

**PUBLIC INFORMATION MEETING**

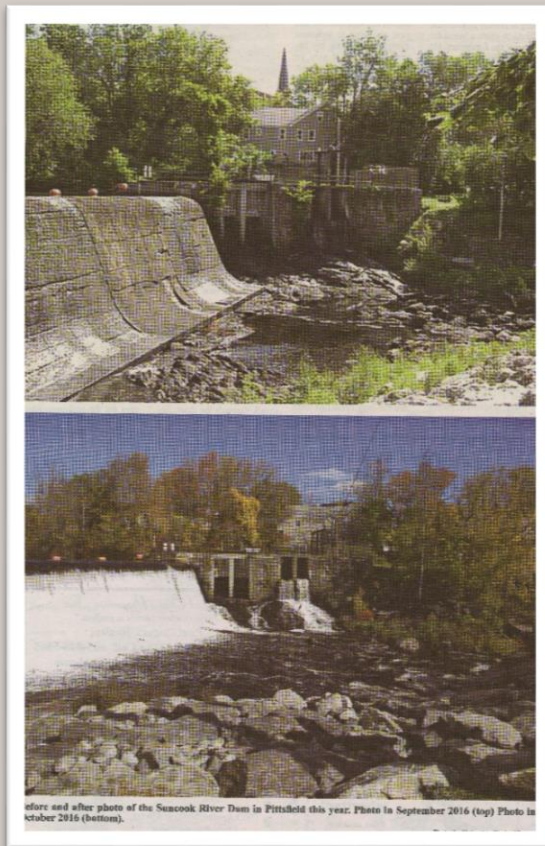
**04-18-17**

**Public Display and Review**

# **Town of Pittsfield**

**New Hampshire**

## **Hazard Mitigation Plan Update 2017**



*Pittsfield Mill Dam  
on the Suncook River,  
Drought Conditions Abated  
September-October 2016*

*Photos from Suncook Valley Sun,  
12-20-16 Edition*

**Adopted by the Pittsfield Board of Selectmen**

**[date], 2017**

**NHHSEM/FEMA Approved [date], 2017**

# Town of Pittsfield New Hampshire

## Hazard Mitigation Plan Update 2017

Adopted [date], 2017

NHHSEM/FEMA Approved [date], 2017



### Town of Pittsfield

PO Box 98  
85 Main Street  
Pittsfield, NH 03263  
Phone: (603) 435-6773  
[www.pittsfieldnh.gov](http://www.pittsfieldnh.gov)

### Central NH Regional Planning Commission

28 Commercial Street, Suite 3  
Concord, NH 03301  
Phone: (603) 226-6020  
[www.cnhrpc.org](http://www.cnhrpc.org)



### NH Department of Safety

**NH Homeland Security and Emergency Management**  
33 Hazen Drive  
Concord, NH 03305 (Mailing Address)



### Incident Planning and Operations Center

110 Smokey Bear Blvd  
Concord, NH 03301 (Physical Address)  
Phone: (800) 852-3792 or (603) 271-2231  
[www.nh.gov/safety/divisions/hsem](http://www.nh.gov/safety/divisions/hsem)  
<https://apps.nh.gov/blogs/hsem>



### US Department of Homeland Security

**Federal Emergency Management Agency**  
99 High Street, Sixth Floor  
Boston, Massachusetts 02110  
Phone: (617) 223-9540  
[www.fema.gov](http://www.fema.gov)

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## **1 PLANNING PROCESS**

The Town's Hazard Mitigation Committee reformed to rewrite the Plan into a more concise format and to incorporate the newest material required by FEMA in addition to updating the Town's newest information since 2011. This Planning Process Chapter contains information previously available in the Introduction Chapter of the **Plan Update 2012**. Expanded public participation steps were taken and a new plan development procedure was used as documented in the Methodology section.

### **Certificate of Adoption, 2017**

Town of Pittsfield, NH  
Board of Selectmen  
PO Box 98  
85 Main Street  
Pittsfield, NH 03263

#### **A Resolution Adopting the Pittsfield Hazard Mitigation Plan Update 2017**

WHEREAS, the Town of Pittsfield has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the **Hazard Mitigation Plan Update 2017** including but not limited to flooding, high wind events, severe winter weather, and fire, resulting in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Town of Pittsfield has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its **Hazard Mitigation Plan Update 2017** under the requirements of 44 CFR 201.6; and

WHEREAS, public and Committee meetings were held between **September 2016** through **April 2017** regarding the development and review of the **Hazard Mitigation Plan Update 2017**; and

WHEREAS, the **Plan** specifically addresses hazard mitigation strategies, and Plan maintenance procedures for the Town of Pittsfield; and

WHEREAS, the **Plan** recommends several hazard mitigation actions (projects) that will provide mitigation for specific natural hazards that impact the Town of Pittsfield 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 Pittsfield eligible for funding to alleviate the effects of future hazards; now therefore be it

RESOLVED by Town of Pittsfield Board of Selectmen:

The **Hazard Mitigation Plan Update 2017** is hereby adopted as an official plan of the Town of Pittsfield; The respective officials identified in the mitigation action plan of the Plan are hereby directed to pursue implementation of the recommended actions assigned to them;

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

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

IN WITNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of the Town of Pittsfield this \_\_\_\_<sup>th</sup> day of \_\_\_\_, 2017.

ATTEST

**Board of Selectmen**

SEAL

\_\_\_\_\_  
Larry Konopka, Selectmen Chair      date

**Town Clerk**

\_\_\_\_\_  
Gerard LeDuc, Selectman Vice Chair      date

\_\_\_\_\_  
Erica Anthony, Town Clerk

\_\_\_\_\_  
Carl Anderson, Selectman      date

\_\_\_\_\_  
Carole Richardson, Selectman      date

\_\_\_\_\_  
James C Allard, Selectman      date

## Plan Process Acknowledgments

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The Board of Selectmen-appointed Hazard Mitigation Committee was comprised of these individuals who met between **September 2016** through **April 2017** to develop the **Pittsfield Hazard Mitigation Plan Update 2017**:

- James C Allard, Pittsfield Board of Selectmen Member
- Jeffrey M Cain, Pittsfield Police Department Chief and Deputy Emergency Management Director
- Brian Eldredge, Pittsfield Highway Department Assistant Superintendent
- Robert Freese, Pittsfield Emergency Management Director
- Cara Marston, Pittsfield Town Administrator, Staff Coordinator
- Peter Pszonowsky, Pittsfield Fire Department Chief
- Kenneth White, Pittsfield Fire Department Lieutenant

The following Central NH Regional Planning Commission (CNHRPC) staff contributed to the development of the Hazard Mitigation Plan Update:

- Stephanie Alexander, CNHRPC Senior Planner
- Craig Tufts, CNHRPC Principal Planner (GIS mapping)

Members of the public\* (0) and other individuals attended one or more Committee meetings and/or contributed information to the content of the Plan:

* member of the public
------------------------

- Shawna-Leigh Morton, NH Homeland Security and Emergency Management (NHHSEM)
- George Bachelder, Pittsfield Highway Department Superintendent
- Troy Normandin, Pittsfield Fire Department Fire Fighter/EMT



## **Authority**

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In 2000, the President enacted the Disaster Mitigation Act 2000 (DMA) which requires states and municipalities to have local adopted and FEMA approved natural hazard mitigation plans in place to be eligible for disaster and mitigation funding programs such as the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Assistance (HMA) programs, including Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, and Pre-Disaster Mitigation Program. New Hampshire is awarded funds based upon the completeness of its State Plan and the number of local plans.

As a result of the DMA, funding was provided to state offices of emergency management, including the New Hampshire Homeland Security and Emergency Management, to produce local (municipal) hazard mitigation plans. To remain in compliance with the DMA, the Town of Pittsfield is required to submit for FEMA approval a revised **Hazard Mitigation Plan Update** every five years.

The New Hampshire Homeland Security and Emergency Management (NH HSEM) produced its latest *State of New Hampshire Hazard Mitigation Plan 2013* in 2013. The development of the State's Plan allows for New Hampshire to receive funding programs to provide to communities in the event of disasters or for mitigation.

Prior versions of the Town's Hazard Mitigation Plan are noted in the **Final Plan Dates** section. A 2014 Pre-Disaster Mitigation (PDM) grant provided 75%/25% funding for the Town to update its prior Plan through the Central NH Regional Planning Commission. The 25% match required by the Town was provided by in-kind staff and volunteer time and labor.

This **Pittsfield Hazard Mitigation Plan Update 2017** has been developed in accordance with the Disaster Mitigation Act of 2000 and the *FEMA Local Mitigation Plan Review Guide, October 1, 2011* and effective one year later. The most recent Plan development standards provided by FEMA Region I have also been incorporated. The planning effort of the Town is a regular process and this Plan is considered to be a "living document."

The 2017 Pittsfield Hazard Mitigation Committee was established by the Board of Selectmen in 2016 and guided the development of the Plan. The Committee consisted of the Town's Fire Department, Emergency Management Director, Town Administrator, Police Department, Highway Department, and Board of Selectmen representatives.

The attendees of the meeting process are noted in the **Acknowledgements**. The Central NH Regional Planning Commission, of which Pittsfield is a member, contributed to the development of this Plan by facilitating the meeting and technical processes, working with the Committee and its members to obtain information, preparing the document, and handling the submissions to NH Homeland Security and Emergency Management and FEMA.



## Methodology

The **Pittsfield Hazard Mitigation Plan Update 2017** was developed over a six-month period, with a group of Town staff members and volunteers and the CNHRPC comprising the majority of the Hazard Mitigation Committee. The 2017 methodology for Plan development is summarized in this section. The Hazard Mitigation Plan is designed differently from the **2012 Plan** with the intent to shorten the Plan for utility purposes, with easier updating and implementation while meeting FEMA's requirements. The Plan roughly follows the *FEMA Local Mitigation Planning Handbook, 2013* by using its terminology and some of its tasks, ensuring **Pittsfield's Plan Update 2017** begins to follow a standardized approach to Plan construction and content endorsed by FEMA. Many of the vital sections of the **2017 Plan Update** will be contained in the **10 APPENDICES** for easier display, usage, sharing, and update.

## Meetings and Duties

The meetings and tasks of the Hazard Mitigation Committee were dictated by Agendas and how much the Committee was able to complete for each Agenda is displayed in **Table 1**. Work Sessions were designed to accomplish what could not be completed at meetings due to time constraints.

**Table 1**  
**Meeting Schedule and Agenda Activities**

Meeting	Date	Agenda Activities – see Appendix C
<b>Meeting 1</b>	09-14-16	Discuss Process and Schedule, Hazard Risk Assessment, Critical and Community Facilities Vulnerability Assessment, Review & Revise Maps 1-2-3, Schedule Meetings
<b>Work Session 1</b>	10-05-16	Hazard Risk Assessment, Critical and Community Facilities Vulnerability Assessment, Review & Revise Maps 1-2-3
<b>Meeting 2</b>	10-19-16	Review & Update Goals and Objectives, Critical and Community Facilities Vulnerability Assessment, Review Former Existing Measures -> Now Capability Assessment, Develop List of Existing Mitigation Plans and Documents
<b>Work Session 2</b>	11-02-16	Finish Critical Facilities Vulnerability Assessment, Capability Assessment, List of Existing Mitigation Plans and Documents
<b>Meeting 3</b>	12-07-16	Review & Revise 2012 Actions, Develop New Actions from Problem Statements (Community Vulnerability Assessment) and Capability Assessment's Future Improvements, Determine 2012 Actions' Status, Determine Action Timeframe
<b>Work Session 3</b>	01-11-17	Work with Actions from Problem Statements, Begin List of Actions & Evaluate
<b>Work Session 3.2</b>	02-01-17	Continue Actions from Problem Statements, Finalize List of Actions, Determine Action Timeframe, Cost, Responsibility
<b>Work Session 3.3</b>	02-15-17	Finalize List of Actions, Determine Action Timeframe, Cost, Responsibility, Prioritize Actions using STAPLEE

Meeting	Date	Agenda Activities – see Appendix C
<b>Meeting 4</b>	03-22-17	Review Draft Hazard Mitigation Plan Components (onscreen), Review Sections in Need of Information, Review Outstanding Data and Assignments
<b>Work Session 4</b>	04-05-17	Review Entire Draft Hazard Mitigation Plan, Appendices, and Maps, Prepare for Public Information Meeting, Review Plan Approval Process
<b>Public Information Meeting</b>	04-18-17	HMC members present sections of the Plan to members of the public in a question and answer format. Describe hazards and mitigation Actions. Maps will be available.

*Source: Pittsfield Hazard Mitigation Committee Agendas, 2016-2017*

For each meeting, all meeting attendees signed attendance sheets and meeting match timesheets, documenting their time at the meetings. The Committee members worked to complete the Agendas, including developing the **Hazard Risk Assessment, Critical and Community Facilities Vulnerability Assessment, Capability Assessment, and Mitigation Action Plan**, completing the **STAPLEE Action Prioritization**, etc. along with input from members of the public and guests. The agendas and attendance sheets are included in **APPENDIX C** of the Plan.

The specific meeting tasks are described in detail on the Agendas in **APPENDIX C**. CNHRPC staff facilitated the Committee meetings and Work Sessions. Information needed on the Agenda Tasks indicated above was collected from any attendees present, including any members of the public, by CNHRPC, during discussions among attendees. The new and updated information was described in each Chapter under the **2017 Plan Update** section. Maps were reviewed and updated by the Committee and guests and revised in a GIS by CNHRPC.

In between meetings, Town staff and volunteers and CNHRPC staff researched and collected information for the Chapters. CNHRPC updated and rewrote Chapters, tables, and sections as appropriate. The Chapters were also updated by revising the document to the current FEMA standards.

## **Opportunity for Public Participation**

### **Public Input from the Hazard Mitigation Committee Meetings**

The public notification is described in the Public Outreach Strategy sidebar. Zero (0) members of the public regularly attended the meetings as indicated in the **Acknowledgements** and by the Attendance Sheets in **APPENDIX C Meeting Information**. In this instance, “the public” means “a person who is not a Town, School, state, or federal government staff member or other staff person paid for by local tax dollars, or who is not a current Town volunteer.” Members of the public assisted with completing the Agendas, including developing the **Hazard Risk Assessment, Critical and Community Facilities Vulnerability Assessment, Capability Assessment, and Mitigation Action Plan**, completing the **STAPLEE Action Prioritization**, etc. along with the Committee members. The general public had the opportunity

to attend and participate in the **11** posted meetings or to contact the Staff Coordinator for more information.

### **Public Input from the Public Information Meeting**

The **Public Information Meeting (PIM)** was held on **April 18, 2017**. The Hazard Mitigation Committee members presented portions of the Plan and had the Maps available for display. The agenda and attendance sheet are included in **APPENDIX C**. Held during the semi-monthly Board of Selectmen's meeting, the PIM involved **x** members of the public who listened to presentations, asked questions and had the opportunity to review the final draft Plan document, Appendices and Maps.

### **Public Input from the Board of Selectmen**

#### **Adoption Meeting**

The Board of Selectmen meeting to adopt the **Hazard Mitigation Plan** was held on **[date 2017]**. Although the Plan's APA had been received, the Board permitted public comment prior to adoption although Plan changes could not be made at this time. Discussion was held prior to the unanimous adoption of the Plan by the Board.

### **Completion of the Plan Steps and Dates**

On **April 18, 2017**, the Committee held a **Public Information Meeting**. The same extensive public notification described in the Public Outreach Strategy sidebar occurred to obtain review and comment from the public for the Plan.

On **[date 2017]**, this Plan, Appendices and Maps were submitted to the NH Homeland Security and Emergency Management (NHHSEM) for compliance review and revision to apply for Approvable Pending Adoption (APA) status, also known as conditional approval.

### **Public Outreach Strategy**

Many individuals were personally invited to attend and participate in the Pittsfield Hazard Mitigation Plan Committee meetings. They included local businesses, Pittsfield Schools, Town Boards and representatives from Globe Manufacturing. The NH Homeland Security and Emergency Management (NHHSEM) Field Representative was also invited and attended some of the meetings.

The Hazard Mitigation Committee itself was comprised of all primary Town Departments, including Town Administration, Highway, Fire, Police, and Emergency Management Departments.

The public process for this Plan included posting the public notices. All interested parties were invited to participate, including media, residents, businesses, organizations, local communities, non-profits, and State and federal agencies. The meeting notices were posted on the Town's online calendar and website at [www.pittsfieldnh.gov](http://www.pittsfieldnh.gov), on the Town Hall bulletin board and at the Post Office. All local interests had an opportunity to attend and participate in the meetings. Copies of publicity for the Plan are included in **APPENDIX C**.

The Central NH Regional Planning Commission, a quasi-governmental regional organization of which Pittsfield is a member, contributed to the development of this Plan by facilitating the meetings and guiding the planning process, and preparing the Plan documents, Appendices, and Maps. As a final attempt to obtain additional public input, a specially noticed Public Information Meeting was held on **April 18, 2017** at a Board of Selectmen's meeting. These meetings were publicly noticed as described.

The attendees and publicity of the public planning process are noted in the **Acknowledgements**.

On [date 2017], Pittsfield received an **Approvable Pending Adoption (APA)** notification from NHHSEM. The APA states the Plan will be approved by FEMA after proof of adoption by the local governing body, a Certificate of Adoption from the Board of Selectmen, is submitted.

On [date 2017], the Board of Selectmen **adopted the Hazard Mitigation Plan Update** for the Town at a duly noticed public meeting. Copies had been made available at the Town Office for public review on [date]. Copies of the public notice and flyers are included in **APPENDIX C**. The signed Certificate of Adoption was sent to NHHSEM/FEMA.

On [date 2017], Pittsfield received a **Notification of Formal Approval** from NHHSEM, with the Plan approval granted effective that day. A **Letter of Formal Approval** from FEMA confirming the notification will be forthcoming. The next Hazard Mitigation Plan update is due five (5) years from this date of approval, on [date].

### **Final Plan Dates**

The following is a summary of the required dates which guide the adoption and update of the **Pittsfield Hazard Mitigation Plan**. Included is the history of the Plan approvals and expiration dates as shown in **Table 2**.

**Table 2**  
**Plan Adoption History**

<b>Year of FEMA-Approved Hazard Mitigation Plan</b>	<b>Adoption by Pittsfield Board of Selectmen</b>	<b>FEMA's Formal Approval</b>	<b>Plan Expiration</b>
<b>Original 2006</b>	December 19, 2006	April 28, 2007	<b>April 28, 2012</b>
<b>Update 2012</b>	February 7, 2012	April 9, 2012	<b>April 9, 2017</b>
<b>Update 2017</b>	[date, 2017]	[date, 2017]	<b>[date, 2022]</b>

## **2 COMMUNITY PROFILE**

It has been over five years since the last Plan was written, with the new decennial Census 2010 having been taken. The best available new data has been used in this Chapter to portray the population, housing, and overall demographic picture of present day Pittsfield. The former Relation to Natural Hazards section has been updated within **4 HAZARD RISK ASSESSMENT** as Built Environment Changes. The tables clearly identify the facilities in Town and which natural, human, and technological hazard events could most likely occur in those areas, as described in **5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION**.

A simplified description of how the Town's population and housing have grown within the last four decades follows. Relationships of the locations of people and buildings to natural hazard events are generally explored. Examination of this information will allow the Town to better understand the land use and demographic trends within its borders and how emergency and preventative services can best serve the growing and changing population and landscape.

### **Geographic Context**

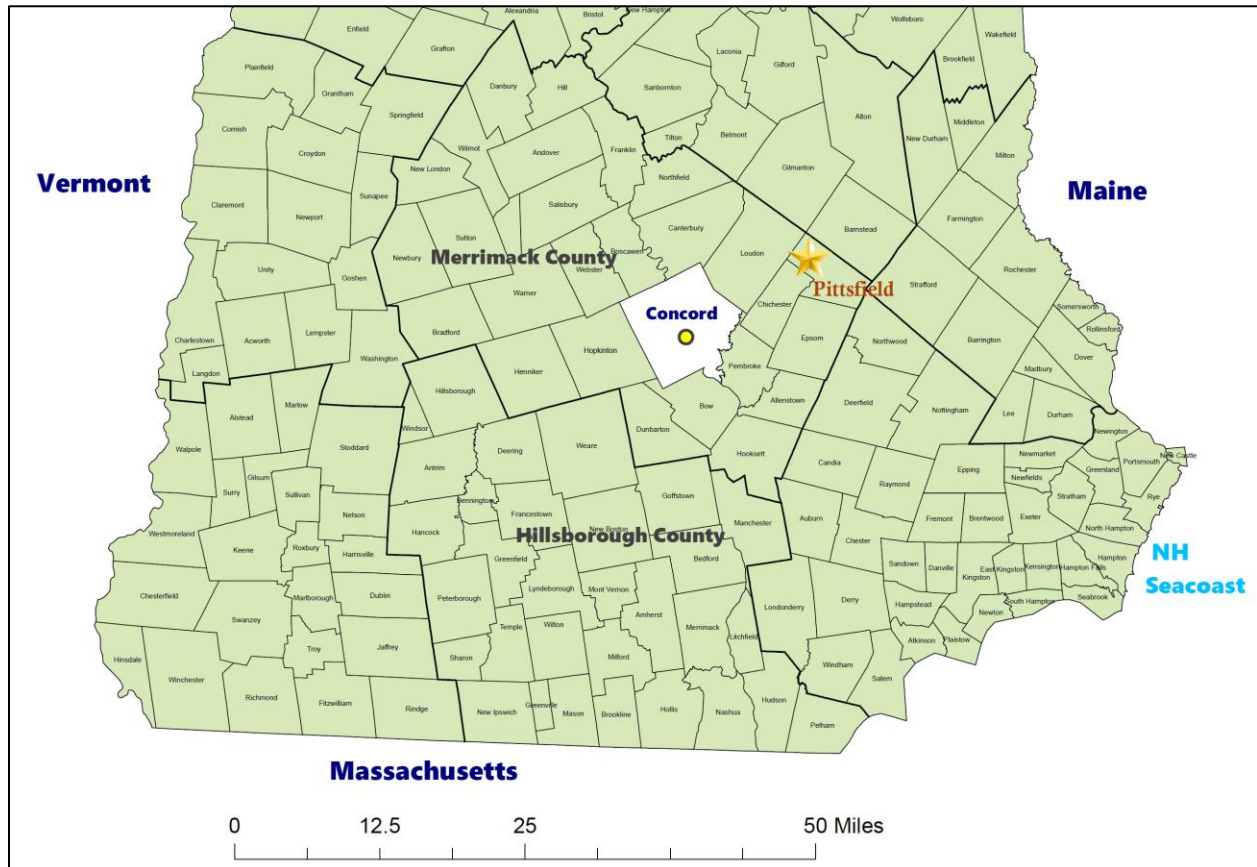
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The Town of Pittsfield is located in Central New Hampshire within Merrimack County on the border of Belknap County. The Town is bordered by the Towns of Gilmanton and Barnstead to the north, Strafford and Northwood to the east, Epsom and Chichester to the south and Loudon to the east. The State's capital City of Concord is about 15 miles to the east of Pittsfield, reached by traveling Interstate 393/US Route 4 to Route 28 North at the Epsom traffic circle into Pittsfield. NH Route 28 is the main highway in Town, running from Chichester straight up to Barnstead, staying slightly east of the Suncook River while bisecting the Town's smaller western section from the larger, more populated eastern section. NH Route 107 connects with Route 28 before traveling west to Loudon or east to Northwood. Route 107 is a lighter commuter traveling corridor than Route 28, which is a major route in the Central NH region. The Suncook River flows through downtown Pittsfield where it is slowed by the Pittsfield Mill Dam, before continuing its way south into Chichester and Epsom.

Merrimack County in which Pittsfield resides is often referred to as a valley as its borders are higher in elevation than its middle communities. Concord is the only City in the County. Merrimack County is surrounded on all sides by other NH Counties, including Hillsborough, Sullivan, Belknap, Rockingham, Strafford, and Grafton. Most, but not all, communities in Merrimack County comprise the majority of the Central NH Planning Region joined by two communities from Hillsborough County. Hillsborough County borders Massachusetts and includes the cities of Manchester and Nashua.

Concord is about 50 miles from the Massachusetts state border, the Vermont state border, the Maine state border, and the seacoast traveling along New Hampshire's Interstates, US Routes, NH Routes, and local roadways. Pittsfield is closer to Maine and the Seacoast than to Massachusetts or Vermont. Pittsfield's context within Merrimack County and the State of New Hampshire are shown in **Figure 1**.

**Figure 1**  
**Pittsfield in the State**



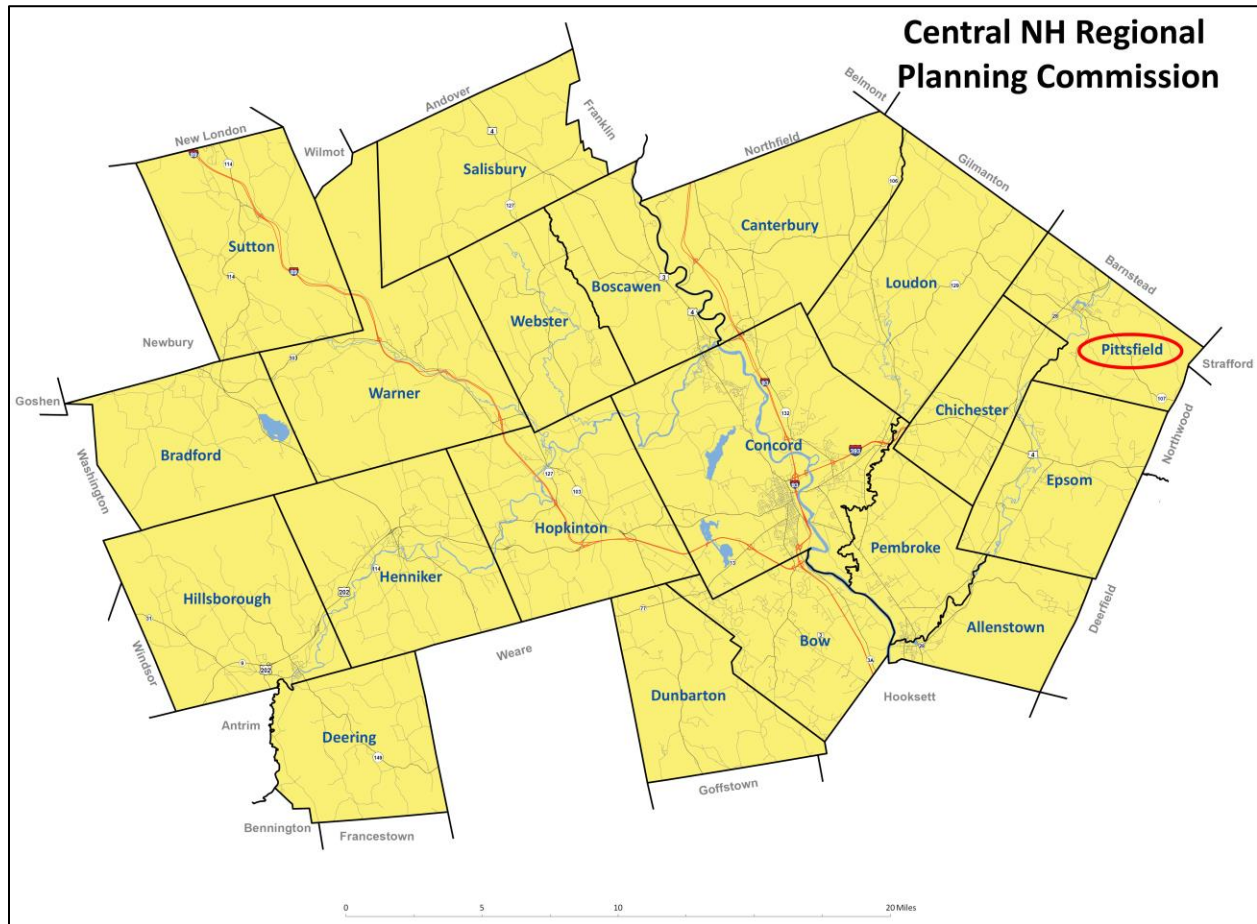
*Source: Central NH Regional Planning Commission*

Pittsfield is closely associated with the Central NH Region, one of the nine legislatively-boundaried planning regions in the State. The Town is a voluntary member of the Central New Hampshire Regional Planning Commission. The **19** Towns and **1** City comprising the Central NH Region contain several major rivers and important highways. The Blackwater River and Warner River flow into the Contoocook River. The Contoocook River runs through Hillsborough, Henniker, Hopkinton, Concord, and Boscawen traveling in a north-easterly direction until its confluence with the Merrimack River in Boscawen/ Penacook. The Contoocook and the Merrimack Rivers effectively bisect the region into three sections. The Soucook River runs through Loudon, Concord/Pembroke and enters the Merrimack River. The Suncook River originates in Belknap County, flowing south through Pittsfield, Chichester, Epsom, Pembroke, and Allenstown until it also converge into the Merrimack River in Bow.



In the Central NH Region, Interstates 89, 93 and 393 stretch in north, northwest, east, and south directions, meeting in Concord and Bow. Major traffic routes of US Route 3 travels north-south and US Routes 4/202 traverses in an east-west direction. Small-town Pittsfield hosts NH Route 28 which travels the entire north-south length of the region as well as Route 107. Dozens of state highways crisscross the entire region. A map of the Central NH Region is displayed in **Figure 2**.

**Figure 2**  
**Pittsfield in the Region**



*Source: Central NH Regional Planning Commission*



## Population and Housing Growth

Pittsfield has an adopted **2009** Master Plan. Chapters include detailed information on Demographics, Housing, Transportation, Community Facilities and Services, Education, Recreation, Natural and Historic Resources, Land Use, and Economic Development. The following data was taken from the most recent sources available during Hazard Mitigation Plan development to portray accurate demographic data of the community.

The following tables in contain the newest available data on housing and population growth which depict development trends over time. Shown in **Table 3**, Pittsfield's population and housing increases have remained constant since the **1980-1990** growth pattern was established. The estimated **2015** population and housing units, based off the **2010** Census, counted **4,077** people and **1,777** housing units in Pittsfield.

**Table 3**  
**Overall Population and Housing Growth Trends in Pittsfield, 1970-2015**

Growth	Population	Net Change		Housing Units	Net Change	
		#	%		#	%
1970 Census	2,517	0	0	867	0	0
1980 Census	2,889	372	14.8%	1,070	203	23.4%
1990 Census	3,701	812	28.1%	1,527	457	42.7%
2000 Census	3,931	230	6.2%	1,569	42	2.8%
2010 Census	4,106	175	4.5%	1,769	200	12.7%
Total Change from 1970 – 2010 Census		1,589	63.1%		902	104.0%
2015 Population & Housing Estimates*	4,077	-29	-1.0%	1,777	8	0%
45 years of increase		+1,560 People		+910 Homes		

*Sources: 1970-1990 US Census CPH-2-31 Table 9 Population and Housing Unit Counts; US Census 2000 & 2010 Data \*includes all housing units, including vacant and seasonal NH Office of Energy and Planning Population Estimates 2015, NHOEP Housing Trends 2015*

In **Table 3**, Pittsfield's **2010** Census population of **4,106** shows an overall increase of about **63%** in population over the previous four decades, up from **2,517** people in **1970**. Between **2000 - 2010**, the Town's population increased by nearly **5%** (**175** people) and housing by **13%** (**200** units). The population growth numbers in Pittsfield are low compared to other communities in the Central NH region during this time period, when little development occurred and in one community a large decline was noted over these last 10 Census years.

The growth of housing units in Pittsfield has fluctuated since **1970**, although the rate remains average. The Town grew from **867** units in **1970** to double that number, totaling **1,769** in **2010**, an overall growth

rate of **104%**. Between **2000-2010**, housing increased by **13%** (**200** units). This housing rate increase is also lower than most communities in the Central NH region.

The number of people per housing unit has continued to decline from its high of **2.9** people in **1970** to **2.3** people per housing unit in **2010**. Pittsfield's overall growth since **1970** has increased by **1,560** people and **910** homes by **2015**.

A good measurement of community population and housing change is population density, or how many people live in a square mile of land area. As displayed in **Table 4**, the overall population density has increased about **63%**, from **104** people per square mile in **1970** to **154** people in **1990** and to **170** people in **2010**.

**Table 4**  
**Population Density in Pittsfield, 1970-2015**

Municipality Size		Persons per Square Mile					
Land Acreage	Land Area in Square Miles	1970	1980	1990	2000	2010	2015
15,440	<b>24.1</b>	104	120	154	163	<b>170</b>	169

Sources: **Table 3**, Office of Energy and Planning's GIS acreage calculations, 2013

Pittsfield is a relatively small community in land area at **24.1** square miles in size and development opportunities are limited primarily to the existing built environment and the highly forested areas of the community. Between the **2000-2010** Census, the addition of **13** people per square mile and **2015** estimates of a population reduction (**-8** people) indicates a slow growth trend.

In **Table 5**, Pittsfield's new construction permits over the last **7** years are very low but consistent.

**Table 5**  
**New Construction Permits Issued by Building Type, 2010 – 2016**

Building Type	2010	2011	2012	2013	2014	2015	2016	7-Year Totals
Single Family Homes								
Multi-family Homes								
Manufactured Homes								
Non-Residential Buildings								
<b>Totals</b>								

Source: Town of Pittsfield building permits files, 2010-2016

Shown in **Table 5**, between **2010-2016**, a total of **xx** single family homes have received new construction permits, an average of **xx** permits per year. # (**xx**) permits were issued for multi-family homes, but **xx**

manufactured home permit and **xx** non-residential building permit were issued for new construction. Within the **2010-2016** timespan, the number of permits for homes have ranged between **xx** to **xx** per year.

## Land Use and Zoning

According to NH Office of Energy and Planning's 2013 geographic information system (GIS) calculations, Pittsfield has a total land area of **15,440** acres, or **24.1** square land miles. An additional **118** acres (about **0.2** square miles) is water area. The acreage figure is not quite comparable to the recent MS-1 reporting calculation of **14,505** acres for the Town. Reviewing the assessing information closely should yield the answer as to why this large discrepancy exists. Small differences between the actual taxable land calculations from the assessing records and the acreage from the basic GIS calculations are not unusual.

For New Hampshire and specifically the Central NH Region, Pittsfield is considered a small-sized community in terms of land area. However, the proportion of residential to forested to commercial land remains about the same as any small town in the region.

**Table 6** provides a comparison of **2011** land use data and **2016** land use data, although the total acreages are differ (data sources vary). The proportions remain very close to the same as **5** years ago: undeveloped land is the most extensive land use type, comprising **60%** of the Town's land area. Residential land (**24%**) follows as the next highest acreage of land use, followed by farmland (**9%**), Town land (**4%**), commercial (**2%**) and utility land (**2%**). According to assessing records, these categories have remained fairly consistent between **2011-2016**.

**Table 6**  
**Land Use Comparisons, 2011 - 2016**

Land Use Category 2016	Acres	% of Town	Land Use Category 2011	Acres	% of Town
Residential	3,504	24.2%	Residential	3,428	23.3%
Commercial	278	1.9%	Commercial	243	1.7%
Farm Lands	1,294	8.9%	Farm Lands	1,280	8.7%
Utility Lands	240	1.7%	Utility Lands	243	1.7%
Roads	0	0.0%	Roads	0	0.0%
Institutional	0	0.0%	Institutional	0	0.0%
Undeveloped	8,654	59.7%	Undeveloped	8,725	59.3%
Town	526	3.6%	Town	787	5.3%
State	9	0.1%	State	9	0.1%
Federal	0	0.0%	Federal	0	0.0%
Water & Other	N/A	N/A	Water & Other	0	N/A
<b>Total</b>	<b>14,505</b>	<b>100.00%</b>	<b>Total</b>	<b>14,715</b>	<b>100.00%</b>

*Source: Avitar Assessing Software Feb 2011; MS-1 Report, September 2016*

The perspective of the Town's Zoning Districts offers another way to view how the land is utilized within Pittsfield in **Table 7**. A full table of uses is available within the Zoning Ordinance which states which uses are allowed within each district. A table of dimensional and density regulations pertaining to water and sewer, lot frontages and lot sizes, and minimum pervious surfaces complement the table of uses.

**Table 7**  
**Zoning Districts, 2017**

<b>Zoning District</b>	<b>Abbreviation</b>
Urban	Urban
Suburban	Suburb
Rural	Rural
Commercial	Comm
Light Industrial/ Commercial	Lt Ind/ Comm
<b>Overlay District</b>	<b>Abbreviation</b>
None	

*Source: Town of Pittsfield Zoning Ordinance, March 2017*

The overlay districts are superimposed upon the zoning districts so additional regulations shall apply. For any conflicting regulation, the more restrictive shall apply. The Zoning Ordinance has sections amended every year at the annual March Town Meeting and is vigorously used and applied by the Land Use Department.

The community's **Built Environment Changes** describe how and where the community has grown, to which hazards vulnerable areas are susceptible, and states the overall change in hazard vulnerability in **4 HAZARD RISK ASSESSMENT**.

### 3 GOALS AND OBJECTIVES

The overall purpose of this Plan is to reduce future life and property losses caused by hazard events before they occur by the identification of appropriate **Actions** that are implemented during the five-year duration of this Plan.

Inspired by the [State of New Hampshire Hazard Mitigation Plan](#), the following **Goals** were initially developed in a previous Plan version and thus were reviewed and updated as applicable by the Hazard Mitigation Committee during a public meeting. While the hazard incidents have remained essentially the same as from the **2012 Plan** with a few disaster additions over the course of the last five years, it was important to reassess the continued relevancy of **Goals** and **Objectives** to influence the development of the best and most relevant hazard mitigation **Actions**.

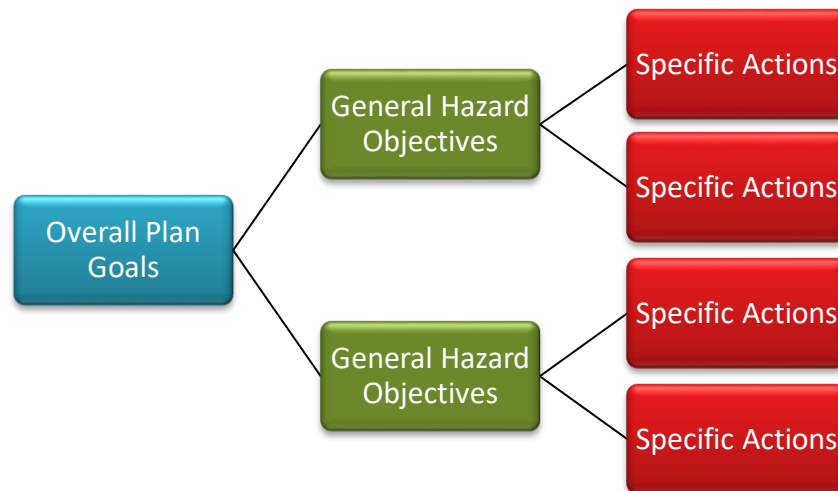
#### What Are Goals, Objectives and Actions

Goals, Objectives and Actions are used in the Hazard Mitigation Plan to define different levels of meaning. Their relationship is displayed in **Figure 3**.

The overall **Goals** of this Hazard Mitigation Plan provide a macro-level view of what emergency managers want to accomplish to keep the Town's life, property and infrastructure safer from natural disasters. Statements of overall **Goals**, beginning with "To", describe the desired vision of mitigation and safety for the community. **Goals** enable the development of thoughtful hazard **Objectives** designed to generally fulfill those **Goals**.

**Figure 3**

**Relationship of Goals, Objectives and Actions**



**Objectives** begin to narrow down the focus of the overall **Goals** into hazard minimization statements. Main hazard categories of **Flood**, **Fire**, **Severe Wind**, **Extreme Temperature (Cold-Hot)**, **Human**, and **Technological** guide the direction of mitigation efforts. These hazard **Objective** statements, beginning with “Minimize”, state Town’s desired outcome for each hazard category. The **Objectives** support the overall **Goals** by placing a focus on hazard mitigation or minimization.

Finally, **Actions** are the specific activities or projects which can be undertaken to accomplish an **Objective**. **Actions** begin with a verb to portray a direction for accomplishment. The **Action** is the target to reach to help mitigate hazards in the community. The completed **Action** fulfills the associated **Objectives**. The Actions will be listed and reviewed later in the **Potential Action Evaluation** and **Mitigation Action Plan** tables.

## Overall Hazard Mitigation Plan Goals

The following **2** Goals for the **Hazard Mitigation Plan 2017** were developed by the Hazard Mitigation Committee as the vision for the community with respect to the declared disaster declarations, general hazard events, seasonal weather events and changing climate patterns resulting in unexpected events. Collectively, the **Goals** guided the formulation of **Objectives** for each of the main hazard categories. These **Goals** were revised from the **2012 Plan** to emphasize hazard mitigation instead of preparedness, response and recovery which are covered in the **Emergency Operations Plan**.

### Overall Hazard Mitigation Plan Goals

1. To reduce the risk of injury and the loss of life in the Town from all natural hazards and disasters and impacts from secondary hazards.
2. To reduce the risk of potential damages in Town to public and private property, critical facilities, infrastructure, historic resources and the natural environment from all natural hazards and disasters.

## General Hazard Mitigation Objectives

Main hazard event categories, such as **Flooding**, **Fire**, **Severe Winds** and **Extreme Temperature** hazards are intended to encompass their respective full sub-hazards range described in this Plan. The general Objectives are developed by addressing the primary hazard events that could impact Pittsfield. They focus on minimizing or mitigating the hazard events to support the overall Goals while driving the direction of Action development later in the Plan.

