on and improve these existing tools. The 'Recommended Changes' column in the table below includes recommendations for improving on these capabilities, as necessary.

Integration of Mitigation Priorities into Planning and Regulatory Tools

The Town should conduct periodic review of these regulations and this Hazard Mitigation Plan. Reviewing these plans on a regular basis will ensure the integration of mitigation strategies. This review will continue to be a priority of the Plainfield Emergency Management Director and will likely include yearly requests in the annual budget process. Moreover, as suggested in the onset of this document, this *Plan* is a planning tool to be used by the Town of Plainfield, as well as other local, state, and federal governments, in the effort to reduce future losses from natural and/or man-made hazardous events before they occur. Under the Prioritized Mitigation Projects *Action Plan* (found in Chapter 6), all parties listed under the Responsibility/Oversight category shall also review this listing annually, and consider the listed (and updated) mitigation projects within their annual budget requests.

Since the 2019 Plan update, the Town of Plainfield integrated information from the mitigation plan into the Emergency Operations Plan, Capital Improvement Planning (CIP) and the Stream Crossing Survey Study. This was accomplished by reviewing and referencing the Hazard Mitigation Plan during meetings when developing or updating the EOP, Master Plan, CIP or Stream Crossing Study.

Existing Protection Matrix Plainfield, NH				
Existing Protection	**Description**	**Responsible Agent**	**Effectiveness* *Poor/Average/Exc.***	**Status**
Building Code	The Town has adopted the International Building Code (IBC) and International Residential Code (IRC).	Building Inspector	Average	Continue to enforce.
Digital Tax Maps	The Conservation Commission commissioned a new set of digital tax maps, to be used as an analytical tool for making recommendations that will help conserve the most important natural land features and open spaces.	Conservation Commission	Excellent	Continue to update maps.
Elevation Certificates Maintained	Elevation certificates are maintained for new and substantially built structures in the 100-year floodplain.	Building Inspector	Excellent	The Town continues to administer, enforce, and ensure that Elev. Cert. are properly filed, certified and implemented.
Emergency Operations Plan	The Town maintains an EOP that meets the recommendations by the NH Homeland Security Emergency Management. This plan identifies the response procedures and capabilities of the Town in the event of a natural or man-made disaster.	EMD	Excellent	Planned for update in 2027.
Emergency Warning System	The town is part of the Grafton County Grafton County Emergency Notification System which can notify all landlines as well as people's cell phones if they have signed up voluntarily. Supplementing Grafton County Emergency Notification System are PA systems in all Fire & Police vehicles. The elementary school (Alma) and KUA have notification systems. Libraries' bulletin board	Police / Fire / EMD / Town Office	Excellent	Reach out to people with no landlines to sign up for Grafton County Emergency Notification System.
Floodplain Ordinance	The minimum National Flood Insurance Program (NFIP) requirements have been adopted as part of the Town's Zoning Ordinance. This regulates all new and substantially improved structures located in the 100-year floodplain, as identified on the FEMA Flood Maps. In March of 2024 the zoning ordinance reviewed and updated for compliance with NFIP.	Planning Board / Zoning Board / Building Inspector	Excellent	Continue to enforce floodplain regulations, including substantially improved structures; and amend regulations as necessary per federal requirements.

Existing Protection Matrix Plainfield, NH				
Existing Protection	**Description**	**Responsible Agent**	**Effectiveness* *Poor/Average/Exc.***	**Status**
Hazardous Materials Plan / Team	There are no substantial Hazardous Material facilities that warrant a Hazardous Material Plan. There is also a regional HazMat response team that serves the town.	Fire Chief	Excellent	Continue to participate in the Midwest Hazardous Response Team.
Master Plan	The Master Plan serves as the guiding document for future development in Plainfield. It also serves as the guiding document to assist the Planning Board as it updates the Town Zoning Ordinance, Subdivision and Site Plan Review Regulations and other regulations that fall under its jurisdiction.	Planning Board	Excellent	Due to be Updated
Mutual Aid	The Fire, Police and Highway Departments all participate in Mutual Aid.	Fire/EMS, Police and Highway.	Excellent	Continue to participate in Mutual Aid
School Emergency Plans	KUA and Plainfield Elementary School both have emergency Plans. The Town of Plainfield participates in their updates and emergency training.	EMD	Excellent	Continue to participate in school emergency response planning.
Ready for 100 Program (Sierra Club)	The Sierra Club organized communities to commit to 100 percent clean energy and prioritizing local leadership. Ready For 100 challenged politicians and neighbors alike to think differently about where their energy comes from and how it impacts their communities.	Facilities Director / Energy Committee	Excellent	The Elementary School, Kimball Union Academy and the Wastewater Treatment Plant have a solar array for backup power. Continue to promote a 'Micro Grid' possibility to link Fire, Town Hall, School and Libraries.

Existing Protection Matrix Plainfield, NH				
Existing Protection	**Description**	**Responsible Agent**	**Effectiveness* *Poor/Average/Exc.***	**Status**
Stream crossing assessment	UPVRPC is conducting stream crossings to survey the 52 stream crossings that have potential impact to culverts. The Conservation Commission is partnering on this: to protect the road infrastructure but also consider environmental passageways for animals, and stream morphology.	Facilities Director / Conservation Comm	Excellent	Assessment done by fall of 2024 and will be used for spring work.
Structural Assessment (2016)	In 2016 an assessment of the structural integrity of the two Fire Depts, Highway Garage, Town Office, and Highway Department Annex was conducted. The assessment has a number of recommendations for these critical facilities.	Facilities Director	Average	Work is being done as money and opportunity is available.
Upper Valley Regional Public Health Network	The Upper Valley Public Health Network works to assure coordinated and comprehensive delivery of essential public health services and serves as a local liaison with state agencies involved in the public's health and safety.	Human Services Director and EMD	Average	Increase participation in the Public Health planning process

*****Effectiveness terms are defined as:
Poor: Outdated and/or ineffective and needs to be reviewed/updated.
Average: Meets minimum requirements and may require potential reviews/updates.
Excellent: Regulations meets all requirements and requires no reviews/updates.

Chapter 6
MITIGATION PROJECTS

Hazard Identification

The Committee utilized the *Hazard Identification Worksheet*, as shown in Appendix B, to identify potential hazards, the historical occurrence, locations, assets at risk and the probability of each hazard. The results of this process can be found in Chapters 2 and 3.

Problem Statements

From the Hazard Identification process the Committee developed a list of Problem Statements for each Hazard (see Appendix B). Based on the hazards and risks within the town, the Committee summarized the 'problems' associated for every hazard identified. These problem statements allowed the Committee to identify mitigation alternatives during the project identification step described below.

Goals Identified

During the 2024 update, the Committee reviewed the 2019 Plainfield Hazard Mitigation Plan goals and made no revisions. The Goals were not modified for any substantial content, as there has not been any substantial change in development.

Project Identification

Using the *Mitigation Project Identification Worksheet* (see Appendix B) as a guide, the Committee members identified mitigation projects for each problem Statement. Specific objectives included: Prevention, Property Protection, Public Education, Natural Resource Protection, Emergency Services and Structural Projects.

This process resulted in the *Mitigation Project Identification Matrix*. For illustrative purposes the table below is an excerpt from the *Matrix* included in Appendix B. In this *Matrix*, the committee was able to determine a basic benefit/cost by using the STAPLEE method. For each project identified, the committee considered the STAPLEE Criteria (Social, Technical, Administrative, Political, Legal, Economic and Environmental) to guide their decision in prioritizing the projects. One component of STAPLEE is the Economic criteria which aided the committee in determining whether the benefits outweigh the costs.