**General Hazard Mitigation Objectives**

**FLOOD HAZARDS**

1. Minimize the damages from floodwaters of the Suncook River, White's Brook, Cram Brook, Tan Brook, Kelley Brook, Berry Ponds, White's Pond, Jenness Pond, Wild Goose Pond, and other water bodies, to life, property, and infrastructure.
2. Minimize the damages caused by flooded roads, culvert washouts, dam failures or debris (tree limbs, leafy material/sediment) to life, property, and infrastructure.

**FIRE HAZARDS**

3. Minimize the damages from fire, lightning, and wildfire to life, property, and infrastructure, including the Town Forests and Town-owned property and all telecommunications towers.

**SEVERE WIND HAZARDS**

4. Minimize the damages from severe wind events, including thunderstorms, downbursts, hurricanes and tropical storms, and tornadoes, to life, property, and infrastructure.

**EXTREME TEMPERATURE (COLD-HOT) HAZARDS**

5. Minimize the damages from both severe winter weather, including storms, snow, ice, and wind chill events and from excessive heat events such as heat waves, drought, energy consumption, air and water quality, and climate warming, to life, property and infrastructure.
6. Minimize the threat of public health events from the cold and warm weather seasons to the public, especially those in close quarters.

Although human and technological hazards are not natural disasters, many technological hazards in particular are secondary to (caused by) natural hazards such as **Thunderstorms, Flooding or Severe Winter Weather** causing **Power Failure or Debris Impacted Infrastructure**. Eleven **(11)** **General Hazard Mitigation Objectives** were crafted to direct Action development in later Chapters.

**HUMAN HAZARDS**

7. Minimize the damages from human threats such as sabotage/vandalism, terrorism, hostage situations and civil disturbance, to life, property and infrastructure.

**TECHNOLOGICAL HAZARDS  
(Infrastructure and Secondary)**

8. Minimize the impact to travelers through blocked transportation systems, including Route 28, Route 107, Main Street, and others
9. Minimize the damages from multiple hazards to the operational efficiency of all communications systems, dams, underground water and sewer utilities, bridges, and transportation roadways.
10. Minimize the damages from electrical power failure to life, property, and infrastructure, in both rural and urban environments.
11. Minimize the damages from hazardous materials exposure, chemical spills, radiological materials incidents, or biological incidents to life, property, and infrastructure.



## 4 HAZARD RISK ASSESSMENT

Natural disasters and technological, and human hazards that have occurred in Pittsfield or have the potential to occur in the Town were assessed in a [Hazard Risk Assessment](#) to determine their **Overall Risk** to the community. The major disasters declarations covering the Central NH Region (Merrimack County and Hillsborough County) have been inventoried and additional hazard events occurring in Pittsfield and the area have been described. FEMA Public Assistance funding to the Town is detailed for each disaster declaration. A review of climate changes is provided for region to provide perspective on how the weather may change over time.

The [State of New Hampshire Hazard Mitigation Plan, 2013](#) recommends that municipalities examine multiple natural hazards. Two hazards, coastal flooding and snow avalanche, are not discussed in Pittsfield's Plan because they have no relevance. Within the **Hazard Mitigation Plan 2017**, natural hazards under these basic categories have been incorporated:

- **Flooding Hazards**
- **Wind Hazards**
- **Fire Hazards**
- **Extreme Temperature (Cold-Hot) Hazards**
- **Earth Hazards**
- **Technological (Secondary) Hazards**
- **Human Hazards**

Within these basic hazard categories are numerous related subcategories, all of which are detailed in a [Hazard Risk Assessment](#). This Assessment provides a measure of **Frequency, Location Area, Impact to the Town, Hazard Magnitude, and Overall Risk** for each hazard in a numerical format as determined by the Hazard Mitigation Committee. Scale definitions and the process to define hazards are discussed.

Many of these examined hazards discussed may pose little threat to the Town. The Hazard Mitigation Committee wanted to acknowledge their possibility as opposed to simply focusing on a handful of top hazards which will certainly occur in the community. Using this broad vision allows Pittsfield to contemplate the impact of a variety of hazards and to develop mitigation actions and design emergency planning programs as appropriate. Only the most predominant hazards, or even multiple hazards, will have mitigation actions developed to try to reduce the hazards' impact. These are later discussed in [Potential Mitigation Actions](#) and prioritized in the [Mitigation Action Plan](#).

## Hazard Risk Assessment Rankings

Twenty-seven (27) natural, technological, and human hazards are evaluated within this Plan. The 16 natural hazards (including the technological hazard **Dam Failure** because of its close association with flooding) are ranked within in a **Hazard Risk Assessment**. Some hazards may be more likely to occur in the community than others based on past events and current conditions, and some hazards may have a greater impact than other hazards. How vulnerable Pittsfield could be to natural hazards can be measured in terms of **Overall Risk**.

The location of where each hazard has occurred either in the past or may be prone to future hazard occurrences is noted in the **Hazard Locations in Town** column.

Knowing where events may be likely to occur, the 2017 Hazard Mitigation Committee examined each potential hazard for its **Probability of Occurrence** and its potential **Impact to the Town** affecting people, services/infrastructure and property based on past personal recollections and community hazard trends to determine the **Overall Risk** to the community.

The Committee identified each hazard's **Probability of Occurrence** score on a **1-2-3-4** scale from **Unlikely/1** (0-25% chance of occurring in 10 years, which is 2 Hazard Mitigation Plan cycles) to **Highly Likely/4** (76-100% chance in 10 years) as shown below.

### Probability of Occurrence

1	<b>Unlikely=</b>	0 - 25% chance	in 10 years
2	<b>Possible=</b>	25 - 50% chance	in 10 years
3	<b>Likely=</b>	51 - 75% chance	in 10 years
4	<b>Highly Likely=</b>	76 - 100% chance	in 10 years

The Committee determined the likely **Impact to the Town** of an event based on a **1-2-3-4** scale for **3 Impact** characteristics – Human injuries, the length of time Critical Services/Infrastructure are shut down, and Property damage. Not all of these characteristics have to be expected because each hazard differs. The scale runs from **Limited/1** to **Catastrophic/4** and the more specific definitions are described below.

The **Probability of Occurrence** score was multiplied by the average of each **Impact to the Town** (Human, Critical Services/Infrastructure and Property) score to obtain the **Overall Risk** score.

The technological and human hazards were not scored to ensure the natural hazards retained the focus of the **Hazard Mitigation Plan Update 2017**. However, **Dam Failure** was rated because of its close correlation to **Flooding**.

**Impact to the Town: Human, Critical Facilities/Infrastructure/Services, Property**

1	<b>Limited=</b>	<u>Human:</u> Injuries treatable with first aid. <u>Critical Facilities/Infrastructure/Services:</u> Minor inconvenience; Shutdown for 3 days or less. <u>Property:</u> Damaged less than 10%.
2	<b>Significant=</b>	<u>Human:</u> Significant injuries or illnesses result in no permanent disability. <u>Critical Facilities/Infrastructure/Services:</u> Shutdown for up to 2 weeks. <u>Property:</u> Damaged 10% to 25%.
3	<b>Critical=</b>	<u>Human:</u> Significant injuries or illnesses result in permanent disability. <u>Critical Facilities/Infrastructure/Services:</u> Complete shutdown for at least 2 weeks. <u>Property:</u> Damaged 25% to 50%.
4	<b>Catastrophic=</b>	<u>Human:</u> At least 1 to multiple deaths. <u>Critical Facilities/Infrastructure/Services:</u> Complete shutdown for 30 days or more. <u>Property:</u> Damaged greater than 50%.

**OVERALL RISK ASSESSMENT SCORES**

The highest possible **Overall Risk** score a natural hazard could be ranked using this **Hazard Risk Assessment** system is **16** while the lowest score a hazard could be ranked is **1**. The **Overall Risk** numeric score is one which can help the community weigh the hazards against one another to determine which hazards are most detrimental to the community and which hazards should have the most Actions developed to try to mitigate those hazards. The **Overall Risk** is calculated simply by adding the two scores of **Probability of Occurrence** and **Impact to the Town**. The full results of the **Hazard Risk Assessment** are displayed in **Table 8**.

Out of the **16** ranked natural hazards, Pittsfield's highest ranking hazards scored an **Overall Risk** between **9 - 12** (out of a possible score of **16**), rounded to whole numbers:

**Highest Overall Risk Hazards Scored 9 - 12:**

- Hurricanes and Tropical Storms **12**
- Rapid Snow Pack Melt **11**
- Riverine Scouring, Erosion and Channel Movement **11**
- Downbursts **11**
- Severe Winter Weather, Wind Chill and Ice Storms **11**
- Drought **11**
- Wildfire **9**
- Floods and Flash Floods **9**

Table 8  
Hazard Risk Assessment

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Flooding	Floods and Flash Floods	Floodplains of Suncook River result in expanded flooding. The Town has an issue with runoff, with dirt/gravel entering into the Town water supply as a result of flooding. Runoff from roadways or heavy rain can cause floods over the Entire Town. Pittsfield Mill Dam in the downtown is a critical dam to watch and is susceptible to requiring sandbagging (in the past, 6,000 sandbags have been placed). Regular flooding experienced on Tilton Hill Road, Will Smith Road, Cram Brook. Regular culvert flooding over roads: River Road (after Watson Street on a Suncook River tributary), Tan Brook (at Tan Road, Dowboro Road intersection with Epsom town line), Tan Road at Blake Pond, Shaw Road at Kelly Brook, private road Shingle Mill Road (at beaver meadow swamp), Clough Road (at Shingle Mill Brook and at unnamed brook culverts), Wild Goose Pond Road (just below), Tommytown Road (just above), Berry Pond Road (at culvert into Berry Pond, above 4 corners at foot of the hill - if that one fails, the rest down Berry Pond goes), Mountain Road (whole length 1.0 miles gravel and high slope with fields on either side (4 sites), runoff), Ingles Road (at 2 sites, both from swamp overflow of large cross culverts, high volume of water), Will Smith Road (at site off Tilton Hill Road), Jenness Pond Road (1 site after intersection with Route 107, 1 site past Glen and Glade Campground) and Hills Road (2 sites, come out of the fields)..	4	2	2	3	2	9.3
	Rapid Snow Pack Melt	Melt runoff from impervious surfaces and roadways or from tree cover and fields can cause floods over the Entire Town. Susceptible areas include regular road washouts at: Mountain Road, Berry Pond Road, Tan Road, Eaton Pond (on Catamount Road/Route 107), Shaw Road, Blake Pond (at Catamount & Tan Roads).	4	2	3	3	3	10.7

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Flooding	River Ice Jams	<b>Suncook River</b> ice jams could endanger the Pittsfield Mill Pond Dam. If this dam was breached, the Suncook River could flood the 5 downstream dams and communities (Epsom and Chichester, then Allenstown & Pembroke). Ice build-up at the low clearance Webster Mills Bridge on Webster Mills Road is a recurring problem, Town must check during high water and heavy rain/snow melt over Suncook.	<b>3</b>	1	3	4	<b>3</b>	<b>8.0</b>
	Riverine Scouring, Erosion, Channel Movement	<b>Floodplains of Suncook River and Tan Brook</b> , Cram Brook, Kelly Brook, Eaton Pond, Blake Pond, Berry Pond, Whites Brook, Shingle Mill Road beaver pond. These are the largest watercourses in the Town and some run under or alongside local roads. Tan Brook (at Tan Road & Dow Road), Town Pool, Eaton Pond (at Route 107 & Governor's Road), Whites Pond erodes surrounding areas.	<b>4</b>	2	3	3	<b>3</b>	<b>10.7</b>
Wind	Tornadoes	<b>Entire Town</b> . Most vulnerable areas include: Elementary & Middle Schools, Downtown, both sides of Suncook River, Leavitt Road Manufactured Housing Parks, Wildwood Drive neighborhood, White Brook Apartments (~60 units), 67 Main Street (55+ older facility) and Vintage Assisted Living at 10 Berry Avenue. Wooded and forested sections of Town are vulnerable: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads.	<b>2</b>	2	2	4	<b>3</b>	<b>5.3</b>

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Wind	Downbursts	Entire Town. Most vulnerable areas include: Elementary & Middle Schools, Downtown, both sides of Suncook River, Leavitt Road Manufactured Housing Parks, Wildwood Drive neighborhood, White Brook Apartments (~60 units), 67 Main Street (55+ older facility) and Vintage Assisted Living at 10 Berry Avenue. Wooded and forested sections of Town are vulnerable: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads. Also agriculture farms - Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar, Dodge's Mixed Use Agricultural Farm.	4	2	2	4	3	10.7
	Hurricanes and Tropical Storms	Entire Town. Areas of particular concern include Pittsfield Mill Dam, bridges, vulnerable populations, Elementary & Middle Schools and previously listed severe wind vulnerability sites. Roadways (fallen trees), electrical power utilities, communications network, local government operations are susceptible to damage by debris impacted infrastructure. 127 South Main Pittsfield Waste Water Treatment Facility and Catamount Road Water Treatment Facility.	4	2	3	4	3	12.0

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Wind	Severe Winds, Rainstorms and Thunder Storms	Entire Town. Areas of particular concern include previously listed severe wind vulnerability sites. Road network (fallen trees), electrical power utilities, communications network, cell towers, local government operations are susceptible to damage to debris impacted infrastructure. Wooded and forested sections of Town are vulnerable: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads.	4	1	2	1	1	5.3
	Lightning	Entire Town. Areas most susceptible include forested areas, conservation areas, open recreation fields, locations difficult to access by vehicle, points of higher elevation than surrounding area: Church spires, Berry Pond Road (higher elevations), Catamount Road (Route 107 higher elevation), Upper City Road, Governor's Road (and cell tower), Nudd's Hill, Webster Mills Road, cell tower on Webster Mills Road, Mountain Road telecommunications tower and Sanderson Drive estate. Those buildings without lightning rods would be more susceptible to damage from a strike than those buildings with the rods. Other susceptible structures include aboveground utilities: transformers, telecommunications towers, water towers, churches and tall buildings.	4	1	1	1	1	4.0
Fire								



Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Fire	Wildfire	<b>Entire Town.</b> Areas most susceptible include forested areas, conservation areas, open recreation fields, locations difficult to access by vehicle, points of higher elevation than surrounding area. Susceptible structures include aboveground utilities: transformers, telecommunications towers, water towers; churches and tall buildings. The top of Catamount Road, Clough Road, Shingle Mill Brook Road, Range Road, Rocky Point Road, are vulnerable primarily due to slash left behind from the ice storms and drought conditions. Wooded and forested sections of Town are vulnerable: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town could be difficult to access. See also lightning for specific areas.	<b>4</b>	2	1	4	<b>2</b>	<b>9.3</b>
	Severe Winter Weather, Cold, Wind Chill and Ice Storms	<b>Entire Town.</b> Areas of particular concern include Elementary School, Union Block, and manufactured housing (snow load). Roadways (fallen trees), electrical power utilities, communications network, local government operations are susceptible to damage. Road network (fallen trees), electrical power utilities, communications network, cell towers, local government operations are susceptible to damage to debris impacted infrastructure. Wooded and forested sections of Town are vulnerable to loss of power and debris on roads: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads. People may be subject to cold temperature, snow isolation, transportation accidents, power failure and communications failure during winter storm events.	<b>4</b>	2	2	4	<b>3</b>	<b>10.7</b>
Extreme Temp								

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Extreme Temp	Drought	<b>Entire Town / Region.</b> Areas susceptible include farms, orchards: Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar, Dodge's Mixed Use Agricultural Farm. Also vulnerable are those residences with private dug wells and Town water supplies [Berry Pond]. Drought means increased risk of brush fire with dry vegetation (see Wildfire for areas). Gravel roads affected because can't grade them when water is low. All fire ponds are low or dry (Quail Ridge). Higher elevations Tilton Hill, Catamount Road are ledgy (bedrock) and are running out first.	<b>4</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>10.7</b>
	Excessive Heat	<b>Entire Town.</b> Vulnerable areas most susceptible to extreme heat include farms, orchards: Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar, Dodge's Mixed Use Agricultural Farm. Shelters are now being planned need to be opened for cooling centers during extended heat conditions.	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>5.3</b>
Earth	Earthquake	<b>Entire Town.</b> The Central NH Region is seismically active and earthquakes are regularly felt from area epicenters. Damage to utility poles and wires, roadways and infrastructure (Pittsfield Mill Dam, Pittsfield Water Treatment Facility, Waste Water Treatment Facility) could be significant. Areas with underground utilities, community water systems, old buildings (Downtown), Town Buildings, and the High School are particularly susceptible.	<b>4</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4.0</b>

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Earth	Landslide	Slopes greater than 25%, including roads with steep ditching or embankments are most vulnerable to landslide. The Suncook River and brook banks can also slide, usually known as erosion. Generally, vegetation in Pittsfield is good at preventing landslides. Route 107 has erosion in multiple places, Prescott Road receives landslide onto the road regularly, renders the road partly impassible and Mountain Road could be vulnerable. Road washouts and flash-flooding could cause landslides, but otherwise the Town is not particularly susceptible.	2	1	1	1	1	2.0
	Dam Failure	Pittsfield Mill Pond Dam (state-owned) is the only High (H) Hazard dam in Town. Some dams in the Town have been breached but were not large enough to have caused a problem. <b>Largest concern is Pittsfield Mill Pond Dam</b> and other Suncook River dams. Spring runoff sends water over the road at Route 107, and there is the possibility that heavy rainfall will send water over the top of the PMP dam, threatening Route 107. A combination of water and ice would be required for a breach of the Pittsfield Mill Dam. Downstream (Chichester and Epsom) would be facing huge problems if the PMP dam breached.	1	4	4	4	4	4.0
Technological								

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Technological	Power/ Utility Failure	Entire Town, utilities and vulnerable populations. Wooded, forested and more remote sections of Town [list] would be difficult to access, with trees and power lines down on these routes or residential roads: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. Pittsfield primarily depends on Eversource for its power needs, with some areas served by NH Co-op (Clough Road). Power outages may last for several days before service is restored in a large event. The outskirts of Town are particularly vulnerable because the trees are overgrown. All of the utility the feeds come in from over the mountains, one over Catamount Road and one over Loudon Road into Eversource substation at Globe Manufacturing.	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated
	Communications Systems Failure	Entire Town, Telecommunications Tower. Telephone lines often go down with power. Communications are detailed in the Community Vulnerability Assessment tables. Communications failure would be worse if it occurred at the Fire and Police Depts, Highway Department or Town Offices, especially during a holiday, or inhibited emergency dispatch and EOC operations. Most Town radios are interoperable, and they are used in more than one location. The Police Department has a repeater in a secondary location and is kept up to date. The Fire Department has mobile and land radios, with repeaters in locations in other towns. The Town is serviced by the Capital Area Mutual Aid Compact, which does all the emergency medical service and Fire dispatching. They have redundant capabilities and are currently upgrading their systems.	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Technological	Debris Impacted Infrastructure	<b>Most dams and bridges</b> could experience debris impacted infrastructure. The Town has built a diversion wall at the Pittsfield Mill Pond Dam, which also helps contend with tree debris. Bridges vulnerable to such a hazard would be on Main Street at the Suncook River, and on Route 107 at the White's Pond outlet. <b>Roads with culverts that regularly washout</b> are listed above under <b>Flooding</b> .	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated
	Transportation Accidents	<b>Major NH Route intersections.</b> Frequent transportation accidents occur at each intersection with Route 28, especially the intersections with Loudon Road Barnstead Road. Other dangerous locations include Route 107 and Catamount Road "S" curve (icy conditions) for Town & State. See <b>Map</b> series for regular accident locations - at certain intersections, curves, straightaways, hills.	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated
	Hazardous/Radiological Materials Spills	<b>Route 28 and Route 107</b> would be the most realistic routes taken where vehicular traffic transports hazardous waste. The largest or most dangerous stationary sites that store and/or handle haz mat on site (fertilizer, pesticides, fuel, etc) are listed in <b>Appendix A</b> . Occupational haz mat sites where spills could occur include: health care facilities, schools, manufacturing, etc.	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated
Human	Public Health Epidemics	<b>Congregate populations.</b> Elementary, Middle and High School, health clinics, restaurants, populated areas, large employers, apartments, senior housing, stores and public assembly venues listed in <b>Appendix A</b> - all of these locations increase the risk of exposure to and transfer of illness. The forests, conservation areas, agriculture, wooded areas, ponds can host ticks and mosquitos.	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Technological	Fire (Vehicle, Structure, Arson)	<b>Downtown &amp; Entire Town.</b> Areas most susceptible include: Downtown, vacant or vulnerable sites, foreclosed homes or seasonal buildings, buildings in densely populated areas or residential manufactured home parks. Vehicle fires could occur anywhere, parking lots, driveways, roadways.	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated
	Terrorism	<b>Unlikely, but Entire Town.</b> Most susceptible sites could include: NH Route 28 or Route 107, Pittsfield Mill Pond Dam, Water Treatment Facility, Wastewater Treatment Facility, Town Office, all Schools, Post Office, all governmental facilities, state facilities, political offices or rallies, churches, etc.), telecommunication towers, Schools, major employers (especially those large quantities of haz materials), health clinics, grocery or convenience stores, restaurants.	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated
Human	Sabotage/Vandalism	<b>Town Facilities.</b> Sabotage would be most likely to occur at electric utilities, Town computer systems & website, Town buildings, dams, water supplies, waste water treatment, cemeteries, vacant buildings, under bridges. Berry Pond is not controlled or monitored (Town water system).	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated
	Hostage Situation	<b>Unlikely, Isolated events.</b> Locations where hostages could be taken include: Town Offices and other public buildings, Schools, banks, Post Office, Suncook Valley Sun, workplaces, grocery and convenience stores, restaurants, high density population areas (Downtown, manufactured housing parks, apartment buildings), courthouse, domestic home situations.	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated

Natural, Technological, Human Hazard Events		Susceptible (Existing) Hazard Locations in the Town	Probability of Occurrence	Human Injury Impact	Critical Services and Infrastructure Impact	Property Damage Impact	Severity of Impact	OVERALL RISK
Human	Civil Disturbance/ Public Unrest	Limited, Downtown Area. Locations where civil disturbance could occur should be limited. Locations and occasions include: Town Meetings, voting day, local board meetings, during visits from political candidates, at large events such as Old Home Day, Balloon Rally or Veteran's Parade, School sports events or graduation. Locations include the Schools, Tilton Hill Ball Field, Town Office, stores, restaurants, establishments serving alcohol, high density population areas (Main Street, downtown, manufactured housing parks, neighborhoods), courthouse, health clinics.	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated

*Source: Pittsfield Hazard Mitigation Committee 2016*



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## Central NH Region Major Disaster Declarations, 1973-2016

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The Central NH region, which encompasses parts of Merrimack County (**18** communities) and Hillsborough County (**2** communities), has been damaged by **21** multiple presidentially-declared major disasters in the last **43** years, between **1973-2016**.

While a natural disaster typically befalls multiple counties in New Hampshire, only those damaging either Merrimack County or Hillsborough County were identified in this section. Over the last **11** years (**2005-2016**), the number of presidentially-declared natural major disasters have increased significantly compared to the first severe storm and floods of **1973** to the **1998** ice storm (**25** years).

Between **2005-2016**, the most recent round of major disasters afflicting the Central NH Region, **12** natural disasters within **11** years were declared for Merrimack and/or Hillsborough Counties, **5** of which were floods, **5** snow/ice storms, and **2** rain/wind storms. No other major disasters were declared between **1998-2005** in the Central NH Region, bringing the total number of *disaster declarations* (DR-) to **14** disasters within **18** years (**1998-2016**).

*Emergency declarations* (EM-) are often proclaimed for counties in New Hampshire to help communities receive funding for less serious hazard events that may have caused more damage in nearby declared declaration counties or states. The **4** Snow Emergency declarations that occurred between **2005-2016** are not counted within the **12** declared disasters, and neither is Hurricane Sandy in **2012**, which was a declared disaster in Hillsborough County but not in Merrimack County (emergency declaration).

However, the last declared disaster in Merrimack County, in which Pittsfield is located, was in **February 2013**; as of **December 2016**, no new major disasters have been declared here. These details are displayed in **Table 9**. Most of these disasters will be described within the following [\*\*Recent Disaster Events Summary\*\*](#) section.

**Table 9**

**Central NH Region Major Disaster Declarations, 1973 to 2016**

FEMA DR-	Local Disaster Name	Incident Period	FEMA Disaster Name	Includes County*		FEMA Public Assistance Funding to Pittsfield**
				Merr	Hill	
4209	2015 January Blizzard	Jan 26-28, 2015	Severe Winter Storm and Snowstorm	---	H	N/A
4105	2013 Snowstorm NEMO	Feb 8-10, 2013	Severe Winter Storm and Snowstorm	M	H	\$15,700
4095 EM-3360	2012 Hurricane Sandy Emergency	Oct 26-Nov 8, 2012	Hurricane Sandy <i>emergency declaration only for Merr and Hill Cty</i>	EM- M	EM- H	\$0
4049	2011 Halloween Snow Storm	Oct 29-30, 2011	Severe Storm and Snowstorm	---	H	N/A
4026	2011 Tropical Storm Irene	Aug 26-Sep 6, 2011	Tropical Storm Irene	M	---	\$3,000
1913	2010 March Flooding & Winds	Mar 14-31, 2010	Severe Storms and Flooding	M	H	\$0
1892	2010 Winter Storm	Feb 23-Mar 3, 2010	High Winds, Rain, Snow	M	H	\$6,300
1812	2008 December Ice Storm	Dec 11-23, 2008	Severe Winter Storm	M	H	\$13,900
1799	2008 September Flood	Sep 6-7, 2008	Heavy Rains and Floods	M	H	\$10,400
1782	2008 July Tornado	Jul 24, 2008	Tornado, Severe Winds, Heavy Rains	M	---	\$7,900
1695	2007 April Spring Flood	Apr 15-23, 2007	Severe Storms and Flooding	M	H	\$124,700
1643	2006 Mother's Day Flood	May 12-23, 2006	Severe Storms and Flooding	M	H	\$31,200
1610	2005 Columbus Day Flood	Oct 7-18, 2005	Severe Storms and Flooding	M	H	\$0
EM-3207	2005 Snow Emergency	Jan 22-23, 2005	Snowstorm	M	H	\$5,800
EM-3193	2003 Snow Emergency	Dec 6-7, 2003	Snowstorm	M	H	\$9,000
EM-3177	2003 Snow Emergency	Feb 17-18, 2003	Snowstorm	M	H	\$5,300
EM-3166	2001 Snow Emergency	Mar 5-7, 2001	Snowstorm	M	H	\$8,500
1231	1998 Flooding	Jun 12-Jul 2, 1998	Severe Storms and Flooding	M	H	\$0
1199	1998 December Ice Storm	Jan 7-25, 1998	Ice Storms	M	H	\$0
1144	1996 Severe Storms and Flooding	Oct 20-23, 1996	Severe Storms and Flooding	M	H	\$0
1077	1995 Flood	Oct 20-Nov 15, 1995	Storms and Floods	M	---	\$0
917	1991 Hurricane Bob	Aug 18-20, 1991	Severe Storm	---	H	N/A
876	1990 Flooding and Severe Storm	Aug 7-11, 1990	Flooding and Severe Storm	M	H	No data
789	1987 Severe Storms and Flooding	Mar 30-Apr 11, 1987	Severe Storms and Flooding	M	H	No data
771	1986 Severe Storms and Flooding	Jul 29-Aug 10, 1986	Severe Storms and Flooding	---	H	N/A
399	1973 Severe Storms and Flooding	Jul 11, 1973	Severe Storms and Flooding	M	H	No data
<b>Total Public Assistance (PA) FEMA Funding to Pittsfield, 1993-2016**</b>						<b>\$241,700</b>

Source: [http://www.fema.gov/disasters/grid/state/33?field=disaster\\_type&term\[tid\]=All](http://www.fema.gov/disasters/grid/state/33?field=disaster_type&term[tid]=All)

\*M = Merrimack County (18 towns in CNH region) H = Hillsborough County (2 towns in CNH region)

\*\* Dollar figures are rounded to the nearest \$100

## Recent Disaster Events Summary

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The Town of Pittsfield has been affected by several significant natural disasters within the last decade and applied for and received Public Assistance (PA) funding for many of these events. Severe natural hazard events have been occurring more frequently in Merrimack County than in the past. While these events on occasion disrupted the flow of the community and isolated residents for days, the disaster impacts were relatively mild as few injuries were reported. FEMA provided Public Assistance funding to the Town for tasks such as cleanup, road repairs, tree and brush cutting, and culvert replacement.

The Hazard Mitigation Committee helped provide anecdotal descriptions of how the recently declared natural disasters or emergency declarations for the Central NH Region affected Pittsfield and its residents. Public Assistance disaster funding opportunities open to communities when a disaster is declared within a county. The Town of Pittsfield applied for and received this funding for several recently declared disasters. Also identified were numerous hazard events that occurred locally in the community and within the area. The disaster event listing dates from the 1936 floods to present day.

### PUBLIC ASSISTANCE GRANT FUNDING

To help reclaim some of the costs these disasters wrought on town property and infrastructure, Pittsfield applied for and received FEMA Public Assistance (PA) funds, Categories A-G, a 75% grant and 25% match program for several declared Merrimack County disasters. These PA funds have been used for overtime wages for Town employees, equipment rentals, snow removal, washout repair, road reconstruction, bridge repair, debris removal, and more.

The database where the Public Assistance funding information resides is available from **1993** to present (**2016**). The Public Assistance disaster funding was sought for and received by Pittsfield for **8** of the **14** eligible *Declared* disasters in Merrimack County during this timeframe. *Emergency declaration* funding was sought and received by Pittsfield for **4** of the **4** eligible snowstorms between **2001-2005**, but not for Hurricane Sandy (**2012**). This data is available through FEMA at <https://www.fema.gov/openfema-dataset-public-assistance-funded-projects-details-v1>.

The most expensive disaster for Pittsfield in terms of FEMA Public Assistance funds received for recovery was the **April 2007 Spring Floods** after which Pittsfield received **\$124,700** for **14** projects to help repair the roads and bridges, including Wildwood Drive, Hills Road and Mountain Road. The last time the Town was awarded funding was for **\$15,700** for protective measures and snow removal for the **February 2013 Severe Winter Storm**. This was the last major disaster declaration for Merrimack County to date. All Public Assistance funding to date, from **1993** to **December 2016** totals **\$241,700**. This detail is displayed in **Table 10** but is summarized previously in **Table 9**.

**COLOR KEY for Table 10:**

Declared Disasters in Merrimack County or Hillsborough County (Central NH Region)	PA Funding \$ Received by Pittsfield	Other Pittsfield Local Hazard Event
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**Table 10**

**Local and Area Hazard Event and Disaster History**

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
Pittsfield/Merrimack County Drought Severe Emergency <b>2017</b>	No	2017	Feb 21	N/A	Severe Drought (D2) intensities are found in all communities of Merrimack County and all but the western edge of Hillsborough County in Central NH. The State's counties have been experiencing levels of drought for over a year. The NH DES has issued a series of statements and tips for homeowner water conservation. As of September 2016, residents and municipalities are requested to voluntarily conserve water. Some communities or water precincts have enacted water restrictions or bans for certain water usage. More restrictions may be enacted or may eventually be required by the State if conditions remain the same or worsen.	The Severe Drought (D2) conditions as of 02/17 continue to cover the entire community of Pittsfield. Reports have been made of dry wells (12 in 2016) and residents are going to the Fire Station to obtain water.	Drought	US Drought Monitor NH, NH DES
Pittsfield Severe Wind Rain & Thunder Storm <b>2016</b>	No	2016	Jul 23	N/A	N/A although the entire region experienced the severe rain & thunderstorm	Storm occurred on Old Home Day, Town sent people home. Tree damage throughout Town, 0 visibility with the rain. Trees down on roads and powerlines. Localized flooding/standing water. A small microburst touched down on Clough Road, blew down a corn field.	Severe Winds Rain Storm, Thunder Storm	Pittsfield Hazard Mitigation Committee
Pittsfield Wildfires <b>2016</b>	No	2016	Spring - Sept	N/A	September fire spread to parts of Epsom	Spring 2016- Large brush fire on Clough Hill - 3 acres. September 2016 Hills Road, Pittsfield/Epsom - 3 acres.	Wildfire	Pittsfield Hazard Mitigation Committee
Pittsfield Downtown Fires <b>2016</b>	No	2016	Jan- Jun	N/A	N/A	Downtown fires in 2016: Jan 1- arson in 3 story apartment building, no injuries. Apr - car fire, electrical system short set apartment building on fire too. Jun- trash cans set on fire at Post Office	Fire	Pittsfield Hazard Mitigation Committee
Earthquake 2.8M Warner Epicenter <b>2016</b>	No	2016	21-Mar	N/A	Epicenter in Warner/Hopkinton area, 2.8 magnitude. Felt in the Central NH Region/most of Merrimack County, light in Hillsborough County. Felt most strongly in	Reports may have been made to the USGS from Pittsfield residents across the Central NH region from Warner.	Earth, Earthquake	USGS, CNHRPC

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 4 HAZARD RISK ASSESSMENT

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
					Hopkinton, Henniker, Warner, Webster, Salisbury, Franklin, Pittsfield, Concord, and Hillsborough			
<b>Earthquake 2.6M Epsom Epicenter 2015</b>	No	2015	2-Aug	N/A	Epicenter around Epsom in the Central NH Region in Merrimack County, felt in nearby locations including Concord, Hopkinton, Allenstown, Loudon Chichester and Pittsfield	Reports were made to the USGS from Pittsfield residents feeling the earthquake. Epsom forms Pittsfield's southern boundary with Route 28 connecting the two towns.	Earth, Earthquake	Earthquake-track.com, CNHRPC
<b>Tornado, Severe Thunders-torms 2015</b>	No	2015	31-Jul	N/A	In Warner, NWS confirmed an EF-0 tornado touched down in the evening. It had a maximum wind speed of 75 mph and was 100 yards wide. Town officials said the tornado ripped the roof off a barn, but there were no injuries reported.	N/A, although Warner is also located in the Central NH Region several communities to the west of Pittsfield	Severe Wind, Tornado, Thunderstorm	WMUR
<b>Severe Winter Storm and Snowstorm - January Blizzard 2015</b>	4209	2015	Jan 26-28	N/A for Pittsfield	Predicted at near blizzard conditions, the end of January, 2015 snowstorm's major declaration ended up having a Hillsborough County wide per capita impact of \$3.88, making the storm a fairly expensive one at \$3.3 million dollars in Public Assistance over three southern NH counties. Snow approached 30" in some areas with heavy snow and 50 mph whiteout wind conditions. There was no declaration for Merrimack County The closest reporting weather station, Concord Airport (CON), had accumulated 29" of heavy snow, 50 mph whiteout wind conditions in the region. <u>Not declared in Merrimack County.</u>	Pittsfield could not apply for/receive funding. About 22" inches of snow fell on Pittsfield, power outages 1-2 days at south end and north end. 18" snow with heavy drifting. Stayed very cold and had 4" more two days later.	Severe Winter Weather, Extreme Temp, Snow, Ice, Power Failure, Severe Winds, Debris Impacted Infrastructure	Pittsfield Hazard Mitigation Committee, fema.gov, Boston Globe
<b>Thanksgiving Day Snowstorm 2014</b>	No	2014	27-Nov	N/A	Large amount of snowfall fell in a very short period of time ahead of typical seasonal expectations. Power outages were prolific, with a peak of about 200,000 outages, from the Public Service of New Hampshire, Unitil (Concord area), and NH Electric Co-op. Nearby Concord and the towns on the eastern side of the Central NH region accumulated only 6-12" of snow according to PSNH, far less snow than southern and western NH. This was not a presidentially declared disaster in NH.	Pittsfield likely experienced some of the same snowfall and power outages during this holiday.	Extreme Temp, Snow, Power Failure	Concord Monitor, CNHRPC

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 4 HAZARD RISK ASSESSMENT

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
Pittsfield Communications Failure by Lightning 2014	No	2014	Summer	N/A	Regional event- Plausawa Hill (Pembroke) Lightning Strike - affected Capital Area Fire Compact Dispatch. Fairpoint (Boscawen) went down due to equipment failure so Merrimack County dispatch went down.	Both of these events affected Pittsfield as the Town uses the Capital Area Fire Dispatch.	Lightning, Communications Failure	Pittsfield Hazard Mitigation Committee
Pittsfield Civil Disturbance 2014	No	2004	Jul- Aug	N/A	N/A	At Bridge and Chestnut Streets, local young adult rioting.	Civil Disturbance	Pittsfield Hazard Mitigation Committee
Earthquake 2.6M Warner Epicenter 2013	No	2013	11-Oct	N/A	Epicerter in Warner, 2.6 magnitude. Felt in the Central NH Region/northern Merrimack County, most strongly in Hopkinton, Henniker, Warner, Webster, Concord, Salisbury, Franklin	Reports were likely made to the USGS from Pittsfield residents feeling the earthquake as a rumble or loud noise.	Earthquake	USGS, CNHRPC
Severe Winter Storm and Snowstorm - Winter Storm NEMO 2013	4105	2013	Feb 8-10	\$15,700	Winter Storm "Nemo". FEMA-3360-DR. Blizzard conditions with winds gust of 50-60 MPH and over 20 inches snow hit New Hampshire and the New England area. Disaster declaration received for emergency protective measures in eight counties of the State.	Pittsfield received \$15,700 in FEMA Public Assistance funding for protective measures (snow removal). Snow was deep and conditions were icy. 30" snow heavy drifting. 2+ days of plowing. Had heavy equipment out pushing back and piling snow to be moved. Took another 3 days to recover.	Severe Winter Weather, Extreme Temp, Snow, Ice, Wind	FEMA, Pittsfield Hazard Mitigation Committee, CNHRPC
Hurricane - Hurricane Sandy 2012	4095 EM-3360	2012	Oct 26- Nov 8	No	Merrimack County and Hillsborough County received a disaster declaration for Emergency Protective Measures. Five counties experienced severe damage from heavy winds and moderate flooding, 218,000 customers without power. Fallen trees and debris closed roads, building and vehicle damage.	Pittsfield did not apply for/receive funding. This storm was reportedly very mild in Pittsfield.	Wind, Flood, Severe Storm, Hurricane, Debris Impacted Infrastructure	Pittsfield Hazard Mitigation Committee, FEMA, Nashua Telegraph
Earthquake 4.0M Hollis ME Epicenter 2012	No	2012	16-Oct	N/A	With the epicenter near Hollis Center, Maine, a 4.0 earthquake was measured and felt not only in Central NH, but throughout New England. Reportedly sounding like a jumbo jet and lasting for 10 seconds, calls came in to local Fire Departments inquiring about the event. By two hours later, no calls reporting damages or injuries had been received.	Reports may have been made to the USGS from Pittsfield with an earthquake of this magnitude as it was felt around the Central NH Region.	Earthquake	Concord Monitor, Earthquake--track.com, CNHRPC
Pittsfield Hostage Situation Circa 2011	No	2011	Circa	N/A	N/A	Family domestic hostage situation on Loudon Road. SWAT responded.	Hostage Situation	Pittsfield Hazard Mitigation Committee

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 4 HAZARD RISK ASSESSMENT

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
<b>Snowstorm-Halloween Snow Storm 2011</b>	4049	2011	Oct 29-30	N/A for Pittsfield	FEMA-4049-DR. Towns in Central NH were impacted by this shocking, early severe snowstorm, although a major disaster declaration was <u>not</u> declared in Merrimack County. Halloween festivities were cancelled in most communities, to the heartbreak of young children. In Hillsborough County, damages were at the equivalent of \$5.11 per capita (400,721 people in 2010). The storm was also declared in Rockingham County.	Pittsfield could not apply for/receive funding. Unexpected snow depth of 23", trees and limbs down, wet snow. Power outages for specific homes for 2 days neighborhoods from trees and limbs down.	Extreme Temp, Snow	FEMA, Pittsfield Hazard Mitigation Committee
<b>Tropical Storm-Tropical Storm Irene 2011</b>	4026	2011	Aug 26-Sep 6	\$3,000	Carroll, Coos, Grafton, and Merrimack Counties suffered severe impacts to roads and bridges as a result of flooding from Tropical Storm Irene, which also caused power outages. Merrimack County reimbursement to towns was \$4.29 per capita (146,455 people in 2010), a total of \$11m was allocated. Disaster was not declared for Hillsborough County.	<b>Pittsfield received \$3,000 in FEMA Public Assistance funding</b> for protective measures and debris removal. Tree limbs down around Town.	Wind, Flood, Severe Storm, Rainstorm, Tropical Storm, Debris Impacted Infrastructure	FEMA, Pittsfield Hazard Mitigation Committee
<b>Pittsfield Residential Fire 2011</b>	No	2011	May	N/A	N/A	A residential propane LP gas tank that was improperly installed resulted in an explosion and flash fire on Leavitt Road. The explosion resulted in structural damage and personal injury.	Fire, Explosion, Hazardous Materials	Pittsfield Hazard Mitigation Committee
<b>April Fool's Snowstorm 2011</b>	No	2011	1-Apr	N/A	A Nor'easter snowstorm impacted the State, causing over 30,000 power outages, most by PSNH. Snow fell in depths of up to 8", but stopped by noon. Although dozens of accidents were reported, no serious injuries were reported.	N/A, but Pittsfield likely experienced some snow and inconvenience	Extreme Temp, Snow	wmur.com, CNHRPC
<b>Earthquake 3.4M Boscawen Epicenter 2010</b>	No	2010	26-Sep	N/A	"A magnitude 3.4 earthquake rattled buildings and nerves across much of New Hampshire Saturday night. The quake occurred at 11:28 p.m. and was centered about 10 miles north of Concord, according to the U.S. Geological Survey. State police said they received reports from residents across the state who reported what they thought was an explosion. The quake was felt in places like Fremont, Derry, Durham,	Reports may have been made to the USGS from Pittsfield with the epicenter three communities to the west, in Boscawen.	Earth, Earthquake	Union Leader, USGS, CNHRPC



# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 4 HAZARD RISK ASSESSMENT

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
					Henniker, Penacook and Raymond. There were no reports of damage." The quake was felt all over the state, Southern Maine and Massachusetts, but most reports were received from the Central NH region.			
<b>Pittsfield Drought 2010</b>	No	2010	Summer	N/A	N/A although the region was experiencing mild drought conditions	Several people in Town reported that their wells went dry. Some people had difficulties with providing water to their livestock	Drought, Earth, Wildfire	Pittsfield Hazard Mitigation Committee
<b>Pittsfield Transportation Accident-Mass Casualty 2010</b>	No	2010	Jul	N/A	N/A	In summer 2010, on Route 28 at the intersection of Route 107 a mass casualty occurred where multiple ambulances from different communities were called in. There are now traffic lights at this location.	Transportation Accident, Public Safety, Mass Casualty	Pittsfield Hazard Mitigation Committee
<b>Pittsfield Lightning Strike 2010</b>	No	2010	Jul	N/A	N/A, although it is likely similar storms were experienced in the region.	The Union Block was struck by lightning, which caused minor damage. The building is three stories high.	Lightning, Fire	Pittsfield Hazard Mitigation Committee
<b>Quebec-Ottawa Earthquake 5.0M 2010</b>	No	2010	Jun	23	Earthquake lasted about 30 seconds, epicenter near Buckingham, Quebec 35 north of Ottawa. Ottawa declared this earthquake the most powerful in 65 years. Tremors felt in Central NH.	People were reporting that their household china was rattling, but there was no damage	Earthquake, Earth	Pittsfield Hazard Mitigation Committee
<b>Severe Storms and Flooding March 2010</b>	1913	2010	Mar 14-31	No	Severe storms and flooding occurred over two weeks and damaged roads and bridges. Merrimack County reimbursement to towns for repair was \$0.28 per capita (146,455 people in 2010), and in Hillsborough County reimbursements were \$1.80 per capita (400,721 people in 2010)	Pittsfield did not apply for/receive funding. Much of the damage from the previous storm was still being cleaned up and repaired. Town had 10" of snow pack. Temps rose high and fast then 3-4" of rain fell on top causing major runoff and large washouts on Mountain Rd., Johnson Rd., Tan Rd., Berry Pond Rd., Sanderson Rd., Dowboro Rd., Jenness Pond Rd. Two other roads had washouts that took multiple days to fix, Thompson Rd and Will Smith Rd. Waters were high and incidental erosion occurred to roads. The Town was not affected very hard by this storm. Although there was major flooding, there were no dam issues and the emergency call volume was normal.	Severe Winds, Flooding, Power Failure, Debris Impacted Infrastructure	Pittsfield Hazard Mitigation Committee, FEMA
<b>Severe Winter Storm Feb-March</b>	1892	2010	Feb 23-Mar 3	\$6,300	FEMA-1892-DR. This severe weather event included high winds, rain, and snow over a week-long period. The primary	Pittsfield received <b>\$6,300 in FEMA Public Assistance funding</b> for protective measures and debris removal.	Extreme Temp, Snow, Wind, Flood,	Pittsfield Hazard Mitigation

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 4 HAZARD RISK ASSESSMENT

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
<b>Storm and Flooding 2010</b>					impact was debris removal and repair reimbursement for fallen trees and powerlines. In Merrimack County, the reimbursement to communities was the equivalent of \$10.39 per capita (146,455 people in 2010), with Hillsborough County at \$3.68 per capita (400,721 people in 2010). In the Concord area, 21,000 Unital customers were out of power at the peak outage period.	Storm started with freezing rain bringing trees down and taking power out in multiple places. Warmed up very quickly, had snowmelt to multiply the issues. Washouts: Mountain Road, Berry Pond Road, Tan Road, Will Smith Road, Eaton Road, Shaw Road and Route 107 erosion in multiple places. Ice build-up at low bridge: Webster Mills Bridge (Webster Mills Road)- recurring problem, check during high water and heavy rain/snow melt over Suncook (not much clearance). Town opens up snowbanks on Webster Mills Road for snowmelt (recurring). There was a spike in the Fire Department call volume due to power outages, alarm system malfunctions, tree branches on power lines, etc. The next day brought 3" of wet snow. A few days later another inch of snow fell hindering clean-up. Took over a week to fully clean up and fix all the damage.	Wind Chill, Dam Failure	Committee, FEMA, Unital
<b>Severe Winter Storm - December 2008 Ice Storm</b>	<b>1812</b>	<b>2008</b>	<b>Dec 11-23</b>	<b>\$13,900</b>	FEMA-1812-DR. Accumulating ice, snow, rain, and strong winds caused downed trees and power lines, with power outages and traffic accidents resulting. In Merrimack County, debris removal and repair cost reimbursement FEMA the equivalent of \$10.07 per capita (146,455 people in 2010). In Hillsborough County, debris removal costs were \$6.35 per capita (400,721 people in 2010). The major disaster was declared in all 10 counties. New England was blanketed with ice and snow during the winter storm. 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	<b>Pittsfield received \$13,900 in FEMA Public Assistance funding</b> for debris removal and protective measures for this severe ice storm. The Town experienced massive power outages for up to 7 days. Damage to utilities occurred, including wires down and numerous electrical hazards. There were concerns with residents' generators improperly feeding/carbon monoxide issues. The Town shelter at the Elementary School was opened.	Extreme Temp, Ice, Wind, Technological, Power Failure, Debris Impacted Infrastructure	Pittsfield Hazard Mitigation Committee, FEMA, CNHRPC

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 4 HAZARD RISK ASSESSMENT

Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
					northern, central and southeastern New Hampshire was estimated at over \$5 million. Event was the largest power outage in New Hampshire's history.			
Severe Storms and Flooding - September Flood 2008	1799	2008	Sep 6-7	\$10,400	Heavy rain from the remnants of tropical storm Hanna resulted in flooding on small rivers and streams in the Central NH area. The remains of tropical storm Hanna moved through eastern New England dumping 3 to 6 inches of rain in New Hampshire in about 8 hours causing rapid rises on area streams. In Merrimack County, damage to road systems totaled the equivalent of \$1.48 per capita (146,455 people in 2010) for town reimbursement. Hillsborough County's damage was much higher at \$6.90 per capita (400,721 people in 2010)	Pittsfield received \$10,400 in FEMA Public Assistance funding for roads & bridges and protective measures.	Flood, Debris Impacted Infrastructure	Pittsfield Hazard Mitigation Committee, FEMA
Severe Winds, Heavy Rains July Tornado 2008	1782	2008	Jul 24	\$7,900	An F2-F1 tornado touched down in Rockingham County then proceeded into another county. Then in Merrimack County, the tornado was rated up to an F-3 and killed a woman in Deerfield trapped in a collapsed house. In the county, there was substantial damage totaled the equivalent of \$1.12 per capita (146,455 people in 2010) for the towns' debris removal reimbursement costs. A total of 123 residences statewide were affected, with 17 destroyed and another 37 suffering major damage. Damage was estimated to exceed \$10 million. Hillsborough County	Pittsfield received \$7,900 in FEMA Public Assistance funding for debris removal and protective measures. The path of the tornado traveled through Pittsfield. The Tornado in July 2008 grazed the Town but created building structural issues, and some buildings were crushed. The tornado blocked roads with trees and made the roads inaccessible to fire apparatus, and took down telephone poles and power lines, with live wires exposed on the ground. The Town engaged neighbors for mutual assistance. The access to Wild Goose Pond was blocked, and rescuers had to hike in to reach residents. Trees that were blocked by fallen trees included Catamount Hill, Clough Road, Shingle Mill Brook Road, Greer Lane, Rocky Point Road, and Hill Road. One resident reported seeing the tornado. Private property damage concerns were conveyed to the Town. Much of the damage was on the rural outskirts of Town.	Wind, Tornado, Downburst, Severe Storm, Debris Impacted Infrastructure	FEMA, Epsom Hazard Mitigation Committee, CNHRPC

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Pittsfield EEE 2007- 2008	No	2007- 2008	---	N/A	N/A	A flock of emus were lost on Shingle Mill Brook Road due to EEE.	Biological, Public Health, Epidemic	Pittsfield Hazard Mitigation Committee
Severe Storms and Flooding - April Spring Flood 2007	1695	2007	Apr 15-23	\$124,700	Extensive flooding caused by severe storms impacted seven counties. Indirect peak discharge measurements on stream gages on the Suncook River at Short Falls Road in Epsom were 14,100 ft <sup>3</sup> , which was determined to be greater than 100-year flood discharge levels. The heavy rain combined with snow melt to cause small rivers and streams in much of New Hampshire to flood. Over land, the strong winds downed numerous trees. The downed trees caused widespread power outages, especially near the coast, and numerous road closures. The storm also brought heavy rain to the region which, when combined with snow melt, produced widespread flooding across much of the region.	Pittsfield received \$124,700 in FEMA Public Assistance funding for roads & bridges and protective measures. Shaw Road Bridge was washed out and caused extended road closures and detours. Its replacement process started in 2007 and Pittsfield is still working in 2016 on its replacement. Town appropriated State bridge aid, and has Town funding set aside - engineering is holding up the process right now. Hope to have bridge replaced in 2017.	Flood, Wind, Debris Impacted Infrastructure, Rapid Snow Pack Melt	FEMA, USGS Flood of 2007, Pittsfield Hazard Mitigation Committee
Pittsfield Transportation Accident-Mass Casualty 2006	No	2006	---	N/A	N/A	A transportation accident resulting in mass casualty occurred in front of Globe Manufacturing on Route 28 in 2006. There are now traffic lights at this location.	Transportation Accident, Public Safety, Mass Casualty	Pittsfield Hazard Mitigation Committee
Suncook River Avulsion in Epsom 2006	1643	2006	May 14-17	N/A	The Suncook River through Epsom changed its course during this recent heavy rain event and its resultant flooding. The River shifted hundreds of meters, flowing around two dams, creating about a mile of new river through a sand pit a half mile from its original course, and leaving a similar length of dry riverbed. The water carved through peat bogs and tore away a corner of a sand excavation pit. Local communities of Epsom, Allenstown, and Pembroke later dealt with siltation and erosion issues from the new river course	Area event. The Suncook River travels through Pittsfield south into Chichester and Epsom, where the avulsion occurred, then down to Pembroke and Allenstown. See storm effects on Pittsfield below.	Flood, Earth, Landslide, Erosion, Debris Impacted Infrastructure, Channel Movement	Concord Monitor, CNHRPC

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
Severe Storms and Flooding – Mother's Day Flood 2006	1643	2006	May 12-23	\$31,200	Extensive flooding caused by severe storms impacted seven counties including Merrimack and Hillsborough. The USGS recorded the highest flows on record for several rivers including the Contoocook River in Davisville village, Soucook in Concord, and Piscataquog in Goffstown.	Pittsfield received \$31,200 in FEMA Public Assistance funding for roads & bridges and protective measures. Widespread damage occurred and numerous roads were blocked including Tilton Hill Road, Barnstead Road. Flooding occurred on River Road because water was spilling over out the side of the Pittsfield Mill Pond Dam. Major damage occurred in the spill zone. The water was coming over the Pittsfield Mill Pond Dam at such a rapid rate, it deteriorated the catch basin at the bottom of the dam, removed about 25' of the bank's grassy area, and moved rocks. Flooding occurred on River Road. Riprap was brought in and the Town created a diversion wall to divert the water back into the Suncook River. The Town lost complete sections of Mountain Road and Berry Pond Road, with material gone down to the bedrock. The Town could not gain access to residents, so the National Guard was called in for assistance and they hiked to residents. Shaw Road Bridge washed out.	Flood, Wind, Debris Impacted Infrastructure, Erosion, Landslide	Pittsfield Hazard Mitigation Committee, FEMA, USGS, CNHRPC
Severe Storms and Flooding - Columbus Day Flood 2005	1610	2005	Oct 7-18	No	Extensive flooding caused by severe storms impacted five counties, including Merrimack and Hillsborough. Alstead experienced several fatalities as the result of dam failure.	Pittsfield did not apply for/receive funding. In October 2005, heavy rains caused flooding throughout New Hampshire, including Pittsfield. Sandbagging at the Pittsfield Mill Pond Dam was necessary to reduce flood threats. The flood washed out Tan Road, and people were evacuated by boat on Barnstead Road.	Flood, Wind, Debris Impacted Infrastructure, Erosion	Pittsfield Hazard Mitigation Committee, FEMA
Regional Thunderstorms and Lightning 2005	No	2005	12-Jun	N/A	During a thunderstorm, lightning struck and severely damaged the historic Loudon Town Hall on Clough Hill Road. Winds from a severe thunderstorm knocked down trees and power lines down in the towns of Warner, Hopkinton, Concord, Bow, Loudon, and Hopkinton in Merrimack County.	Pittsfield likely experienced the thunderstorm and lightning event.	Thunderstorm, Lightning, Severe Winds	CNHRPC, Area Hazard Mitigation Committees

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
<b>Snow Emergency 2005</b>	EM-3207	2005	Jan 22-23	\$5,800	Record and near record snowstorm for 8 NH counties including Merrimack and Hillsborough. Emergency protective measures declared for reimbursement.	<b>Pittsfield received \$5,800 in FEMA Public Assistance funding</b> for protective measures, including snow removal.	Extreme Temp, Snow	FEMA, CNHRPC
<b>Pittsfield Hostage Situation Circa 2005</b>	No	2005	Circa	N/A	N/A	Domestic hostage situation and resulting deaths on Will Smith Road	Hostage Situation	Pittsfield Hazard Mitigation Committee
<b>Earthquake 2.2M Henniker-Hopkinton Epicenter 2004</b>	No	2004	20-Jan	N/A	An earthquake measuring 2.2 on the Richter Scale was centered in the Henniker-Hopkinton area. Shaking and noise were reported, but no damage occurred.	Reports were likely made to the USGS from Pittsfield residents feeling the earthquake as a rumble or loud noise. The epicenter was across the region, a few communities to the west of Pittsfield.	Earth, Earthquake	Concord Monitor, January 2004, USGS, Earthquake Monitor, CNHRPC
<b>Snow Emergency Dec 2003</b>	EM-3193	2003	Dec 6-7	\$9,000	Record snow fall event impacting much of New England. In NH, 8 counties received emergency protective measures, including Merrimack and Hillsborough.	<b>Pittsfield received \$9,000 in FEMA Public Assistance funding</b> for protective measures, including snow removal.	Extreme Temp, Snow	FEMA, CNHRPC
<b>Snow Emergency Feb 2003</b>	EM-3177	2003	Feb 17-18	\$5,300	Record and near record snowstorm for 5 NH counties including Merrimack and Hillsborough. Emergency protective measures declared for reimbursement.	<b>Pittsfield received \$5,300 in FEMA Public Assistance funding</b> for protective measures, including snow removal	Extreme Temp, Snow	FEMA
<b>NH Drought Emergency 2002</b>	No	2002	Aug	N/A	All counties in the State of NH except Coos County. One of the hottest Augusts on record in Concord along with drought conditions since March made for a high fire danger in New Hampshire. Numerous forest fires were reported, including a 30-acre blaze in New Durham.	N/A, although Pittsfield was likely affected by dug wells going dry	Drought, Extreme Temperatures, Earth, Fire	Concord Monitor 8/20/02
<b>Snow Emergency 2001</b>	EM-3166	2001	Mar 5-7	\$8,500	Record and near-record snowfall from late winter storm, emergency declaration was issued for protective measures. Merrimack, Hillsborough and 5 other counties declared eligible.	<b>Pittsfield received \$8,500 in FEMA Public Assistance funding</b> for protective measures, including snow removal.	Extreme Temp, Snow	FEMA, CNHRPC
<b>Pittsfield Ice Jams Suncook River Circa 2000 - 2005</b>	No	2000 - 2005	Circa	N/A	N/A	Several Webster Mills Bridge ice jams from Suncook River. Pittsfield has had ice jams in the past and they could endanger the Pittsfield Mill Pond Dam.	Ice Jam	Pittsfield Hazard Mitigation Committee
<b>Regional Downbursts and Severe Winds 1999</b>	No	1999	6-Jul	N/A	Severe storms in July 1999 bring strong damaging winds and 3 downbursts. Two deaths occurred. The roof of the Pill building in Concord is blown off during a storm. The	N/A, although Pittsfield likely experienced some heavy winds as it is located in the region.	Severe Wind, Downburst	Concord Monitor, NH HSEM, CNHRPC

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					downburst was designated a macroburst (at least 2.5 miles in diameter). Other communities in the Central NH Region experienced damages			
Severe Storms and Flooding Summer 1998	1231	1998	Jun 12-Jul 2	No	Heavy flooding in six counties, including Merrimack and Hillsborough Counties. Damages of \$3.4m for all counties.	Pittsfield did not apply for/receive funding. As Pittsfield is within Merrimack County, it is likely experienced heavy rains and possibly some flooding.	Flood, Wind, Debris Impacted Infrastructure	FEMA
Ice Storm of 1998	1199	1998	Jan 7-25	No	This ice storm was the first to test our statewide and local emergency management systems and utility providers. Tree and infrastructure damage was extensive and power failures lasted up to two weeks in some parts of the state. In The Central NH Region, many lost power for over a week. This ice storm had severe impacts throughout most of the State, with 52 communities impacted. FEMA Disaster Declaration #1199, Six injuries and one death resulted. Damage totaled \$12,446,202. In addition, there were 20 major road closures, 67,586 people left without electricity, and 2,310 people without phone service.	Pittsfield did not apply for/receive funding.	Extreme Temp, Ice Storm, Power Failure, Communications Failure	FEMA, US Army Corps of Engineers NH Storms database, Pittsfield Hazard Mitigation Committee, Bow Times
Severe Storms and Flooding 1996	1144	1996	Oct 20-23	No	Heavy rains caused flooding in six counties, including Merrimack and Hillsborough Counties. Damage totaled \$2.3m for all counties.	Pittsfield did not apply for/receive funding. As Pittsfield is within Merrimack County, it is likely experienced heavy rains and possibly some flooding.	Flood	FEMA, NH HSEM
Storms and Floods 1995	1077	1995	Oct 20-Nov 15	No	Four NH counties were damaged by excessive rain, high winds and flooding, including Merrimack (not Hillsborough).	Pittsfield did not apply for/receive funding. As Pittsfield is within Merrimack County, it is likely experienced heavy rains, trees down and power outages.	Flood, Severe Winds	FEMA, Federal Register
Pittsfield Haz Mat Building Fire 1995	No	1995	---	N/A	N/A	The Suncook Valley Leather Tannery at 5 Main Street experienced a fire that took two weeks to extinguish. The environment was exposed to multiple chemicals due to fire suppression activities and the chemicals used in the facility. The original part of the building was built in the 1800s and was used in a chemically-dependent industry. Chemicals were also present in the building materials.	Fire, Hazardous Materials Spill	Pittsfield Hazard Mitigation Committee



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Severe Storm-Hurricane Bob 1991	917	1991	Aug 18-20	N/A for Pittsfield	Public assistance was available for Hillsborough County and 2 other counties (not declared in Merrimack County) as a result of damages caused by Hurricane Bob. The 2 seacoast counties fared the worst.	As Pittsfield is within Merrimack County, it likely experienced heavy rains, wind gusts, tree debris, power outages and possibly some flooding.	Severe Winds, Hurricane	FEMA
Flooding and Severe Storm 1990	876	1990	Aug 7-11	No data available	Moderate to heavy rains caused flooding in eight counties, including Merrimack and Hillsborough Counties. Damage totaled \$2.3m for all counties	As Pittsfield is within Merrimack County, it likely experienced heavy rains, tree debris, power outages and possibly some flooding.	Flood, Severe Winds	FEMA, NH HSEM
Severe Storms and Flooding 1987	789	1987	Mar 30-Apr 11	No data available	Flooding caused by snowmelt and intense rain was felt in seven counties, including Merrimack and Hillsborough Counties. Nearly \$5m in damages.	As Pittsfield is within Merrimack County, it likely experienced rapid snow pack flooding and debris impacted infrastructure.	Flood, Rapid Snow Pack Melt, Debris Impacted Infrastructure	FEMA, NH HSEM
Severe Storms and Flooding 1986	771	1986	Jul 29-Aug 10	N/A for Pittsfield	Severe summer storms with heavy rains, tornadoes, flash floods, and severe winds, damaged the road network statewide. Disaster declared in Cheshire, Sullivan and Hillsborough Counties (not declared in Merrimack County).	It is likely Pittsfield experienced heavy rains and possibly some flooding.	Flood, Wind	FEMA, NH HSEM, CNHRPC
Earthquake 4.5M Sanbornton 1982	No	1982	18-Jan-82	N/A	An earthquake originating near in Sanbornton in Belknap County measured 4.5M and was felt in various locations throughout the State. The area it was felt includes all of northern Merrimack County including the Concord area communities in Central NH.	With a quake of this size, it is highly likely Pittsfield experienced some strong shaking and noise	Earthquake	Earthquake-track.com, CNHRPC
Concord Beaver Meadow Tornado 1979	No	1979	Jul 27	N/A	In Concord, a small twister was sighted at Beaver Meadow, where 13 trees were toppled, including a 100-foot tall pine. The duration was about 15-20 seconds.	N/A, although Concord is 2 communities to the southwest of Pittsfield	Wind, Tornado	Concord Monitor
NH Blizzard of 1978	No	1978	Feb 5-7	N/A	RSI Index of Category 5 (Extreme). This snowstorm is described as "a natural disaster of major proportions" and stunned all of New England. The storm was caused by an intense coastal Nor'easter that produced winds in excess of hurricane force and very high snow totals. Most of southern New England received more than three feet of snow, 25-33" in NH and higher throughout New England. Abandoned cars along roadways immobilized infrastructure	Although it is unknown what Pittsfield experienced, it is likely many of the same depths and effects occurred across the Town.	Extreme Temperatures, Severe Snow Storms, Windchill, Power Failure	American Meteorological Society, Northeast States Emergency Consortium, CNHRPC

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					and blocked major interstates. For over a week, New England remained paralyzed by the storm. All of New Hampshire was impacted. Governor Meldrim Thomson Jr. declared a state of emergency.			
<b>Quebec Earthquake 4.8M 1973</b>	No	1973	15-Jun	N/A	An earthquake originating near the Quebec border at a scale of 4.8 was felt in various locations throughout NH.	N/A, although some Pittsfield residents may have felt the effects	Earthquake	Northeast States Emergency Consortium
<b>Severe Storms and Flooding 1973</b>	399	1973	Jul 11	No data available	All counties in the State of NH experienced storm damage and were declared disaster areas, including Merrimack and Hillsborough Counties.	No information available	Flood, Wind	FEMA
<b>Pittsfield Wildfire 1965</b>	No	1965	May 12	N/A	N/A	A wildfire occurred along Clough Hill Road resulting in the loss of a large section of forest, about 100 acres	Wildfire	Pittsfield Hazard Mitigation Committee
<b>Pittsfield Wildfire 1956</b>	No	1956	May 9	N/A	N/A	A fire of unknown origin burned 90 acres near Hardy's Place on North Village Road, which was then Route 106.	Wildfire	Pittsfield Hazard Mitigation Committee
<b>Older Hurricanes 1954-1991</b>	No	1954	to 1991	N/A	Many older hurricanes have impacted New Hampshire including the 1954 – 1991 Hurricanes: Carol on August 31, 1954 (tree and crop damage), Edna on September 11, 1954, Donna on April 12, 1960 (heavy flooding), Doria on August 28, 1971, Bell on August 10, 1976, Gloria on September 27, 1985, and Bob in 1991.	Downed trees, wind damage, and flooding were likely experienced in Pittsfield during many of these hurricanes.	Wind, Flood, Hurricane, Tropical Storm, Debris Impacted Infrastructure	NH Homeland Security and Emergency Management,
<b>10 Severe Snowstorms 1940-1978</b>	No	1940	to 1978	N/A	Ten severe snowstorms are documented in south-central New Hampshire during this time span, February 14-15, 1940 (depths over 30" and high winds), February 14-17, 1958 (20-33"), March 18-21, 1958 (22-24"), March 2-5, 1960 (up to 25"), January 18-20, 1961 (up to 25", blizzard conditions), January 11-14, 1964 (up to 12"), January 29-31, 1966 (up to 10"), February 22-28, 1969 (24-98", slow-moving storm), December 25-28, 1969 (12-18"), January 19-21, 1978 (up to 16").	Although it is unknown what Pittsfield experienced, it is likely many of the same depths occurred.	Extreme Temperatures , Severe Snow Storms, Ice, Windchill, Power Failure	American Meteorological Society

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Event	Declared Disaster DR-	Year	Date	FEMA Public Assistance	Area Effects Surrounding Pittsfield	Local Effects Occurring in Pittsfield	Hazard Category	Source
<b>Pittsfield Hurricane of 1938</b>	No	1938	Sep 21	N/A	Hurricane made landfall as a 3 on the Saffir-Simpson Scale, killed about 682 people and damaged or destroyed over 57,000 homes. Most deadly New England hurricane. Central New Hampshire was inundated with water. Downed trees caused extensive damage to homes, businesses and community infrastructure. President Roosevelt ordered emergency aid be sent to NH, including Merrimack County	According to the 1939 Town Report: Pittsfield and surrounding towns were visited by a hurricane from the southeast, commencing about four-thirty o'clock in the afternoon, which caused much damage to buildings, timber lands, shade trees, orchards and the apple crop, telephone and electric light lines. The blown-down timber in Pittsfield is estimated to be about seven million feet. Logs from this blown-down timber are being purchased by the federal government and stored in ponds. The Grammar School roof was repaired extensively. A "Grave Forest Situation" was declared for citizen action.	Wind, Hurricane, Flood, Debris Impacted Infrastructure	Wikipedia, Concord Monitor, Pittsfield Town Report 1939
<b>Pittsfield Flood of 1936</b>	No	1936	Mar 11-21	N/A	Simultaneous high snowfall totals, heavy rains, and warm weather combined to hit all of New England. Floods killed 24 people, caused \$133,000,000 in damage, and made 77,000 people homeless in New England. The great flooding of 1936 resulted from heavy rains and rapid snow pack melt. Snow north of Concord contributed to the higher waters in the Winnepesaukee, Contoocook and Pemigewassett rivers that were largely responsible for the destruction in Concord and the surrounding area. NH issued boil water warnings to everyone.	March flood damage repair (\$2,100) was 1/3 of the entire Highway Department budget for 1937 (\$6,500).	Flood, Ice Jams, Rapid Snow Pack Melt	Concord Monitor, Union Leader, Army Corps of Engineers Ice Jam Database, Pittsfield Annual Report 1937

Source: Compilation of Events by Pittsfield Hazard Mitigation Committee; CNHRPC

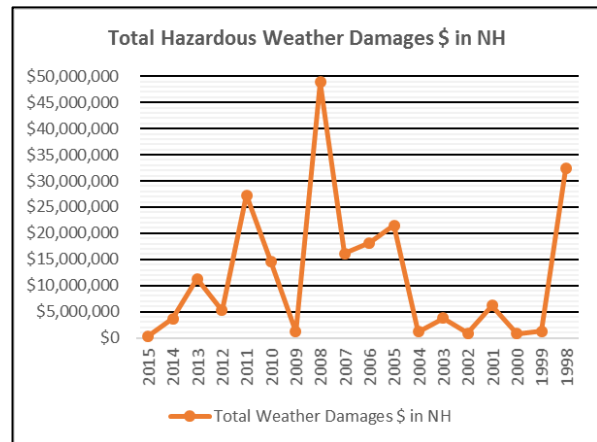
## Local Climate Changes and Extreme Weather

In the State and the Central NH Region, like any other areas, exist our own “micro-climate” areas that can be analyzed for future susceptibility to disasters and hazard events. New Hampshire has obtained high costs of damage over time due to hazardous weather and declared disasters. A review of the state and area history can provide a perspective on what Pittsfield can expect to see in terms of extreme weather in the future.

**Table 11**

**Summary of Hazardous Weather Fatalities, Injuries, and Damage Costs in NH, 1998-2015**

Year	Fatalities	Injuries	Total Damages \$
2015	2	34	\$370,000
2014	0	2	\$3,700,000
2013	0	30	\$11,250,000
2012	1	4	\$5,280,000
2011	1	2	\$27,280,000
2010	1	6	\$14,630,000
2009	1	0	\$1,130,000
2008	2	5	\$48,890,000
2007	0	3	\$16,150,000
2006	1	9	\$18,200,000
2005	4	9	\$21,500,000
2004	0	11	\$1,200,000
2003	2	29	\$3,800,000
2002	0	7	\$900,000
2001	0	2	\$6,200,000
2000	2	6	\$800,000
1999	3	17	\$1,300,000
1998	1	23	\$32,400,000



### **Annual Hazardous Weather \$ Damages in NH**

Source: National Oceanic and Atmospheric Administration, last accessed 12/16/16

<http://www.nws.noaa.gov/om/hazstats.shtml>

Injuries to people and the costs of damages in New Hampshire have increased as a result of hazardous weather. These increases of injuries and damages can be generally applied to the major disasters declared in the State. As displayed in **Table 11**, the highest numbers of damage costs correlate to the 1998 (**\$32m**) and 2008 (**\$49m**) ice storms between 1998 and 2015.

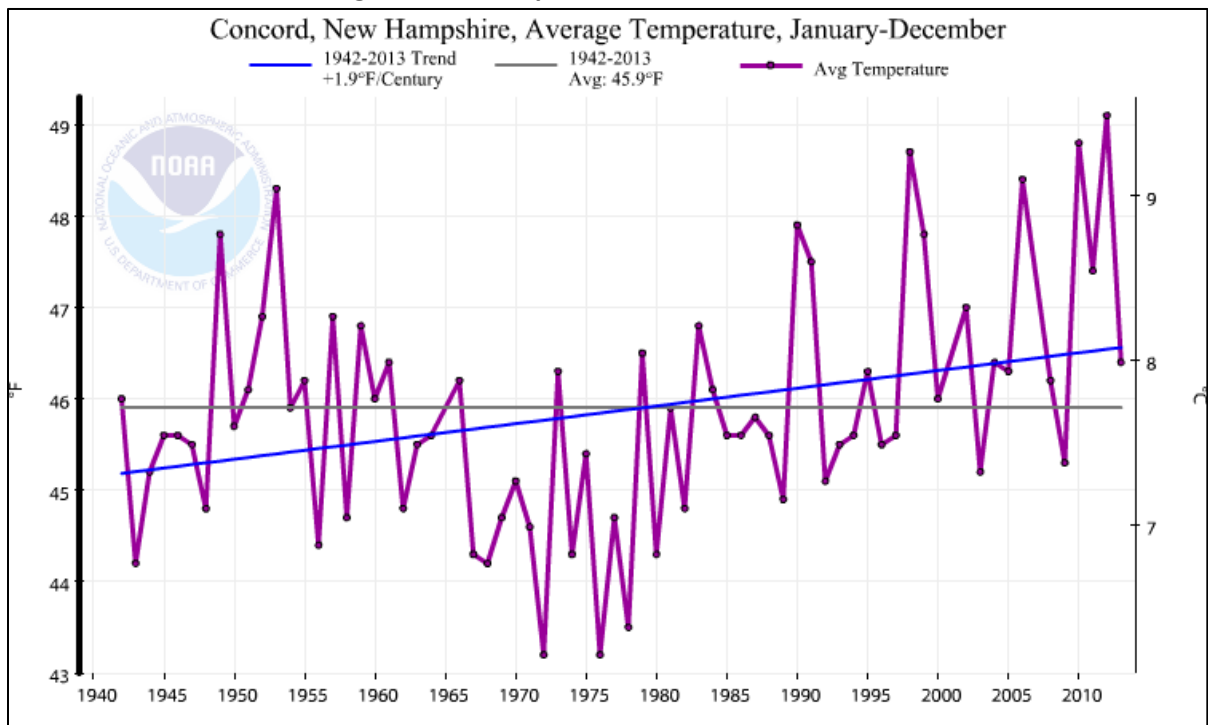
The number of injuries and fatalities have a less distinct association, with the highest numbers shown in 2013 (**30**) and 2003 (**31**). However, the greatest number of fatalities during this time period occurred in 2005 (**4**), likely during the time of the Columbus Day floods that hit the southwestern section of the State very hard.

Much of the rest of the discussion in this section has been directly excerpted or paraphrased from the [Central NH Regional Plan 2015](#). The Central NH Region's weather history is summarized to provide a view of the trends around the Concord area where the weather measurements have taken since 1939 at the Concord Airport. Pittsfield is geographically close to the City of Concord (within **15** miles), so these measurements should have some reasonable basis in Pittsfield.

**Figure 4** displays Concord's average annual temperature between 1942 (**46.0°F**) and 2013 (**46.4°F**). Earlier data was not available. As with typical New Hampshire weather, the seasonal temperatures can vary year after year and without obtaining an average, changes are difficult to see. The displayed trend line allows a definitive way of averaging all of the temperatures and illustrates a **+2.8°F** increase in average annual temperature during this 70-year time period.

**Figure 4**

**Average Annual Temperature for Concord, 1942-2013**

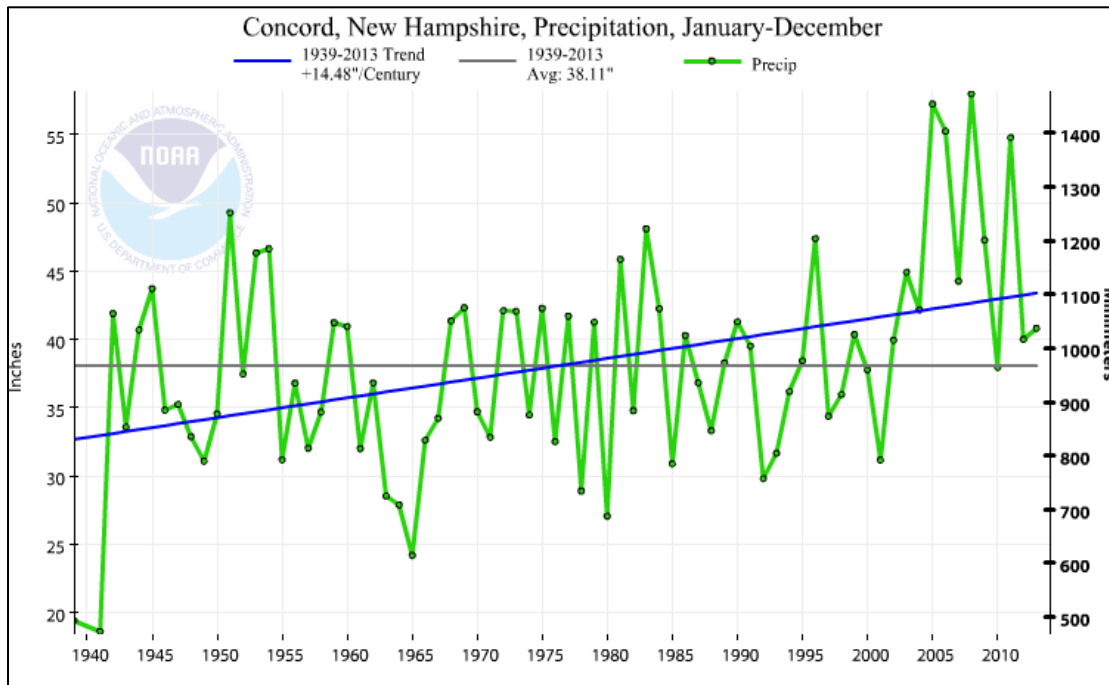


Source: National Oceanic and Atmospheric Administration

For precipitation changes, **Figure 5** displays Concord's average annual precipitation rates between 1939 and 2013. Varying seasonal rainfall amounts continue over the decades. The trend line serves the same purpose to illustrate an overall increase of **+14.48"** in precipitation over the 74-year time period from 1939 to 2013.

Figure 5

Average Annual Precipitation for Concord, 1939-2013

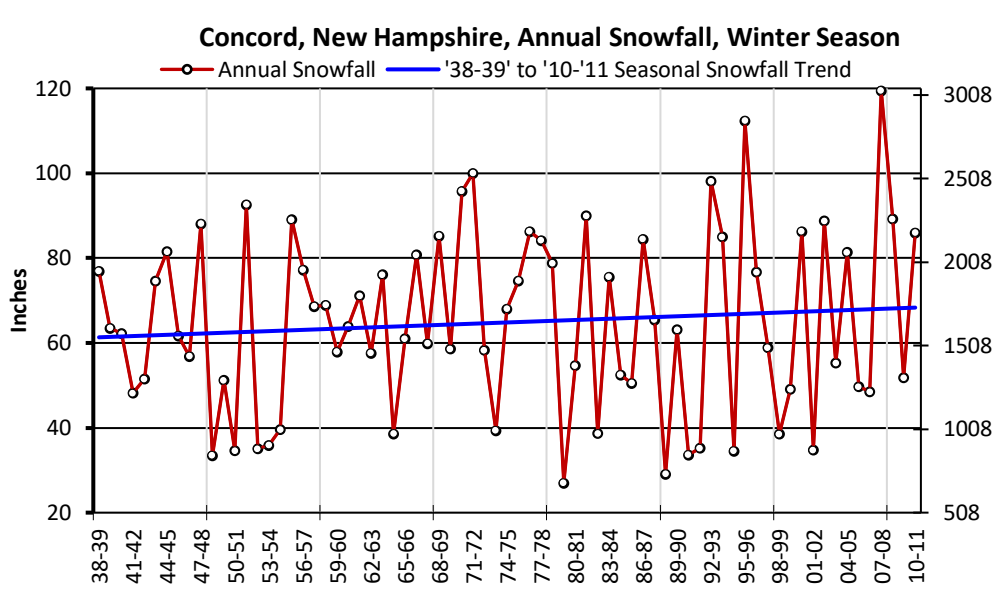


Source: National Oceanic and Atmospheric Administration

Similar to temperature and precipitation, annual snowfall amounts as reported by NOAA were observed for Concord starting in the **1938-1939** winter season through the **2010-2011** winter season. Snowfall data from **2011-2013** was not available. As displayed in **Figure 6**, the amount annual of snowfall has varied greatly over the past century. Overall, the trend line indicates a slight increase in annual snowfall inches, from about **60"** in the **1938/39** season to about **68"** in **2010/11**, totaling an increase of **+8"** of snowfall over the 72-year time span.

Figure 6

Average Annual Snowfall for Concord, Winter Seasons 1938/39 - 2010/11



Source: NOAA Compiled by: CNHRPC

This climate data may certainly be relevant to the entire Central NH Region which includes the Town. The Central NH region climate summation is that the temperature is getting warmer, the precipitation is increasing, and the snowfall is slightly increasing according to the National Oceanic and Atmospheric Administration's data collection at the Concord airport. There are no indications to see these trend lines reverse although the snowfall varies greatly from one season to the next, almost in an alternating pattern.

The Southern NH Climate Change Assessment, formally entitled *Climate Change in Southern New Hampshire: Past, Present, and Future, 2014* by the University of New Hampshire, reviewed current climate conditions and projected future conditions of Southern New Hampshire under potential low and high emission scenarios. Their past and future climate overview is illustrated in Figure 7.



Figure 7

Southern NH Climate Assessment Projections

As a result of anticipated extreme weather continuing and climate changes in Central NH and Pittsfield, consideration should be given for potential impacts to the community. A few new issues are considered, although the list is not detailed. For more information on these topics, refer to the **Central NH Regional Plan 2015**.

**More Human Health Emergency Events**

- ☞ Illnesses such as heatstroke, fainting, and heat exhaustion.
- ☞ Excess heat especially dangerous for the aging population and residents without air conditioning.
- ☞ Increase in greenhouse gas emission, energy demand, and air conditioning use and cost.
- ☞ More favorable conditions for insects carrying viruses and diseases, such as West Nile Virus.
- ☞ Increases risk of waterborne illnesses caused by pollutants entering the town's water supply, commonly through stormwater runoff and sewage overflow.
- ☞ Infrastructure failure by adding additional stress, leading to potential injury or loss of life.
- ☞ More air pollution, leading to asthma and breathing disorders.

**Natural Environment Disruption**

- ☞ Too much water and/or lack of water can disrupt trees and plants natural growing cycle, potential leading the tree, plant, and surrounding area to die.
- ☞ Additional water and drought conditions affect wetland discharge, stream flow, and water quality, affecting the habitat's quality of life and species' health within the area.
- ☞ Debris will be a result of harsh flooding, including trash and downed trees, polluting waters, harming habitats, and damaging property and infrastructure.

**Past Data and Future Climate Overview**

**SOUTHERN NH CLIMATE ASSESSMENT Projections**

**TEMPERATURE**

What have we seen since 1970?

- Average maximum temperatures have warmed by 2.0°F (annual) and 2.9°F (winter)
- Average minimum temperatures have warmed by 3.2°F (annual) and 6.1°F (winter)

What can we expect?