Hazard	Problem Statement	**Mitigation Project** *(Objectives: Prevention /Property Protection/ Public Educ./ Nat.Resource /Emerg.Serv / Structural)*	Social	Technical	Administrative	Political	Legal	Economic	Environments
Extreme Temps	Special populations are at risk during extreme heat and cold events.	Install air conditioning/heat pump at the Highway Office Building and notify public of local and regional cooling centers.	+	+	+	+	+	+	+

Completed Projects since 2019

The Town of Plainfield completed the latest version of this plan in 2019. Since that time, the town has completed the projects listed below. These completed projects are not included in the 2024 edition of the Hazard Mitigation plan. In addition, the Committee added new projects to the Mitigation Action Plan, all of which are included in the Action Plan. The 'Mitigation Project Status Crosswalk' Table in the Appendices describes what projects were completed, deleted, reworded or continued.

2024 Prioritized Mitigation Projects:

In 2024, each committee member reviewed the updated list of Mitigation Projects. After careful evaluation, the committee ranked the projects by voting for half of the projects. The project that received the most votes was ranked as the highest priority and the project receiving the least amount of votes received the lowest priority. (See Prioritized Mitigation Projects in Appendix B.) The committee was able to determine a basic benefit/cost by using the STAPLEE method. For each project identified, the committee considered the STAPLEE Criteria (Social, Technical, Administrative, Political, Legal, Economic and Environmental) to guide their decision in prioritizing the projects. The prioritized projects are identified in the Mitigation Action Plan.

There have been no significant changes to mitigation priorities for the Town of Plainfield. The Town has not experienced any changes in resources, new hazard impacts, or development patterns that merit changes to mitigation priorities. The Hazard Mitigation Committee identified new projects as described below and prioritized them as discussed above.

Incorporating Mitigation Into Local Planning

In order for the requirements of this plan to be effective, it is essential that the Town of Plainfield incorporate the strategies and actions into its planning process. Educating employees working within the Town Agencies along with members of the various Boards on the provisions of the plan is critical for ensuring that disaster preparedness and risk mitigation become part of their planning process when holding discussions, making decisions, and developing plans and Standard Operating Procedures (SOPs). As noted above, information outreach is a high priority action item that will impact more than just Town employees and Board members. Since interested citizens attend various Town meetings where decisions are made, having a community base that understands the importance of disaster mitigation planning will also assist in ensuring that future plans and actions integrate the requirements found in this plan.

The Board of Selectmen will instruct the Town Agency Heads to review their SOPs and ensure that where appropriate, the requirements of this plan are integrated into those procedures. They will also coordinate with both the Zoning Board and the Planning Board to ensure that risk mitigation planning continues to be a part of their recommendation/decision process in order to fulfill the goals and objectives outlined in this plan.

Since the last update of this Plan in 2019, the Town incorporated Hazard Mitigation Planning into the following documents:

- Plainfield Emergency Operations Plan (EOP) – The EOP is designed to allow the Town to respond more effectively to disasters as well as mitigate the risk to people and property. The EOP was updated in 2022 and was reviewed to ensure that where appropriate, specific mitigation actions outlined in the HMP were also addressed in the EOP.

Mitigation Action Plan

The mitigation projects are compiled in the Mitigation Action Plan found on the following page, which identifies Responsibility, Funding, Time frame, Hazards Addressed and the Priority for each mitigation project.

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Mitigation Action Plan - Plainfield, NH						
Mitigation Action	**Responsibility/ Oversight**	**Funding/ Support**	**Timeframe***	**Hazards Addressed**	**Estimated Cost**	**Priority**
1. Upgrade culvert on Underhill Road, Kenyan Road, and Hell Hollow Road, Grantham Mt. Road and other culverts as identified in the Stream Crossing survey being conducted UPVLSRPC and DES.	Highway Department	Town Operating Budget	Short term	Flooding, Hurricane	$3,000,000	6 High
2. Appropriate funding for tree trimming on roads where utility companies don't trim.	Selectmen / Highway Department	Town Budget	Sort term	Hurricane, Severe Wind, Winter Weather	$10,000 / year	6 High
3. Enhance Highway Department inventory and supplies for road repair for emergency repair in the event of flooding. To be stockpiled in town and reserved for emergencies.	Highway Department	Town Operating Budget	Short term	Dam Failure, Flood, Hurricane	$50,000	5 High
4. Implement a regular drainage maintenance system.	Highway Department	Town Operating Budget	Medium term	Flood, Hurricane	$50 – 60,000 / year	5 High
5. Purchase a grapple, harley rake, skid steer, bucket truck and roadside mower with attachments for Highway to use for tree and debris removal. (Note this is also ties back to mitigating flood hazards given the reality of low staff numbers, you begin to move to a model of more mechanized equipment.)	Highway Department	Town Budget	Medium term	Flooding, Hurricane, Severe Wind, Winter Weather	$50,000-$500,000	5 High
6. Investigate options for extending electricity resilience (i.e. portable storage battery, portable generator, solar, etc.) to supplement back up power supply at critical facilities, schools and shelters.	Facilities Director	Town Budget	Long term	Flooding, Hurricane, Severe Wind, Winter Weather	$25,000	5 High

Mitigation Action Plan - Plainfield, NH						
Mitigation Action	**Responsibility/ Oversight**	**Funding/ Support**	**Timeframe***	**Hazards Addressed**	**Estimated Cost**	**Priority**
7. Update radio equipment for Fire, Police, EMS and Public Works; with the goal of improving town wide communication among and between all town departments.	Police Chief / Fire Chief	Grants	Medium Term	All Hazards	$63,000	5 High
8. Construct additional dry hydrants, cisterns and fire ponds, per the recommendations of the 2009 Water Resource Plan. (East Plainfield and River Road are the most lacking and furthest away from the hydrant system that could benefit from a hydrant.)	Fire Chief	Water Districts	Long term	Drought	$2-3,000 per	4 Medium
9. Conduct further structural design and develop actionable items to mitigate damage. Highway Garage and Ferry Hill Annex and Plainfield fire bracing and snow load capacity and is not adequate and should be retrofitted.	Facilities Director	Town Operating Budget	Medium term	Earthquake, Winter Weather	$20,000	4 Medium
10. Coordinate with HSEM to understand the resources available to Plainfield for emergency repair of road due to dam failure or flooding damage.	Board of Selectmen	Staff Time	Long term	Dam Failure	None	3 Medium
11. Install 'Beaver Deceivers' devices on problem culverts to prevent road damage.	Conservation / Highway Department	Conservation Fund	Medium term	Dam Failure, Flood, Hurricane	$1,500 per	3 Medium
12. Update special needs population database annually and distribute to Dispatch.	Police Department / EMD	Town Operating Budget	Short term	All Hazards	$0	3 Medium
13. Install air conditioning/heat pump at the Highway Office Building and notify public of local and regional cooling centers.	Facility Manager	Capital Reserve Fund	Short term	Extreme Heat	$25,000 per building	3 Medium

Mitigation Action Plan - Plainfield, NH						
Mitigation Action	**Responsibility/ Oversight**	**Funding/ Support**	**Timeframe***	**Hazards Addressed**	**Estimated Cost**	**Priority**
14. Continue to enhance GIS mapping for more effective mitigation planning, including flood risk.	Town Administrator	Town Operating Budget	Short term	All Hazards	$1,000 / year	3 Medium
15. Continue to collect additional data for the Stream Crossing Survey.	Facilities Director	Town Operating Budget	Short term	Flooding, Hurricane	$10,000	3 Medium
16. Relocate portions of River Road and Willow Brook Road away from Connecticut River to prevent future erosion and flooding.	Board of Selectmen	Town Budget and Grants	Medium term	Flood, Hurricane	To be determined	3 Medium
17. Continue to work with utility companies for tree trimming along roads and utilities.	Selectmen / Highway Department	Town Budget	Short term	Hurricane, Severe Wind, Winter Weather	$10,000 / year	3 Medium
18. Fire, Police and Highway Departments coordinate on what is needed to put together several traffic control sign packages for when there are multiple roads damaged (i.e. cones with signs) to be utilized by all town departments.	Fire / Police / Highway	Town Budget	Short term	Flooding, Hurricane, Severe Wind, Winter Weather	$5,000	3 Medium
19. Apply soil stabilization measures, such as planting soil stabilization vegetation on publicly owned slopes and as identified in the Stream Crossing Survey.	Conservation Commission	Conservation Fund	Long term	Landslide, Flood	$2,500 / year	3 Medium
20. Conduct a Cost Benefit analysis for automation of the Plainfield Village Water District (i.e. SCADA system) to include security as well alarm systems for interruption or damage to service (i.e. low water leakage tampering, etc.).	Plainfield Water District	Water District Budget	Short term	Drought, Earthquake, Human Caused	$30,000	3 Medium
21. Identify beaver dams and private dams and their potential to impact roads.	Highway Department	Staff Time	Long term	Dam Failure, Flood, Hurricane	$2,000	2 Low

Mitigation Action Plan - Plainfield, NH						
Mitigation Action	**Responsibility/ Oversight**	**Funding/ Support**	**Timeframe***	**Hazards Addressed**	**Estimated Cost**	**Priority**
22. Purchase a portable battery storage trailer to supplement back up power supply to critical facilities, schools and shelters.	???	Town Operating Budget	Long term	Flooding, Hurricane, Severe Wind, Winter Weather	$100,000	2 Low
23. Continue to enforce floodplain regulations, including substantially improved structures; and amend regulations as necessary per federal requirements.	Town Administrator	Town Operating Budget	Long Term	All Hazards	$1,000 / year	2 Low
24. Continue to work with the Upper Valley Public Health Network on public health matters.	Human Services Director	Staff Time	Long Term	Public Health	None	2 Low
25. Conduct multi hazard drills in schools and public buildings.	Fire / Police / School Principal	NH HSEM	Mid Term	Human Caused	$0	2 Low
26. Educate the public about severe weather impacts, including but not limited to dam failure, drought, extreme temperatures, flood, hurricane, lightning, severe wind, wildfire and winter weather. Distribute hazard information on the town website, social media, monthly community lunches, school newsletter, 'Plain Facts' monthly newsletter, library bulletin board. Continue to use Grafton County Emergency Notification System and other media to push out to public.	Emergency Management Director	Staff Time	Short term	Winter Weather	None	1 Low
27. Educate public on generator safety/carbon monoxide	Emergency Management Director	Staff Time	Short term	Winter Weather	None	1 Low

Mitigation Action Plan - Plainfield, NH						
Mitigation Action	**Responsibility/ Oversight**	**Funding/ Support**	**Timeframe***	**Hazards Addressed**	**Estimated Cost**	**Priority**
28. Conduct an outreach program to citizens in the 100-year floodplain, as well as those in the inundation pathway of dams.	EMD	Town Operating Budget	Long term	Dam Failure, Flood, Hurricane	$500	0 Low
29. Educate the public on creating defensible space and utilize information from the NFPA Firewise Community program.	Fire Department	Staff Time	Mid term	Wildfire	None	0 Low
30. Implement security protection for the Meriden Water Tank.	Meriden Water District	Water District	Mid term	Human Caused	$15,000	0 Low

*Timeframe: Short Term=1 year or less, or ongoing Medium Term=2-3 years Long Term=4-5 years
* Ongoing: Projects that are reviewed and implemented on a daily, monthly or annual basis.

Chapter 7
ADOPTION, IMPLEMENTATION, MONITORING

Adoption

The Plainfield Selectmen by majority vote officially adopted the *Plainfield Hazard Mitigation Plan 2024 Update* on _____. This plan identified Mitigation Actions to be implemented as outlined in Chapter 6.

Implementation

For each mitigation project the Committee identified who, when and how they would be implemented. Please refer to the "Action Plan" in Chapter 6 for a description of the timeframe and persons or departments responsible for implementation of the Prioritized Projects.

It will be the future responsibility of the Emergency Management Director and associated Departments to ensure implementation of these Prioritized Projects.

Plan Updates

The *Plainfield Hazard Mitigation Plan 2024 Update* must be reviewed, evaluated and updated at least once every five years. The Emergency Management Director is responsible for initiating this review and needs to consult with members of the Plainfield Emergency Management Committee, in order to track progress and update the Prioritized List in Chapter 6.

The Emergency Management Director will be responsible for updating the plan every five years and incorporating the results of the town's plan monitoring and evaluation procedures. The next anticipated update of the plan is scheduled to begin 2028. A first meeting, initiated by the EMD, is anticipated in 2028. The plan update may begin earlier following a significant natural hazard event within the town and region, such as a federally declared disaster.

The public meetings of the planning team shall be publicized through legal notices in local newspapers, posted fliers, and on the town and regional planning commission websites. Written and email comments shall be directed to the EMD. The updated plan will incorporate input from the public, other municipalities and government agencies. The Board of Selectmen is responsible for approving the plan submission to FEMA and for adoption of the plan.

The update will likely follow a similar planning process and outline to the current planning process, making deviations when needed, and will be expanded to better address existing goals.

Plan Evaluation

The Town's Emergency Management Director will call meetings of all responsible town parties to review plan progress annually on the anniversary of plan adoption and as needed, based on occurrence of hazard events, and report outcomes to the Select Board. The public will be notified of these meetings in advance through a posting of the agenda at Town Hall. Responsible parties identified for specific mitigation actions will be asked to submit their reports in advance of the meeting. Meetings will entail the following actions:

- Review previous hazard events to discuss and evaluate major issues, effectiveness of current mitigation, 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 Bylaw and Emergency Management Plan.
- Review and evaluate progress toward implementation of the current mitigation plan based on reports from responsible parties.
- Amend current plan to improve mitigation practices.
- Meetings will involve evaluation and assessment of the plan, regarding its effectiveness at achieving the plan's goals, stated purpose, and priorities. The following questions will serve as the criteria that is used to evaluate and update the plan:

Plan Mission and Goal

- Is the Plan's stated goal and mission still accurate and up to date, reflecting any changes to local hazard mitigation activities?
- Are there any changes or improvements that can be made to the goal and mission?

Hazard Identification and Risk Assessment

- Have there been any new occurrences of hazard events since the plan was last reviewed? If so, these hazards should be incorporated into the Hazard Identification and Risk Assessment.
- Have any new occurrences of hazards varied from previous occurrences in terms of their extent or impact? If so, the stated impact, extent, probability of future occurrence, or overall assessment of risk and vulnerability should be edited to reflect these changes.
- Is there any new data available from local, state, or Federal sources about the impact of previous hazard events, or any new data for the probability of future occurrences? If so, this information should be incorporated into the plan?