- Summers will be hotter: 16-47 days above 90°F
- Winters will be warmer: 20-45 fewer days below

**RAINFALL**

What have we seen since 1970?

- Annual precipitation has increased by 8-22%
- Frequency and magnitude of extreme events

What can we expect?

- Precipitation annual average will increase: 15-20%
- More frequent and severe flooding

**SNOW**

What have we seen since 1970?

- Fewer days with snow cover
- Lake ice-out dates occurring earlier

What can we expect?

- Significant decrease of 20-50% in number of snow covered days

**Declining Forest Health**

- ☞ Large weather events such as heat stress, drought, and periods of winter thaw followed by intense cold can lead to loss of trees.
- ☞ Become susceptible to invasive species and diseases, such as the Hemlock Woolly Adelgid.
- ☞ Loss of trees can have a direct impact on portions of the region's economic components, including declining tourism.

**Fewer Recreation Opportunities**

- ☞ Weather Impacts on Recreational Trails such as debris, flooding and erosion.
- ☞ Snowmobiling, ice fishing, snow shoeing, skiing and snowboarding provide numerous sources of winter recreation and winter tourism, enhancing the quality of life and economy, will be affected with shorter seasons.

**Risks to the Built Environment**

- ☞ Critical infrastructure such as roads, bridges, culverts, stormwater drainage systems, water and wastewater treatment facilities, natural gas lines, electric lines and poles might be at risk of severe damage or failure if the anticipated extreme weather events occur.
- ☞ Damaged infrastructure cannot provide services to homes and businesses, disrupting the economy and may endanger public health.
- ☞ Culverts are at risk to extreme precipitation events, including rain, snow, and ice.
- ☞ Residents who experience damage with flooding to their homes and personal belonging may lack proper flooding insurance, placing the resident in financial hardship.
- ☞ Dams with High Hazard and Significant Hazard classifications are the most likely to cause the largest amount of damage or loss of life.

**Increasing Municipal Transportation Systems Maintenance Needs**

- ☞ Volume of flooding is expected to increase, potentially closing roads and increasing the travel time for drivers and increasing the cost and energy use.
- ☞ Flooding can also cause damage to pavement and embankments, increasing maintenance, repair, and replacement costs to municipalities.
- ☞ Extreme precipitation will also increase erosion, decreasing certain infrastructure components design life span.

**Aging and Inadequate Stormwater Infrastructure**

- ☞ Stormwater infrastructure such as catch basins, pipes, discharge points, and culverts that redirect stormwater runoff can be impacted by flooding and cannot perform their function.
- ☞ Blocking of water can lead to flooding of the area and roadways, potential leading to the closure of nearby roads.
- ☞ Components of stormwater infrastructure are outdated, and increased flows are added stress to the system, more money to maintain and higher replacement costs.

- ☞ Increased development with increased amounts of impervious surface adds the volume of stormwater runoff within more urban area.

**Decreasing Water Resources**

- ☞ Water quality and quantity are both threatened by projected changing weather events, with threats of flooding, drought, erosion and stormwater runoff.
- ☞ By preventing groundwater from replenishing, additional runoff and sediments can lead to intensify flows in rivers and streams with higher contamination levels of unwanted nutrients and pathogens.
- ☞ Additional water treatment may be necessary, potentially overloading treatment systems.
- ☞ Contamination can pollute sewage, threatening the performance of wastewater treatment facilities.
- ☞ Increased occurrences in flooding can also intensify flows, causing overloading of treatment system.
- ☞ When the ground is frozen, rapid snow melt from warm days or intense rain is not able to infiltrate the ground, leading to drought conditions.

**Changing Food and Agriculture Production**

- ☞ Merrimack County is the top county in the State for agriculture sales of higher temperatures will promote a longer growing season for most crops, benefiting a larger number of local crops.
- ☞ Negative impacts can potentially alter the region to a climate not suitable for growing valuable local crops such as apples and blueberries.
- ☞ Temperature are expected to slow weight gain and lower the volume of milk produced by dairy cows.
- ☞ Higher overnight temperatures are anticipated to prevent the dairy cows and cattle from recovering from heat stress.
- ☞ Warmer temperatures and increase in carbon dioxide in the air creates a more ideal environment for pests and weeds, potentially increasing the use of herbicides and pesticides on crop.

This is a sampling of how changing climate and severe weather impacts can affect communities in New Hampshire, in the Central NH Region and in Pittsfield. Consideration should be given to applicable items during the development and update of the **Hazard Mitigation Plan**.

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## Detailed Hazard Events in Pittsfield

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A compilation of hazards that have occurred in Pittsfield and the Central NH Region area is provided in the prior Table of **Local and Area Hazard Events**. **Hazard Locations in Town** are areas to watch, areas of particular susceptibility and may be vulnerable to future events. **Potential Future Hazards** are determined based on the past hazard events, possibilities, and existing issues in Town to provide focus to future potential problem areas and to help with mitigation action development.

Each hazard is generally described and then is noted how and where it could occur in Pittsfield. For all hazards examined in this Plan, a table of the **Hazard Locations in Town** and the **Potential Future Hazards** is provided at the end of this Plan Chapter.

Hazard events were researched using a wide variety of sources for the **original Pittsfield Hazard Mitigation Plan 2006** which were the basis for many of the past disaster events and updated to the present. The **Hazard Mitigation Plan Update 2012** provided recent information on many of the extreme disasters experienced between 2005-2008. Sources and techniques included interviewing local townspeople, researching Town Histories and related documents, and collecting information from governmental or non-profit websites. Presidentially declared disasters or other significant hazard events are described for the surrounding area or Merrimack County for the **Hazard Mitigation Plan Update 2017** and some of them may have affected the community. These disasters were also considered by the Committee when determining the risk evaluation.

Committee member experiences, knowledge, and recollections generally comprise the **Local and Area Hazard Events** and **Hazard Locations in Town**. While additional hazards might have occurred in Town, those events in the Plan are what the Committee chose to list, or were familiar with to list, to comprise the hazard events within the in Tables. The same is true for the **Potential Future Hazards** section.

## FLOODING

Floods are defined as a temporary overflow of water onto lands that are not normally covered by water. Flooding results from the overflow of major rivers and tributaries, storm surges, and/or inadequate local drainage. Floods can cause loss of life, property damage, crop/livestock damage, and water supply contamination. Floods can also disrupt travel routes on roads and bridges. However, floods can be beneficial to the low lying agricultural areas which are used for active farm lands by enriching the soil.

Floodplains are usually located in lowlands near rivers, and flood on a regular basis. The term *100-year flood* does not mean that a flood will occur once every 100 years. It is a statement of probability that scientists and engineers use to describe how one flood compares to others that are likely to occur. It is more accurate to use the phrase *1% annual chance flood*. This phrase means that there is a 1% chance of a flood of that size happening in any year.

Inland floods are most likely to occur in the spring due to the increase in rainfall and melting of snow; however, floods can occur at any time of year. A sudden thaw during the winter or a major downpour in the summer can cause flooding because there is suddenly a lot of water in one place with nowhere to drain. Flooding is the most common natural disaster to affect New Hampshire, a common and costly hazard.

There are several types of **Flooding** hazards examined in the **Hazard Risk Assessment**:

- ☒ **Floods and Flash Floods**
- ☒ **Rapid Snow Pack Melt**
- ☒ **Ice Jams**
- ☒ **Riverine Fluvial Hazard Flooding, Erosion, Channel Movement**

### Magnitude of Flooding

Flooding magnitude, or how bad flooding could get in Pittsfield, can be measured by the following SFHA Flood Zone scale in **Table 12**. “Flooding” encompasses all types of flooding including **Floods and Flash Floods**, **Rapid Snow Pack Melt**, **River Ice Jams** and **Fluvial Hazard Erosion and Channel Movement**.

**Table 12**  
Special Flood Hazard Area (SFHA) Zones on 2010 DFIRMS

Special Flood Hazard Areas on Pittsfield DFIRMS	
<b>Zone A</b>	<b>1% annual chance of flooding</b> <ul style="list-style-type: none"> <li>• <b>100-year</b> floodplains <i>without</i> Base Flood Elevations (BFE)</li> </ul>
<b>Zone AE</b> (with or without floodways)	<b>1% annual chance of flooding</b> <ul style="list-style-type: none"> <li>• <b>100-year</b> floodplains <i>with</i> Base Flood Elevations (BFE)</li> <li>• some identified as <b>floodways</b> with stream channel and/or adjacent floodplain areas</li> <li>• areas must be kept free of encroachment so 1% annual chance of flood will not substantially increase flood height</li> </ul>
<b>Zone X</b>	<b>0.2% annual chance of flooding</b> <ul style="list-style-type: none"> <li>• <b>500-year</b> floodplain <i>without</i> Base Flood Elevations (BFE)</li> <li>• sheet flow flooding less than 1-foot deep</li> <li>• stream flooding where the contributing drainage area is less than 1 square mile</li> <li>• areas protected from 100-year floodplains by levees</li> <li>• OR areas determined to be outside the 0.2% annual chance of flood (see DFIRMS)</li> </ul>


Sources: FEMA and NH Geographically Referenced Analysis and Transfer System (NH GRANIT) websites


**Pittsfield DFIRMS** can be viewed online at and downloaded from the [NH Geographically Referenced Analysis and Transfer System \(NH GRANIT\)](#) website. Alternatively, the DFIRMS’ respective paper FEMA 2009 Floodplain Maps in the Town Office could be consulted. Should the **Zone A** or **Zone X** or **Zone AE** flood to either the 100-year or 500-year level, the DFIRM areas will help **measure the location of the floodplain and potential magnitude of the flood**.

## Flooding in Pittsfield

Pittsfield has few areas particularly susceptible to flooding. Rapid pack snow melt affecting roadways, beaver dam breaches and the controlled US Army Corps of Engineer flooding are the most likely flood events. There are many hilly roads in Town that could washout during flash flooding and heavy rain events. Some key culvert pipes need to be up-sized to address the increased water, and these are listed as Actions in **8 MITIGATION ACTION PLAN**. The Town has been working with the State and FEMA to upgrade culvert pipes.

These small brooks, ponds and wetlands in Pittsfield contribute to flooding these and other areas in Town:

 **Watercourses:** Suncook River, Gulf Brook, Sanborn Brook, Tan Brook, Kelley Brook, Cram Brook, Berry Pond Brook, Shingle Mill Brook, White's Brook and several unnamed brooks.

 **Waterbodies:** Berry Pond, Blake Pond, White's Pond, Wild Goose Pond, Jenness Pond, beaver meadow swamp and several unnamed ponds and wetlands.

## Road Washouts

Roads in Pittsfield are vulnerable to washouts and floods but do not consistently washout during flash flooding and heavy rain events. A listing of past and future potential road washouts is shown on [Map 1 Potential Hazards](#) and [Map 2 Past Hazards](#). A [Table](#) of undersized Town-owned culverts to be upgraded to ensure their carrying capacity can be found in **5 COMMUNITY VULNERABILITY ASSESSMENT**. These roads are either most common, regular locations of **road washouts** or water flooding over the roadways or are locations which could be washed out during a very heavy rain event:

- Berry Pond Road (at culvert into Berry Pond, above 4 corners at foot of the hill; if that culvert fails, the rest down Berry Pond fail)
- Clough Road (at Shingle Mill Brook and at unnamed brook culverts)
- Dowboro Road
- Eaton Pond (on Catamount Road/Route 107)
- Governor's Road
- Hills Road (2 sites, come out of the fields)
- Ingalls Road (at 2 sites, both from swamp overflow of large cross culverts, high volume of water)
- Jenness Pond Road (after intersection with Route 107)
- Jenness Pond Road (past Glen and Glade Campground)
- Johnson Road
- Mountain Road (whole length 1.0 miles gravel and high slope with fields on either side (4 sites) and runoff)
- River Road (after Watson Street on a Suncook River tributary)
- Sanderson Road

- Shaw Road at Kelly Brook
- Shingle Mill Brook Road-private road (at beaver meadow swamp)
- Tan Brook (at Tan Road, Dowboro Road intersection with Epsom town line)
- Tan Road at Blake Pond
- Thompson Road
- Tilton Hill Road
- Tommytown Road (just above)
- Webster Mills Bridge (ice jam)
- Wild Goose Pond Road (just below)
- Will Smith Road at Cram Brook
- Will Smith Road (at site off Tilton Hill Road)
- Many other gravel roads (ditching, flood over road, washouts)

#### **Dam Failure**

There are a few dams in Pittsfield with potential for flooding damage if breached. Two **(2) High Hazard** dams could have catastrophic consequences If a dam failure occurred, particularly downstream, Berry Pond Dam (Berry Pond Brook) and Pittsfield Mill Pond Dam (Suncook River). Two **(2) Significant Hazard** dams are also located in the community. The following areas have been identified by the Hazard Mitigation Committee as being immediately susceptible to the impacts of dam failure **flooding**

- Water Streetm Downtown (Suncook River)
- Downstream communities – Epsom, Chichester, Allenstown, Pembroke (Suncook River)
- Winant/Winsunvale residential community (Whites Pond, tributary of Suncook River)

#### **Special Flood Hazard Areas (SFHAs)**

**Base Flood Elevations (BFEs)** are abundant within Central NH along the Merrimack River, Contoocook River, Blackwater River, Soucook River and Suncook River on the DFIRMs of 2010. In Pittsfield (**330120**), New Hampshire (**D33013C**), there are few DFIRMs identifying floodplains. There are **14** DFIRMS in Pittsfield of which **6** panels contain floodplains of the **Suncook River: #0379, #0383, #0387, #0388, #0389, #0389**. The Suncook River DFIRMs include **Zone AE** floodways (1% annual risk of flooding), **Zone AE** floodplains with **BFEs** (1% annual risk of flooding) or **Zone X** (0.2% annual risk of flooding) locations in Town. These are highlighted gray in **Table 13**.

Two **(2)** DFIRMS **#0360** and **#0380** (**Sanborn Brook**) display the Special Flood Hazard Area (SFHA) **Zone A** (1% annual risk of flooding).

The **6** remaining DFIRMs, **#0370, #0386, #0392, #0393, #0394** and **#0415** either have no panel printed or do not display floodplains within Pittsfield. When panels are not printed, it means floodplains are not



present. Panel **#0370** only displays the floodplains in abutting communities. **Table 13** also provides this information.

**Table 13**

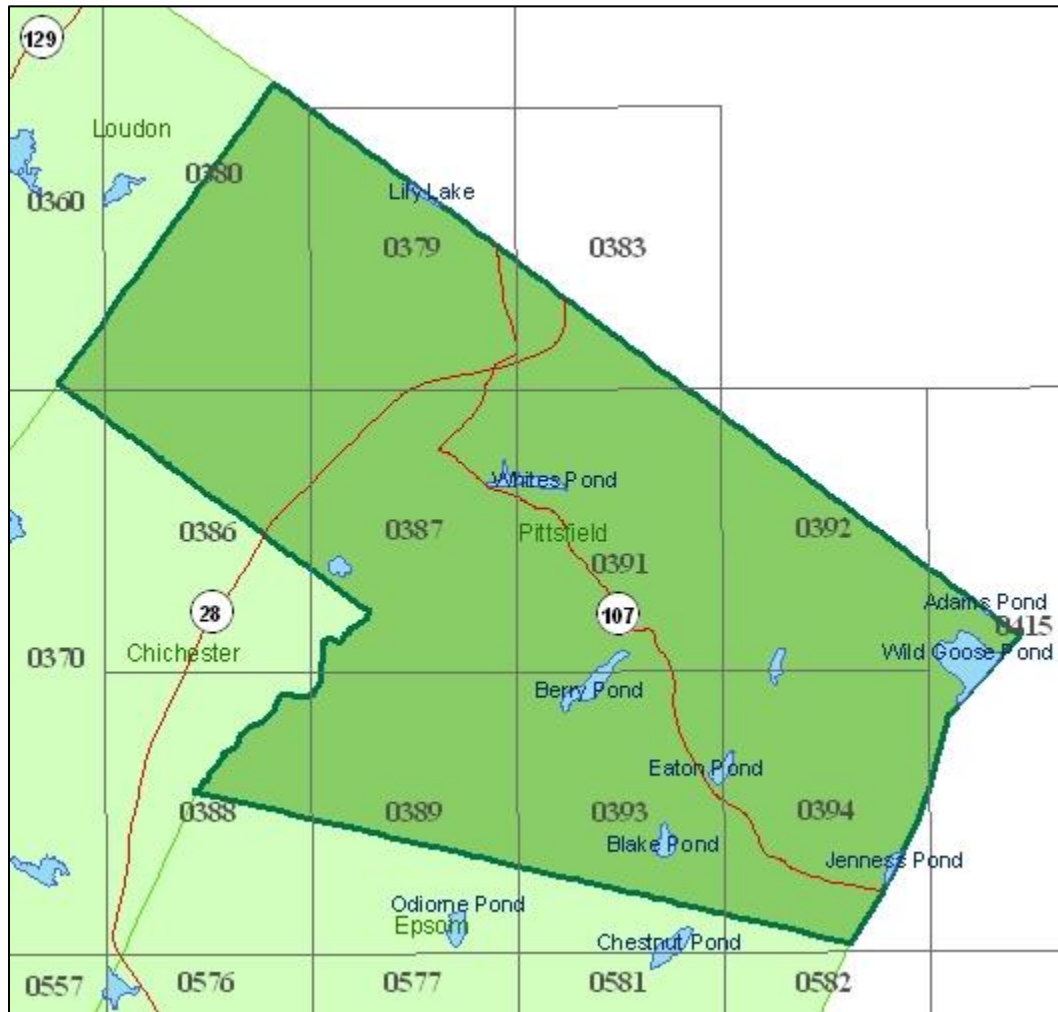
**Locations of Pittsfield Special Flood Hazard Areas (SFHA) on 2010 DFIRMS**

<b>Panel NH (D33013C)</b>	<b>Flood Zones in Pittsfield</b>	<b>Base Flood Elevations (BFEs)</b>	<b>Water Body Areas</b>	<b>Community of Pittsfield (330120) Geographic Location</b>
<b>0379</b>	AE with floodway, AE, X	486, 485, 484	<b>Suncook River</b>	Northern central section, abuts Belknap County (Barnstead). Catamount Street, Shaw Road, Route 28, Upper City Road, Norris Road.
<b>0383</b>	AE with floodway, AE, X	490, 489, 487	<b>Suncook River</b>	Northeast center of Town. Follows Route 28 (Suncook Valley Highway) entering from Barnstead-Belknap County. Will Smith Road
<b>0387</b>	AE with floodway, AE, X	486, 482, 480, 468, 444, 440, 436, 431, 425, 4125, 409	<b>Suncook River</b>	Central-western area with Route 28 and Route 107. Pittsfield Mill Pond Dam, Main Street, Tilton Hill Road, Downtown, Catamount Street, South Main Street, Dowboro Road, Concord Hill Road.
<b>0388</b>	AE with floodway, AE, X	399, 381, 376, 361, 353	<b>Suncook River</b>	Southwest corner abutting Chichester and Epsom. Route 28 (Suncook Valley Highway), Webster Mills Road. Perry Brook in Chichester.
<b>0389</b>	AE with floodway, AE	409, 405, 399	<b>Suncook River</b>	Southwest section of Town. Prescott Road, Dowboro Road, Webster Mills Road
<b>0391</b>	AE with floodway, AE	487	<b>Suncook River</b>	Center of Town. Route 107, Tilton Hill Road, White's Pond, Wild Wood Drive, Berry Pond Road, True Road, Catamount Road
<b>0360</b>	A	N/A	<b>Sanborn Brook</b>	Northwest corner of Town, abutting Loudon and Chichester. Very small section, no roads.
<b>0380</b>	A	N/A	<b>Sanborn Brook</b>	Western section of Pittsfield, abutting Loudon. Old Colony Road, Osborne Wildlife Management Area, Loudon Road, Leavitt Road.
<b>0370</b>	None	N/A	<b>None</b>	Very small northwest edge, carries a short section of Sanborn Brook.
<b>0386</b>	No printed panel	N/A	<b>N/A</b>	South section abutting Chichester with Route 28.
<b>0392</b>	No printed panel	N/A	<b>N/A</b>	Northeast section abutting Barnstead.
<b>0393</b>	No printed panel	N/A	<b>N/A</b>	South central section, Route 107 abutting Epsom and with Blake Pond.
<b>0394</b>	No printed panel	N/A	<b>N/A</b>	Southeastern-most panel, with Route 107 and Jenness Pond, abutting Northwood.
<b>0415</b>	No printed panel	N/A	<b>N/A</b>	Eastern corner abutting Strafford and Barnstead.

Sources: FEMA and NH Geographically Referenced Analysis and Transfer System (NH GRANIT) websites

Figure 8 displays the relative location of each of the DFIRM panels in the community used in Table 13. This set of DFIRMs is excerpted from the *Merrimack County Flood Insurance Study (FIS) of 2010*.

Figure 8  
DFIRM Panel Location, 2010

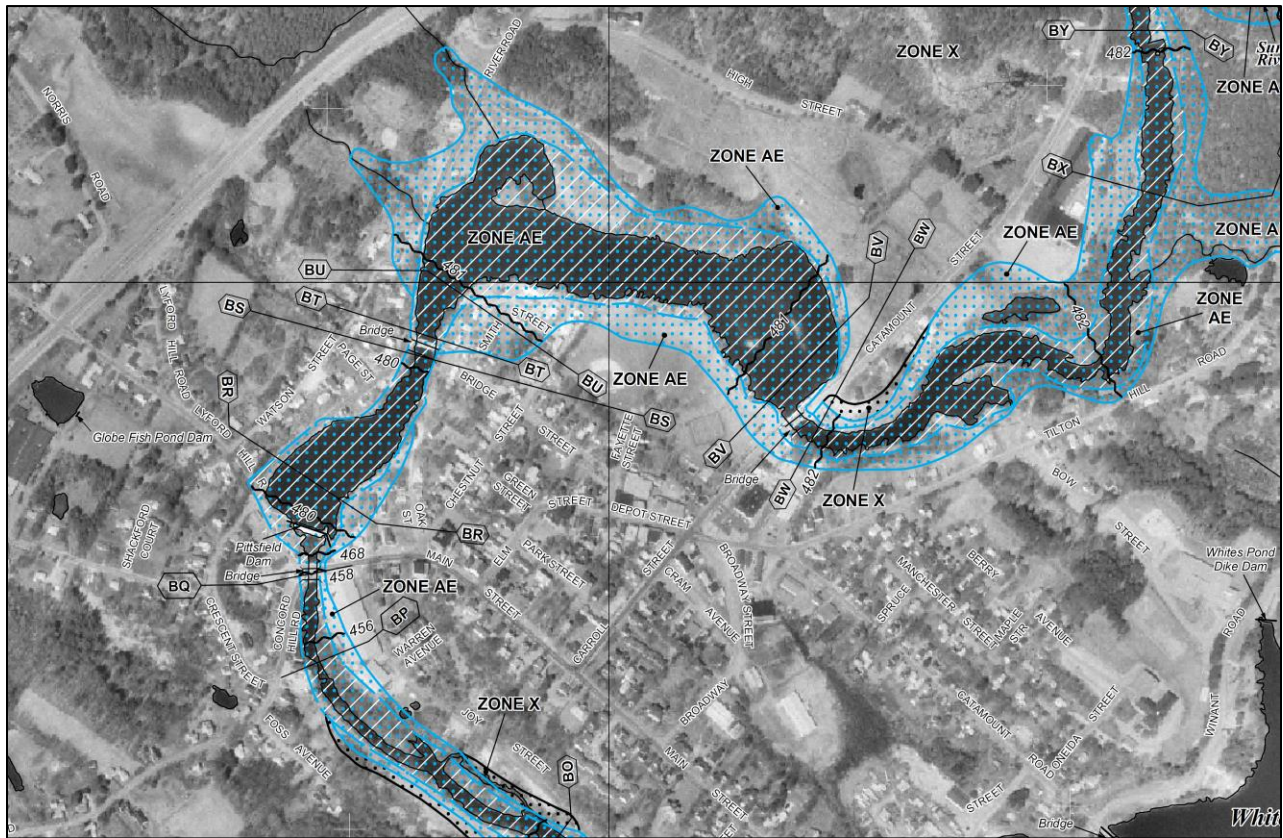


Source: Pittsfield DFIRMS can be downloaded at <http://www.granit.nh.edu/dfirms/>, last accessed 03-06-17

**Figure 9** displays an example of a DFIRM's zoomed-in view of the Suncook River as it meanders through Downtown. The Pittsfield Mill Pond Dam is illustrated as is the floodplain's relation to Route 28. This is the most populated area displayed in a floodplain area in Pittsfield. DFIRMs illustrate the location of floodplains as a significant upgrade from the previous series of paper maps. These new 2010 maps are now set on an aerial photography background that displays roads, buildings, forested areas, waterbodies and watercourses.

**Figure 9**

**Zoom View of Pittsfield DFIRM Panel Location #0387**



Source: FEMA DFIRMS 2010 for Pittsfield NH, #0387

### **Rapid Snow Pack Melt**

Warm temperatures and heavy rains cause rapid snowmelt. The water cannot seep into the frozen ground in early spring and so it runs off into streets and waterways. Quickly melting snow coupled with moderate to heavy rains are prime conditions for flooding.

There is the possibility of damages from the rapid snow pack melt because of the flooding from the Suncook River and the various streams along the roads, and from the culverts of the various brooks. Locations in Pittsfield that may be vulnerable to rapid snow pack melt include undersized or unmaintained culverts, roads, driveways, slopes, yards or fields, or swollen brooks, or any of the Town's fast moving brooks or ditches. Damage to roads is expected.

### **Magnitude of Rapid Snow Pack Melt**

**Rapid snow pack melt** is a type of flooding. On its own, it has no known magnitude measurement. However, the hazard can share **Flooding's** Special Flood Hazard Areas (SFHAs) table.

### **Rapid Snow Pack Melt in Pittsfield**

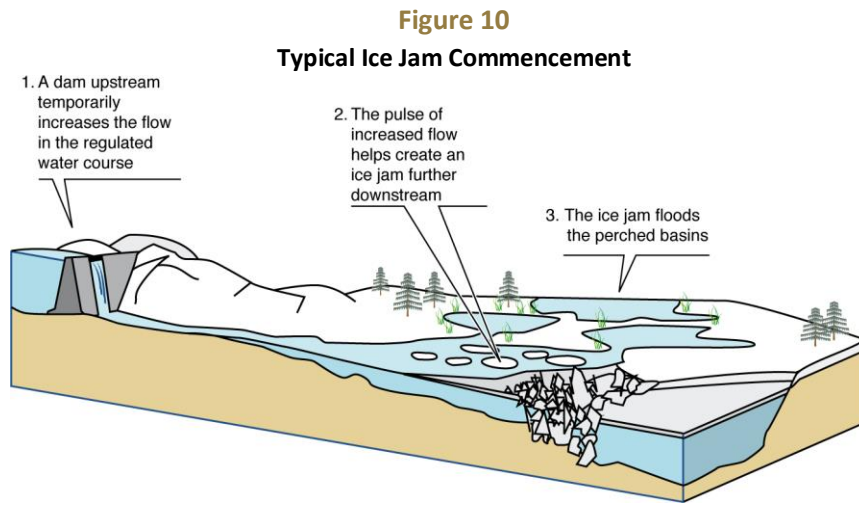
Melt runoff from impervious surfaces and roadways or from tree cover and fields can cause floods over the Entire Town. Road washouts and/or culvert failure locations or other areas flooded have included over the years: Berry Pond Road, Clough Road, Dowboro Road, Eaton Pond, Hills Road, Ingles Road, Jenness Pond Road, Johnson Road, Mountain Road, River Road, Sanderson Road, Shaw Road at Kelly Brook, Shingle Mill Road, Tan Road/Brook, Thompson Road, Tilton Hill Road, Tommytown Road, Wild Goose Pond Road, Will Smith Road at Cram Brook and many other locations in Pittsfield.

On these and other gravel roads, the road beds may be washed away, preventing traffic from passing. All areas of Town could be susceptible to rapid snow pack melt, particularly those near the wetlands and brooks (Clough Road, Tan Road, Will Smith Road, etc).

### **River Ice Jams**

Rising waters in early spring often break ice into chunks, which float downstream, pile up and cause flooding. Small rivers and streams pose special flooding risks because they are easily blocked by jams. Ice in riverbeds and against structures presents significant flooding threats to bridges, roads, and the surrounding lands. A visual of how ice jams often form is displayed in **Figure 10**.





Source: USGS, Internet Accessed May 2014

### Magnitude of River Ice Jams

There is no known widely-used magnitude scale for **river ice jams**. River ice jams can cause debris impacted infrastructure when they apply pressure to bridges and dams.

### River Ice Jams in Pittsfield

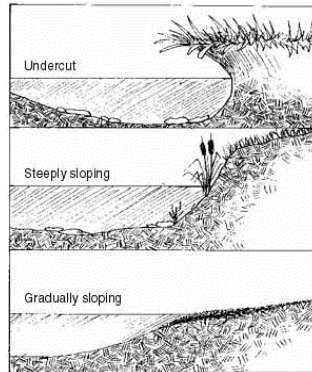
The Suncook River is significant in Pittsfield and **ice jams** have occurred in the community. These specific locations are capable of **ice jam** conditions: Shaw Road Bridge over Kelley Brook, Webster Mills Road over Suncook River. The Pittsfield Mill Pond dam (Suncook River) is not a great concern because ice typically pushes over the dam. However, in the right conditions a Suncook River ice jam could endanger the Pittsfield Mill Pond Dam. If this dam was breached, the Suncook River could flood the 5 downstream dams and communities (Epsom and Chichester, then Allenstown & Pembroke). Ice build-up at the low clearance Webster Mills Bridge on Webster Mills Road is a recurring problem, Town must check during high water and heavy rain/snow melt over Suncook. Bridges and dams are identified in **APPENDIX A Critical and Community Facility Vulnerability Assessment**.

### Fluvial Erosion, Bed Scouring and Channel Movement

Fluvial erosion is the wearing away of the river/stream bank and floodway. Bed scouring is the wearing away of the bed of the river or stream, typically shown as a pool type formation at downstream culvert outflows. Watercourses with high elevation change (stream gradient) are particularly prone to flash-flooding conditions and most vulnerable to erosion and scouring. During flooding or even high flow events, rivers can erode their banks and migrate into their floodplains. A migrating river, when channel movement is occurring, has the potential to impact nearby structures (berms, dams, buildings, etc.) or infrastructure such as river or stream crossings (culverts and bridges) or transportation features (roads, drainage structures, rail, etc.) in its migration path.

**Fluvial geomorphology** is the study of how processes of flowing water in rivers work to shape river channels and the land around them. Fluvial assessments are a collection of field data undertaken within designated river reaches. A **river reach** is a length of stream that has characteristics similar enough that condition data collected within that length is representative of the entire reach. **Figure 11** displays visual bank erosion characteristics.

**Figure 11**  
Bank Erosion Characteristics

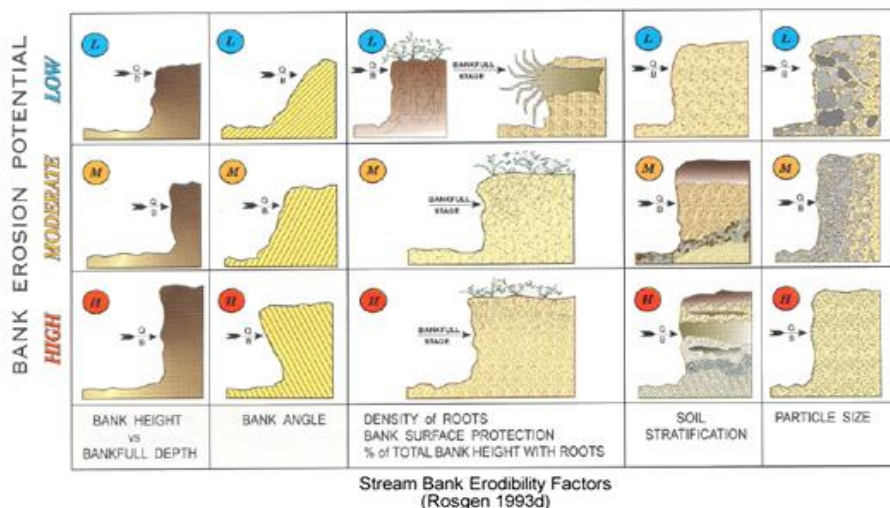


Source: US Geological Survey (USGS)

## Magnitude of (Fluvial) River Bank Erosion

**River and streambank erosion** magnitude can be measured by the US EPA Bank Erosion Prediction Index (BEHI), which is used with the Near Bank Stress (NBS) quantification. Taken into consideration for the BEHI are the bank height versus bankfull depth, bank angle, density of roots, soil stratification, and particle size at a river reach. **Figure 12** displays the visual version of the index.

**Figure 12**  
Bank Erosion Prediction Index (BEHI)



Source: US Environmental Protection Agency (US EPA)

### **Fluvial Erosion, Bed Scouring and Channel Movement in Pittsfield**

**Erosion** can occur along the Suncook River, Gulf Brook, Sanborn Brook, Tan Brook, Kelley Brook, Cram Brook, Berry Pond Brook, Shingle Mill Brook or White's Brook streambanks when developments (roads, homes) or human activities (parks, paths) are too close or if stream crossing alignments are not adequate for their locations. The Town should remain alert for potential developing erosion sites. Bridges can be contributors to scouring of the Suncook River streambed. Erosion effects have been felt at the Pittsfield Mill Pond Dam which has been breached in the past.

The Hazard Mitigation Committee identified the following as existing or potential future hazards in the case of **stream bank erosion and scouring**:

- Suncook River and its floodplains
- Pittsfield Mill Dam
- Tan Brook
- Cram Brook
- Kelly Brook
- Eaton Pond
- Blake Pond
- Berry Pond
- Whites Brook
- Shingle Mill Road beaver pond



## **WIND HAZARDS**

Hurricane season begins on June 1 and continues through the end of November. August and September are the most active hurricane months. It is not uncommon for New England to be impacted by a hurricane more than once in a season. River and flooding due to heavy rains is a risk to Pittsfield during hurricanes. Numerous hurricane events in recent history have occurred in the State, region, and the local area surrounding Pittsfield that may have also had an impact on the Town.

Wind is also found in severe winter snow and ice storms, making this hazard likely to occur during the entire year. Significantly high winds occur especially during hurricanes, tornadoes, winter storms, and thunderstorms any time of the year. Falling objects and downed power lines are dangerous risks associated with high winds. Property damage and downed trees are common during high wind occurrences. All utilities, including power lines, are at risk and their damage or destruction would create a hazard to the Town. A communications interruption or failure resulting from damage to telecommunications towers could affect the capabilities of emergency personnel to respond to the hazard event.

There are several types of **Wind** hazards examined in the **Hazard Risk Assessment**:

-  **Tornadoes**
-  **Downbursts**
-  **Hurricanes and Tropical Storms**
-  **Severe Wind, Rain Storms and Thunderstorms**

### **Tornadoes**

Significantly high winds that occur especially during hurricanes, winter storms, and thunderstorms, but can also exist independent of other storms. Falling objects and downed power lines are dangerous risks associated with high winds. In addition, property damage and downed trees are common during high wind occurrences.

A tornado is a violent windstorm characterized by a twisting, funnel shaped cloud. They develop when cool air overrides a layer of warm air, causing the warm air to rise rapidly. The atmospheric conditions required for the formation of a tornado include great thermal instability, high humidity, and the convergence of warm, moist air at low levels with cooler, drier air aloft. Most tornadoes remain suspended in the atmosphere, but if they touch down they become a force of destruction.

Tornadoes produce the most violent winds on earth, at speeds of 280 mph or more. In addition, tornadoes can travel at a forward speed of up to 70 mph. Damage paths can be in excess of one-mile wide and 50 miles long. Violent winds and debris slamming into buildings cause the most structural damage.

## Magnitude of Tornadoes

A tornado occurring in Pittsfield would cause considerable damage. Roofs could be torn off frame houses; dams could be damaged; large trees snapped or uprooted; and light object missiles would be generated by an EF-2 Tornado. Tornado magnitude is measured by the [Enhanced Fujita \(EF\) Scale](#), a 2007 update from the original F-scale (Fujita Scale), which are provided in [Table 14](#).

**Table 14**  
Enhanced Fujita (EF) Scale

Enhanced Fujita (EF) Scale 2007 – Present	Old Fujita (F) Scale <i>replaced</i>
F Number with 3-Second Gust mph	F Number with 3-Second Gust mph
<b>EF0</b> 65-85 mph	<b>F0</b> 45-78 mph
<b>EF1</b> 86-110 mph	<b>F1</b> 79-117 mph
<b>EF2</b> 111-135 mph	<b>F2</b> 118-161 mph
<b>EF3</b> 136-165 mph	<b>F3</b> 162-209 mph
<b>EF4</b> 166-200 mph	<b>F4</b> 210-261 mph
<b>EF5</b> over 200 mph	<b>F5</b> 262-317 mph

Source: National Oceanic and Atmospheric Administration (NOAA) Storm Prediction Center

## Tornadoes in Pittsfield

The whole Town could be vulnerable to a **tornado**. Populated areas include the Pittsfield Elementary & Middle Schools, Downtown, both sides of Suncook River, Leavitt Road Manufactured Housing Parks, Wildwood Drive neighborhood, White Brook Apartments (~60 units), 67 Main Street (55+ older facility) and Vintage Assisted Living at 10 Berry Avenue, all of which carry greater risk because of density (see **APPENDIX A Critical and Community Facility Vulnerability Assessment** for a complete list of sites). A tornado occurring in Pittsfield 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 EF-2 Tornado.

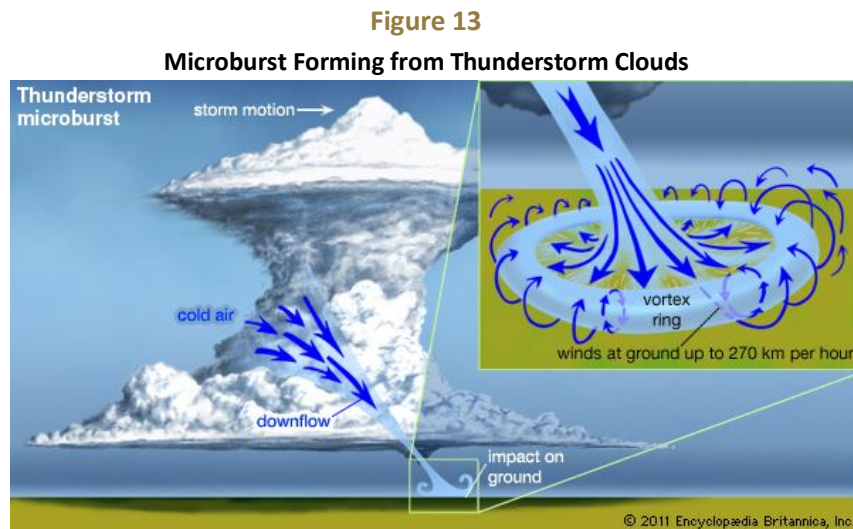
Forested sections of Town run a risk of isolation through debris impacted infrastructure (trees down on roads and powerlines) resulting in power failure with little emergency access until the way is cleared. These areas include: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads. A tornado

occurring in Pittsfield would cause considerable damage. Roofs could be torn off frame houses; large trees snapped or uprooted; vehicles crushed by trees; and light object missiles could be generated.

### Downbursts

A downburst is a severe localized wind blasting down from a thunderstorm. These "straight line" winds are distinguishable from tornadic activity by the pattern of destruction and debris. Downbursts are capable of producing winds of up to 175 mph and are life threatening. Downbursts are quite common during Central NH's hot weather months. Microbursts and macrobursts (wet) have been known to occur here in the region.

Downbursts of both sizes can produce strong wind shear - or large changes in wind speed and direction over a short distance. Trees are regularly snapped off in a singular direction by a macroburst or microburst. Downbursts typically originate from thunderstorm clouds, with air moving in a downward motion until it hits the ground level and then spreads outward in all directions. In fact, the wind pattern of a downburst is the opposite of a tornado's wind pattern, shown in **Figure 13**.



*Source: Internet (Encyclopedia Britannica)*

### **Magnitude of Downbursts**

**Downburst** magnitude is rated on the same NOAA Enhanced Fujita (EF) scale as tornadoes. In addition, downbursts fall into two categories:

- microburst, which covers an area less than 2.5 miles in diameter and
- macroburst, which covers an area equal to or greater than 2.5 miles in diameter.

### **Downbursts in Pittsfield**

**Downbursts** are considered a greater threat than tornadoes in Pittsfield. The likelihood of future wind events in Town seems high. **High winds** are unpredictable, and are often more prevalent at higher elevations. The Town Center of Pittsfield is at a moderate elevation but is located above the floodplains, in a more open area.

More populated locations could have the potential for higher injury and property damage from downbursts. These include the Pittsfield Elementary & Middle Schools, Downtown, both sides of Suncook River, Leavitt Road Manufactured Housing Parks, Wildwood Drive neighborhood, White Brook Apartments (~60 units), 67 Main Street (55+ older facility) and Vintage Assisted Living at 10 Berry Avenue run a higher risk of damages than many removed locations.

Forested sections of Town run a risk of isolation through debris impacted infrastructure (trees down on roads and powerlines) resulting in power failure with little emergency access until the way is cleared. These areas include: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond which are all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads. Forested locations such as these run a risk of isolation through debris impacted infrastructure (trees down on roads and powerlines) resulting in power failure with little emergency access until the way is cleared. Communications towers, telephone lines, power lines and other utilities could also be affected by downbursts.