Existing Mitigation Strategies

- Are the current strategies effectively mitigating the effect of any recent hazard events?
- Has there been any damage to property since the plan was last reviewed?
- How could the existing mitigation strategies be improved upon to reduce the impact from recent occurrences of hazards?

Proposed Mitigation Strategies

- What progress has been accomplished for each of the previously identified proposed mitigation strategies?
- How have any completed mitigation strategies reduced the Town's vulnerability and impact from hazards that have occurred since the strategy was completed? If not and if they have been tested, what changes need to make them more effective?
- Should the criteria for prioritizing the proposed strategies be altered in any way?

- Should the priority given to individual mitigation strategies be changed, based on any recent changes to financial and staffing resources, or recent hazard events?

Review of the Plan and Integration with Other Planning Documents

- Is the current process for reviewing the Hazard Mitigation Plan effective? How could it be improved?
- Are there any Town plans in the process of being updated that should have the content of this Hazard Mitigation Plan incorporated into them or integrated with other Town planning tools and operational procedures, including the zoning bylaw, the Comprehensive Emergency Management Plan, and the Capital Improvement Plan?

Annual Hazard Mitigation Plan Update, Monitor & Evaluate Schedule and Public Involvement			
Meeting Schedule	**Task**	**Town of Plainfield Responsibilities**	**Public Involvement** (neighboring communities)
Annually or as needed	Assess the status of mitigation projects. Get a situation update from people/departments that have been identified in the Action Plan.	EMD to coordinate with Department heads and Board of Selectmen.	Residents, businesses, and neighboring / watershed communities.
Annually or as needed	Assess current status of funding for mitigation projects. Discuss any new projects/plans that should be obtained for your community.	Dept. heads and Board of Selectmen to locate and apply for sources of funding and implement the proposed strategies and plans.	Residents, businesses, and neighboring / watershed communities.
Annually or as needed	Meet to discuss the Hazard Mitigation Plan content and any updates needed for the plan	Department Heads or other agencies.	Residents, businesses, and neighboring / watershed communities.
Annually or as needed	Discussion and evaluation of Training Programs and public outreach efforts. New public outreach methods discussed.	Department Heads or other agencies.	Residents, businesses, and neighboring / watershed communities.

The EMD will be responsible for identifying and using unique and meaningful ways to engage the public in the Tasks listed above. This can include but are not limited to: periodic presentations on the plan's progress to elected officials, schools or other community groups; annual questionnaires or surveys; public meetings; postings on social media; and interactive websites

The Hazard Mitigation Committee shall oversee the development, update, and implementation of the Town's Hazard Mitigation Plan (HMP). The HMP must be maintained by the Committee to ensure the Town remains eligible for federal mitigation grant funding opportunities. The Town intends to update its HMP with current information to ensure conformity with the latest standards and to receive new approvals. The Plan update and development will be a public processes where multiple perspectives are valued and encouraged. The following positions should be considered for participation on the Committee.

Municipal Positions:
Emergency Management Director
Town Administrator
Fire Department
Police Department
Highway Department
Building Inspector
Planning Board
Conservation Commission
School

Community Stakeholder Positions:
Safety and Security.
Food, Water, Shelter
Health and Medical.
Energy
Communication
Transportation
Hazardous Material
Business Community
Populations at Risk
Citizen Groups

State/Quasi-Governmental Positions:
NH Homeland Security and Emergency Management
NH Office of Planning & Development
Regional Planning Commission
Public Health Network

CERTIFICATION OF ADOPTION

Town of Plainfield, NH
Board of Selectmen
Date: October 2, 2024

A RESOLUTION ADOPTING THE TOWN OF Plainfield, NH HAZARD MITIGATION PLAN UPDATE 2024

WHEREAS, the Town of Plainfield, NH has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of - only those natural hazards profiled in the plan (i.e. *flooding, thunderstorm, severe wind, winter storms, earthquakes, and dam failure)*, resulting in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Town of Plainfield, NH, has developed and received Approved Pending Adoption from the NH Homeland Security and Emergency Management for its Hazard Mitigation Plan Update 2024 under the requirements of 44 CFR 201.6; and

WHEREAS, public and committee meetings were held between July 2024 and August 2024 regarding the development and review of the Hazard Mitigation Plan Update 2024; and

WHEREAS, the Plan specifically addresses hazard mitigation strategies and Plan maintenance procedure for the Town of Plainfield, NH; and

WHEREAS, the Plan recommends several hazard mitigation actions/projects that will provide mitigation for specific natural hazards that impact the Town of Plainfield, 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 Plainfield, NH eligible for funding to alleviate the impacts of future hazards; now therefore be it RESOLVED by the Board of Selectmen: The Plan is hereby adopted as an official plan of the Town of Plainfield, NH

1. The respective official identified in the mitigation strategy of the Plan are hereby directed to pursue implementation of the recommended actions assigned to them;
2. An annual report on the progress of the implementation elements of the Plan shall be presented to the Board of Selectmen by April 1st of each year.

Adopted this day: October 2nd 2024

Chair, Board of Selectmen

Board of Selectmen

Board of Selectmen

Notary Public

MICHELLE MARSH
STATE OF NEW HAMPSHIRE
-MY- COMMISSION EXPIRES JUNE 15, 2027
NOTARY PUBLIC

ACRONYMNS

BMP – Best Management Practices
CRS – Community Rating System
DES – Department of Environmental Services
DHS – Department of Homeland Security
DMA – Disaster Mitigation Act
DOT – Department of Transportation
EAP – Emergency Action Plan
EMD – Emergency Management Director
EMPG – Emergency Management Performance Grant
EMS – Emergency Medical Services
EOC – Emergency Operations Center
EOP – Emergency Operations Plan
FEMA – Federal Emergency Management Agency
FIRM – Flood Insurance Related Maps
FMA – Flood Mitigation Assistance Program
GIS – Geographic Information System
HAZMAT – Hazardous Material
HMGP – Hazard Mitigation Grant Program
HSEM – Homeland Security and Emergency Management
ICC – International Code Council
NFIP – National Flood Insurance Program
NH HSEM – NH Homeland Security and Emergency Management
PDM – Pre-Disaster Mitigation
OPD – Office of Planning & Development
RC&D – Resource Conservation and Development
USGS – United State Geological Survey

BIBLIOGRAPHY

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

Digital quality Level 3 Flood Maps
http://msc.fema.gov/MSC/statemap.htm

Federal Emergency Management Agency (FEMA)
http://www.fema.gov

Plainfield, NH Hazard Mitigation Plan 2019

National Flood Insurance Program (NFIP)
http://www.fema.gov/national-flood-insurance-program

NH Homeland Security and Emergency Management (HSEM)
http://www.nh.gov/safety

NOAA National Weather Service
http://www.websites.noaa.gov

NOAA National Climactic Data Center
http://lwf.ncdc.noaa.gov/oa/ncdc.html

APPENDICES

Appendix A Hazard Mitigation Resources
Appendix B Documentation of Planning Process
Appendix C Approval Letter from FEMA

APPENDIX A

Hazard Mitigation Resources

Type	Resource	Link
Hazard Assessment	FEMA Disaster Declarations	https://www.fema.gov/disasters
	National Oceanic and Atmospheric Administration Storm Events Database	https://www.ncdc.noaa.gov/stormevents/
	United States Geological Survey (USGS) Earthquake Archives	http://earthquake.usgs.gov/earthquakes/search
	National Geophysical Data Center / World Data Service (NGDC/WDS): Significant Earthquake Database	https://www.ngdc.noaa.gov/nndc/struts/form?t=101650&s=1&d=1
NESEC	The Northeast States Emergency Consortium (NESEC) to provides free assistance to help local, state, regional and other organizations	http://nesec.org/mapyourrisk/
Funding Possibilities	Hazard Mitigation Grant Program (HMGP)	http://www.fema.gov/hazard-mitigation-grant-program
	Flood Mitigation Assistance Grant Program (FMA)	https://www.fema.gov/flood-mitigation-assistance-grant-program
	Pre-Disaster Mitigation Grant Program (PDM)	http://www.fema.gov/pre-disaster-mitigation-grant-program
	HMA grant programs – eligible activities by grant program	https://www.fema.gov/hazard-mitigation-assistance-mitigation-activity-chart
	Flood Mitigation Assistance (FMA) Grant Program	https://www.fema.gov/flood-mitigation-assistance-grant-program
	U.S. Economic Development Administration: Road and water infrastructure upgrades and potential projects.	http://www.eda.gov/funding-opportunities/
	FEMA; USGS National Earthquake Hazards Reduction: Technical program assistance under grants to states and local jurisdictions	http://www.fema.gov/national-earthquake-hazards-reduction-program
Technical Assistance	State Hazard Mitigation Officers	http://www.fema.gov/state-hazard-mitigation-officers
	USDA, Natural Resources Conservation Service (NRCS) Conservation Technical Assistance	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/cta
Publications	FEMA Region I Webliography	http://www.fema.gov/about-region-i/about-region-i/hazard-mitigation-planning-webliography
	Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards	http://www.fema.gov/media-library/assets/documents/30627?id=6938
	FEMA B-797, Hazard Mitigation Field Book – Roadways	http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=4271
	Flood Hazard Mitigation Handbook for Public Facilities	http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=3724
	FEMA 386-6, Mitigation Planning How To #6: Integrating Historic Property & Cultural Resource into Hazard Mitigation Planning	http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=1892
	FEMA P-787 Catalog of FEMA Building Science Branch: Publications and Training Courses (2015)	http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=3184
	Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials (2013)	http://www.fema.gov/media-library/assets/documents/31372
	Local Mitigation Planning Handbook (2013)	https://www.fema.gov/media-library/assets/documents/31598

APPENDIX B

Documentation of Planning Process

Including:

Agendas
Attendance Sheets
Public Notices
Problem Statements
Mitigation Project Identification Matrix
Prioritized Mitigation Projects

Plainfield, NH
Hazard Mitigation Plan

July 15, 2024
Committee/Public Meeting
AGENDA

1. Introductions

2. Review/Update Hazard History

3. Review/Update Risk Matrix: *add hazards from State plan – delete any not needed*

4. Review/Update Goals, Problem Statements & Vulnerable Assets

5. MISC:
   a. What existing plans, studies, reports and technical information should be reviewed/referenced for the development of the plan?
   b. Any significant changes in development since 2017, especially in hazard prone areas? Population growth (bldg. permits?)
   c. Participation/activities in NFIP since 2017? Who reviews Floodplain development/Substantial Improvements.
   d. Was the HMP incorporated into other planning mechanisms?
   e. Discuss additional efforts on community outreach.

6. Review for next meeting:
   Update Critical Facilities
   Update Capability Assessment
   Update Completed Projects since 2017

Name	Title/Affiliation
Anthony Swett	Plainfield Police Chief
Bill Taylor	Plainfield Fire Chief
Brad Atwater	Plainfield Facilities Director
Evan Oxenham	Plainfield Energy Committee
Jane Hubbard	Hubbard Consulting LLC
Lee Oxenham	Plainfield Energy Committee
Rich Collins	Plainfield Road Agent
Stephanie Schell	Plainfield Emergency Management Director
Stephen Halleran	Plainfield Town Administrator

Plainfield, NH
Hazard Mitigation Plan

July 22, 2024

Committee/Public Meeting
AGENDA

1. Update Chapter 4 and 5

2. Update completed mitigation projects

3. Sample Mitigation Projects

4. Review for next meeting:

   Identify NEW Mitigation Projects

Name	Title/Affiliation
Anthony Swett	Plainfield Police Chief
Brad Atwater	Plainfield Facilities Director
Jane Hubbard	Hubbard Consulting LLC
Lee Oxenham	Plainfield Energy Committee
Rich Collins	Plainfield Road Agent
Stephanie Schell	Plainfield Emergency Management Director
Stephen Halleran	Plainfield Town Administrator

Plainfield, NH
Hazard Mitigation Plan

July 29, 2024

Committee/Public Meeting
AGENDA

1. Identify NEW mitigation projects

2. Review for next meeting:

   Prioritize Mitigation Projects
   Complete the Mitigation Action Plan
   Review Draft Plan

Name	Title/Affiliation
Bill Taylor	Plainfield Fire Chief
Brad Atwater	Plainfield Facilities Director
Jane Hubbard	Hubbard Consulting LLC
Rich Collins	Plainfield Road Agent
Stephen Halleran	Plainfield Town Administrator

Plainfield, NH
Hazard Mitigation Plan

August 19, 2024

Committee/Public Meeting
AGENDA

1. Review and Confirm Prioritized Projects

2. Complete the Mitigation Action Plan

3. Next Steps:

   Complete Final Draft and submit to HSEM

Name	Title/Affiliation
Amy Lappin	Plainfield Board of Selectmen
Bill Taylor	Plainfield Fire Chief
Brad Atwater	Plainfield Facilities Director
Jane Hubbard	Hubbard Consulting LLC
Rich Collins	Plainfield Road Agent
Stephanie Schell	Plainfield Emergency Management Director
Stephen Halleran	Plainfield Town Administrator

The following Public Notice was posted at Plainfield Town Hall, Meriden Town Hall and the Town Website. These notices reach local residents, business, and organizations. This public notice was used as the opportunity for community leaders, stakeholders and members of the public to be involved.

PUBLIC NOTICE

PLAINFIELD HAZARD MITIGATION PLAN UPDATE

July 15, 2024, at 5:30pm

at **Plainfield Town Office**

The Town of Plainfield, with the Hazard Mitigation Planning Committee, is currently working to update Plainfield's *Hazard Mitigation Plan.* The Plan identifies potential natural, and human caused hazards throughout the town and various projects and/or strategies to mitigate their effects. All residents, neighboring communities, businesses, and interested parties are formally invited to participate in the update process and publicly comment on their concerns regarding the *Plan*.

In addition, the Town has a 'Weather Incident & Hazard Survey' that provides an opportunity for any Town of Plainfield stakeholders to share information and comments on hazards in town. Interested parties can take the survey online at: https://www.surveymonkey.com/r/S3RGWV3

For more information please contact Jane Hubbard, via email at janehubbardconsulting@gmail.com.

COMMUNITY INVOLVEMENT NOTES FOR THE TOWN:

A successful planning effort includes active participation and buy-in from community leaders, stakeholders and the public. Examples of sectors with mitigation capabilities are those agencies and stakeholders responsible for:

- Emergency management.
- Economic development.
- Land use and development.
- Conservation Commission.
- Housing.
- Health and social services.
- Infrastructure (including transportation and other community lifelines).
- Natural and cultural resources.