Agricultural farms and orchards run the risk of high damage from **downbursts** which also brings economic consequences. In Pittsfield, these areas include Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar and Dodge's mixed-use Agricultural Farm.

### **Hurricanes and Tropical Storms**

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. Flooding is often caused from the coastal storm surge of the ocean and torrential rains, both of which accompany the storm. The floods and high winds can result in loss of life and property. Hurricanes, high wind and rain events, and thunderstorms can damage Pittsfield just like any other community in Central New Hampshire. Forested lands and trees along the transportation infrastructure can be blown down across roads; the above-ground powerlines along the sides of the road can be snapped either by trees or high winds and fall onto the roads or nearby objects; and runoff flooding and stream/brook and river flooding can occur because of hurricanes and severe storms.

### **Magnitude of Hurricanes and Tropical Storms**

The [Saffir-Simpson Hurricane Wind Scale](#) measures the magnitude of wind event on a 1 through 5 rating basis. The definitions of Category 1 through 5 sustained wind miles per hour and their respective threats

to people, different types of homes, shopping centers, trees, power lines, water, and more are displayed in **Table 15**.

**Table 15**  
**Saffir-Simpson Hurricane Wind Scale**

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
<b>1</b>	<b>74-95 mph</b>	<b>Very dangerous winds will produce some damage:</b> Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
<b>2</b>	<b>96-110 mph</b>	<b>Extremely dangerous winds will cause extensive damage:</b> Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
<b>3</b> <i>major</i>	<b>111-129 mph</b>	<b>Devastating damage will occur:</b> Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
<b>4</b> <i>major</i>	<b>130-156 mph</b>	<b>Catastrophic damage will occur:</b> Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
<b>5</b> <i>major</i>	<b>157 mph or higher</b>	<b>Catastrophic damage will occur:</b> A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

*Source: National Oceanic and Atmospheric Administration (NOAA)*

## Hurricanes and Tropical Storms in Pittsfield

**Hurricane Sandy**, which was not a declared disaster in Pittsfield, caused many roads to temporarily close while the Highway Department cleared them of debris. Trees and limbs fell onto the roadways and onto powerlines. If vehicles had been traveling on these roads while the hurricane was in progress, they would have been in danger.

When **hurricanes or tropical storms** occur in Pittsfield, the Towns electrical utilities of Eversource (formerly Public Service of NH or PSNH) and Unitil (smaller provider) will continue to be prone to power outages. The response time to these outages could be several days in the more remote or densely populated areas of Town, depending on where debris has fallen onto roads. Areas particularly vulnerable to the combination of **flooding, wind, tree debris** and **power failure** include forested sections of Town: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond which are all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads, resulting in possible isolation. Radio operability for emergency communications could be adversely affected. Land line utilities are at risk of failure during severe storm weather.

### Severe Wind, Rainstorms and Thunder Storms

More commonly experienced are severe wind storms, rainstorms and thunder storms. The severe wind storms occur during all months of the year while the thunder storms tend to erupt during periods of humidity. On occasion, precipitation in the form of rain or hail is experienced during these storms. Rainstorms bring can flooding and high winds. Thunderstorms can also bring lightning hazards in addition to high winds and flooding.

### **Magnitude of Severe Wind and Thunder Storms**

Many of the severe wind storms Pittsfield experiences are not hurricanes but are severe wind storms or thunderstorms. Thunderstorms are common in New Hampshire, particularly during the hot weather months. The [Thunderstorm Category Criteria](#) scale in **Table 16** measures the magnitude of thunderstorms with their various weather components, including rain, wind, hail, tornado, and lightning.

**Table 16**  
**Thunderstorm Criteria Scale**

<b>Thunderstorm Categories</b>	<b>Rainfall Inches per hour</b>	<b>Wind Gust max mph</b>	<b>Hail Size in</b>	<b>Tornado Potential Highest Category</b>	<b>Lightning Frequency per 5 minutes</b>	<b>Darkness Aspect</b>	<b>Overall Thunderstorm Impact</b>
<b>T-1 Weak Thunderstorms or Thundershowers</b>	0.03" to 0.10"	< 25 mph	None	None	Few strikes during entire storm	<b>Slightly Dark</b> Sunlight may be seen after storm	1. No damage. 2. Gusty winds at times.
<b>T-2 Moderate Thunderstorms</b>	0.10" to 0.25"	25-40 mph	None	None	Occasional 1 to 10	<b>Moderately Dark</b> Heavy downpours might cause the need for car headlights	1. Heavy downpours. 2. Occasional lightning. 3. Gusty winds. 4. Very little damage. 5. Small tree branches might break. 6. Lawn furniture moved around. 7. Power outages are possible.
<b>T-3 Heavy Thunderstorms</b> 1. Singular or lines of storms	0.25" to 0.55"	40-57 mph	1/4" to 3/4"	EF0	Occasional to Frequent 10 to 20	<b>Dark</b> Car headlights used. Visibility low in heavy rains. Cars might pull off the road.	1. Minor damage. 2. Downpours produce some flooding on streets. 3. Frequent lightning could cause house fires. 4. Hail occurs with the downpours. 5. Small tree branches are broken. 6. Shingles are blown off roofs. 7. Power outages are likely.
<b>T-4 Intense Thunderstorms</b> 1. weaker supercells 2. Bow echoes or lines of storms	0.55" to 1.25"	58-70 mph	1" to 1.5"	EF0 to EF2	Frequent 20 to 30	<b>Very Dark</b> Car headlights used. Some streetlights come on.	1. Moderate damage. 2. Heavy rains can cause flooding to streams and roadway flooding occurs. 3. Hail can cause dents on cars and cause crop damage. 4. Tornado damage. 5. Power outages will occur.

Thunderstorm Categories	Rainfall Inches per hour	Wind Gust max mph	Hail Size in	Tornado Potential Highest Category	Lightning Frequency per 5 minutes	Darkness Aspect	Overall Thunderstorm Impact
<b>T-5 Extreme Thunderstorms</b> 1. Supercells with family of tornadoes 2. Derecho Windstorms	1.25" to 4"	> 70 mph	1.5" to 4"	EF3 to EF5	Frequent to Continuous > 30	<b>Pitch Black</b> Street lights come on. House lights might be used.	1. Severe damage to trees and property. Damage is widespread. 2. Flooding rains. 3. Damaging hail. 4. Damaging wind gusts to trees and buildings. 5. Tornadoes EF3 to EF5 or family of tornadoes can occur. Tornadoes cause total devastation. 6. Widespread power outages.

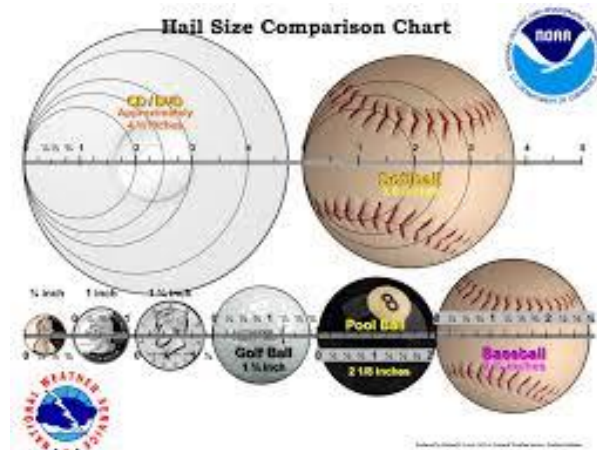
Source: Adapted from Accuweather.com, Henry Margusity, Senior Meteorologist

Incidentally, hail can accompany thunderstorms, hurricanes, or severe wind events. The [Hail Size Description Chart](#) describes the potential size of hail during a hurricane or severe storm event, which could occur anywhere in Pittsfield. The chart is shown below along with a Hail Size Comparison Chart which is a visual representation of some of the relative sizes of hail (note this chart image is not shown to scale). The **Table 17** hail size description and **Figure 14** size comparison scales measure the magnitude of hailstones that could fall on Pittsfield during severe storm events.

**Table 17**  
Hail Size Description

Hailstone Diameter (inches)	Size Description
< 1/4	bb
1/4	Pea Size
1/2	Mothball Size
3/4	Penny Size
7/8	Nickel Size
<b>Severe Criteria 1</b>	<b>Quarter Size</b>
1 1/4	Half Dollar Size
1 1/2	Walnut or Ping Pong Ball
1 3/4	Golf Ball Size
<b>2</b>	<b>Hen Egg Size</b>
2 1/2	Tennis Ball Size
2 3/4	Baseball Size
<b>3</b>	<b>Teacup Size</b>
3 4/5	Softball Size
<b>4</b>	<b>Grapefruit Size</b>

**Figure 14**  
Hail Size Comparison



Sources: National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS)



**Severe Wind, Rainstorms and Thunder Storms in Pittsfield**

All of Pittsfield has experienced **severe wind, rainstorms, and thunderstorms**. , the Towns electrical utilities of Eversource (formerly Public Service of NH or PSNH) and Unitil (smaller provider) will continue to be prone to power outages. The response time to these outages could be several days in the more remote or densely populated areas of Town, depending on where debris has fallen onto roads. Areas particularly vulnerable to the combination of **flooding, wind, tree debris and power failure** include forested sections of Town: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond which are all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads, resulting in possible isolation. Radio operability for emergency communications could be adversely affected. Land line utilities are at risk of failure during **severe storm weather**.

## FIRE HAZARDS

Fire can be caused by several agents and can spread rapidly to consume property and endanger lives. This **2017 Plan** examines **lightning**, and **wildfire** (natural) fire sources and places other **fires (vehicles, structure, arson, explosions)** with **Technological Hazards**.

Wildfire is a significant concern and can quickly get out of control without good infrastructure, easily accessible forested backlots and practiced procedures. Lightning or human folly can cause wildfire. Locations of older narrow graveled roads or densely packed residential areas Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond which are all dead end roads, the southwestern section of Town or roads with only 1 access/egress are among the most vulnerable locations for fire and wildfire hazards. Rural, forested areas of the community or recreation and conservation areas are often the most vulnerable to both wildfire and lightning.

There are two types of natural **Fire** hazards examined in the **Hazard Risk Assessment**:

-  **Lightning**
-  **Wildfire**

### Lightning

All thunderstorms contain lightning. During a lightning discharge, the sudden heating of the air causes it to expand rapidly. After the discharge, the air contracts quickly as it cools back to ambient temperatures. This rapid expansion and contraction of the air causes a shock wave that we hear as thunder, a shock wave that can damage building walls and break glass. Lightning strikes can cause death, injury, and property damage. Lightning is often referred to as the “underrated killer”.

### **Magnitude of Lightning**

Lightning can be measured to determine how likely it may be for starting fires. Using a Level system of **1** to **6** corresponding with storm development and the number of lightning strikes, the [Lightning Activity Level \(LAL\)](#) measures the magnitude of lightning strikes as displayed in **Table 18**.

**Table 18**  
**Lightning Activity Level (LAL)**

Level	LAL Cloud and Storm Development	Cloud to Ground Strikes per 5 Minutes	Cloud to Ground Strikes per 15 Minutes
<b>LAL 1</b>	No thunderstorms	n/a	n/a
<b>LAL 2</b>	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground strikes in a 5- minute period.	1 to 5	1 to 8
<b>LAL 3</b>	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.	6 to 10	9 to 15
<b>LAL 4</b>	Scattered thunderstorms. Moderate rain is commonly produced Lightning is frequent, 11 to 15 cloud to ground strikes in a 5-minute period.	11 to 15	16 to 25
<b>LAL 5</b>	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a 5- minute period.	> 15	> 25
<b>LAL 6</b>	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.	6 to 10	9 to 15

*Source: National Weather Service*

### Lightning in Pittsfield

**Lightning** regularly strikes in Town and can strike at any time at any given location. Specific sites which would cause the greatest impact if struck by **lightning** include the Town buildings, Schools, electrical utilities, generators, transformers and either of the **3** telecommunications towers, especially the emergency communications tower. Many buildings in Town have lightning rods. The tall Congregational Church on Main Street, next to the Union Block, could be vulnerable. Areas of concern are remote areas, which could not be easily accessed by emergency vehicles. The more remote forested areas, older narrow graveled roads, and densely packed residential areas are among the most vulnerable locations for fire and wildfire hazards. Lightning regularly shorts out people's well pumps. Higher elevations are of greater concern including the forested area between True Road and Thompson Road.

### Wildfire

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

Increased severity over recent years has decreased capability to extinguish wildfires. Wildfires are unpredictable and usually destructive, causing both personal property damage and damage to community infrastructure and cultural and economic resources.

## Magnitude of Wildfire

The standard of measuring wildfire magnitude is by the National Wildfire Coordinating Group (NWCG)'s wildfire classification scale. **Table 19** displays the wildfire classification size per the number of acres burned.

**Table 19**  
National Wildfire Coordinating Group Wildfire Classification Scale

Fire Class	Sizes in Acres
Class A	1/4 acre or less
Class B	> 1/4 acre to < 10 acres
Class C	10 acres to < 100 acres
Class D	100 acres to < 300 acres
Class E	300 acres to < 1,000 acres
Class F	1,000 acres to < 5,000 acres
Class G	5,000 acres or more

*Source: National Wildfire Coordinating Group*

## Wildfire in Pittsfield

Although **wildfire** damage has been kept to a minimum to date, the potential for losing an immense acreage of Pittsfield to this natural hazard is possible, particularly with the severe drought conditions currently occurring in 2016-2017. The heavily forested woodlands of Town are often remote locations and difficult to access by emergency vehicles. The forested dead-end remote residential neighborhoods listed previously would be difficult to evacuate. Any **debris** left over from **flooding, winter storms, or wind events** are a **wildfire hazard**. When **droughts** or drier conditions occur, the dry vegetation becomes a significant hazard to the Town Fire Department.

All areas of Pittsfield could be impacted by wildfire. Unmaintained Class VI roads and the transmission lines corridor are challenging to access because of the potential lack of emergency vehicle access and the number of people who use them for recreational purposes. Wildfires can also be caused by campfires and other human activity.

## **EXTREME TEMPERATURE (COLD-HOT) HAZARDS**

Extreme temperature hazards include diverse hazards such as severe cold and snowstorms, excessive heat, drought, and public health. The snow and ice component often results in communications & power failure for a large segment of the Town. This category is meant to encompass all the hazards which can be influenced by the extreme weather temperatures and climate changes that New England, New Hampshire, the Central NH Region, and Pittsfield are experiencing.

There are several types of **Extreme Temperature (cold-hot)** hazards examined in the **Hazard Risk Assessment**:

- ☒ **Severe Winter Weather, Cold, and Ice Storms**
- ☒ **Drought**
- ☒ **Excessive Heat**
- ☒ **Public Health (Epidemics)**

The National Weather Service (NWS) in Gray, Maine which covers New Hampshire collects and reports climate data in addition to issuing warning and advisories. Winter **2015-2016** was the warmest and one of the least snowy on record in Concord, their most local reporting station. The average temperature this season since **1868** was **30.9** degrees, topping the previous record of **30.4** degrees in the season of **1879-1880**. Precipitation was **2.01** inches above normal this winter, totaling **10.53** inches. Total snowfall was **24.7** inches, **20.2** inches below normal. Warmest temperature records were also set during **2015**.

### **Severe Winter Weather, Cold, and Ice Storms**

Ice and snow events typically occur during the winter months and can cause loss of life, property damage, and tree damage. Severe winter storms, including Nor'easters, typically occur during January and February. However, winter storms can occur from late September through late May.

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.

An ice storm involves rain, which freezes upon impact. Ice coating at least one-fourth inch in thickness is heavy enough to damage trees, overhead wires, and similar objects. Ice storms also often produce widespread power outages.

A Nor'easter is a large weather system traveling from South to North, passing along or near the seacoast. As the storm approaches New England and its intensity becomes increasingly apparent, the resulting counterclockwise cyclonic winds impact the coast and inland areas from a Northeasterly direction. In the winter months, oftentimes blizzard conditions accompany these events. The added impact of the masses

of snow and/or ice upon infrastructure often affects transportation and the delivery of goods and services for extended periods.

Extreme cold temperatures are associated with continental Arctic air masses. The actual temperatures reached depend specifically on the nature of the cold air mass and where it originated. In general, those from the Arctic regions are the coldest. Though cold temperatures are dangerous, they become more so in conjunction with strong winds. The combination produces a wind-chill factor – heat loss measured in Watts per meter squared ( $Wm^{-2}$ ). A wind-chill factor of  $1400 Wm^{-2}$  is equivalent to a temperature of -40 degrees F. At  $2700 Wm^{-2}$ , exposed flesh freezes within a half-minute.

Numerous severe winter events in recent history have occurred in the State, region, and the local area surrounding Pittsfield that may have also had an impact on the Town. Unlike the relatively infrequent hurricane, New Hampshire generally experiences at least one or two Nor'easters each year with varying degrees of severity. These storms have the potential to inflict more damage than many hurricanes because the high storm surge and high winds can last from 12 hours to 3 days, while the duration of hurricanes ranges from 6 to 12 hours.

All winter storms make walking and driving extremely dangerous. The elderly and very young are at high risk during winter storms and may be affected by hypothermia and isolation. During winter storms, there is an increased risk of **fire** because people experience **power failure** and use candles, portable gas stoves, and other flammable sources of heat and light.

### **Magnitude of Severe Winter Weather**

Severe Winter Weather magnitude can be measured for windchill, ice accumulation and snowfall using several different scales and indices including the NWS Windchill Chart, Sperry-Piltz Ice Accumulation Index (SPIA) and NCDC Regional Snowfall Index (RSI) for the Northeast. **Figure 15** displays the [Windchill Temperature Index](#) which measures the wind and temperature leading to how quickly frostbite can occur.

Figure 15

Windchill Temperature Index

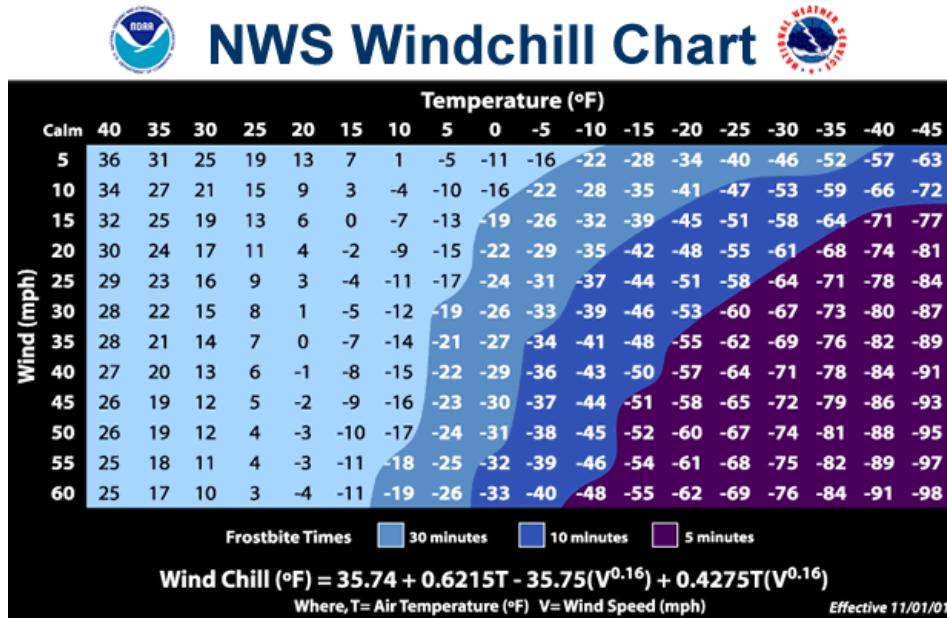


Table 20 displays the [Sperry-Piltz Ice Accumulation Index \(SPIA\)](#) which measure the magnitude of ice damage from severe winter weather. The index is compared to the tornado and hurricane scales note above. Storm total rainfall converted to ice accumulation, wind, and temperatures during the storm period are used to develop SPIA.



**Table 20**  
**Sperry-Piltz Ice Accumulation Index (SPIA)**

Ice Damage Index	Average NWS Ice Amount in Inches	Wind Speed mph	Ice Damage and Impact Descriptions
<b>0</b>	< 0.25	< 15	Minimal risk of damage to exposed utility systems. No alerts or advisories needed for crews, few outages.
<b>1</b>	0.10 to 0.25	15 to 25	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges might become slick and hazardous.
	0.25 to 0.50	> 15	
<b>2</b>	0.10 to 0.25	25-35	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions might be extremely hazardous due to ice accumulation.
	0.25 to 0.50	15-25	
	0.50 to 0.75	< 15	
<b>3</b>	0.10 to 0.25	> = 35	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1-5 days. Warming sites needed.
	0.25 to 0.50	25 - 35	
	0.50 to 0.75	15 - 25	
	0.75 to 1.00	< 15	
<b>4</b>	0.25 to 0.50	> = 35	Prolonged and widespread utility interruptions with extensive damage to main distribution feeder lines and some high voltage transmission lines/structures. Outages lasting 5-10 days. Shelters or warming sites needed.
	0.50 to 0.75	25 - 35	
	0.75 to 1.00	15 - 25	
	1.00 to 1.50	< 15	
<b>5</b>	0.50 to 0.75	> = 35	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.
	0.75 to 1.00	> = 25	
	1.00 to 1.50	> = 15	
	> 1.50	Any	

Source: [www.spia-index.com](http://www.spia-index.com) (adapted by CNHRPC)

The [Regional Snowfall Index \(RSI\) for the Northeast](#) is used to categorize significant snowstorms. The RSI ranks snowstorm effects on a scale from **1** to **5**, similar to the Enhanced Fujita Scale for tornadoes or the Saffir-Simpson Hurricane Wind Scale for hurricanes. The RSI differs from these other indices because it includes population, a social component. The RSI is based on the spatial extent of the storm, the amount of snowfall, and the juxtaposition of these elements with population. The Regional Snowfall Index (RSI) displayed in **Table 21** is a measurement of the magnitude of a snowstorm in the Northeast, which includes New Hampshire.

**Table 21**  
**Regional Snowfall Index (RSI) for the Northeast**

Storm Category	RSI Value	Snow Description
1	1–3	Notable
2	3–6	Significant
3	6–10	Major
4	10–18	Crippling
5	18.0+	Extreme

Source: [www.ncdc.noaa.gov/snow-and-ice/rsi/](http://www.ncdc.noaa.gov/snow-and-ice/rsi/) (adapted by CNHRPC)

### Severe Winter Weather in Pittsfield

**Winter weather events** are as common in Pittsfield as they are in the other areas of Central New Hampshire. The most recent worst winter storm on record was the **December 2008 Ice Storm** with wide-spread power outages that lasting up to **1 week (7 days)** in the most remote areas. Road icing (**transportation accidents**) can occur when **ice and snow storm** events hit. **Communications failure, power failure, extreme cold** and local road impassibility (trees and/or power lines down) occur as well. Areas above 800 feet in elevation are particularly vulnerable to the effects of severe winter weather.

Areas of particular concern include Union Block, dams, bridges, vulnerable populations, Pittsfield Elementary School and other schools, assisted living or 55+ aged communities, manufactured housing (snow loads), remote residential communities, electrical power utilities, communications network, Town government operations, and older or historic buildings (roof collapse). The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads. People may be subject to cold temperature, snow isolation, transportation accidents, power failure and communications failure during winter storm events. See complete list in **APPENDIX A Critical and Community Facilities**).

### Drought

A drought is defined as a long period of abnormally low precipitation, especially one that adversely affects growing or living conditions. Droughts are rare in New Hampshire. They generally are not as damaging and disruptive as floods and are more difficult to define. The effect of droughts is indicated through measurements of soil moisture, groundwater levels, and streamflow. However, not all of these indicators will be minimal during a drought. For example, frequent minor rainstorms can replenish the soil moisture without raising ground-water levels or increasing streamflow. Low streamflow also correlates with low ground-water levels and commonly cause diminished water supply because ground water discharge to streams and rivers maintains streamflow during extended dry periods.

In the case of drought, residential (dug wells especially) and Town water supplies would be threatened. Most homes in Town rely on well water which is not easily replenished during periods of drought. All

farms and orchards in town, including the tree farms, would be affected by drought. Additionally, wildfires would have the potential of being more severe and commonplace during periods of drought.

### Magnitude of Drought

**Table 22** displays overall drought magnitude, measured by the [Palmer Hydrological Drought Index \(PHDI\)](#) the extent of hydrological drought in the form of long-term, cumulative monthly moisture conditions. The indices are developed by algorithms taking into consideration precipitation, temperature data, and the local Available Water Content (AWC) of the soil.

**Table 22**

**Palmer Drought Conditions**

Hydrological Drought Classification	
Extremely Moist	+4 and above
Very Moist	+3 to +3.99
Moderately Moist	+2 to +2.99
Mid-Range	-1.99 to +1.99
Moderate Drought	-2 to -2.99
Severe Drought	-3 to -3.99
Extreme Drought	-4 and below

Source: [www.ncdc.noaa.gov/sotc/drought](http://www.ncdc.noaa.gov/sotc/drought) (as compiled by CNHRPC)

### Drought in Pittsfield

Periods of **drought** in Pittsfield would occur Town-wide and could cause property damage and economic losses. The lack of water would become a community problem to keep people hydrated and the failure of agricultural crops, products and farm animals can occur. Failure of tree farms to thrive can result in economic losses. Increased likelihood of wide-spread **brush fire** and **wildfire** will occur with drier vegetation. **Lightning** strikes could contribute to wildfire risk during droughts. Dug wells can dry up during droughts and interrupt personal water supplies, so few homes remain with dug wells in Town. Property damage and personal injuries or death could occur from drought-related fires or dry wells. The community water suppliers (Pennichuck Water Works) could enact water saving measures for their Downtown customers to assist with keeping the groundwater table higher. Residents should be encouraged to voluntarily undertake water conservation.

Agricultural farms and orchards run the risk of high damage from **drought** which also brings economic consequences. In Pittsfield, these areas include Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar and Dodge's mixed-use Agricultural Farm.

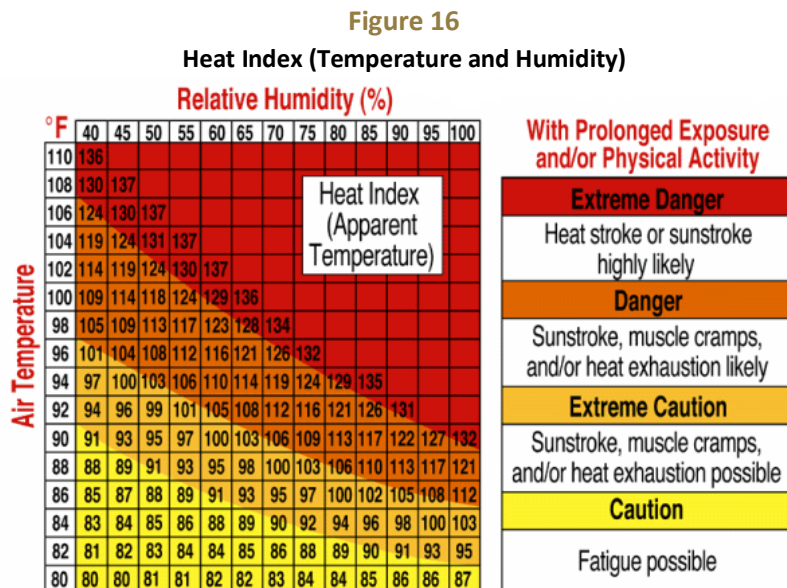
Pittsfield has a lot of livestock and the Town would have to find ways of watering them during certain weather events, including drought. Municipal water supply is running low; Pittsfield Aqueduct said the water level is lower than normal but still sustainable (Berry Pond).

## Excessive Heat

A heat wave is a period of abnormally and uncomfortably hot and unusually humid weather that typically lasts two or more days. The National Weather Services' Heat Index is used to measure humidity against temperature to develop a "real feel" temperature. Heat disorders on the body are quick and can be deadly. These now normal hot temperatures in the summer are commonly known as **excessive heat**.

### Magnitude of Excessive Heat

Excessive heat is measured by the [NWS Heat Index and the NWS Excessive Heat Warning Classifications](#). As both the air temperature and the humidity rise, so will the danger level to people. Heat disorders will become more likely with prolonged exposure or strenuous activity as shown in **Figure 16**.



Source: weather.gov

### Excessive Heat in Pittsfield

Pittsfield has experienced **heat waves** where temperatures exceeded 90 degrees for several days. During these times, many specific population sites in Town particularly susceptible to excessive heat, including the Downtown apartment buildings, Blueberry Express, Pittsfield Community Center (senior or recreational programs) and the Pittsfield Elementary School should have access to either air conditioning or cooling facilities. **Excessive heat** can cause dehydration, heat exhaustion and more serious illnesses. Other vulnerable facilities are indicated in **APPENDIX A Critical and Community Facilities Vulnerability Assessment**.

## **EARTH HAZARDS**

Earth hazards include geologic events such as the small earthquake NH residents experience. The Central NH area is seismically active and small earthquakes (less than 2.5 magnitude on the Richter Scale) occur about 1-2 times per year. Landslides can occur as a result of earthquakes, rain, flooding and result in erosion along roadways and watercourses.

Radon is a naturally occurring radioactive gas with carcinogenic properties. The gas is a common problem in many states, including New Hampshire, seeping into homes from basements. Radon may also enter homes dissolved in drinking water from drilled wells. High levels of radon in water from individual drilled wells is a common occurrence in New Hampshire. Radon is no longer being addressed by the State of New Hampshire Hazard Mitigation Plan as no new studies have made specific data available. It is generally known that radon exists throughout in the State and in communities, including the Central NH Region. Arsenic is a new concern that often co-occurs with radon. Radon is known to be present throughout New Hampshire and is addressed on an individual basis, no longer addressed in the **Hazard Mitigation Plan** because of the lack of state monitoring and available action.

There are two types of **Earth** hazards examined in the **Hazard Risk Assessment**:

-  **Earthquake**
-  **Landslide**

### **Earthquake**

An earthquake is a rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. **Earthquakes** can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and often cause **landslides, flash floods, fires**, and avalanches. 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 underground point of origin of an earthquake is called its focus; the point on the surface directly above the focus is the epicenter. The magnitude and intensity of an earthquake is determined by the use of scales such as the [Richter scale](#) and [Mercalli scale](#). Geologic events are often associated with California, but New England is considered a moderate risk earthquake zone.

### **Earthquakes in Pittsfield**

Multiple small scale **earthquakes**, about **1** quake every **1-2** years, have been felt by Pittsfield residents, with their epicenters occurring within the Hopkinton (Contoocook)/Hillsborough/Warner area in Central NH or otherwise within **30** miles of Pittsfield since **2002** to present day. The Central NH Region is an active

seismic area with mild quakes in bedrock. No damages or injuries have been reported from these events. Close earthquakes with a magnitude greater than 2.5 would be concerning to the Town.

While It is likely Pittsfield residents will continue to feel **earthquakes** in the future, it is less likely that major damage will result. The old Town Buildings (Town Hall, Police Department, Highway Department, Fire Department), Churches, Community Center, Union Block, Downtown area and older buildings may be more prone to damage because of their age and structural integrity. Pittsfield Mill Pond Dam on Suncook River would be disastrous if breached. The High School's original section is susceptible to earthquake. Loss of these or other community buildings could result in fewer services available to residents. The sewer and water system is old and vulnerable to earthquake.

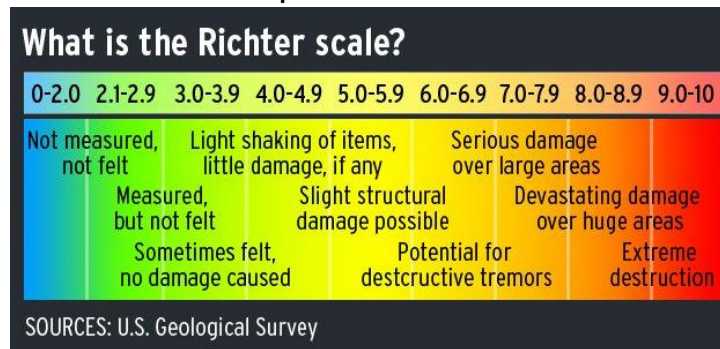
Older buildings (stone foundations) in Town could be particularly susceptible to earthquake damage. Underground utilities, stone walls, dams, bridges, telecommunications towers, utility poles/lines and historic resources could also be susceptible to damage.

### Magnitude of Earthquake Hazards

Earthquake hazard magnitude can be measured by the Richter Scale as shown in **Figure 17**. To better place the Richter Scale magnitude in perspective, the Mercalli Scale describes the *intensity* felt at different magnitudes in **Figure 18**.

Figure 17

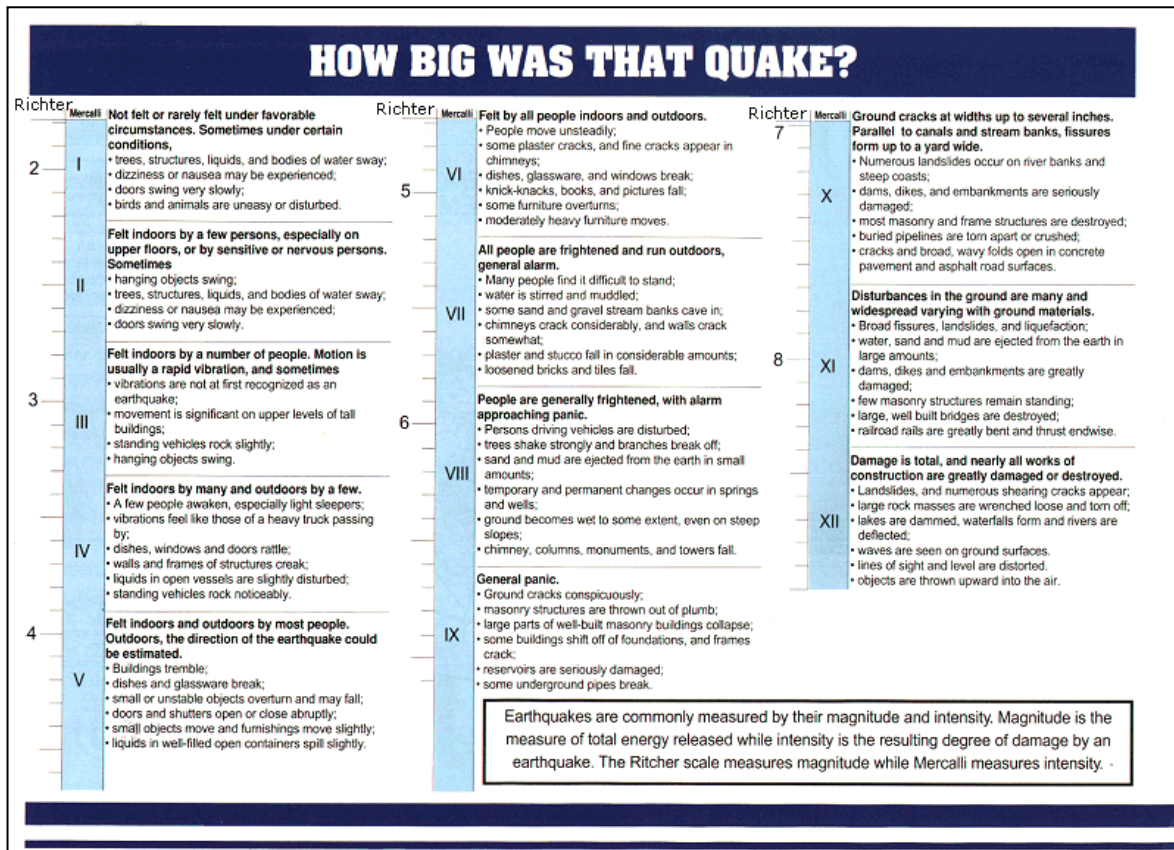
Descriptive Richter Scale



Source: US Geological Survey (USGS)



Figure 18  
Earthquake Impacts on the Richter and Modified Mercalli Scales



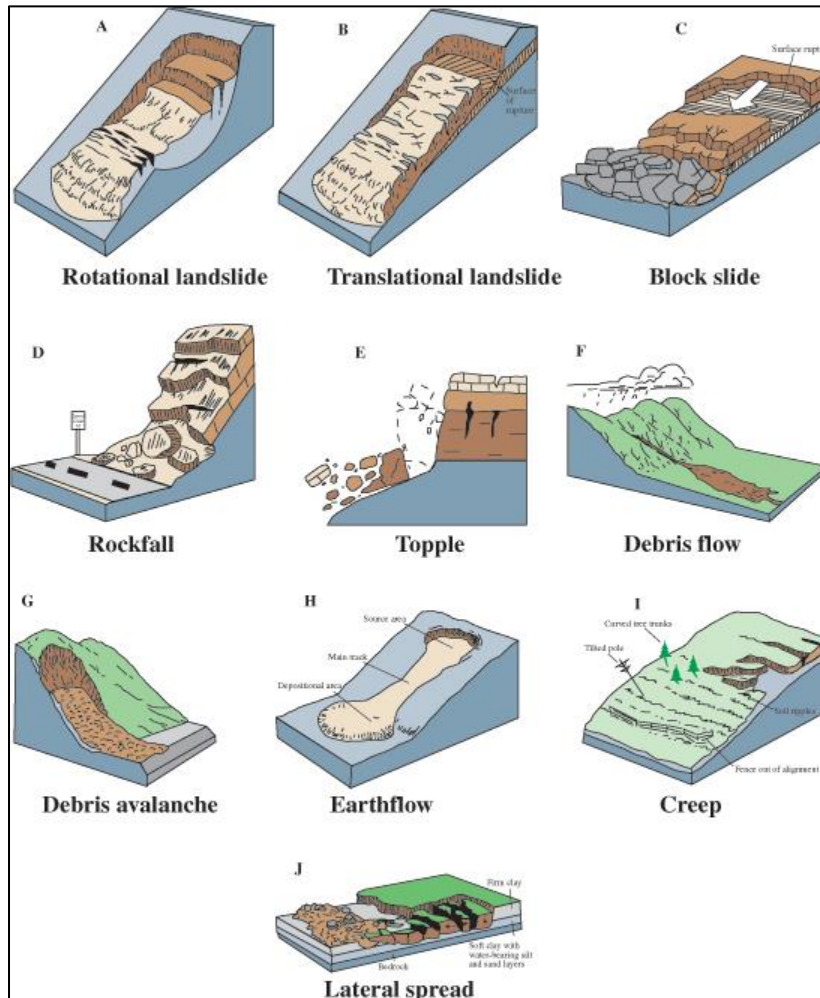
Source: National Oceanic and Atmospheric Administration (NOAA)



## Landslide

A landslide is the downward or outward movement of slope-forming materials reacting under the force of gravity including: mudflows, mudslides, debris flows, rockslides, debris avalanches, debris slides, and earth flows. Erosion of soil may also contribute to landslides. **Landslides** have damaged or destroyed roads, electrical and telephone lines, buildings, sewers, bridges, dams, forests, parks, and farms. A display of different types of landslides is shown in **Figure 19**.

**Figure 19**  
**Basic Types of Landslides**



Source: US Geological Survey (USGS)

### **Magnitude of Landslide Hazards**

There is no known standardized measurement of landslide magnitude available.

### **Landslides in Pittsfield**

Landslide is a possibility in limited areas of Pittsfield where certain topological conditions are met. Development in proximity to areas of steep slopes (greater than 15% or 25%) could present a risk to residents. Most potential **landslides** will be in conjunction with another hazard event, such as **flooding**, a severe rain event, **earthquake**, or from the construction of buildings or infrastructure in a topologically vulnerable area. Most roads are gravel roads which already experience washout during heavy rain events, flooding, or rapid snow pack melt. Some of the steeper roads could experience landslide erosion during heavy rain events. Although a large-scale road landslide would damage few structures, road (infrastructure) closures are costly and can last for months.

The Suncook River and brook banks can also slide, usually known as **erosion**. Generally, vegetation in Pittsfield is good at preventing landslides. Route 107 has erosion in multiple places, landslides occur on Prescott Road regularly and render the road partly impassible, and Mountain Road could be vulnerable. Road washouts and flash-flooding could cause landslides, but otherwise the Town is not particularly susceptible.

## TECHNOLOGICAL HAZARD EVENTS

Many technological hazards could be construed as secondary hazards, as they often occur as the result of a primary (natural) hazard. For example, **power failure** or **transportation accidents** (technological) can result from severe winter weather (natural). Scientific measures of magnitude are generally not available for individual technological hazards, but they are provided for **debris impacted infrastructure** and **dam failure** which are closely related to **flooding** and for **hazardous materials spills** and **radiological incident**.

There are several types of **Technological** hazards examined in the **Hazard Risk Assessment**:

- ☒ **Dam Failure**
- ☒ **Power/Utility Failure**
- ☒ **Communications Systems Failure**
- ☒ **Debris Impacted Infrastructure**
- ☒ **Transportation Accidents**
- ☒ **Fire (Vehicle, Structure, Arson)**
- ☒ **Hazardous Materials Spills**

### Magnitude of Technological Events

Magnitude of most technological hazards are not addressed in this Plan. The only exception is **Dam Failure** because of its close relationship with flooding using the NH DES Dam Hazard Classifications.

### Dam Failure

Dam breach and the resulting failure cause rapid loss of water that is normally impounded by the dam. These kinds of floods are extremely dangerous and pose a significant threat to both life and property as they are quick, unexpected, and if they occur during a flooding event, dam failures can overload an already burdened water channel.