FEMA's National Response Framework identifies critical community lifelines, which are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function. Community lifelines include the following:

- Safety and Security.
- Food, Water, Shelter.
- Health and Medical.
- Energy.
- Communications.
- Transportation.
- Hazardous Material.

In addition, the following email invitation was sent to individuals listed below.

The Town of Plainfield, NH is in the process of updating its Hazard Mitigation Plan. This Plan is a tool to be used by the Town, as well as other local, state and federal governments, to reduce the effects of natural and man-made hazards. Our communities and organizations share common hazards which do not respect governmental boundaries. Therefore, we are personally inviting you to participate in the planning process to update the Town's Hazard Mitigation Plan.

We encourage you to attend the first Committee meeting on July 15, 2024 at 5:30pm at the Plainfield Town Office. If you are unable to attend this meeting you may access a copy of the planning documents and/or comment on hazard mitigation issues by emailing Jane Hubbard with Hubbard Consulting LLC at janehubbardconsulting@gmail.com or at 603-848-8801. For further information on mitigation planning, we are attaching a fact sheet. We look forward to hearing your ideas on how to mitigate future hazards for the community.

Thank you, on behalf of the Town of Plainfield,

The above email was sent to the following individuals:

Cornish EMD, Dale Lawrence
dalehlawrence@yahoo.com

Croydon Board of Selectmen
selectboardcroydon@hotmail.com

Enfield EMD Ray Holland
rholland@enfield.nh.us

Grantham EMD Jay Fountain
jfountain@granthamnh.net

Lebanon EMD/Fire Chief
Jim Wheatley
jim.wheatley@lebanonnh.gov

Upper Valley Regional Planning Com.
Meghan Butts
mbutts@uvlsrpc.org

Lebanon Area Chamber of Commerce
lebanonchamber@lebanonchamber.com

Plainfield Elementary School
Sandra Blake
sbrake@plainfieldschool.org

Upper Valley Region Public Health Network
Nancy Kreis
Nancy.e.kreis@hitchcock.org

NH HSEM Field Rep Paul Hatch
Paul.Hatch@dos.nh.gov

Sarah Thunberg, Principal Planner
Office of Planning & Development
Sarah.M.Thunberg@livefree.nh.

Hazard	Problem Statements	Vulnerable Assets
Dam Failure	Wilder Dam in Lebanon and Moore Dam in Littleton could cause significant flood damage in Plainfield.	Road infrastructure, structures, loss of life.
	Emergency Actions Plans for Wilder Dam (High Hazard) and Moore Dam (High Hazard) should be reviewed, updated and shared with the public.	Road infrastructure, structures, loss of life.
	Man made ponds and beaver ponds pose a minimal to moderate threat of flood damage.	Road infrastructure.
Drought	An extended drought increases the probability of fires and may hinder fire suppression in minimal fire protection areas.	All structures in the wildland urban interface.
	The town relies on shuttling and tankers for fire suppression for a majority of the town.	All structures in the wildland urban interface.
	About 1300 citizens rely on water from the Plainfield and Meriden Water Districts.	Public water system
Earthquake	Town municipal critical facilities may be at risk.	Unreinforced masonry buildings.
Extreme Temperatures	Residents and special populations are at risk during extreme heat or cold events.	At-risk populations (elderly, medical), recreational populations.
	Potential for increase in wildfire.	All structures in the wildland urban interface
	Increase in power outages and brownouts.	Residents without back up power for heat/cold. KUA and Plainfield School.
Flooding	Heavy and prolonged rain events and erosion cause flood damage primarily to roads and culverts. Likely to see more erosion happening due to more intense storms due to climate change. Need technical/engineering help that is going to reflect the future of climate change and the volume of water.	Roads, bridges, dams. People that need to be rescued or evacuated. Private septic systems. Homes can be cut off due to damaged roads.
	Areas vulnerable to flooding include River Road, Penniman Road, Grantham Mt. Road, Willow Brook Road and Croydon Turnpike.	Roads, bridges, dams. People that need to be rescued or evacuated.
	Residences along rivers are susceptible to flooding.	Residential structures.
Human Caused	Several areas are more vulnerable to terrorist incidents: Dartmouth Hitchcock Center in neighboring Lebanon/Hanover, Wilder Dam, Moore Dam, and I-91 across the river in Vermont.	Municipal/public buildings, general population. IT infrastructure.
	Transportation related haz-mat spills are likely due to the local connector roads to and from Vermont.	Natural resources. General population.
	Municipal buildings, including schools, are at risk to armed assault.	Municipal buildings, water facilities, schools.
	The Town is at risk to aviation accidents (Lebanon Airport).	Structures.
Hurricane/ Tropical Storm	Power outages from downed utilities, minor structural damage, debris removal, limited access and flooding can affect the town as a result of a hurricane.	Communications infrastructure. Road infrastructure. Residential structure. Critical Facilities.

Hazard	Problem Statements	Vulnerable Assets
Infectious Disease	Infectious diseases and public health emergencies have and will continue to impact all populations and the local, State and national public health system.	All community members. Emergency response.
Landslide	River Road (municipally owned) and a portion of Rt. 12A (State owned) is susceptible to landslide hazards.	Road infrastructure.
Lightning	Structural and forest fires can result from frequent lightning strikes	Structures. Conservation areas. People outdoors.
	Utilities are at risk from lightning strikes.	Critical facilities and utilities
Severe Wind *(Tornado /Downburst)*	Wind damage can result in downed utilities causing power outages and limit access.	Communications infrastructure. Road infrastructure. Critical facilities. Residential structure.
	High density population/recreational areas are at high risk in severe wind events.	Critical facilities. Public and private infrastructure.
Wild/Forest Fire	Need to develop additional sources of fire suppression (cisterns, fire ponds, etc), as recommended in the 2009 Water Resource Plan.	Wildland-Urban Interface. Conservation lands.
Winter Weather	All structures are susceptible to collapse due to heavy snow loads.	Public and private residences.
	Resulting power outages result in increased emergency response calls and could require opening a shelter.	Road and communication infrastructure. Public and private residences.
	Severe damage to roads due to potholes.	School populations. Emergency response.

2019 MITIGATION ACTIONS	Complete	None or Some Done - KEEP	Delete (Reason why)
1. Construct additional dry hydrants, cisterns and fire ponds, per the recommendations of the 2009 Water Resource Plan.		Some Done Venditto and Sutherland Arbogest Dry Hydrants added.	
2. Update special needs population database annually and distribute to Dispatch.		Ongoing	
3. Implement a regular drainage /ditching maintenance system.		This year local survey commission for slopes greater than 10% and prioritize those areas. Stream Crossing initiative will have an APP where you can see the active areas.	
4. Installing 'Beaver Deceivers' devices on problem culverts to prevent road damage.		2 installed but ongoing	
5. Educate public on generator safety/carbon monoxide.		Keep. Senior luncheons cover this. Ongoing	
6. Establish guidelines for all utilities regarding tree pruning around lines.		Town has met with the 3 utilities regarding tree trimming.	
7. Relocate portions of River Road and Willow Brook Road away from Connecticut River to prevent future erosion and flooding.		River Road improvements is going on now. 12a NH DOT had a major repair w/ riprap.	
8. Apply soil stabilization measures, such as planting soil stabilization vegetation on publicly owned slopes		Keep	
9. Install lightning protection devises and methods (lighting rods, grounding, etc.) on communications infrastructure and other critical facilities.			Delete. As protected as you can be. Up to code
10. Conduct an outreach program to citizens in the 100-year floodplain, as well as those in the inundation pathway of dams. (Link the Dam EAP on the Website)		Keep	
11. Continue to work with the Upper Valley Public Health Network on public health matters.		Keep	