### Magnitude of Dam Failures

Although dam failure is considered a **Technological Hazard**, it is often a secondary hazard caused by flooding conditions. Classifications of dams and their magnitude of failure can be measured by the [NH DES Dam Hazard Classifications](#) shown in **Table 23**.

**Table 23**  
**New Hampshire Dam Hazard Classifications**

<b>NON-MENACE Structure</b>		<b>Inspection</b>
<b>NM</b>	Means a dam that is not a menace because it is in a location and of a size that failure or misoperation of the dam would not result in probable loss of life or loss to property, provided the dam is: <ul style="list-style-type: none"> <li>○ Less than six feet in height if it has a storage capacity greater than 50 acre-feet;</li> <li>○ Less than 25 feet in height if it has a storage capacity of 15 to 50 acre-feet.</li> </ul>	Every 6 years if criteria met
<b>LOW Hazard Structure</b>		<b>Inspection</b>
<b>LH</b>	Means a dam that has a low hazard potential because it is in a location and of a size that failure or misoperation of the dam would result in any of the following: <ul style="list-style-type: none"> <li>○ No possible loss of life.</li> <li>○ Low economic loss to structures or property.</li> <li>○ Structural damage to a town or city road or private road accessing property other than the dam owner's that could render the road impassable or otherwise interrupt public safety services.</li> <li>○ The release of liquid industrial, agricultural, or commercial wastes, septage, or contaminated sediment if the storage capacity is less than two-acre-feet and is located more than 250 feet from a water body or water course.</li> <li>○ Reversible environmental losses to environmentally-sensitive sites.</li> </ul>	Every 6 years
<b>SIGNIFICANT Hazard Structure</b>		<b>Inspection</b>
<b>SH</b>	Means a dam that has a significant hazard potential because it is in a location and of a size that failure or misoperation of the dam would result in any of the following: <ul style="list-style-type: none"> <li>○ No probable loss of lives.</li> <li>○ Major economic loss to structures or property.</li> <li>○ Structural damage to a Class I or Class II road that could render the road impassable or otherwise interrupt public safety services.</li> <li>○ Major environmental or public health losses, including one or more of the following: <ul style="list-style-type: none"> <li>◆ Damage to a public water system, as defined by RSA 485:1-a, XV, which will take longer than 48 hours to repair.</li> <li>◆ The release of liquid industrial, agricultural, or commercial wastes, septage, sewage, or contaminated sediments if the storage capacity is 2 acre-feet or more.</li> <li>◆ Damage to an environmentally-sensitive site that does not meet the definition of reversible environmental losses.</li> </ul> </li> </ul>	Every 4 years
<b>HIGH Hazard Structure</b>		<b>Inspection</b>
<b>HH</b>	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: <ul style="list-style-type: none"> <li>○ 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.</li> <li>○ 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.</li> <li>○ Structural damage to an interstate highway, which could render the roadway impassable or otherwise interrupt public safety services.</li> <li>○ The release of a quantity and concentration of material, which qualify as "hazardous waste" as defined by RSA 147-A:2 VII.</li> <li>○ Any other circumstance that would more likely than not cause one or more deaths.</li> </ul>	Every 2 years

*Source: NH Department of Environmental Services (NHDES) Dams Bureau, 2012*

### **Dam Failures in Pittsfield**

Dam failures, or breaches, are a potential danger to people and property within the dam failure inundation area(s). There are **17** active dams in Pittsfield, all listed in **APPENDIX A**.

Two (**2**) dams are of High Hazard (**H**) classification- Pittsfield Mill Pond Dam (Suncook River) and Berry Pond Dam (Berry Pond Brook). Two (**2**) dams are of Significant Hazard (**S**) classification- Whites Pond Dam and Dike (tributary of Suncook River) and Pittsfield Sewage Lagoon. Two (**2**) dams are of Low Hazard (**L**) classification- Clarks Pond Dam (Berry Pond Brook) and Adams Pond Dam (Adams Pond). Eleven (**11**) dams are of Non-Menace (**NM**) classification- Whites Pond Dike (tributary of Suncook River), Farm Pond Dams (**3**), Fish Pond Dams (**2**), Barto Farm Pond Dam, Drolet Farm Pond Dam, Globe Fish Pond Dam (Natural Swale), Pittsfield Water Treatment Dam and Ryan Dam (Unnamed Brook).

The dams at White's Pond and Pittsfield Mill Pond can be expected to experience failure in the future. White's Pond Dam poses a significant threat to area residents for multiple reasons. Spring runoff sends water over the road at Route 107, and there is the possibility that heavy rainfall will send water over the top of the dam, threatening Route 107. A **breach** of the Pittsfield Mill Pond Dam (state-owned) would cause significant damage to life and property. Though flooding has been managed in the past, this site is susceptible to major flood events, including heavy rain events. All major licensed dams within Pittsfield have operations plans on file with the Emergency Management Director and should be referenced during one of the hazard events at the dams. They are also held at the Fire Department.

### **Power/Utility Failure**

Utilities systems exist everywhere and are subject to damage from construction work, accidents and extreme weather. Many utilities are protected by back-up generators to prevent failure, whatever the cause may be. Nuclear power plants produce roughly 20% of the nation's power, they exist in nearly all states and 3 million Americans live within 10 miles of a nuclear power plant. The greatest risk to life resulting from a nuclear power plant failure is radiation contamination resulting from radiation release into the environment. People in the immediate vicinity are at greatest risk of radiation contamination. Another common source of energy, coal, can be potentially hazardous because coal power plants emit chemicals such as mercury and sulfur dioxide.

New Hampshire contains nuclear, coal and natural gas power plants. There is only one (**1**) coal power plant in New Hampshire, the Eversource Merrimack Station in Bow. The Merrimack Station is the largest coal-fired electrical generating station owned by Eversource (formerly PSNH) and supplies power to 190,000 households.

In the harsh environment that New Hampshire residents are subjected to, power and utility failures on an isolated level are commonplace. During nearly every heavy snow storm, ice storm, or other severe weather event, someone, somewhere, loses power and/or other utilities.

### **Power Failure in Pittsfield**

Power is disrupted on a regular basis during all seasons. Pittsfield primarily depends on Eversource for its power needs; a fewer number of residents rely on Unil. Power outages may last for several days before service is restored in a large event. Power outages to isolated areas of Town are particularly vulnerable to outages and the resulting effects.

The Pittsfield Elementary School serves as the sheltering space available to Pittsfield residents. As a rule of thumb, all residents should be able to shelter in place in their homes for up to three days, gathering needed supplies and water ahead of time. If substation at Globe Manufacturing failed, the 1/2 Downtown area would lose electricity. General population and business disruption, heat/cooling disruption to 55+ older facilities.

Power failure can cause inconvenience, loss of economy, extra Town expenditures, restrict emergency and response because the typical power failure is a secondary hazard caused by a severe wind or severe winter weather event. This problem is applicable to the **Hurricanes and Tropical Storms, Downbursts, Tornadoes**, and **Severe Winter Weather, Cold, and Ice Storms** hazard events described earlier as well as **Debris Impacted Infrastructure** and **Transportation Accident** hazard events in the following sections.

### **Communications Systems Failure**

Communications systems, like utilities, are found everywhere and are subject to damage by construction work, severe weather and traffic accidents. Because communications systems depend on electricity, any power outage may cause an interruption in a communications system. In addition, many communications systems have buried cables which are particularly vulnerable to being cut. Communications systems interruptions can negatively impact a region, town, neighborhood or household in the case of a natural disaster, catastrophe or other emergency. Power lines often share cables and poles with communications systems. When power fails, cable, telephone and radio services frequently fail as well.

### **Communications Systems Failure in Pittsfield**

Any **communications failure** can mean lack of emergency services or delayed emergency services. Police/Fire use digital service and are members of the effective Capital Area Fire Compact Mutual Aid (CAFCMA) Dispatch service. The Police Department has an emergency communications tower on Berry Pond Road. For residents, services can be disrupted easily. Those at greatest risk are the same as those for **power/utility failure**. There has been a steady migration to cell phone use only with people dropping their landline telephones. A few individuals in Town require oxygen and power failure and the likely accompanying communications systems failure would comprise the most vulnerable populations. The Fire Department has a voluntary registration program for people who want to be checked during emergencies.

### Debris Impacted Infrastructure

Debris impacted infrastructure regularly occurs along the Central NH Region's rivers and streams and also along roadways. Rivers or brooks flowing under bridges or through culverts could get clogged or damaged by woody material or leaves in the watercourse. Culvert maintenance is particularly important before and during heavy rainfall and floods. Tree limbs falling onto power lines and onto roadways, disrupting both electricity and the roadway, occur during wind or winter storms.

#### **Debris Impacted Infrastructure in Pittsfield**

Pittsfield's watercourses, including the brooks and wetlands can **flood** their banks, **overflow culverts**, or **washout roads** during certain conditions. Trees and limbs falling on roads and power lines cause **power failure** or **road blockage**. Infrastructure in Pittsfield can refer to roadways, powerlines, utility lines, culverts, water towers, bridges or dams. These features inventoried in **APPENDIX A Critical and Community Vulnerability Assessment** are those which should be watched carefully before and after storms and should be checked and maintained regularly to reduce the risk of significant **debris impacted infrastructure** events. **Erosion** along the Suncook River embankments causes debris flow downstream in Chichester and Epsom. Debris in the form of trees is a constant concern, although they are not considered a particular hazard of concern in Pittsfield. The Town calls NH Department of Environmental Services for removal. Bridges vulnerable to such a hazard would be on Main Street at the Suncook River, and on Route 107 at the White's Pond outlet. All outlying roads are susceptible (see **Wind** hazards).

### Transportation Accidents

Automobile accidents could occur on any roadway in the Central NH region. A major accident would have the greatest impact for travelers on Interstates 93, 393 or 89, on US Route 202, US Route 4 or US Route 3, on NH Route 3A, NH Route 9, NH Route 13, NH Route 28, NH Route 31 NH Route 49, NH Route 77, NH Route 103, NH Route 106, NH Route 107, NH Route 114, NH Route 127, NH Route 129 and NH Route 132 or on their bypasses, interchanges, Exits and on/off ramps. These are high speed corridors with high traffic volumes. Many local roads allow for residential and commuter vehicles at low speeds.

The railroad lines along the Merrimack River create the potential for a (railcar) transportation accident. Trains could potentially derail, causing injuries or fatalities and hazardous materials spills. In the Central NH Region, the Concord-Lincoln Line runs 73 miles between Concord and Lincoln. The New Hampshire Maine Line runs between Concord, Nashua and Lowell, MA. Several communities through which these lines travel have expressed the concern about hazardous material spills due to transportation accidents or sabotage. Concord Municipal Airport is the major airport in the Central NH Region but Manchester-Boston Regional Airport (MHT) can be accessed via Route 28 in about 45 minutes. Air traffic can also be hazardous to the region's citizens.



### **Transportation Accidents in Pittsfield**

**Traffic accidents** may be the most likely future transportation hazard in Pittsfield on Route 28, Route 107, and at difficult intersections, hills, curves (like the Catamount Road “S” curve) or straightaways. Traffic accidents occur in several locations along Route 28 repeatedly, at the Route 107 intersection, at the Leavitt Road intersection, at the Upper City Road intersection, at Dunkin Donuts, and along Route 107 over Catamount (windy). As the local roads become developed with more homes, more vehicles, pedestrians and bicyclists will find themselves vying for the same space. As vehicular traffic increases or as the weather turns bad, there is the likelihood that **transportation accidents** will occur in these and other areas.

### **Fire (Arson, Vehicle, Structure)**

Fires which are not natural hazards are often associated with vehicles, structures or hazardous materials spills, or sometimes an explosion. These are considered **Technological Hazards**. Arson, the deliberate setting of a fire as an act of sabotage or mischief, is a **Human Hazard** but is described in this section for convenience. No magnitude scales were defined for these types of non-natural fires.

### **Fire in Pittsfield**

The Fire Department annually reports all fires to the NH Fire Marshal’s office. Over a three-year period between **2010-2013**, a total of **57** fires were reported in Pittsfield; the figures for 2011 were not available. In **2010** were **26** fires (**19** structure, **3** vehicle, **3** outside rubbish, **1** special outside). In **2012** were **15** fires (**9** structure, **2** vehicle, **2** natural vegetation, **2** outdoor rubbish. In **2013** were **16** fires (**9** structure, **1** natural vegetation, **4** outdoor rubbish, **1** special outside, **1** other).

Locations in Pittsfield which are particularly vulnerable to **fire** include Depot Street block (old, closely built 3-4 story wood buildings), old Downtown buildings (potential mixed use buildings - restaurants with housing above and no good fire suppression can cause accidental grease fires). Vintage Hill Assisted Living (12 beds), Bridge View Apartments (14 units), Whites Brook Apartments (60 units), Rolling Green Apartments (40 units) do not have sprinklers.

A list of hazardous materials facilities which could cause fire or explosions in Town is available in **APPENDIX A Critical and Community Facility Vulnerability Assessment**. Also available from these **APPENDIX A** tables are a listing of vulnerable populations that are living in close quarters.

### **Hazardous Materials Spills**

Hazardous materials and hazardous wastes contain properties that make them potentially dangerous or harmful to humans. They can be liquids, solids, contained gases or sludge. Hazardous wastes can be the by-product of manufacturing, as well as discarded commercial products. Most households contain cleaning agents that become hazardous waste when disposed of improperly. Chemicals have numerous benefits but can also cause hazards during their production, storage, transportation, use or disposal. Hazardous materials can have adverse health related effects and may even cause death in certain cases. In addition, hazardous materials may damage homes, businesses and other property, as well as natural ecosystems. Chemical accidents in plants or chemical spills during transportation may often release hazardous chemicals.

The risk from hazardous materials spills or releases into groundwater is present if consumers and homeowners make irresponsible decisions regarding the disposal of household chemicals. These household chemicals can contaminate drinking water in wells and cause damage to various ecosystems. Most people contaminate without being aware that they are doing so. Further education may be needed to reduce hazardous waste contamination.

### **Hazardous Materials Spills in Pittsfield**






Transportation trucking of hazardous materials on Route 28 is likely an everyday occurrence. These trucks could rollover and spill their contents onto these significant roadways. The [\*New Hampshire Hazardous Material Commodity Flow Study 2016\*](#) and its accompanying maps may provide some enlightening data the Town can use to help protect the community from spills.

Several occupational facilities in Town could handle, store, or use hazardous materials. The Barnstead Chichester Epsom Pittsfield Recycling (BCEP) hosts a Household Hazardous Waste Collection Day once a year. Large volumes are collected from residents. Globe Manufacturing, the Power Station, 5 Main Street (old processing plants), and Northeastern Mechanical are the stationary site locations which may experience this type of hazard in the future. Any of these facilities could have a spill or an incident at their location. A listing of known facilities which store or could use hazardous materials has been inventoried in **APPENDIX A Critical and Community Vulnerability Assessment**.

## HUMAN HAZARD EVENTS

Events of human nature include terrorism (ecological, cyber and chemical), sabotage/vandalism, hostage situations, and civil unrest. These are often “behind the scenes” hazards that local Police Departments handle on a regular basis. These events are all caused by direct human action.

There are several types of **Human** hazards examined in the **Hazard Risk Assessment**:

-  **Public Health Epidemics**
-  **Terrorism**
-  **Sabotage/Vandalism**
-  **Hostage Situation**
-  **Civil Disturbance/Public Unrest**

Human Hazards are examined by descriptions of the types of human hazards and in the **Potential Future Hazards**. Scientific measures of magnitude are not available for individual human hazards.

### Public Health Epidemics

Public health issues can be measured in many ways. Students and the elderly are vulnerable to seasonal health outbreaks as they tend to congregate in large numbers and in shared environments where physical contact is common. Large groups can make bioterrorism more effective.

It is difficult to predict where an epidemic would occur due to human, mosquito and wildlife mobility. Commonly occurring epidemics following extreme heat or cold can include **influenza**, rotovirus, Lyme disease, EEE, West Nile, and any could occur in Pittsfield. The Town has swampy areas around its wetlands and brooks which are prime breeding ground for **mosquitoes**. Large deer herds that roam can carry **deer ticks** in the Town’s heavily forested sections and into State Forests. Water quality degradation (failing septic systems, flooding, pipes breaking) could sicken residents using the public water supplies (those serving over 25 people), dug wells or bedrock wells or cause aquatic and wildlife deaths.

### **Public Health Epidemics in Pittsfield**

Reported widespread **public health** issues have occurred recently in Pittsfield and were resolved. The highest risk pick-up or transfer facilities in Town are the Pittsfield Elementary, Middle & High Schools, Blueberry Express, Pittsfield Community Center, daycare facilities, convenience stores, restaurants, recreational facilities and gathering places (see **APPENDIX A**). The same populations identified as particularly susceptible to **Excessive Heat** would be most vulnerable to public health issues and epidemics.

To help combat local and area public health issues, Pittsfield is nearby a regional Point of Distribution (POD) site at the Northwood Academy, a location where vaccines or other medicines are provided to people during an emergency.

### **Terrorism**

The use of force or violence against people to create fear, cause physical harm and/or intimidation or for reasons of ransom. Terrorists often make threats to create fear and change public opinion. Cyber terrorism consists of hackers who threaten the economy by attacking the intricate computer infrastructure, affecting business and communication. Biological and chemical terrorism refers to those infectious microbes or toxins used to produce illness or death in people or animals. Large groups or close quarters of people can make bioterrorism more effective. Terrorists may contaminate food or water, thus threatening an unprotected civilian population. Eco-terrorism refers to the destruction of property by persons who are generally opposed to the destruction of the environment or to make a visible argument against forms of technology that may be destructive to the environment.

### **Terrorism in Pittsfield**

It is unlikely that the Town would be the target of any act of international terrorism. Domestic terrorism has occurred within the last 15 years regionally. Possible targets could be the Town Hall, Pittsfield Elementary Middle or High School, Library, all Town or governmental facilities, State facilities (NHDOT shed) or churches. There could be a massive impact felt in the community even on a small-scale event.

### **Sabotage/Vandalism**

Sabotage is a deliberate action aimed at someone or some institution in order to weaken that person's or institution's integrity and reputation through subversion, destruction, obstruction or disruption. Sabotage may occur in war, a workplace, in the natural environment, as a crime, in politics or as a direct attack against an individual.

### **Sabotage /Vandalism in Pittsfield**

Any incident of **sabotage** in Pittsfield could come from within Pittsfield or any nearby Town, or outside of the State or country, but some sabotage efforts would require perpetrators to be on site. **Vandalism** can also be present at cemeteries, vacant buildings, under bridges. While a nuisance, vandalism has a lower potential to harm than sabotage.

Vandalism could occur in Floral Park Cemetery and the Berry Pond Town water supply could be sabotaged. These facilities would be the most damaging to the community. Vandalism could occur at vacant buildings.

Technological systems such as computer systems at the Town Hall, Pittsfield Elementary Middle or High School, Library, all Town buildings could be subject to computer or network sabotage. Utilities or telecommunications towers could be vulnerable to sabotage or vandalism. Many other significant facilities in Pittsfield could be subject to sabotage including the powerlines, transmission lines, transformers and utility substations.

### **Hostage Situation**

A hostage situation is an incident where an innocent civilian is held by someone or some group of persons demanding something from another person or group of persons not related to the person or persons being held hostage. The person or persons held are done so pending the fulfillment of certain terms.

#### **Hostage Situations in Pittsfield**

**Hostage situations** can occur anywhere, are isolated events and are nearly impossible to predict; none have been reported for this Plan. Hostage situations are not normal events and therefore are nearly impossible to predict. Domestic violence events generally occur in resident homes, perhaps one per year.

Conventional hostage situations would most likely target such locations as the Town Hall Pittsfield Elementary Middle or High School, Library, all Town or governmental facilities, major businesses, the Suncook Valley Sun, banks, and the Post Office in Town.

### **Civil Disturbance/Public Unrest**

This hazard refers to types of disturbances that are caused by a group of people, often in protest against major socio-political problems including sit-ins or protests against wars and any general and public expression of outrage against a political establishment or policy. Many instances of civil disturbance and public unrest are quelled by a use of force from police. Participants may be victims of personal injury in severe cases.

The most probable locations of larger civil disturbance and/or protest in New Hampshire are at the State House in Concord and at the universities and colleges. They have also occurred at political locations, such as feminist health centers or political party headquarters.

#### **Civil Disturbance/Public Unrest in Pittsfield**

None have been reported and large scale incidents of civil disturbance and public unrest are unlikely in Pittsfield. Locally, the highest potential for **public unrest** could take place during Town Meetings and School Meetings, on voting day or during visits from political candidates, or at large events such as Old Home Day, Veteran's Parades, Pittsfield Balloon Rally or School events. Locations where civil unrest could occur include the Schools, Town Hall, Tilton Hill Ball Field, restaurants and establishments serving alcohol, recreational facilities and within high density population areas.

The Balloon Rally could be a public unrest concern because of the visitors parking on private property and not respecting the local property owners. High School-level sporting events can have irate parents who need to be calmed down or removed from the site. Security has been provided at public meetings, weddings, and funerals in Pittsfield.

## Existing and Potential Future Hazards

After the inventory of hazards types and past hazards in Town, hazards that currently exist or that need to be monitored in Pittsfield has been completed along with potential future hazards that could occur in other areas. This unique listing of **Existing and Potential Future Hazards** was compiled so the Town can be aware of areas that might need to be watched for recurring hazardous problems or that may experience some of these hazards for the first time. The listing was developed by knowledge of the Hazard Mitigation Committee and past experiences of hazards. Past locations of hazard events, where they exist for each hazard, are listed under the individual hazard narratives in the previous section. The existing and susceptible hazard locations are taken from the **Hazard Risk Assessment**. With this existing and potential future knowledge listed side by side, it becomes easier for a community to plan mitigation measures for the most prominent hazard events in Town.

Included in **Table 24** is the **Overall Risk** score between **1-16** from the **Hazard Risk Assessment** for **16** natural hazards. The name of the magnitude or extent scale of the natural hazard is represented for ease of reference. Technological and human hazards were not rated for their **Overall Risk** to retain the importance of maintaining a natural hazard perspective for the **Hazard Mitigation Plan 2017**. **NR** is the abbreviation for **Not Rated**.

**Table 24**  
**Existing and Potential Future Hazards**

Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measure-ment Scale
Floods and Flash Floods	Floods	9.3	Floodplains of Suncook River result in expanded flooding. The Town has an issue with runoff, with dirt/gravel entering into the Town water supply as a result of flooding. Runoff from roadways or heavy rain can cause floods over the Entire Town. Pittsfield Mill Dam in the downtown is a critical dam to watch and is susceptible to requiring sandbagging (in the past, 6,000 sandbags have been placed). Regular flooding experienced on Tilton Hill Road, Will Smith Road, Cram Brook. Regular culvert flooding over roads: River Road (after Watson Street on a Suncook River tributary), Tan Brook (at Tan Road, Dowboro Road intersection with Epsom town line), Tan Road at Blake Pond, Shaw Road at Kelly Brook, private road Shingle Mill Road (at beaver meadow swamp), Clough Road (at Shingle Mill Brook and at unnamed brook culverts), Wild Goose Pond Road (just below), Tommytown Road (just above), Berry Pond Road (at culvert into Berry Pond, above 4 corners at foot of the hill - if that one fails, the rest down Berry Pond	Tan Road has much silt/dirt placed as a result of flooding. Smith Street is still vulnerable, as the electrical lines were under water, heating systems were flooded and residents were evacuated during one of the major flooding events. A home on River Road always needs sandbagging since it sits at or below the river elevation. An apartment building on River Road has the potential for building collapse due to foundation erosion. If the Pittsfield Mill Dam should let go, the whole section on the other side of Water Street would be affected. Regular flooding experienced on Tilton Hill Road, Will Smith Road, Cram Brook. Regular culvert flooding over roads: River Road (after Watson Street on a Suncook River tributary), Tan Brook (at Tan Road, Dowboro Road intersection with Epsom town line), Tan Road at Blake Pond, Shaw	Special Flood Hazard Areas (SFHAs) on 2009 Digital Flood Rate Insurance Maps (Zones A, AE, X)

Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
			goes), Mountain Road (whole length 1.0 miles gravel and high slope with fields on either side (4 sites), runoff), Ingles Road (at 2 sites, both from swamp overflow of large cross culverts, high volume of water), Will Smith Road (at site off Tilton Hill Road), Jenness Pond Road (1 site after intersection with Route 107, 1 site past Glen and Glade Campground) and Hills Road (2 sites, come out of the fields)..	Road at Kelly Brook, private road Shingle Mill Road (at beaver meadow swamp), Clough Road (at Shingle Mill Brook and at unnamed brook culverts), Wild Goose Pond Road (just below), Tommytown Road (just above), Berry Pond Road (at culvert into Berry Pond, above 4 corners at foot of the hill - if that one fails, the rest down Berry Pond goes), Mountain Road (whole length 1.0 miles gravel and high slope with fields on either side (4 sites), runoff), Ingles Road (at 2 sites, both from swamp overflow of large cross culverts, high volume of water), Will Smith Road (at site off Tilton Hill Road), Jenness Pond Road (1 site after intersection with Route 107, 1 site past Glen and Glade Campground) and Hills Road (2 sites, come out of the fields).	
Flooding	Rapid Snow Pack Melt	10.7	Melt runoff from <b>impervious surfaces and roadways or from tree cover and fields</b> can cause floods over the Entire Town. Susceptible areas include regular road washouts at: Mountain Road, Berry Pond Road, Tan Road, Eaton Pond (on Catamount Road/Route 107), Shaw Road, Blake Pond (at Catamount & Tan Roads).	Regular flooding: Tilton Hill Road, (also off of Will Smith Road, Cram Brook). Culverts - River Road (after Watson Street, Suncook River tributary), Tan Brook - Tan Road, Dowboro Road intersection Epsom town line. Tan Road - Blake Pond. Shaw Road - Kelly Brook culvert. Private Road Shingle Mill Road at beaver meadow swamp. Clough Road at Shingle Mill Brook and at unnamed brook culverts, culvert just below Wild Goose Pond Road, culvert above Tommytown Road. Berry Pond Road - culvert into Berry Pond, above 4 corners at foot of the hill - if that one fails, the rest down Berry Pond goes. Mountain Road - whole length 1.0 miles gravel and high slope with fields on either side (4 sites), runoff. Ingles Road - 2 sites, both from swamps overflow of large cross culverts, high volume of water. Will Smith Road - site off Tilton Hill Road. Jenness Pond Road - 1 site after intersection with Route 107, 1 site past Glen and Glade Campground. Hills Road- 2 sites, come out of the fields.	None specific known but can use SFHAs



Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
Flooding	River Ice Jams	8.0	<b>Suncook River</b> ice jams could endanger the Pittsfield Mill Pond Dam. If this dam was breached, the Suncook River could flood the 5 downstream dams and communities (Epsom and Chichester, then Allenstown & Pembroke). Ice build-up at the low clearance Webster Mills Bridge on Webster Mills Road is a recurring problem, Town must check during high water and heavy rain/snow melt over Suncook.	The potential for ice jams poses a threat to Pittsfield. The Suncook River is always a concern to Pittsfield because of the dams and what would happen if they are blocked and the water cannot go over. Many dams are along the Suncook and it could affect the entire downstream. Barnstead Road Bridge (Suncook River) could have an ice build-up. Pittsfield Mill dam is not a concern as ice gets pushed over. Webster Mills may have future ice jams because of its past history.	No known widely-used scale measuring the magnitude of river ice jams
	Riverine (Merrimack) Erosion, Channel Movement	10.7	<b>Floodplains of Suncook River and Tan Brook</b> , Cram Brook, Kelly Brook, Eaton Pond, Blake Pond, Berry Pond, Whites Brook, Shingle Mill Road beaver pond. These are the largest watercourses in the Town and some run under or alongside local roads. Tan Brook (at Tan Road & Dow Road), Town Pool, Eaton Pond (at Route 107 & Governor's Road), Whites Pond erodes surrounding areas.	Regular flooding: Tilton Hill Road, (also off of Will Smith Road, Cram Brook). Culverts - River Road (after Watson Street, Suncook River tributary), Tan Brook - Tan Road, Dowboro Road intersection Epsom town line. Tan Road - Blake Pond. Shaw Road - Kelly Brook culvert. Private Road Shingle Mill Road at beaver meadow swamp. Clough Road at Shingle Mill Brook and at unnamed brook culverts, culvert just below Wild Goose Pond Road, culvert above Tommytown Road. Berry Pond Road - culvert into Berry Pond, above 4 corners at foot of the hill - if that one fails, the rest down Berry Pond goes. Mountain Road - whole length 1.0 miles gravel and high slope with fields on either side (4 sites), runoff. Ingles Road - 2 sites, both from swamps overflow of large cross culverts, high volume of water. Will Smith Road - site off Tilton Hill Road. Jenness Pond Road - 1 site after intersection with Route 107, 1 site past Glen and Glade Campground. Hills Road- 2 sites, come out of the fields. When repair roads and gravel roads, the Highway Department redoes drainage, reconstructs road to original specs.	EPA Bank Erosion Risk Index

Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
Wind	Tornadoes	<b>5.3</b>	<b>Entire Town.</b> Most vulnerable areas include: Elementary & Middle Schools, Downtown, both sides of Suncook River, Leavitt Road Manufactured Housing Parks, Wildwood Drive neighborhood, White Brook Apartments (~60 units), 67 Main Street (55+ older facility) and Vintage Assisted Living at 10 Berry Avenue. Wooded and forested sections of Town are vulnerable: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads.	Anywhere, the Town could be impacted by a tornado. No particular areas or buildings are thought to be more vulnerable than another. However, those buildings with a significant number of people, including the Pittsfield Elementary School, would be most at risk. Other particularly vulnerable sites would be the bridges in Town, the high population area of downtown Pittsfield, and dams along the Suncook River. See also vulnerable populations in <a href="#">Appendix A</a> .	Enhanced Fujita (EF) Tornado Scale
	Downbursts	<b>10.7</b>	<b>Entire Town.</b> Most vulnerable areas include: Elementary & Middle Schools, Downtown, both sides of Suncook River, Leavitt Road Manufactured Housing Parks, Wildwood Drive neighborhood, White Brook Apartments (~60 units), 67 Main Street (55+ older facility) and Vintage Assisted Living at 10 Berry Avenue. Wooded and forested sections of Town are vulnerable: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads. Also agriculture farms - Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar, Dodge's Mixed Use Agricultural Farm.	See also Tornado vulnerable locations. Also, agriculture farms (Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar) are vulnerable to wind damage.	Enhanced Fujita (EF) Tornado Scale
Wind	Hurricanes and Tropical Storms	<b>12.0</b>	<b>Entire Town.</b> Areas of particular concern include Pittsfield Mill Dam, bridges, vulnerable populations, Elementary & Middle Schools and previously listed severe wind vulnerability sites. Roadways (fallen trees), electrical power utilities, communications network, local government operations are susceptible to damage by debris impacted infrastructure. 127 South Main Pittsfield Waste Water Treatment Facility and Catamount Road Water Treatment Facility.	Eversource is the largest electric provider, with Unitil also servicing customers in Pittsfield as smaller providers. Large trees falling down on the supply lines or across the roads are considered more of an inconvenience than a hazard. Particularly vulnerable areas include Suncook River and downtown area, as well as the key dams in Town.	Saffir-Simpson Hurricane Wind Scale

Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
Wind	Severe Winds, Rainstorms and Thunder Storms	5.3	<b>Entire Town.</b> Areas of particular concern include previously listed severe wind vulnerability sites. Road network (fallen trees), electrical power utilities, communications network, cell towers, local government operations are susceptible to damage to debris impacted infrastructure. Wooded and forested sections of Town are vulnerable: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads.	Eversource is the largest electric provider, with Unitil also servicing customers in Pittsfield as smaller providers. Large trees falling down on the supply lines or across the roads are considered more of an inconvenience than a hazard. Particularly vulnerable areas include Suncook River and downtown area, as well as the key dams in Town.	Accuweather Thunderstorm Criteria Scale, Hail Size Scale
	Lightning	4.0	<b>Entire Town.</b> Areas most susceptible include forested areas, conservation areas, open recreation fields, locations difficult to access by vehicle, points of higher elevation than surrounding area: Church spires, Berry Pond Road (higher elevations), Catamount Road (Route 107 higher elevation), Upper City Road, Governor's Road (and cell tower), Nudd's Hill, Webster Mills Road, cell tower on Webster Mills Road, Mountain Road telecommunications tower and Sanderson Drive estate. Those buildings without lightning rods would be more susceptible to damage from a strike than those buildings with the rods. Other susceptible structures include aboveground utilities: transformers, telecommunications towers, water towers, churches and tall buildings.	Lightning can strike at any time at any given location. Areas of concern are remote areas, which could not be easily accessed by emergency vehicles. The tall Congregational Church on Main Street, next to the Union Block, could be vulnerable. See areas of high elevation.	Lightning Activity Level (LAL)

Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
Fire	Wildfire	9.3	<b>Entire Town.</b> Areas most susceptible include forested areas, conservation areas, open recreation fields, locations difficult to access by vehicle, points of higher elevation than surrounding area. Susceptible structures include aboveground utilities: transformers, telecommunications towers, water towers; churches and tall buildings. The top of Catamount Road, Clough Road, Shingle Mill Brook Road, Range Road, Rocky Point Road, are vulnerable primarily due to slash left behind from the ice storms and drought conditions. Wooded and forested sections of Town are vulnerable: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town could be difficult to access. See also <b>Lightning</b> for specific areas.	Because of the dry conditions, it takes 10 times longer to put out fires, have to dig down with equipment takes 3 days. Particular future potential for wildfire was identified in the heavily wooded areas of Town, especially areas located off of True Road. The top of Catamount Road, Clough Road, Shingle Mill Brook Road, Range Road, Rocky Point Road, are vulnerable primarily due to slash left behind from the ice storms. This can cause a significant hazard that increases over time due to the drying out of materials of the ignitable base in the woods	NWCG Wildfire Classification
	Severe Winter Weather, Wind Chill and Ice Storms	10.7	<b>Entire Town.</b> Areas of particular concern include Elementary School, Union Block, and manufactured housing (snow load). Roadways (fallen trees), electrical power utilities, communications network, local government operations are susceptible to damage. Road network (fallen trees), electrical power utilities, communications network, cell towers, local government operations are susceptible to damage to debris impacted infrastructure. Wooded and forested sections of Town are vulnerable to loss of power and debris on roads: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. The southwestern section of Town would be difficult to access with trees and power lines down on these residential roads. People may be subject to cold temperature, snow isolation, transportation accidents, power failure and communications failure during winter storm events.	The Elementary School, Union Block, and manufactured housing are vulnerable to snow loads. Most of the roads in Town have been open during snow storms and people have not been isolated, although residences may not have power.	NWS Windchill Index, Sperry-Piltz Ice Accumulation (SPIA), NCDC Regional Snowfall Index (RSI) for Northeast

Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
Extreme Temp	Drought	10.7	<b>Entire Town / Region.</b> Areas susceptible include farms, orchards: Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar, Dodge's Mixed Use Agricultural Farm. Also vulnerable are those residences with private dug wells and Town water supplies [Berry Pond]. Drought means increased risk of brush fire with dry vegetation (see Wildfire for areas). Gravel roads affected because can't grade them when water is low. All fire ponds are low or dry (Quail Ridge). Higher elevations Tilton Hill, Catamount Road ledge (bedrock) are running out first.	Pittsfield has a lot of livestock and the Town would have to find ways of watering them during certain weather events, including drought. Municipal water supply is running low; Pittsfield Aqueduct said the water level is lower than normal but still sustainable (Berry Pond).	Palmer Hydrological Drought Index (PHDI)
	Excessive Heat	5.3	<b>Entire Town.</b> Vulnerable areas most susceptible to extreme heat include farms, orchards: Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar, Dodge's Mixed Use Agricultural Farm. Shelters are now being planned need to be opened for cooling centers during extended heat conditions.	Farms and agriculture are deemed most susceptible to extreme heat: Marston's Dairy Farm, Bachelder Farm, Apple View Farm (orchard), Loudon Road Journey's End maple sugar, Dodge's Mixed Use Agricultural Farm.	NWS Heat Index
Earth	Earthquake	4.0	<b>Entire Town.</b> The Central NH Region is seismically active and earthquakes are regularly felt from area epicenters. Damage to utility poles and wires, roadways and infrastructure (Pittsfield Mill Dam, Pittsfield Water Treatment Facility, Waste Water Treatment Facility) could be significant. Areas with underground utilities, community water systems, old buildings (Downtown), Town Buildings, and the High School are particularly susceptible.	Town buildings can be more susceptible because of their age: Fire Department, Police Department, Town Hall susceptible to earthquake. Pittsfield Mill Pond Dam on Suncook River would be disastrous if breached. The High School's original section is susceptible to earthquake. The sewer and water system is old.	Richter Magnitude Scale
	Landslide	2.0	<b>Slopes greater than 25%,</b> including roads with steep ditching or embankments are most vulnerable to landslide. The Suncook River and brook banks can also slide, usually known as erosion. Generally, vegetation in Pittsfield is good at preventing landslides. Route 107 has erosion in multiple places, Prescott Road receives landslide onto the road regularly, renders the road partly impassible and Mountain Road could be vulnerable. Road washouts and flash-flooding could cause landslides, but otherwise the Town is not particularly susceptible.	The Suncook River and brook banks can also slide, usually known as erosion. Generally, vegetation in Pittsfield is good at preventing landslides. Route 107 has erosion in multiple places, landslide occur on Prescott Road regularly and renders the road partly impassible, and Mountain Road could be vulnerable. Road washouts and flash-flooding could cause landslides, but otherwise the Town is not particularly susceptible.	No known widely-used scale measuring the magnitude of landslides
Technological	Dam Failure	4.0	<b>Pittsfield Mill Pond Dam</b> (state-owned) is the only High (H) Hazard dam in Town. Some dams in the Town have been breached but were not large enough to have caused a problem. <b>Largest concern is Pittsfield Mill Pond Dam</b> and other Suncook River dams. Spring runoff	The dams at White's Pond and Pittsfield Mill Pond can be expected to experience breaching in the future. White's Pond Dam poses a significant threat to area residents for multiple reasons. Spring runoff sends water	NHDES Dam Hazard Classification <i>either/or criteria</i> <i>*Dam Failure causes</i>

Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
			sends water over the road at Route 107, and there is the possibility that heavy rainfall will send water over the top of the PMP dam, threatening Route 107. A combination of water and ice would be required for a breach of the Pittsfield Mill Dam. Downstream (Chichester and Epsom) would be facing huge problems if the PMP dam breached.	over the road at Route 107, and there is the possibility that heavy rainfall will send water over the top of the dam, threatening Route 107. Pittsfield Mill Pond Dam (state-owned) is the only High (H) Hazard dam in Town. Breach of this dam would cause significant damage to life and property. Though flooding has been managed in the past, this site is susceptible to major flood events, including heavy rain events. All major licensed dams within Pittsfield have operations plans on file with the Emergency Management Director and should be referenced during one of the hazard events at the dams. They are also held at the Fire Department.	<i>flooding and therefore is included as natural in this instance</i>
Technological	Power/ Utility Failure	N/A	<b>Entire Town</b> , utilities and vulnerable populations. Wooded, forested and more remote sections of Town [list] would be difficult to access, with trees and power lines down on these routes or residential roads: Governor's Road, Hills Road, Ingles Road area, Molly Lane, Sweet Fern, Rocky Point Road, Gray Lag Campground on Wild Goose Pond - all dead end roads. Pittsfield primarily depends on Eversource for its power needs, with some areas served by NH Co-op (Clough Road). Power outages may last for several days before service is restored in a large event. The outskirts of Town are particularly vulnerable because the trees are overgrown. All of the utility the feeds come in from over the mountains, one over Catamount Road and one over Loudon Road into Eversource substation at Globe Manufacturing.	If substation at Globe Manufacturing failed, the 1/2 Downtown area would lose electricity. General population and business disruption, heat/cooling disruption to 55+ older facilities.	N/A

Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
Technological	Communications Systems Failure	N/A	<b>Entire Town, Telecommunications Tower.</b> Telephone lines often go down with power. Communications are detailed in the Community Vulnerability Assessment tables. Communications failure would be worse if it occurred at the Fire and Police Depts, Highway Department or Town Offices, especially during a holiday, or inhibited emergency dispatch and EOC operations. Most Town radios are interoperable, and they are used in more than one location. The Police Department has a repeater in a secondary location and is kept up to date. The Fire Department has mobile and land radios, with repeaters in locations in other towns. The Town is serviced by the Capital Area Mutual Aid Compact, which does all the emergency medical service and Fire dispatching. They have redundant capabilities and are currently upgrading their systems.	During every windstorm which causes a loss of power or phone landline, the Police repeater which is situated on a tower is disrupted, which reduces the services available to residents. Not enough wattage is produced, so the Police Department cannot transmit or receive during events that reduce or eliminate electricity.	N/A
	Debris Impacted Infrastructure	NR	<b>Most dams and bridges</b> could experience debris impacted infrastructure. The Town has built a diversion wall at the Pittsfield Mill Pond Dam, which also helps contend with tree debris. Bridges vulnerable to such a hazard would be on Main Street at the Suncook River, and on Route 107 at the White's Pond outlet. <b>Roads with culverts that regularly washout</b> are listed above under <b>Flooding</b> .	Debris in the form of trees is a constant concern, although they are not considered a particular hazard of concern in Pittsfield. The Town calls DES for removal. Bridges vulnerable to such a hazard would be on Main Street at the Suncook River, and on Route 107 at the White's Pond outlet. All outlying roads are susceptible (see <b>Wind</b> hazards).	N/A
	Transportation Accidents	NR	<b>Major NH Route intersections.</b> Frequent transportation accidents occur at each intersection with Route 28, especially the intersections with Loudon Road Barnstead Road. Other dangerous locations include Route 107 and Catamount Road "S" curve (icy conditions) for Town & State. See <b>Map</b> series for regular accident locations - at certain intersections, curves, straightaways, hills.	Traffic accidents occur in several locations along Route 28 repeatedly, at the Route 107 intersection, at the Leavitt Road intersection, at the Upper City Road intersection, at Dunkin Donuts, and along Route 107 over Catamount (windy).	N/A
	Hazardous Materials Spills/ Radiological Accidents	NR	<b>Route 28 and Route 107</b> would be the most realistic routes taken where vehicular traffic transports hazardous waste. The largest or most dangerous stationary sites that store and/or handle haz mat on site (fertilizer, pesticides, fuel, etc) are listed in <b>Appendix A</b> . Occupational haz mat sites where spills could occur include: health care facilities, schools, manufacturing, etc.	The Barnstead Chichester Epsom Pittsfield Recycling (BCEP) hosts a Household Hazardous Waste Collection Day once a year. Large volumes are collected from residents. Globe Manufacturing, the Power Station, 5 Main Street (old processing plants), and Northeastern Mechanical are the stationary site locations which may experience this type of hazard in the future.	N/A



Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
Technological	Public Health Epidemics	NR	<b>Congregate populations.</b> Elementary, Middle and High School, health clinics, restaurants, populated areas, large employers, apartments, senior housing, stores and public assembly venues listed in <b>Appendix A</b> - all of these locations increase the risk of exposure to and transfer of illness. The forests, conservation areas, agriculture, wooded areas, ponds can host ticks and mosquitos.	Member of the Northwood POD. Children and 55+ most vulnerable to public health epidemics.	N/A
	Fire (Vehicle, Structure, Arson)	NR	<b>Downtown &amp; Entire Town.</b> Areas most susceptible include: Downtown, vacant or vulnerable sites, foreclosed homes or seasonal buildings, buildings in densely populated areas or residential manufactured home parks. Vehicle fires could occur anywhere, parking lots, driveways, roadways.	Depot Street block - old, closely built 3-4 story wood buildings. Old downtown buildings. Downtown has potential mixed use buildings - restaurants with housing above and no good fire suppression can cause accidental grease fires. Vintage Hill Assisted Living (12 beds), Bridge View Apartments (14 units), Whites Brook Apartments (60 units), Rolling Green Apartments (40 units) do not have sprinklers.	N/A
	Terrorism	NR	<b>Unlikely, but Entire Town.</b> Most susceptible sites could include: NH Route 28 or Route 107, Pittsfield Mill Pond Dam, Water Treatment Facility, Wastewater Treatment Facility, Town Office, all Schools, Post Office, all governmental facilities, state facilities, political offices or rallies, churches, etc.), telecommunication towers, Schools, major employers (especially those large quantities of haz materials), health clinics, grocery or convenience stores, restaurants.	It is unlikely that the Town will be the target of any act of terrorism, but because there are many forms of terrorism and terrorists, the possibility always exists. Possible targets could be the Town Office, cellular towers, Globe Manufacturing, the High School, etc. There could be a massive impact felt in the community even on a small-scale event.	N/A
	Sabotage/ Vandalism	NR	<b>Town Facilities.</b> Sabotage would be most likely to occur at electric utilities, Town computer systems & website, Town buildings, dams, water supplies, waste water treatment, cemeteries, vacant buildings, under bridges. Berry Pond is not controlled or monitored (Town water system).	Vandalism could occur in Floral Park Cemetery and the Berry Pond Town water supply could be sabotaged. These facilities would be the most damaging to the community.	N/A
	Hostage Situation	NR	<b>Unlikely, Isolated events.</b> Locations where hostages could be taken include: Town Offices and other public buildings, Schools, banks, Post Office, Suncook Valley Sun, workplaces, grocery and convenience stores, restaurants, high density population areas (Downtown, manufactured housing parks, apartment buildings), courthouse, domestic home situations.	Hostage situations are not normal events and therefore are nearly impossible to predict. Domestic violence events generally occur in resident homes, perhaps one per year. Conventional hostage situations would most likely target such locations as the Town Offices or Elementary School, High School, major corporations, the Suncook Valley Sun, and the Post Office in Town.	N/A

Hazard Risk Assessment Hazards		Overall Risk	Hazard Locations in Town – Existing (Susceptible) From Hazard Risk Assessment	Potential Future Hazards	Magnitude/ Extent Measurement Scale
Human	Civil Disturbance/ Public Unrest	NR	<b>Limited, Downtown Area.</b> Locations where civil disturbance could occur should be limited. Locations and occasions include: Town Meetings, voting day, local board meetings, during visits from political candidates, at large events such as Old Home Day, Balloon Rally or Veteran's Parade, School sports events or graduation. Locations include the Schools, Tilton Hill Ball Field, Town Office, stores, restaurants, establishments serving alcohol, high density population areas (Main Street, downtown, manufactured housing parks, neighborhoods), courthouse, health clinics.	Large-scale incidents of civil disturbance and public unrest are unlikely in Pittsfield. Potential public unrest may take place at the Town Offices or the public school system. The Balloon Rally could be a public unrest concern because of the visitors parking on private property and not respecting the local property owners. High School-level sporting events can have irate parents who need to be calmed down or removed from the site. Security has been provided at public meetings, weddings, and funerals in Pittsfield.	N/A

*Source: Pittsfield Hazard Mitigation Committee*

Although there are many potential hazards in Pittsfield's future, the community is knowledgeable about where some of the worst occurrences might result with this descriptive **Potential Future Hazards** inventory. A comprehensive, specific community facility inventory that indicates each site's **Primary Hazard Vulnerabilities** is found next in **5 COMMUNITY VULNERABILITY ASSESSMENT**.