2019 MITIGATION ACTIONS	Complete	None or Some Done - KEEP	Delete (Reason why)
12. Continue to enhance GIS mapping for more effective mitigation planning, including flood risk.		Keep	
13. Appropriate funding for tree trimming on roads where utility companies don't trim.		Keep	
14. Adopt and enforce international building Code (IBC) and International Residential Code (IRC)			Move to chapter 5 as an existing capability. The IBC and IRC are adopted, just continue to enforce.
15. Educate the public about severe weather impacts. – website, social media, monthly community lunches, school newsletter, 'plain facts' monthly newsletter, library bulletin board. Continue to use code red and other media to push ino out to public.		Keep – Jane to add more language for a Public Education Project	
16. Continue to enforce floodplain regulations, including substantially improved structures; and amend regulations as necessary per federal requirements.		Keep	
17. Update radio equipment for Fire, Police, EMS and Public Works.		Repeaters in police cruisers. EMD got a radio.	
18. Install air conditioning at Town Office, Library and other municipal buildings and notify public of local and regional cooling centers.	Done	Add: repurpose/utilize heat pumps from the libraries	
19. Install an automatic transfer switch for the Town Office / EOC for the generator.	Done		
20. Conduct multi hazard drills in schools and public buildings. ADD LIBRARIES		Some done with EMD/Police. Keep doing and include libraries	
21. Implement security protection for the Meriden Water Tank.		Keep	

Hazard	Problem Statements	Projects *BOLD are existing projects from last edition of plan. RED are new projects.*	Social	Technical	Administrative	Political	Legal	Economic	Environment
Dam Failure	Wilder Dam in Lebanon and Moore Dam in Littleton could cause significant flood damage in Plainfield.	Coordinate with HSEM to understand the resources available to Plainfield for emergency repair of road due to dam failure or flooding damage.	+	+	+	+	+	+	+
	Emergency Actions Plans for Wilder Dam (High Hazard) and Moore Dam (High Hazard) should be reviewed, updated and shared with the public.	**Conduct an outreach program to citizens in the 100-year floodplain, as well as those in the inundation pathway of dams.**	+	+	+	+	+	+	+
	Man made ponds and beaver ponds pose a minimal to moderate threat of flood damage. Beaver dam failure can take out one of the many dead-end roads that would strand residents up the road.	**Install 'Beaver Deceivers' devices on problem culverts to prevent road damage.**	+	+	+	+	+	+	+
		Identify beaver dams and private dams and their potential to impact roads.	+	+	+	+	+	+	+
		Enhance Highway Department inventory and supplies for road repair for emergency repair in the event of flooding. To be stockpiled in town and reserved for emergencies.	+	+	+	+	+	+	+
Drought	An extended drought increases the probability of fires and may hinder fire suppression in minimal fire protection areas.	**Construct additional dry hydrants, cisterns and fire ponds, per the recommendations of the 2009 Water Resource Plan.** (East Plainfield and River Road are the most lacking and furthest away from the hydrant system that could benefit from a hydrant.)	+	+	+	+	+	+	+
	The town relies on shuttling and tankers for fire suppression for a majority of the town.	See above project							
	About 1300 citizens rely on water from the Plainfield and Meriden Water	None. Can be managed in an emergency response by purchasing bottled water.							

Hazard	Problem Statements	Projects *BOLD are existing projects from last edition of plan. RED are new projects.*	Social	Technical	Administrative	Political	Legal	Economic	Environment
	Districts. About 800 private wells can dry up as well.								
Earthquake	Town municipal critical facilities may be at risk.	Conduct further structural design and develop actionable items to mitigate damage. Highway Garage and Ferry Hill Annex and Plainfield fire bracing and snow load capacity and is not adequate and should be retrofitted.	+	+	+	+	+	+	+
Extreme Temps	Special populations are at risk during extreme heat and cold events.	**Update special needs population database annually and distribute to Dispatch.**	+	+	+	+	+	+	+
		Install air conditioning/heat pump **at the** Highway Office Building **and notify public of local and regional cooling centers.**	+	+	+	+	+	-	+
	Potential for increase in wildfire.	See wildfire							
	Increase in power outages and brownouts.	Purchase a portable battery storage trailer to supplement back up power supply to critical facilities, schools and shelters.	+	+	+	+	+	+	+
Flooding	Heavy and prolonged rain events cause flood damage primarily to roads and culverts.	**Continue to enhance GIS mapping for more effective mitigation planning, including flood risk.**	+	+	+	+	+	+	+
		Upgrade culvert on Underhill Road, Kenyan Road, and Hill Hollow Road, Grantham Mt. Road and other culverts as identified in the Stream Crossing survey being conducted UPVLSRPC and DES.	+	+	+	+	+	+	+
		Continue to collect additional data for the Stream Crossing Survey.	+	+	+	+	+	+	+
	Areas vulnerable to flooding include River Road, Penniman Road, Grantham	**Continue to enforce floodplain regulations, including substantially improved structures; and**	+	+	+	+	+	+	+

Hazard	Problem Statements	Projects *BOLD are existing projects from last edition of plan. RED are new projects.*	Social	Technical	Administrative	Political	Legal	Economic	Environment
	Mt. Road, Willow Brook Road and Croydon Turnpike.	**amend regulations as necessary per federal requirements.**							
		Implement a regular drainage maintenance system.	+	+	+	+	+	+	+
		See also dam failure project							
Hurricane/ Tropical Storm	Power outages from downed utilities, minor structural damage, debris removal, limited access and flooding can affect the town as a result of a hurricane.	**Continue to work with utility companies for tree trimming along roads and utilities.**	+	+	+	+	+	+	+
		Purchase a grapple, harley rake, skid steer, bucket truck and roadside mower with attachments for Highway to use for tree and debris removal. (**Note** this is also ties back to mitigating flood hazards given the reality of low staff numbers, you begin to move to a model of more mechanized equipment.)	+	+	+	+	+	+	+
		Fire, Police and Highway Departments coordinate on what is needed to put together several traffic control sign packages for when there are multiple roads damaged (i.e. cones with signs) to be utilized by all town departments.	+	+	+	+	+	+	+
		Investigate options for extending electricity resilience (i.e. portable storage battery, portable generator, solar, etc.) to supplement back up power supply at critical facilities, schools and shelters.	+	+	+	+	+	+	+
Infectious Disease	Infectious diseases and public health emergencies have and will continue to impact all populations and the local, State and national public health system.	**Continue to work with the Upper Valley Public Health Network on public health matters.**	+	+	+	+	+	+	+

Hazard	Problem Statements	Projects *BOLD are existing projects from last edition of plan. RED are new projects.*	Social	Technical	Administrative	Political	Legal	Economic	Environment
Landslide	River Road (municipally owned) and a portion of Rt. 12A (State owned) is susceptible to landslide hazards.	**Relocate portions of River Road and Willow Brook Road away from Connecticut River to prevent future erosion and flooding.**	+	+	+	+	+	+	+
		Apply soil stabilization measures, such as planting soil stabilization vegetation on publicly owned slopes and as identified in the Stream Crossing Survey.	+	+	+	+	+	+	+
Lightning	Structural and forest fires can result from frequent lightning strikes	See public education project in Winter Weather.							
	Utilities are at risk from lightning strikes.								
Severe Wind (*Downburst*)	Wind damage can result in downed utilities and structural damage causing power outages and limit access.	**Appropriate funding for tree trimming on roads where utility companies don't trim.**	+	+	+	+	+	+	+
		See Earthquake project							
	High density population/recreational areas are at high risk in severe wind events.	See public education project in Winter Weather.							
Wild/Forest Fire	Need to develop additional sources of fire suppression (cisterns, fire ponds, etc), as recommended in the 2009 Water Resource Plan.	Educate the public on creating defensible space and utilize information from the NFPA Firewise Community program.	+	+	+	+	+	+	+
		See also Drought projects							
Winter Weather	All structures are susceptible to collapse due to heavy snow loads.	See also the project in Earthquake.							
	Resulting power outages result in increased emergency response calls and could require opening a shelter.	Educate the **public about severe weather impacts, including but not limited to dam failure, drought, extreme temperatures, flood, hurricane, lightning, severe wind, wildfire and winter**	+	+	+	+	+	+	+

Hazard	Problem Statements	Projects *BOLD are existing projects from last edition of plan. RED are new projects.*	Social	Technical	Administrative	Political	Legal	Economic	Environment
		weather. Distribute hazard information on the town website, social media, monthly community lunches, school newsletter, 'Plain Facts' monthly newsletter, library bulletin board. Continue to use Grafton County Emergency Notification System and other media to push out to public.							
		Educate public on generator safety/carbon monoxide	+	+	+	+	+	+	+
Human Caused	Several areas are more vulnerable to terrorist incidents: Dartmouth Hitchcock Center in neighboring Lebanon/Hanover, Wilder Dam, Moore Dam, and I-91 across the river in Vermont.	Conduct a Cost Benefit analysis for automation of the Meriden Village Water District (i.e. SCADA system) to include security as well alarm systems for interruption or damage to service (i.e. low water leakage tampering, etc.)	+	+	+	+	+	+	+
	Transportation related haz-mat spills are likely due to the local connector roads to and from Vermont.	None; haz mat response is provided through mutual aid and Midwestern NH HazMat Team.							
	Municipal buildings, including schools, are at risk to armed assault.	**Conduct multi hazard drills in schools and public buildings**	+	+	+	+	+	+	+
		Implement security protection for the Meriden Water Tank.	+	+	+	+	+	+	+
		Update radio equipment for Fire, Police, EMS and Public Works; with the goal of improving town wide communication among and between all town departments.	+	+	+	+	+	+	+
	The Town is at risk to aviation accidents (Lebanon Airport).								

For purposes of prioritizing the mitigation projects listed in the table below, each committee member should **vote for HALF of the projects (a total of 15 votes in this table) by placing a check mark in the "# of votes" column.** ALL OF THE PROJECTS WILL BE PRIORITIZED BASED UPON THE TOTAL NUMBER OF VOTES RECEIVED FOR EACH PROJECT.

PRIORITZED MITIGATION PROJECTS	***# OF VOTES***
1. Coordinate with HSEM to understand the resources available to Plainfield for emergency repair of road due to dam failure or flooding damage.	3 Medium
2. Conduct an outreach program to citizens in the 100-year floodplain, as well as those in the inundation pathway of dams.	0 Low
3. Install 'Beaver Deceivers' devices on problem culverts to prevent road damage.	3 Medium
4. Identify beaver dams and private dams and their potential to impact roads.	2 Low
5. Enhance Highway Department inventory and supplies for road repair for emergency repair in the event of flooding. To be stockpiled in town and reserved for emergencies.	5 Medium
6. Construct additional dry hydrants, cisterns and fire ponds, per the recommendations of the 2009 Water Resource Plan. (East Plainfield and River Road are the most lacking and furthest away from the hydrant system that could benefit from a hydrant.)	4 Medium
7. Conduct further structural design and develop actionable items to mitigate damage. Highway Garage and Ferry Hill Annex and Plainfield fire bracing and snow load capacity and is not adequate and should be retrofitted.	4 Medium
8. Update special needs population database annually and distribute to Dispatch.	3 Medium
9. Install air conditioning/heat pump at the Highway Office Building and notify public of local and regional cooling centers.	3 Medium
10. Purchase a portable battery storage trailer to supplement back up power supply to critical facilities, schools and shelters.	2 Low
11. Continue to enhance GIS mapping for more effective mitigation planning, including flood risk.	3 Medium
12. Upgrade culvert on Underhill Road, Kenyan Road, and Hill Hollow Road, Grantham Mt. Road and other culverts as identified in the Stream Crossing survey being conducted UPVLSRPC and DES.	6 High
13. Continue to collect additional data for the Stream Crossing Survey.	3 Medium
14. Continue to enforce floodplain regulations, including substantially improved structures; and amend regulations as necessary per federal requirements.	2 Low
15. Implement a regular drainage maintenance system.	5 High
16. Relocate portions of River Road and Willow Brook Road away from Connecticut River to prevent future erosion and flooding.	3 Medium
17. Continue to work with utility companies for tree trimming along roads and utilities.	3 Medium
18. Purchase a grapple, harley rake, skid steer, bucket truck and roadside mower with attachments for Highway to use for tree and debris removal. (Note this is also ties back to mitigating flood hazards given the reality of low staff numbers, you begin to move to a model of more mechanized equipment.)	5 High

19. Fire, Police and Highway Departments coordinate on what is needed to put together several traffic control sign packages for when there are multiple roads damaged (i.e. cones with signs) to be utilized by all town departments.	3 Medium
20. Investigate options for extending electricity resilience (i.e. portable storage battery, portable generator, solar, etc.) to supplement back up power supply at critical facilities, schools and shelters.	5 High
21. Continue to work with the Upper Valley Public Health Network on public health matters.	2 Low
22. Apply soil stabilization measures, such as planting soil stabilization vegetation on publicly owned slopes and as identified in the Stream Crossing Survey.	3 Medium
23. Appropriate funding for tree trimming on roads where utility companies don't trim.	6 High
24. Educate the public on creating defensible space and utilize information from the NFPA Firewise Community program.	0 Low
25. Educate the public about severe weather impacts, including but not limited to dam failure, drought, extreme temperatures, flood, hurricane, lightning, severe wind, wildfire and winter weather. Distribute hazard information on the town website, social media, monthly community lunches, school newsletter, 'Plain Facts' monthly newsletter, library bulletin board. Continue to use Grafton County Emergency Notification System and other media to push out to public.	1 Low
26. Educate public on generator safety/carbon monoxide	1 Low
27. Conduct a Cost Benefit analysis for automation of the Plainfield Village Water District (i.e. SCADA system) to include security as well alarm systems for interruption or damage to service (i.e. low water leakage tampering, etc.).	3 Medium
28. Conduct multi hazard drills in schools and public buildings.	2 Low
29. Implement security protection for the Meriden Water Tank.	0 Low
30. Update radio equipment for Fire, Police, EMS and Public Works; with the goal of improving town wide communication among and between all town departments.	5 High

Priority: 0-2 Low 3-4 Medium 5-6 High

__6_ voters total:

APPENDIX C

Approval Letter from FEMA