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## **Pittsfield's Built Environment Changes Since the 2012 Plan**

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The locations of where people and buildings are concentrated now or where new lands may be developed should be compared to the changing locations of potential natural hazards in order to best mitigate potential property damage, personal injury or loss of life.

### **The Town's Statement of Vulnerability Change**

The overall vulnerability of the Town to natural disasters is not believed to have increased with the development changes (population and housing increases) experienced by the Town over the last 5 years. The Town has removed some buildings in the floodplain to reduce risk of flooding damage. No extensive natural disasters have occurred that risked life, property or infrastructure during this time. The Town Departments handled the impacts of natural disaster events when they occurred and obtained federal Public Assistance funding to help offset some of the costs.

## **AREAS OF HIGHEST DENSITIES**

Downtown Pittsfield, along Barnstead Road and Main Street is a dense area of development which includes the Police Department, Fire Department, Town Hall, Pittsfield Elementary School, Pittsfield Middle-High School, Recreational Fields, several churches, economics assets and residential homes. The Suncook River winds through the downtown under several bridges and dams. The main hazards to be concerned about in this area are **floodwater runoff** from **rapid snow pack melt**, **debris impacted infrastructure** (culverts) or **severe storms** can occur anywhere downtown. **Lightning** may pose a threat to the church and other tall buildings due to their height.

Another area of high density is Route 28 along its intersections with Route 107, Levitt Road, Loudon Road, Barnstead Road, and other smaller outlets. This very busy stretch of road is host to many industrial businesses and the traffic entering them. The primary hazards are **severe wind events**, **severe winter weather** and technological hazards such as chemical fires or hazardous materials spills.

High residential density can be found throughout the Town in the many new subdivisions recently built. Primary egress is via Town Class V paved roads to Routes 28 or 107. The main hazards of concern for subdivisions include **wildfire**, **power failure**, and **severe winter weather**. Other residential developments can be susceptible to **wildfire** in forested, rural sections of Pittsfield, some with the limited evacuation options out of the area.

### Changes Since 2012 Plan

Downtown, the Town has removed the 42 Chestnut Street building (2-family home) in the floodplain to reduce risk of flooding damage. Little new development has occurred in the dense areas of Town. Most of the new development was in-fill development or redevelopment in existing buildings as opposed to new construction.

### **VULNERABLE POPULATIONS**

Numerous vulnerable populations are located in certain facilities around Town. Located Downtown, Blueberry Express Day Care and other day care providers in the area will need extra assistance during an emergency because there are many children at these sites in proportion to adults. Pittsfield Middle/High School and the Pittsfield Elementary School are in similar situations. **Severe winter weather** may cause damage to the buildings and create dangerous traveling conditions for buses and parents trying to pick up their children. **Human** and **public health** hazards are possibilities wherever schools and daycare facilities are located.

Retirement or assisted living communities including Rolling Green, Vintage Hill and Brock's Home require extra care taken during an emergency because the elderly may require extra assistance. **Power failures** may render the inability to operate oxygen machines or medical equipment.

Manufactured home parks including Bedell's, Bedell's 2 and Grigg's are considered vulnerable populations because of the large concentration of individuals living in a small area, and structural stability of shelter, and evacuation access in the event of **downbursts**, other **severe wind events**, and **snowstorms**. While the area is not believed subject to **floodings** or **wildfire** hazards, extra attention may be required during any other natural disaster event.

### Changes Since 2012 Plan

Several tax deeded manufactured houses were removed from Bedell's Park. Some of these were replaced with new structures. Other manufactured homes that were tax deeded were condemnable and removed by the Town. Other than these homes, the locations and number of vulnerable populations have neither increased nor decreased since the last Plan.

### **FUTURE DEVELOPMENT IN PITTSFIELD**

Areas which are most likely to experience future growth and development include Route 28, which is zoned for commercial and industrial development. **Severe winter weather** and **wind events** will be hallmark to any facilities or developments locating to Pittsfield.

Upgrades to the Wastewater Treatment Facility are continuous and could help prevent future **biological**, **water quality**, chemical, **fire**, and **floodings** hazard events.

West Meadow (Merrill), an unbuilt **8**-unit housing development, will be located on Catamount Road. Baily Drive (K&M) and Governor's Road (Telos) are also un-built residential subdivisions. The developments could be vulnerable to **wildfire**, **severe winter weather**, and **lightning**.

Family-run Mud Run (a vehicle rally) on Thompson Road has been a large attraction but is currently on a business break. The **400** vehicles and their occupants which the events attract are susceptible to **severe wind events**, **traffic accident**, and **flooding**, respectively.

Subdivision of legacy parcels, those family-owned large parcels throughout the Town, may occur at any time when these lots are inherited by the next generation. These legacy parcels, if developed under existing zoning regulations, could quickly outweigh the ability of Town services to appropriately respond to resident needs.

The Town will continue to grow and develop, and attention should be focused on the hazards any new development could face during the consideration process. At this time, techniques to mitigate identified hazards could be undertaken before the facilities are sited and constructed.

### **Changes Since 2012 Plan**

Some of the Baily Drive (K&M) lots had been sold and built.

The main natural hazards for this rural, forested community remain **wildfire**, **severe wind events**, **severe winter weather**, **debris impacted infrastructure** (trees down on powerlines and trees/powerlines down on roads), and **power outages**. The Town will need to ensure Town services are not eclipsed by the needs of new development.

Any future development in Town could be vulnerable to the various natural hazards identified previously. The Town is heavily forested, rural, and agricultural. New (or replacement) buildings and infrastructure and potential future development appear in **APPENDIX A Critical and Community Facility Vulnerability Assessment**.

## 5 COMMUNITY VULNERABILITY ASSESSMENT AND LOSS ESTIMATION

The Hazard Mitigation Committee developed and/or updated as needed each of the assets tables within this Chapter. Sites were added or removed, and contact information was revised. Modifications were made to the **Primary Hazard Vulnerability** column to reflect changes over the last five years. Revisions were made to the future development section, which now includes a clear table. The Plan's maps were also updated from the **Pittsfield Hazard Mitigation Plan 2012**.

The identification of Critical and Community Facilities within Pittsfield is integral to determining what facilities may be at risk from a natural disaster. Every Critical and Community Facility can be damaged by multiple hazards listed in **4 HAZARD RISK ASSESSMENT**. A tabular inventory of facilities in Pittsfield is provided in **APPENDIX A Critical and Community Facilities Vulnerability Assessment**. The **911 Street Address** and **Phone** number of each facility is supplied, the assessed **Structure Replacement Value \$**, and the **Primary Hazard Vulnerabilities** to which the facility is most susceptible are listed. The hazards identified are primarily natural disasters but regularly include the technological (and secondary disasters) such as power failure and communications systems failure as well as human hazards such as vandalism/sabotage.

Most sites appear on [Map 3: Critical and Community Facilities](#) and [Map 4: Potential Hazards and Losses](#).

Potential dollar losses for each of the facilities' **Structure Replacement Value \$** (not land) have been obtained through the [February 2017 assessments](#) to provide a starting point of the financial loss possible should these structures become damaged or require replacement. These community facility losses are estimated for the value of structure and does not include land (unless indicated), contents, or infrastructure.

**Problem Statements** were then generated for each type of facility when issues were identified by the Hazard Mitigation Committee during discussion of the facility characteristics and **Primary Hazard Vulnerabilities**. These **Problem Statements** are listed here.

Potential dollar losses to buildings in the Pittsfield from flooding and other natural hazards are provided using the methods described in the chapter. The Town's participation in the National Flood Insurance Program (NFIP) offers a way for individuals to obtain insurance coverage for flooding. The Town's history with NFIP claims and repetitive losses are examined.

The Chapter provides an inventory of the **Community Facilities** and **Critical Facilities** and the most prevalent hazards to which they are vulnerable. Potential structure damage loss is also provided. The detailed information is available in **APPENDIX A Critical and Community Facilities Vulnerability**

**Assessment:**

Facility Name	Street Address (911)	Phone	Structure Replacement Value* \$	Primary Hazard Vulnerabilities
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## Critical Facilities

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**Critical Facilities** are categorized as those Town or State buildings or services that are first-responders in a disaster or that are required to keep the community running during a disaster. The Fire Department, Police Department, Highway Department, Town Offices, BCEP Solid Waste Facility, Pennichuk Water Treatment Facility and Pittsfield Wastewater Treatment Facility are crucial in providing and coordinating every day and emergency services. Other **Critical Facilities** would include educational facilities, clinics and emergency shelters. Utilities or utility features such as cisterns, culverts, dry hydrants, pump stations, water and sewer lines, and electric transmission lines are included because of the essential communication and power/water services provided.

Many such facilities are located in Pittsfield. The assessed structure/building only value is provided for each facility where available, otherwise estimates are provided to help ascertain the financial impact a disaster can have on the community. To view the detailed **Critical Facilities** sites and tables, see **APPENDIX A**. Most of these facilities appear on *Map 3: Community and Critical Facilities*.

**Essential Facilities include:** Town Hall, Police Department (g), Fire Department (g), Highway Department (g), Town Salt Shed. Those facilities with a (g) indicate a generator can power the facility if electricity is shut down. Assessed structure (only) replacement values for these essential facilities total **\$1.5m**.

**Utilities include:** Pennichuck Water Works Company, Wastewater Treatment Plant, Sprint Communications Tower, Verizon Communications Tower, Emergency Communications Tower (Police Dept), Fairpoint, Eversource Substations (2). Assessed values for these utilities in Town total **\$16.5m**.

**Dams include:** 2 High Hazard (H) dams- Pittsfield Mill Pond (Suncook River) and Dam Berry Pond Dam (Berry Pond Brook). 2 Significant Hazard (S) dams- Whites Pond Dam and Dike (tributary of Suncook River) and Pittsfield Sewage Lagoon. 2 Low Hazard (L) Dams- Clarks Pond Dam (Berry Pond Brook), and Adams Pond Dam (Adams Pond). 11 Non-Menace Dams- Whites Pond Dike (tributary of Suncook River), Farm Pond Dams (3), Fish Pond Dams (2), Barto Farm Pond Dam, Drolet Farm Pond Dam, Globe Fish Pond Dam (Natural Swale), Pittsfield Water Treatment Dam and Ryan Dam (Unnamed Brook). Estimated structure (only) repair values for these dams total **\$8.5m**.

**Bridges include:** Shaw Road over Kelley Brook (Town), Main Street over Suncook River (State), Main Street over Suncook River Penstock (Private), Bridge Street over Suncook River (Town), NH 107 over Suncook River (State), NH 107 over Kelley Brook (State), NH 107 over White Pond Outlet (State) and Webster Mills Road over Suncook River (Town with Chichester co-owner). Estimated structure (only) rehabilitation values for these bridges total **\$5.3m**.

**Shelters, Schools, and Medical Facilities include:** Pittsfield Middle/High School (~400 children), Pittsfield Elementary School (~200 children), Pittsfield School District and Pittsfield Community Center (~300



people) Assessed structure (only) replacement values for these schools, medical facilities and shelters total **\$7.0m**.

## **PROBLEM STATEMENTS**

During discussion of these **Critical Facilities**, the Hazard Mitigation Committee identified specific issues or problems that could be further evaluated. **Problem Statements** were developed after ascertaining the **Primary Hazard Vulnerabilities** to the sites and known existing issues. These potential hazards were typically those from the **Hazard Risk Assessment**.

- ⊙ The Town Hall & Police Department's permanent, historical paper hard-copy records are vulnerable to fire, lightning, wind, all other natural hazards.
- ⊙ Police Dept equipment and uniforms are vulnerable if the building is struck by natural disaster. Operations and resources would be compromised if PD building was nonfunctional.
- ⊙ The Fire Department building is built on swampland and is currently settling down into the former Tannery waste (eroding down into the ground). The FD is more susceptible to other hazards as a result.
- ⊙ The Highway Department Garage is upstream of the Fire Dept on the same bog and may also experience settling.
- ⊙ The BCEP landfill in the late 1980s may have not been properly covered & sealed to current standards due to its age and lack of methane well pipe. Current DES inspection letters are copied to the Town.
- ⊙ ACTION: The Fire Department building and Highway Garage should be elevated as they are situated on a bog.
- ⊙ The top of the Pennichuck Water Works watershed (Sanderson Drive, Mullen Drive) has multiple private home septic facilities are heading downhill toward Berry Pond reservoir.
- ⊙ The Pittsfield Mill Dam handles a large volume of water, but if water flows around or over the dam, businesses, infrastructure, residential homes are impacted.
- ⊙ Any ponded water backed up behind the Pittsfield Mill Dam creates a bigger floodplain environment to River Road and Smith Road homes.
- ⊙ A Pittsfield Mill Dam breach or failure has a larger impact downstream on the Chichester and Epsom communities, especially campgrounds and agricultural lands.
- ⊙ The Webster Mills Bridge, susceptible to ice jams, is jointly owned with Chichester and the Pittsfield school buses are on other side of the bridge (Suncook River) in the event of an emergency.

- The Webster Mills Bridge written agreement with Chichester for maintenance has yet to be found. Pittsfield does more maintenance, washing the bridge deck and plowing than Chichester.

Many of these problem statements were developed into Actions discussed later in **7 POTENTIAL ACTION EVALUATION** and **8 MITIGATION ACTION PLAN**.

## **CULVERT UPGRADES**

A table of culverts in need of upgrade does not appear with the **Community Facility Vulnerability Assessment** but is included here within this section. Culverts (including box culverts, often considered “almost bridges”) are responsible for carrying large volumes of water safely under roadways, and with the prior severe flooding events it is necessary to keep Town infrastructure in good condition. **Table 25** displays a listing of culverts in need of upgrade and approximately when the upgrades should occur. The estimated cost for replacement of all these culverts is **\$241,000** for materials; labor for the smaller projects is performed by Town staff and usually considered an in-kind cost. For the larger projects, contracted engineering, design and permitting may need to be occur and is included in the cost estimates.

**Table 25**  
**Town-Owned Culverts in Need of Upgrade**

Location of Culvert(s) to Upgrade	# of Culverts	Intersecting Watercourse	Issue(s) with the Culvert(s)	Upgrade Diameter Inches	Estimated Upgrade Year	Total Approx \$ Cost for All
Eaton Road	1	Seasonal stream	12" corrugated metal pipe, rotten, undersized and misaligned	15	2017	\$1,500
Tan Road	1	Cross culvert for road drainage	12" corrugated metal pipe, rotten, undersized and misaligned	15	2017	\$1,500
Thompson Road	1	Seasonal stream	12" corrugated metal pipe, rotten, undersized and misaligned	15	2017	\$1,500
Clough Road	1	Unnamed stream	After Shingle Mill Brook Road. 24" corrugated metal pipe, undersized and deteriorating	36	2018	\$5,000
Governors Road	2	Seasonal stream	12" concrete pipes. Undersized, separating and too short	18	2018	\$5,000
Tilton Hill Road	1	Cram Brook	Old undersized 36" concrete pipe. Needs to be upgraded to a box culvert.	TBD	2018	\$70,000
Mountain Road	1	Seasonal stream	12" corrugated metal pipe, rotten, undersized and misaligned	15	2020	\$1,500
Tan Road	3	Gulf Brook	Undersized 36" concrete pipes. Need to be upgraded to box culverts.	TBD	2020	\$150,000
Mountain Road	1	Cross culvert for road drainage	18" concrete pipe with deteriorated header box and pipe separation	24+	2021	\$5,000
<b>Totals</b>	<b>12</b>					<b>\$241,000</b>

*Source: Highway Department February 2017*

This listing of the necessary upgrades to culverts in the community can help begin formulation of a culvert upgrade and maintenance plan. Knowing the location and condition of all culverts to help guide their replacement, maintenance, and monitoring regularly can help alleviate some of the run-off and overtop flooding conditions in Pittsfield, particularly those related to washouts.

Some of the culverts listed in **Table 25** have been developed into **Mitigation Action Plan** items in **8 MITIGATION ACTION PLAN**.

## Community Facilities

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The **Community Facilities** inventoried in **APPENDIX A** generally vulnerable to disasters and in need of careful consideration. Some facilities are vulnerable populations, places where people gather, the economic assets of the community, contain the history of the town, or could release hazardous materials during hazard or disaster events. While **Critical Facilities** are strong with emergency preparedness and mitigation measures, **Community Facilities** are typically not as well attuned to these issues and would require more emergency services during a hazard event disaster.

**Vulnerable Populations** include: Rolling Green (~28 apartments), Vintage Hill (~8 apartments), Brock's Home (~5 beds), Blueberry Express/Pittsfield Head Start (~50 children), Bedell's Manufactured Home Park (~6 homes), Bedell's Manufactured Housing Park #2 (~10 homes), Griggs Manufactured Housing Park (~27 homes), White's Brook Apartments, (~60 apartments) and Bridgeview Apartments (~24 apartments). Assessed structure (only) replacement values for these vulnerable populations total **\$6.5m**.

**Economic Assets** include those businesses and services that employ a large number of people or contribute to the local economy: Globe Manufacturing, Kentek Corporation, Suncook Valley Sun, Atlantic Safety/Grace Capital Church, Rustic Crust, Barry Podmore, Inc., New England Mechanical Overlay, North East Earth Mechanics, Danis Supermarket Inc, Rite Aid, American Energy Independence Company, LLC (Amenico), Dunkin Donuts, Maxfield Ace Hardware, Trailer Tom's Office Storage. Assessed structure (only) replacement values for these economic assets total **\$10.2m**.

**Cemeteries and Churches** include: Park Street Baptist Church, Pittsfield Congregational Church, St. Stephen's, Advent Christian Church, Our Lady of Lourdes, Quaker Friendship Meeting House, Pittsfield Church of God, Grace Capital Church, Berry Family Cemetery, Blake Cemetery, Brock-Snell Cemetery, Brock Cemetery, Brown-James Cemetery, Brown Cemetery, Davis-Greenleaf Cemetery, Drake-Eaton Cemetery, Drake Cemetery, Edgerly Cemetery, Farmer Cemetery, Floral Park Cemetery, Fogg-Joy Cemetery, Goss Cemetery, Green Cemetery, Harvey Cemetery, Hoague-Wesson Cemetery, James Cemetery, Joshua Berry Cemetery, Knowlton Cemetery, Lane Cemetery, Locke-Watson Cemetery, Mansfield-Potter Cemetery, Marston Cemetery, McInnis Cemetery, Merrill Cemetery, Moody Cemetery, Mount Calvary Cemetery, Old Meeting House Cemetery, Osborn Cemetery, Pillsbury Cemetery, Quaker Cemetery, Ring Cemetery, Sargent Cemetery, Shaw Cemetery, Tilton-Watson Cemetery, Towle Cemetery,

True Cemetery I, True Cemetery II, Tucker Cemetery, Watson Cemetery and Yeaton Cemetery. As cemeteries do not contain structures, broad estimates of headstone or mausoleum replacement value were provided instead. Assessed structure replacement values for these cemeteries and churches total **\$4.3m.**

**Hazardous Materials Facilities include:** BCEP Solid Waste Facility (Landfill) (g), St. George Auto Body, J&R Autobody, Pittsfield Garage, Bell Brothers Convenience Store, TCs Service Station, Granite State Motor Sales, Green Leaf Autobody, Eastern Propane, J Parker & Daughters (Excavation), Any Make Auto, Roy Richardson's Auto Salvage, Pittsfield Salvage, James Snedeker Removal, Sanel Auto Parts. See also Economic Assets. Assessed structure (only) replacement values for these hazardous material facilities total **\$2.6m.**

**Historic Sites and Buildings include:** Historical Society, Washington House Lot/Park, and Lyman Park/ Yellow Block Lot. Assessed structure (only) replacement values for these historic sites total **\$240k.**

**Recreational and Gathering Sites of both land and buildings include:** Pittsfield Youth Association (PYA) Baseball Field, Drake Field, Pittsfield Elementary School Playground, Pittsfield Middle High School Grounds, Dustin Park, Forrest B. Argue Pool, Josiah Carpenter Library, Pittsfield Masonic Association, American Legion, South Pittsfield Community Club. Some of these sites can be economic assets to the Town even if the land is untaxable. Assessed structure value for the **2** private business recreational facilities total **\$1.2m.**

**Future Development includes** mostly residential development potential as most of the land in Pittsfield is rural. Approved Planning Board developments: Bailey Drive (K&M), West Meadow (Merrill), Governor's Road (Tilos). Legacy parcels (large family lots with development potential): Watson Family, Marston Family, Sharon Family, Metcalf Family, Gernhard Family, Gangwer Family, Bachelder Family, Laro Family, Tucci Family, Baker Family, Thomas Christie and Chris Hill. Other parcels are currently for sale: Elliott Lot, Medical Associates of Pittsfield, Huckins Lots, Beaudet Lots, Seavey Lot (R-6 Lot 14). There are too many large family legacy parcels to identify without an inventory. Assessed vacant land not yet built for these locations totals **\$6.5m.**

## **PROBLEM STATEMENTS**

During discussion of these Community Facilities, the Hazard Mitigation Committee identified specific issues or problems that could be further evaluated. **Problem Statements** were developed after ascertaining the **Primary Hazard Vulnerabilities** to the sites and known existing issues. These potential hazards were typically those from the **Hazard Risk Assessment**.

- ⊙ The Community Center could have a parking issue - there is only on-street parking and does not have enough parking for a full capacity facility.
- ⊙ Rolling Green evacuation access may be problematic- there is only one way in/out, fire apparatus limited because of cars parked in the way.

- ⊙ The Blueberry Express facility is prone to erosion with the backside of the building facing the side of the Suncook River with a steep embankment.
- ⊙ If Barnstead Dam failed, the Blueberry Express facility would be susceptible to immediate danger of meander embankment erosion from the Suncook River.
- ⊙ White's Brook Apartments has a high concentration of people, limited access (one way in/out), surrounded by forested area, is prone to debris impacted infrastructure (trees falling).
- ⊙ If the Pittsfield Mill Dam fails, the liquor store (6 Water), Amenico, laundromat (10 Water St), Danis supermarket (8 Water) business compound and the adjacent apartment building of 14 Water Street would be flooded.
- ⊙ The front/side part of the Amenico building or its foundation could be washed out/eroded if the Pittsfield Mill Dam fails.
- ⊙ Parking for several churches is not available, patrons park on private property only or few off-street spaces are available.
- ⊙ People often choose to go to church during extreme disaster conditions when they should be staying safe at home.
- ⊙ Accessibility to the church sites during emergencies is difficult, especially when services are in session, because emergency vehicles cannot maneuver around the parked cars on streets or in the small lots.
- ⊙ Eastern Propane's 30,000 gallon propane tank could be released from its holding if the Pittsfield Mill Dam failed.
- ⊙ If the Historical Society building were damaged and its contents damaged by fire or other hazard, Pittsfield's historical culture would be lost.
- ⊙ Social dinners and events at the South Pittsfield Community Club draw many older residents and are difficult to evacuate during emergencies.
- ⊙ The influx of people during the Balloon Rally events at Drake Field are too many to evacuate quickly and safely.
- ⊙ If half of these families developed their land in the next 5 years, Town services (Education, Fire, Police, Highway, Transfer) would be overcome.
- ⊙ Water runoff would increase with higher number of impervious surfaces and cause water quality issues of Jenness Pond.

Many of these problem statements were developed into Actions discussed later in **7 POTENTIAL ACTION EVALUATION** and **8 MITIGATION ACTION PLAN**.

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## Potential Losses from Natural Disasters

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Natural disasters, including floods, wind events, severe winter storms and ice storms, secondary disasters as a result of the natural disasters (such as power loss) and to a lesser degree, human and technological hazards as documented in **4 HAZARD RISK ASSESSMENT** have occurred in Pittsfield. This section estimates Town-wide structure/building damage in Town from natural hazard events. It is difficult to ascertain the amount of damage caused by a hazard because the damage will depend on the hazard's location and magnitude, making each hazard event somewhat unique. Human and technological hazards are typically even more incalculable. Human loss of life was not included in the potential loss estimates for natural hazards, but could be expected to occur, depending on the severity of the hazard.

While this Plan focuses on being pro-active in those geographic areas of Pittsfield most prone to recurring hazards (like flooding), some initial estimates of measurable property damage and building damage have been discussed by utilizing simple techniques such as the numbers of structures and assessed valuation. This two-dimensional approach of calculating dollar losses from tangible structures offers a basic yet insightful tool to begin further loss estimation analyses.

### TOOLS FOR COMMUNITIES WITH GIS

For gauging more three-dimensional estimation of damages, FEMA has developed a software program entitled HAZUS-MH (for multi-hazard), which is a powerful risk assessment software program for analyzing potential losses from floods, hurricane winds and earthquakes. In HAZUS-MH, current scientific and engineering knowledge is coupled with the latest Geographic Information Systems (GIS) technology to produce estimates of hazard related damage before, or after, a disaster occurs. Developed for ARCGIS which produced the *Maps* for this Plan, HAZUS-MH takes into account various effects of a hazard event such as:

- Physical damage: damage to residential and commercial buildings, schools, critical facilities, and infrastructure;
- Economic loss: lost jobs, business interruptions, repair and reconstruction costs; and
- Social impacts: impacts to people, including requirements for shelters and medical aid.

Federal, State and local government agencies and the private sector can order HAZUS-MH free-of-charge from the FEMA Distribution Center. Pittsfield should first ascertain whether a municipal geographic information system (GIS) of hardware and software is appropriate, and if so, consider training staff to perform models. With many Town existing and under-development infrastructure GIS data layers available, HAZUS-MH could prove very helpful for estimating losses for the community on a disaster-specific basis. However, much staff time is necessary to train staff and maintain a GIS system. Official map generation is typically subcontracted out to other agencies now, including *the mapping and appraisal company Avitar Associates of New England used by the Town* and the Central NH Regional Planning Commission who developed the Maps for this **Hazard Mitigation Plan**.

## **METHODS OF POTENTIAL DOLLAR LOSSES BY NATURAL HAZARDS**

A more manageable technique was used for loss estimation for the purposes of this **Hazard Mitigation Plan Update**. Natural hazard losses are calculated based on dollar damage ranges over the entire community, or in the case of flooding, buildings in the Special Flood Hazard Areas (SFHAs) are counted and their value is collected. The number of total parcels in the community as of **December 2016** is **1,884**. Using **December 2016** MS-1 assessment data in March 2017, **the total assessed value of all residential and non-residential structures ONLY in Pittsfield (\$199,875,000)** is the basis for loss estimation calculations.

### **Potential Building Dollar Losses by SFHA Flooding**

Parcels within the floodplain were identified using Pittsfield's 2016 digital online tax maps concurrently with the 2010 FEMA Digital Flood Insurance Rate Maps (DFIRMs). Next, parcels containing buildings were identified using the Town tax assessor's April 2017 database for the Town. Building type was characterized into one of four categories, single-family homes, multi-family homes, manufactured homes, and non-residential buildings. Building number and value were excerpted from the assessing database. **Land value, building content value and infrastructure were not considered in these calculations.** **Table 26** summarizes this data.

**Table 26**  
**Building Value in the Special Flood Hazard Areas (SFHAs)**

<b>Building Type</b>	<b>Number of Buildings</b>	<b>Total Value of Buildings</b>	<b>Average Replacement Value</b>
<b>Single Family Homes</b>	45	\$4,588,500	\$101,967
<b>Multi-family Homes</b>	15	\$3,276,100	\$218,407
<b>Manufactured Homes</b>	4	\$52,100	\$13,025
<b>Non-Residential Buildings</b>	12	\$5,123,800	\$426,983
<b>Totals</b>	<b>76</b>	<b>\$13,040,500</b>	-----

*Sources: Town of Pittsfield mapping and appraisal systems, 03-17; 2010 DFIRMs*

In **Table 26**, **45** single family residential homes, **15** multi-family homes, **4** manufactured homes, and **12** non-residential buildings were considered to be situated the Special Flood Hazard Areas (SFHAs). The average replacement value is **\$102k** for a single-family home (**\$4.6m** for all SF) and **\$427k** for a non-residential building (**\$5.1m** for all NR). The total value of all buildings in the Special Flood Hazard Areas is about **\$13m** for the **76** structures.

There are alternative ways to calculate potential SFHA losses. In the following tables, the average building replacement value was calculated by adding the assessed values of all structures in the special flood hazard areas and dividing by the number of structures. The Federal Emergency Management Agency (FEMA) has developed a process to calculate potential loss for structures during flooding. The potential loss was calculated by multiplying the average replacement value by the percent of damage expected from the hazard event, and then by multiplying that figure by the number of structures.



The costs for repairing or replacing infrastructure such as bridges, railroads, power lines, roads, drainage systems, telephone lines, or natural gas pipelines, and land value and the contents of structures have not been included in these estimates in the following figures.

**Table 27** represents the **worst case scenario of all** single-family homes, multi-family homes, manufactured homes, and non-residential buildings within the Special Flood Hazard Area that are damaged by a flood hazard event.

**Table 27**

**Dollar Damage Ranges for Total Buildings in Special Flood Hazard Areas (SFHA)**

Building Type	Total Value of Buildings in SFHA	Total Value of Potential Damages in SFHAs by Respective Building Type		
		Eight-Foot Flood 49% Damage	Four-Foot Flood 28% Damage	Two-Foot Flood 20% Damage
Single Family Homes	\$4,588,500	\$2,248,365	\$1,284,780	\$917,700
Multi-Family Homes	\$3,276,100	\$1,605,289	\$917,308	\$655,220
Manufactured Homes	\$52,100	\$25,529	\$14,588	\$10,420
Non-Residential Buildings	\$5,123,800	\$2,510,662	\$1,434,664	\$1,024,760

Sources: See **Table 26**; FEMA

If all **45** single family homes were damaged by a **Two-Foot Flood (20% Damage)**, the dollar damage to the buildings *only* could be **\$920k** while an **Eight-Foot Flood (49% Damage)** could yield **\$2.2m** in damage. All **12** non-residential buildings *only* damaged in the same **Two-Foot Flood (20% Damage)** could total **\$1.0m** versus an **Eight-Foot Flood (49% Damage)** yielding **\$2.5m** in damage. Dollar damage estimations vary according to the standard percentages of damage levels associated with flooding levels set by FEMA. Content, land and infrastructure values are not included.

**Table 28** also represents the worst case scenario, but of *individual* single-family homes, multi-family homes, manufactured houses, and non-residential buildings within the Special Flood Hazard Area that are damaged by a flood hazard event.

**Table 28**

**Dollar Damage Ranges for Individual Buildings in Special Flood Hazard Areas (SFHA)**

Building Type	Average Value of Individual Buildings in SFHA	Individual Value of Potential Damages in SFHAs by Respective Building Type		
		Eight-Foot Flood 49% Damage	Four-Foot Flood 28% Damage	Two-Foot Flood 20% Damage
Single Family Homes	\$101,967	\$49,964	\$28,551	\$20,393
Multi-Family Homes	\$218,407	\$107,019	\$61,154	\$43,681
Manufactured Homes	\$13,025	\$6,382	\$3,647	\$2,605
Non-Residential Buildings	\$426,983	\$209,222	\$119,555	\$85,397

Sources: See **Table 26**; FEMA

If **1** single family home was damaged by a **Two-Foot Flood (20% Damage)**, the projected dollar damage to the building *only* could be about **\$20k** while an **Eight-Foot Flood (49% Damage)** could yield **\$50k** in damages. If damage was sustained to **1** non-residential building, the projected dollar damage to the building *only* could be **\$85k** from a **Two-Foot Flood (20% Damage)** and **\$209k** in damages from an **Eight-Foot Flood (49% Damage)**. Content, land and infrastructure values are not included.

### **Potential Building Dollar Losses by Other Natural Hazards**

Flooding is often associated with heavy rains and flash floods, hurricanes, ice jams, rapid snow melting in the spring, and culvert washouts. These are all types of flooding hazards discussed or evaluated previously but can also occur outside of the SFHA.

Building damage by natural disasters in New Hampshire is not limited to SFHA flooding alone, which is easier to quantify and predict. Simple calculations can be made based upon generalizations of a disaster impacting a certain percentage of the number of buildings in the Town. **The assessed value of all residential, commercial, and industrial structures in Pittsfield is \$199,875,000 (no land).** Disaster damages are often illustrated in the following section utilizing a percentage range of town-wide building damage. At **1,769** housing units in Pittsfield from the US Census 2010, disaster impact to **10%** of them would yield **177** damaged homes.

The inventory of Town sites or buildings in **APPENDIX A Critical and Community Facilities Vulnerability Assessment** indicates which hazards each site is most susceptible to and provides its assessed valuation. This dollar value can be used as a damage estimate from the natural hazard events listed below. Yet the potential losses discussed in this section involve all buildings across the community to provide a more distinct portrait of potential losses using the assessed valuation of all town buildings. Damages from natural hazards to anything other than buildings, such as infrastructure, land, humans or building contents, are not examined here. Specific individual studies would be needed to assess more detailed scenarios.

### **Wind Events**

Damage caused by wind events such as **tropical storms & hurricanes, downbursts, tornadoes** and **severe wind storms** can be both excessive and expensive. Pittsfield is primarily a wooded, rural community with forested residential neighborhoods along Town roads. The assessed value of all residential, commercial, and industrial structures in Pittsfield is **\$199,875,000 (no land)**.

With a scenario range of **1% to 5%** of buildings damaged by wind events throughout the Town, a wind event could potentially cause up to **\$2.0m (for more localized downburst, high winds, or tornadoes)** to **\$10.0m (for more damaging and widespread tropical storms and hurricanes)** in building-only damage costs alone, not including contents, infrastructure, or land.

### **Severe Winter Weather**

Heavy **snow loads**, **icy conditions**, **extreme cold**, **wind chill**, and the secondary hazards (including **power failure**, **transportation accidents** and **debris impacted infrastructure**) are result of **winter storms**. Storms with these conditions have been felt in Pittsfield in the past. These hazards and secondary impacts are a risk to the community, including isolation, more falls, (especially by the older residents), and the potential for roof collapse. Damage caused by this type of hazard varies according to wind velocity, snow accumulation, and duration.

With a scenario range of **1%** to **5%** of buildings damaged throughout the Town, **severe winter storms** could potentially cause up to **\$2.0m** to **\$10.0m** in building-only damage costs.

### **Rapid Snow Pack Melt**

**Flooding** caused by **rapid snow pack melt** is often found along roadways and from watercourses such as the brooks and wetlands in Town. Those locations which are particularly susceptible would be the floodplain, along previously identified roadways, Downtown and especially along hilly gravel roads. Anywhere the water cannot yet percolate into the frozen ground could be vulnerable.

With a scenario of **0.5%** of buildings flooded throughout the Town, **rapid snow pack melt flooding** could potentially cause **\$1.0m** in building-only damage costs alone, not including contents, infrastructure, or land.

### **River Ice Jams and Debris Impacted Infrastructure**

**Ice jams** on the local brooks would be the major causes of **ice jam flooding** but would be quite unlikely to occur. Woody material causing **debris impacted infrastructure** would be more likely to occur to bridges than ice jams. Eight (**8**) bridges are located in Town. Multiple additional small streams culverts and drainage systems abound. The **2017-2026 NH Department of Transportation Ten Year Plan (TYP)** provides many examples of basic cost estimates bridge replacement and rehabilitation. Within or near the Central NH Region rehabilitation of small local bridges can average **\$450,000** while replacement of small local bridges can average over **\$600,000**.

This average figure of **\$600,000** can be used for one (**1**) local bridge *replacement* in Pittsfield due to the physical damage caused by **river ice jams** or **debris impacted infrastructure**. The same bridge damaged by **ice** or **debris** which only requires *rehabilitation* could cost **\$450,000**.

Or, if half of the **45 (23)** single family homes in the floodplain were damaged by **Two-Foot Flooding (20% Damage)** resulting from **river ice jams** or **debris impacted infrastructure**, there could be up to **\$460k** in building damage costs.

### **Earthquake or Landslide**

**Earthquakes** can cause buildings and bridges to collapse, disrupt water supplies, electricity and phone lines and are often associated with **landslides** and **flash floods**. Buildings that are not built to a high seismic design level could be susceptible to structural damage. The historic Downtown could be more vulnerable to earthquakes as buildings are older, wooden frame, close together and not built to modern codes. Buildings which are located on or near the sides of river and stream banks or that are located on a hill over **15%** could be subject to **landslide** triggered by rains or **erosion**.

With a scenario of **0.5%** of buildings damaged throughout the Town, an **earthquake** or **landslide** could potentially cause up to **\$1.0m** in building-only damage costs alone, not including contents, infrastructure, or land.

### **Wildfire**

The risk of **wildfire** is difficult to predict based on location. Forest fires are more likely to occur during years of **drought**. In addition, areas and structures that are surrounded by dry vegetation that has not been suitably cleared are at high risk. Humans can contribute by accidents in the woods or dry fields, or by the deliberate setting of **fire** in a structure. Fire danger is generally universal and could occur at any time. Dollar damage would depend on the extent of the fire, the number and type of buildings burned, and the amount of contents destroyed within the buildings.

With a scenario of **1.0%** of buildings damaged in the Town, a **wildfire** could potentially cause up to **\$2.0m** in building-only damage costs alone, not including contents, infrastructure, or land.

### **Lightning**

Damage caused by **lightning** would not be Town-wide because it typically strikes in smaller areas. Few places in Pittsfield are at specific risk but lightning strikes can cause fires. In the future, damages will vary according to the value of the structure and home and the contents inside, and dollar amounts would depend on if the hazard hit an area with a high density of buildings.

With a scenario of **0.5%** of buildings damaged throughout the Town, a **lightning** could potentially cause up to **\$1.0m** in building-only damage costs alone, not including contents, infrastructure, or land, through fire spreading.

### **Drought**

**Drought** is often declared on state-wide or region-wide basis, and sometimes by individual town. Dollar damage caused by drought would be difficult to quantify, but would most likely impact the agricultural and economic base of a community. Although everyone could be charged to conserve water, orchards, farms, and nurseries would be most affected.

As physical damage is usually isolated to specific locations, the effects of potential disasters at certain facilities could be researched utilizing the Town's assessor's database for valuation on targeted land. Agricultural land may be among the most affected by drought. People who rely on well water, which is nearly all of the community, might find their wells running dry, especially dug wells. The Town has about **1,294** acres, or **9%** of its land, in agricultural use which could be physically and economically damaged by a drought.

#### **Critical Facilities Buildings**

These dozens of essential facilities, utilities, dams, bridges, and shelters and medical facilities inventoried in **APPENDIX A Critical and Community Facilities Vulnerability Assessment** provide the **Structure Only Value \$** from the *mapping and appraisal systems*. Multiple hazards are identified which may damage each inventoried building. Therefore, if the Town wanted to ascertain the damage cost from any natural hazard to an individual critical facility, this dollar value is available for evaluation.

#### **Community Facilities Buildings**

Dozens of community facilities such as vulnerable populations, recreation and gathering sites, historic sites, economic assets, hazardous materials facilities, and more are inventoried in **APPENDIX A Critical and Community Facilities Vulnerability Assessment** provide the **Structure Only Value \$** from the *mapping and appraisal systems*. Multiple hazards are identified which may damage each inventoried building. Therefore, if the Town wanted to ascertain the damage cost from any natural hazard to an individual critical facility, this dollar value is available for evaluation.

## National Flood Insurance Program (NFIP)

In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities such as Pittsfield agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding. For more information on the National Flood Insurance Program, visit [https://www.floodsmart.gov/floodsmart/pages/about/nfip\\_overview.jsp](https://www.floodsmart.gov/floodsmart/pages/about/nfip_overview.jsp).

Pittsfield has been a participant in the National Flood Insurance Program (NFIP) since **March 28, 2001**. Although initial flood hazard maps were completed in **March 1974**, the first Flood Insurance Study (FIS) was not completed until **July 1978**, when the first FIRMS were developed and the Town joined the National Flood Insurance Program.

In the present day, Pittsfield's effective FIRMS are digital (DFIRMS) dated **April 19, 2010** as is the Merrimack County Flood Insurance Study (FIS) which includes Pittsfield (community #330120); individual community FIS are not being developed. These newest documents were adopted by the Board of Selectmen and supercede all previous NFIP documentation. **Table 29** summarizes the historical background of the Town's NFIP effective dates.

**Table 29**

### NFIP History of Pittsfield – Effective Dates

Flood Insurance Study (FIS)	Flood Insurance Rate Maps
July 3, 1978	July 3, 1978
April 19, 2010	April 19, 2010

Source: Merrimack County Flood Insurance Study (FIS) Table 7, 2010

## PITTSFIELD'S NFIP STATISTICS

In **Table 30** is a cumulative history of the trends and overall totals of flood insurance policies and losses of those property owners utilizing the NFIP insurance in Town. Three snapshots in time, one from each of Pittsfield's **Hazard Mitigation Plan** versions, display the number of NFIP policies in force and paid loss statistics between **March 2006 – January 2017**.

In **March 2006**, before the **2006 Mother's Day Flood**, the number of NFIP flood insurance policies in force in the Town totaled **7**. Five years later, by **March 2011**, **11** flood insurance policies were active on properties across Pittsfield. By **January 2017**, the number of policies increased to **14** total policies. The first paid flooding losses since **1978** occurred between **March 2006 - March 2011**, totaling **\$110,811** issued to policyholders for these insurance claims. The policy increase between **2006** and **2011** of **5** could be

explained by the significant flooding events damaging properties in Pittsfield during this time period. The small increase of **3** policies by **January 2017**, totaling **14** flood insurance policies throughout Town, could be influenced by the lack of flooding events and the recent changes in flood insurance regulation and cost.

**Table 30**  
**History of NFIP Policy and Paid Loss Statistics**

Date	Policies in Force	Insurance in Force	Number of Paid Losses (since 1978)	Total Losses Paid (since 1978)
March 2006	7	\$714,600	0	\$0
March 2011	11	\$2,328,500	6	\$110,811
January 2017	14	\$2,317,500	6	\$110,811

*Source: Pittsfield Hazard Mitigation Plans 2006 & 2012, FEMA last accessed 03-13-17*

**Table 30** also illustrates that while the entire Town of Pittsfield is eligible to purchase flood insurance, only **14** parcels out of the **1,884** total parcels in the community are insured against flooding. As described previously, a total of **76** homes and non-residential buildings are approximated to be situated in the Special Flood Hazard Areas (SFHA).

Most buildings are uninsured in the SFHA for when the next flooding event occurs in Pittsfield. However, flooding conditions can occur anywhere in the community due to runoff, debris impacted infrastructure (culverts), drainage overflow, rapid snowpack melt, road washouts, etc which are not limited to the floodplain (SFHAs).

## REPETITIVE LOSS PROPERTIES

A specific target group of properties is identified and serviced separately from other NFIP policies when repetitive losses occur on the same properties. The group includes every NFIP-insured property that, since **1978** and regardless of any change(s) of ownership during that period, has experienced four or more paid flood losses of more than \$5,000 each or two or more separate claim payments (building payments only) where the total of the exceeds the current value of the property. Two of the claim payments must have occurred within 10 years of each other. The loss history includes all flood claims paid on an insured property, regardless of any changes of ownership, since the building's construction or back to **1978**.

Pittsfield has only (**3**) repetitive loss properties in the community, even after the significant flooding and infrastructure damage sustained over the active hazard event period of **2005-2012** (See **4 HAZARD RISK ASSESSMENT**). **Table 31** displays the repetitive loss data:



**Table 31**

**Number of Repetitive Loss Properties**

Building Type	Number of Repetitive Loss Properties
Single Family	2
Multi-Family	1
Non-Residential	0
<b>Total Properties</b>	<b>3</b>

*Source: NH Office of Energy and Planning on behalf of FEMA, December 2012*

## FLOODPLAIN ORDINANCE

A major objective for floodplain management is to continue participation in the National Flood Insurance Program. Communities that agree to manage Special Flood Hazard Areas shown on NFIP maps participate in the NFIP by adopting minimum standards. The minimum requirements are the adoption of the Floodplain Ordinance and Subdivision Regulation / Site Plan Review requirements for land designated as Special Flood Hazard Areas (SFHAs). Flood insurance is available to any property owner located in a community participating in the NFIP.

### Community Assistance Visits in Pittsfield

A Community Assistance Visit (CAV) is a process required by the National Flood Insurance Program (NFIP) as a way of reviewing a town's compliance with established floodplain regulations to be sure that they meet NFIP requirements. If the Town is not in compliance with regulations in any way, the officials that conduct the CAV provide assistance and guidance to assist with correcting any violations.

If the NH Office of Energy and Planning (NHOEP) identifies Pittsfield as a repetitive loss community, which is based upon **Table 31** data, a new CAV will be undertaken every five years or if there is a severe flooding event. This would classify Pittsfield as a Tier 1 community. Otherwise, a telephone call may be made to the community every 5-10 years or otherwise as needed (classified as a Tier 2 community).

The Town of Pittsfield contains **3** repetitive loss properties and is a Tier 1 community. Since the Suncook Rivers run through developed areas of Pittsfield, a high risk of future flooding is present. Several steps have been taken to help plan for the flooding hazard in terms of life and property protection, and possibly provide necessary recovery assistance should such a flooding threat arise.

The last Community Assistance Visit was undertaken in **2005**, according to NH OEP's **2013** report. Although Pittsfield is a repetitive loss community, there have been no significant flooding events since the last Plan. To ensure continuation of safe policies, a follow-up CAV should be undertaken by NHOEP to review Building Department procedures and the contents of the Floodplain Ordinance, Subdivision Regulations and Site Plan Review Regulations prior to **2022**, when this Plan expires.

### Floodplain Ordinance Amendments

The Town of Pittsfield has a Floodplain Management Ordinance that currently contains the required FEMA regulations to remain eligible for the NFIP. The first Floodplain Development Ordinance was adopted in **1990**. Revisions were made in **March 2000**, **April 2008** and lastly in **March 2010** to correct/ add language and insert the new, adopted effective **April 19, 2010** Digital Flood Insurance Rate Maps (DFIRMs).

### NFIP Familiarity in Pittsfield

According to NFIP policies, when an applicant files a request for a building permit in the floodplain, the applicant must include an elevation certificate in order to be in compliance. In addition, if an applicant intends to fill onsite, a letter of map of revision must be submitted along with the application. According to NFIP requirements in the Floodplain Ordinance, building permits should be reviewed to assure sites are reasonably safe from flooding and require anchoring to prevent flotation, collapse, or lateral movement and construction out of flood resistant materials.

Ongoing attention and familiarity with the NFIP will keep Town staff and volunteers in top form. In order to reduce flood risks, the Building Inspector, Town Assessor, volunteer Planning Board members, and other Town staff whose duties include review/inspection of development or construction, should be familiar with the Floodplain Ordinance and the NFIP.

Because of their unique position to ensure development conforms with ordinances prior to approval, the Planning Board should be familiar with NFIP policies, especially those regulations that are required to be incorporated into the Subdivision and Site Plan Review regulations. A workshop sponsored by the NH Homeland Security and Emergency Management (NHHSEM) or the NH Office of Energy and Planning (NHOEP) would be appropriate to educate current staff and volunteers. New online courses by FEMA for floodplain management, mapping, elevation certificates and more are available at no charge. For online training taken at the convenience of the individual, see the *FEMA Emergency Management Institute's* current training course index for flooding:

<https://www.training.fema.gov/is/searchis.aspx?search=Flood&all=true>.

An essential step in mitigating flood damage is Town and property owner participation in the NFIP. Pittsfield should work to consistently enforce NFIP compliant policies to continue its participation in this program. Currently, Town staff are fielding many property owners asking for assistance because their mortgage lenders are requiring proof that the properties in question are not located in a Special Flood Hazard Area to determine whether NFIP flood insurance is required. The only way to rectify this growing problem is to have a survey done of the property to complete a Certificate of Elevation to keep on file at the Town Office. If the property is shown to be located out of the floodplain, a Letter of Map Amendment should be completed by the owner or by the Town to ensure future flood maps are corrected. This time of interaction with property owners is emotional and intense and may therefore not be the best time to advertise the availability of flood insurance. When possible, Town staff should try promote flood insurance to property owners in Town; only **14** properties out of the **1,884** parcels in Pittsfield are protected by flood insurance and currently take advantage of the NFIP insurance opportunity.

## 6 CAPABILITY ASSESSMENT

Local mitigation capabilities are existing authorities, plans, ordinances, policies, mutual aid, programs, staffing, technical skills and assets, funding, outreach, public education, and resources that reduce hazard impacts or that could be used to help implement hazard mitigation activities. These capabilities were inventoried for the **Pittsfield Hazard Mitigation Plan Update 2017**.

The **Capability Assessment** contains an inventory of locally-important existing mitigation support activities, or capabilities, which have a positive impact on the way hazard events are handled within the community. Most capabilities are not hazard mitigation Actions but support the Action Plan and help decrease the community's hazard risk. These community-strengthening capabilities are not STAPLEE-rated (Social Technical Administrative Political Legal Environmental and Economics questions) like the Actions, but instead the capabilities serve to sustain and assist the community to maintain and accomplish its hazard mitigation Actions and priorities. Selected **Future Improvements** (mitigation-oriented) to some of these capabilities have the potential to be considered as Actions in **7 POTENTIAL ACTION EVALUATION** and **8 MITIGATION ACTION PLAN**.

### Capability Assessment Types

Planning & Regulatory

Administrative and Technical

Financial Resources

Education and Outreach

There are four overall Capabilities considered for which an inventory of mitigation support items was identified by the Hazard Mitigation Committee, **Planning & Regulatory**, **Administrative and Technical**, **Financial Resources**, and **Education and Outreach**.

Each Capability had inventoried the latest version or adoption Date; a Description of the item; the location of the capability in Town; the Level of Effectiveness of the Capability; which Department, Board or other has Responsibility for the capability; what Changes were made to the capability since the **2011 Hazard Mitigation Plan**; and Future Improvements to the Capability.

## Town Capabilities

A summary of the items within the four Capability tables is provided here to offer a portrait of resources Pittsfield has at hand to assist with mitigation. Careful consideration of each Capability's **Level of Effectiveness** helped the Departments to determine any clear **Future Improvements** to undertake. Many of the Town's Capabilities involved existing plans, procedures, reports, policies, regulations, and resource documents from individual Departments. These plans and documents were reviewed and incorporated into the **Capability**

**Assessment**. **Future Improvements** to these documents were identified and many later became Action items in **8 MITIGATION ACTION PLAN**. Capabilities of all Town Departments and the School District as related to hazard mitigation are detailed within the following tables.

Level of Effectiveness	Description
High	Capability is working well and is regularly followed
Moderate	Capability could use some revisions but is followed
Low	Capability is not working and needs revisions

## PLANNING AND REGULATORY CAPABILITIES

The planning and regulatory capabilities displayed in **Table 32** are the plans, policies, codes, and ordinances that reduce the risks or impacts of hazards. There are 3 categories: Plans, Codes, and Regulations. Most of the documents listed below are the Town's documents, but others are School, local, regional, state and federal which support the Town's the hazard mitigation goals, objectives, and/or Actions.

### DEPARTMENT ABBREVIATION KEY:

<b>FD</b>	Fire Department
<b>EM</b>	Emergency Management
<b>PD</b>	Police Department
<b>BLU</b>	Building & Land Use Department
<b>PB</b>	Planning Board
<b>HD</b>	Highway Department
<b>BOS</b>	Board of Selectmen
<b>TS</b>	Transfer Station
<b>SD</b>	Pittsfield School District

**Table 32**

**Planning and Regulatory Capabilities**

<b>Latest Adoption or Version Date</b>	<b>Capability Assessment: Planning and Regulatory Resources</b>	<b>Description</b> Related to hazard mitigation planning and coordination	<b>Location of Capability</b> Entire Town or Selected Areas	<b>Level of Effectiveness</b>	<b>Responsibility</b>	<b>Changes Since Last Haz Mit Plan (2011)</b>	<b>Future Improvements to Plans</b>
<b>PLANS</b>							
Sep 2017	<b>EMD Emergency Operations Plan 2017</b>	Last updated late 2016. It is in the ESF format, reviewed by 2015 HSEM.	Entire Town	High	Emergency Management Director	Updated 9/16	Need to exercise and test the Plan and ESFs
April 2012	<b>EMD Hazard Mitigation Plan 2012</b>	Adopted by Town & FEMA in 2012 and currently being updated 12-16	Entire Town	High	Emergency Management Director	Updating as of 12-16	Update on an annual basis in accordance with Mitigation Action Plan
Last one collected 2015	<b>EMD Dam Operational Plans</b>	Have several dam plans on record (8-9) that need to be reviewed. Most plans are done by engineers.	Dams	High	Emergency Management Director	2 Plans dam Town Pool White Pond & Winsunvale dam Plan currently being revised, 12-16.	Review the dam plans annually for effectiveness
2011 last cistern installed	<b>PB Cisterns or Other Fire Protection Measures are Required in All New Major Subdivisions</b>	Cisterns are required based on fire flow requirements identified through the Plan review process that includes the Fire Department and Code Official review, based on NH statute. This requirement is from the NH Fire Code RSAs.	Entire Town	High	Planning Board, with assistance of Fire Chief	No changes to regulations and no new cisterns installed after Westmeadow 2011	Regulations should require a plan for maintenance and repair. Clarify ownership of cisterns
2010	<b>PB Capital Improvements Program 2010-2020</b>	The PB CIP is not currently updated annually.	Entire Town	Low	Planning Board	The Town Admin has an informal schedule to use at budget time	Revise the CIP and adjust annually as needed
2015	<b>PD Traffic Control Ordinance, Amended 2015</b>	Document regulates traffic control and public safety. It maintains the Town's public safety through evacuation routes, traffic patterns, and ensures the proper flow of traffic. Great asset to town.	Entire Town	Moderate	Police Chief, with assistance of Board of Selectmen	Year-round parking ban overnight added in 2015	Considering other issues with Main Street businesses to encourage customer parking
2012	<b>EMD School Emergency Management Plans</b>	Two Plans, Elementary and Middle-High School currently working on updating, 12-16. Completed in spring 2017. Old Plans are obsolete. Adding bomb threats, active shooter (staff & police), responses.	Elementary and Middle-High School	Moderate	Superintendent with Police Chief and Fire Chief support	Currently updating as of 12-16	Complete in 2017. Will undertake tabletop exercise to test it. Find EMPG for teacher radios & repeater for PD.
2010	<b>PB Master Plan</b>	Another Planning Board tool, updated every 10 years. CIP	Entire Town	Moderate	Planning Board	PB has not updated	MP should be updated by PB as

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Planning and Regulatory Resources	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2011)	Future Improvements to Plans
		stems out of MP. Guiding document for all Depts and Committee. Vision for the Town, not implementing or keeping in mind				sections. Other Depts currently don't use the document	a guiding document for the Town & Committees and utilize/implement the document.
<b>BUILDING CODES, PERMITTING, INSPECTIONS</b>							
April 19, 2010	<b>PB FEMA Flood Insurance Rate Maps</b>	Adopted by Town, used for Suncook River, streams, brooks	Floodplains	High	Planning Board/Land Use Department Staff	FEMA has not provided new maps since then	Continue using maps in Town offices and noting any substantial deviations
2009	<b>BI State Life Safety Code 2009, Construction Inspected by the Town Building Inspector and Fire Dept</b>	New construction is continually evaluated during the process with the final inspection conducted by both the Fire and Building Officials prior to the issuance of a certificate of occupancy.	Entire Town	High	Building Inspector with Fire Chief assistance	Town only enforce when State adopts the new code	Would like to see the State adopt the current version
2009	<b>State Building Code (International Building Code 2009)</b>	Contains a suite of residential, commercial, plumbing, electrical, mechanical, energy, and existing buildings	Entire Town	High	Building Inspector	Town still follows the code from 2009	Would like to see the State adopt the current version
2009	<b>FD NFPA 101 Life Safety Codes Occupancy Inspections</b>	Contains 15 types of occupancies that may be inspected by Fire Departments <b>- Places of Assembly</b> - Mercantile - Business - Health Care - Ambulatory Health Care - Residential Board and Care <b>- Day Care</b> <b>- Educational</b> - Apartment Buildings - Lodging or Rooming Housing - Hotel or Dormitory - 1 and 2 Family Dwellings - Industrial - Storage - Detention and correctional	Places of Assembly, Day Cares, and Educational sites	High	Fire Department	Continued inspections for these 3 types	Would like to see the State adopt the current version
2009	<b>FD NFPA 1 Fire Codes Permitting</b>	Section 1:12, and Table 1.12.7a specifically outline instances when permits are required	Select Structures	High	Fire Department	Continued to issue permits	Would like to see the State adopt the current version

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 6 CAPABILITY ASSESSMENT

<b>Latest Adoption or Version Date</b>	<b>Capability Assessment: Planning and Regulatory Resources</b>	<b>Description Related to hazard mitigation planning and coordination</b>	<b>Location of Capability Entire Town or Selected Areas</b>	<b>Level of Effectiveness</b>	<b>Responsibility</b>	<b>Changes Since Last Haz Mit Plan (2011)</b>	<b>Future Improvements to Plans</b>
<b>LAND USE</b>	<b>PLANNING,</b>	<b>ORDINANCES,</b>	<b>REGULAT</b>	<b>ION</b>			
2016	<b>PB Floodplain Ordinance to Regulate Development in the Floodplains</b>	Ordinance was updated in March 2010 to FEMA.	Floodplain areas	High	Planning Board/ Code Enforcement	Comprehensively revised to clarify & format it.	Continue to update as FEMA requires
July 2016	<b>BOS Flood Storage Land Obtained- 42 Smith Street Property</b>	The Selectmen obtained the Smith Street property due to non-payment of back taxes. This is a property in the floodplain which is in danger of flooding. (Action COMPLETED JUNE 2011)	Smith Street	High	Board of Selectmen	Demolition in July 2016	Project is complete. Will monitor for potential erosion and flooding issues.
April 2015	<b>WW Septage Ordinance Procedures in Place Against Contamination</b>	The procedures prevent spillage. Must test septage to ensure it is not contaminated with gasoline. Must obtain a DES permit renewed every 5 years.	Wastewater Lagoons	High	Contracted to Utility Partners, LLC	Received administrative permit in 2015	Procedures are continually evaluated and improved. Under an administrative order to check in quarterly.
March 2016	<b>PB Shoreland Ordinance</b>	Cites the Shoreland Water Quality Protection Act 483-B	Jenness Pond, Wild Goose Pond, Berry Pond, Suncook River, White Pond	High	Planning Board	Comprehensively clarified purpose	Adopt new state regulations as they are developed
2016	<b>PB Road Design and Construction Standards (Subdivision /Site Plan Regulations)</b>	PB updated documents recently. Engineer contracted for application to follow the standards	Entire Town	High	Planning Board	Updated 2016	Clarification of right of way ownership
2016	<b>PB Stormwater Construction and Maintenance Standards (Subdivision /Site Plan Regulations)</b>	PB updated documents recently. Engineer contracted for application to follow the standards	Entire Town	High	Planning Board	Updated 2016	Continue to review and update as needed

*Source: Pittsfield Hazard Mitigation Committee*



## ADMINISTRATIVE AND TECHNICAL CAPABILITIES

The administrative and technical capabilities in **Table 33** include staff, volunteers, and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. Smaller jurisdictions without local staff resources often rely on public or shared resources. There are 3 categories: Admin Programs, Staffing, and Technical Capabilities.

**Table 33**

**Administrative and Technical Capabilities**

<b>Latest Adoption or Version Date</b>	<b>Capability Assessment: Administrative and Technical</b>	<b>Description</b> Related to hazard mitigation planning and coordination	<b>Location of Capability</b> Entire Town or Selected Areas	<b>Level of Effectiveness</b>	<b>Responsibility</b>	<b>Changes Since Last Haz Mit Plan (2011)</b>	<b>Future Improvements to Plans</b>
<b>ADMINISTRATIVE PROGRAMS AND POLICIES</b>							
2013	<b>PD Mutual Aid Agreement</b>	One town will assist another during an emergency. Have with 22-24 towns in the MUA, including abutting towns and others that the officers pass through. RSA 153	Entire Town	High	Police Chief	Chief has renewed MUAs with other towns.	Incoming Chiefs of mutual aid agreement communities will review and renew
2006 last full revision	<b>PD Standard Operating Procedures (SOPS)</b>	Operational guidelines for Department ensure the effectiveness and best possible practices of the officers to do their jobs. Includes civil disorder SOG for emergency management. Constantly revised and changed.	Entire Town	High	Police Chief	Updating some of them now, 12-16	Continually review and update policies according to trends in police operational procedures.
January 2016	<b>FD Member of Capital Area Fire Compact Mutual Aid (CAFCMA)</b>	Participate with the Capital Area Fire Mutual Aid Compact of 23 agencies. Pittsfield has been a member for over 25 years. All dispatching for the Town goes through the CAFCMA.	Entire Town, and resources to other communities	High	Fire Chief	FD participates in exercises. Had a simulated balloon crash in 2015.	Working well, continue to participate
2006 Mother's Day	<b>FD Sand-Bagging of Dams Procedure During Periods with Potential for Flooding</b>	This activity is jointly undertaken by the Fire Department, Highway Department, Police Department, and volunteers with materials provided by the NH HSEM.	Entire Town, Main Street/Pittsfield Mill Dam	High	Fire Chief	Not used since the last Plan. New sandbags	Working well, continue to use cooperative procedure
2014	<b>FD Standard Operating Guidelines</b>	New since last Chief, added Staff and Recall.	Entire Town	High	Fire Chief	Regularly reviewed & revised	Continue to review and revise
2014	<b>FD Standard Operating Procedures</b>	New since last Chief, added new procedures.	Entire Town	High	Fire Chief	Regularly reviewed & revised	Continue to review and revise
Dec 2016	<b>HD NH Public Works Mutual Aid</b>	Renewed 12/16 for annual membership	Entire Town	Moderate	Highway Superintendent	Yearly agreement, send	Continue to maintain

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Administrative and Technical	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2011)	Future Improvements to Plans
	Agreement Member					and receive mutual aid	agreement and renew yearly
2010	HD Culvert Maintenance Program	Maintain and upgrade culvert systems to allow for maximum efficiency of culvert use.	Entire Town	High	Highway Superintendent	Constantly monitoring culverts and taking necessary action	Hire an additional Highway Department Staff Member, perhaps develop a written prioritization policy
2010	HD Winter Operations Policy for Plowing Routes	Snow removal operations are prioritized based on access for emergency services response and school bus routes.	Entire Town	High	Highway Superintendent	Reviewed regularly, plowing occurred during storms	Hire an additional Highway Department Staff Member.
2011	HD Procedure to Communicate with Utility Companies to Cutback Overgrown Limbs	Removing overhanging limbs near power-lines will reduce that potential hazard in the Town. Communicate regularly with PSNH and other utility companies to make sure that branches are cut back from power lines to reduce the potential hazards from wind. <i>(Action COMPLETED April 1, 2011)</i>	Roadways	High	Highway Superintendent	Continued communications relationship	Continue communications as needed, be proactive to ensure elimination of hazardous limbs before they fall
2012	WW Procedure to Eliminate Small Space Confinement Problems in Pump Station	Below grade is a confined space, dangerous for employees. They will put in a submersible pump into the grinding station, where the pump slides into pump hole and pumps out the sewage. Will be completed Dec 2011.	WWTP	High	Contracted to Utility Partners, LLC	Set up tripod rescue system equipment for pulling up staff	Continue procedure and update if needed
2014	WW Regular Maintenance Programs	Have 1979 generators, go every week they run them under emergency conditions to check the safeties. If during the running find something else is wrong, will fix it then or do the maintenance later. Have evacuation fans on the top of buildings which are opened up and cleaned/greased once a year. Once a week the new generators are tested.	WWTP	High	Contracted to Utility Partners, LLC	Upgraded most of the generators	Upgrade the last generator
2016	WW Procedure to Maintain List	Maintain a list of all landowners along the Suncook to ensure that if there's a spill,	Suncook River	High	Contracted to Utility	Updated as needed	Continue to update the notification list.

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Administrative and Technical	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2011)	Future Improvements to Plans
	of Landowners for Notification	can contact the landowners soon.			Partners, LLC		
December 2016	PSD School Evacuation Procedures	Revisiting the shelter in place and bomb scare procedures. 12 x per year	Elementary School	Low (for Shelter in Place) and Moderate (for remaining procedures)	PSD and Emergency Response Committee	Committee working with the school to remove the shelter in place. Fire drills done 12 times year.	Revise active shooter scenario procedures to eliminate shelter in place
TECHNICAL SKILLS AND RESOURCES							
7 FD + 7 HD Mobiles, 23 FD + 0 HD + 1 EMD Portable, 1 FD + 1 HD + 1 EMD Base Station	PD/FD/HD/EMD Department Radios with Interoperability	Current Radios allow for this for interoperability. Received grants, now digitally capable on same frequencies to communicate. Also have analog frequencies for Highway and Town Hall communications. HD cannot talk on other channels, listen only	Entire Town	High	Police Chief/ Fire Chief	1 FD new digital portable radio	Need FD funding for 30 radio replacement, all are very old, end of lifespan. EMD needs 1 portable digital radio too.
All staff	PD Officer Training	Department meets all the requirements for the State minimum training for the year in different disciplines. Have additional training in area of special assignments to help Department obtain goals and objectives. ICS training is for emergency management depending on what positions are held in the Dept.	Entire Town	High	Police Chief	Continued required annual training	Continue training, certifications, and new topics training
4 people	FD EMS Training	The Town has 4 certified EMTs who live in Town, 1 Paramedic undergo training at the Fire Academy.	Entire Town	High	Fire Chief	Town pays for 1 certification and 1 professional class per year	Two more will be added soon
7 FT 22 paid call	FD Fire Academy Training	Fire Department staff and volunteers have undergone required training at the Fire Academy.	Entire Town	High	Fire Chief	4 Training classes per month	Will be working with Epsom, Chichester and Northwood for training, will host 1 training each per month

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 6 CAPABILITY ASSESSMENT

Latest Adoption or Version Date	Capability Assessment: Administrative and Technical	Description Related to hazard mitigation planning and coordination	Location of Capability Entire Town or Selected Areas	Level of Effectiveness	Responsibility	Changes Since Last Haz Mit Plan (2011)	Future Improvements to Plans
23 communities	FD/EMS Capital Area Fire Mutual Aid Regional Training	Continual training in regional incident command and response techniques and skill	Entire Town	High	Fire Chief	Upgraded the dispatch center to SimulCast	Might be backing lamResponding as a group
2011	FD Forestry Truck	Truck improves rural forest fire response. (Action COMPLETED June 2011)	Entire Town	High	Fire Chief	Purchased via FEMA grant	Continue utilizing and maintaining
5 staff	HD Training, Road Agent Certified as a Master Roads Scholar	This is a consistent effort to improve service delivery through education acquired by participating in online training activities and program offered through the LGC.	Entire Town	High	Highway Superintendent	The program has added steps beyond master road scholar. One employee has attained. continually attending classes	Send all Highway Department staff for training.
1,600+	EMD Sandbags	Stored at Highway Garage, used for Pittsfield Mill Dam. Old now, brittle.	Highway Garage	Low	Emergency Management	No changes, not used since 2006	Have all emergency response items in a trailer
12 barricades + 25 cones	EMD Barricades and Cones	Plastic barricades, some have been vandalized, not enough	Fire Department	High	Emergency Management	2013 purchased more	Budget 2 dozen barricades and 200 cones
2 buildings, 203	WW Plant Building Upgraded for a Separate Hazardous Materials Facility	Spillage will go into an underground holding tank. Drain is in the floor. Will be completed by December 2011	WWTP	High	Contracted to Utility Partners, LLC	Both Recently upgraded	De-sludge the lagoons
2016	BOS Town Hall Employee Safety	Town Hall lobby has glass in front of the Town Clerk and Tax Collector, Town Administrator & Admin Assistant offices for their protection.	Town Hall	Moderate	Board of Selectmen	Cameras added to meeting room & whole building, office safety, bullet proof door	Want to make the second floor accessible with an elevator
2 sets	BOS Traffic Lights on Route 28, Lyford Hill Road, Barnstead Rd	Traffic lights installed at the busy Route 28 intersection will dramatically lower the number of traffic accidents that occur (2008).	Route 28	High	Town Administrator	No new lights have been added since then	No other need or proposal to add lights have been identified
All FD to ICS 200	EM ICS Training	Town Admin, Fire & Rescue Dept Town Administrator have undergone Incident Command System (ICS) Training.	Entire Town	High	Emergency Management	Continued training of new volunteers	Train Highway Department staff in ICS

Source: Pittsfield Hazard Mitigation Committee

## FINANCIAL CAPABILITIES

The financial resources in **Table 34** available for hazard mitigation projects are those the Town has access to, has used in the past, or may be eligible to use in the future for hazard mitigation projects. These often include FEMA Public Assistance Grants (Disaster Recovery Costs), Warrant Articles, Town Capital Improvements Program (CIP) 2016 Project Funding, Department Operating Budgets, Bonds and FEMA and NH Department of Transportation grants.

**Table 34**  
**Financial Capabilities**

<u>Latest Adoption or Version Date</u>	<u>Capability Assessment:</u> Financial	<u>Description</u> Related to hazard mitigation planning and coordination	<u>Location of Capability</u> Entire Town or Selected Areas	<u>Level of Effectiveness</u>	<u>Responsibility</u>	<u>Changes Since Last Haz Mit Plan (2011)</u>	<u>Future Improvements to Plans</u>
FINANCIAL PROGRAM OR		FUNDING RESOURCE FOR	HAZARD	MITIGATION			
Feb 2013	<b>BOS FEMA Public Assistance Grants (Disaster Recovery Costs)</b>	Public Assistance Categories A-G may become available when disasters are declared if the community has an unexpired approved Haz Mit Plan. Continue to utilize the FEMA funding to help recover from declared disasters.	Entire Town	High	Town Administration with EMD	Used for PA-B Protective Measures	Continue to utilize the FEMA PA program to help with disaster costs
Funded in 2014, engineering still in progress as of 01-17, should be completed 2017	<b>BOS NH Department of Transportation (NH DOT) Bridge Program</b>	The bridge program is an 80/20 funding opportunity, with only 20% required by towns. Using the CIP Capital Reserve Funds, communities can set aside money for the several years it takes for the state to undertake the local bridge project. Kelley Brook Bridge at Shaw Road	Kelley Brook Bridge at Shaw Road	Moderate	Town Administration	Currently using for Shaw Road	Place bridges on list well before expected failure, such as Tan Brook 3 crossings (Tan Road & Dowboro Road) upgraded
PROGRAMS WHICH COULD		POTENTIALLY BE USED	BY TOWN	FOR FUTURE	PROJECTS		
Not used yet	<b>PB Town Capital Improvements Program (CIP) 2017 Project Funding</b>	Sets aside funds for large equipment/projects.	Entire Town	High	CIP Committee	Updated associated costs during annual updates	CIP could include expensive or long-term hazard mitigation projects

<u>Latest Adoption or Version Date</u>	<u>Capability Assessment:</u> Financial	<u>Description</u> Related to hazard mitigation planning and coordination	<u>Location of Capability</u> Entire Town or Selected Areas	<u>Level of Effectiveness</u>	<u>Responsibility</u>	<u>Changes Since Last Haz Mit Plan (2011)</u>	<u>Future Improvements to Plans</u>
Not used yet	<b>WW User Fees for Sewer</b>	Portions of water and sewer user fees are set aside to upgrade infrastructure.	Portion of the Town has service (Downtown)	High	Contracted to Utility Partners, LLC	Continued to collect user fees for maintenance and operations	Continue to make ongoing improvements to water and sewer infrastructure.
Not used yet	<b>EMD Emergency Management Operating Budget</b>	Budget can contain funding for outreach programs, mitigation projects	Entire Town	High	Emergency Management	Continued developing the emergency management operating budget	Use Emergency Management Operating Budget to finance future hazard mitigation improvements

*Source: Pittsfield Hazard Mitigation Committee*

## EDUCATION AND OUTREACH CAPABILITIES

In **Table 35**, identifying Town Department education and outreach programs and methods already in place or those which could be implemented can supplement or encourage mitigation activities and communicate hazard-related information to residents, businesses and the general public.

**Table 35**

### Education and Outreach Capabilities

<u>Latest Adoption or Version Date</u>	<u>Capability Assessment:</u> Education and Outreach Programs	<u>Description</u> Related to hazard mitigation planning and coordination	<u>Location of Capability</u> Entire Town or Selected Areas	<u>Level of Effectiveness</u>	<u>Responsibility</u>	<u>Changes Since Last Haz Mit Plan (2011)</u>	<u>Future Improvements to Plans</u>
<b>PUBLIC</b>	<b>OUTREACH</b>	<b>PROGRAM</b>					
April 2016	<b>EMD Civic Talks for Emergency Response &amp; Preparedness</b>	Engage with the community during emergencies, churches can help.	Entire Town, General Public	Moderate	Emergency Management	Program in action for 3 years	Challenge is to keep people engaged, determine a way of social media to keep the help ongoing
Current as 01-17	<b>FD Public Education Program</b>	Held informal programs for seniors on emergency preparedness, and maintain daily call lists	Entire Town,	High	Fire Department	List is maintained and can be used during an emergency.	Continue the program
Currently in use as of 12-16	<b>PD Drug Take Back Box &amp; Drug Day</b>	People can drop off narcotics or whatever people have with	Police Station	Moderate	Police Chief	Constantly used	Consider using the Fire Department as location to

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 6 CAPABILITY ASSESSMENT

<u>Latest Adoption or Version Date</u>	<u>Capability Assessment:</u> Education and Outreach Programs	<u>Description</u> Related to hazard mitigation planning and coordination	<u>Location of Capability</u> Entire Town or Selected Areas	<u>Level of Effectiveness</u>	<u>Responsibility</u>	<u>Changes Since Last Haz Mit Plan (2011)</u>	<u>Future Improvements to Plans</u>
		immunity and also unused prescription medication. Getting people to turn their medicine in is difficult.					encourage more people
Current as 01-17	<b>PD School Resource Officer/Education for Students</b>	Educational tool not only for drugs but safety protocol for children	Pittsfield Elementary, Middle and High Schools	High	Police Department	Program is new, used to be a casual daily visit	Continue funding the School Resource Officer Education program
Current as 01-17	<b>BOS Town Website</b>	Used by multiple Town Depts, available to residents and visitors, hosts Zoning amendment changes. Have an emergency management page with registration for emergency notification system	Entire Town, General Public	High	Town Administration	Updated regularly with announcements, agendas, meeting notices, more	Would like to publicize the website is where emergency information is available
Current as 01-17	<b>EMD NH Alert</b>	People choose to receive notification calls from NH Alert, a statewide app. Town has advertised for people to join, used by Police, Highway, and Fire Departments	Entire Town, General Public	Low	Fire Department	Few are aware of the program, not publicized in Pittsfield	Publicize better to ensure more people are connected. Consider a Twitter feed
2015	<b>FD Annual Open House</b>	Open House each fall, introduce fire safety to the community, trick or treat. Turnout has been too low for financial burden	Entire Town, General Public	Low	Fire Department	People are showing more interest in public safety in 2016	Better advertisement to hold a successful Open House
Circa 2015	<b>BCEP Transfer Station Household Hazardous Waste Disposal?</b>	Household hazardous material disposal program twice per year permits disposal of dangerous materials at the Transfer Station: propane tanks, dried paint cans, waste oil, waste antifreeze, batteries, tires	BCEP Transfer Station	High	BCEP	Held HHW disposal in 2015	Provide annual household hazardous waste disposal service
Current as 01-17	<b>PSD School District Automated Calling System - BlackBoard</b>	Used only for emergencies. Automated phone, text, email service to parents for alert. Used for snow delays and snow days. A new version is being tested - text, then audio from superintendent. Through PowerSchool	Public Schools, Entire Town	High	School District	Used regularly & successfully	Update regularly when parents require notification



<u>Latest Adoption or Version Date</u>	<u>Capability Assessment:</u> Education and Outreach Programs	<u>Description</u> Related to hazard mitigation planning and coordination	<u>Location of Capability</u> Entire Town or Selected Areas	<u>Level of Effectiveness</u>	<u>Responsibility</u>	<u>Changes Since Last Haz Mit Plan (2011)</u>	<u>Future Improvements to Plans</u>

*Source: Pittsfield Hazard Mitigation Committee*

## Review of Existing Plans

As described above, during the Hazard Mitigation process and the identification of existing mitigation **Capabilities**, the Hazard Mitigation Committee used their knowledge of the existing plans, policies, procedures and other documents utilized for their Department duties to develop Capability **Future Improvements**. However, several additional documents not listed in the **Capability Assessment** are also utilized by the community and have a positive relationship to the **Hazard Mitigation Plan 2017**. Most of the documents below are not the Town's documents, but the hazard mitigation goals, objectives, and/or Actions in this Plan are supported by the **Mitigation Support and Resource Documents** listed below in **Table 36**.

**Table 36**  
**Mitigation Support and Resource Documents**

<u>Latest Adoption or Version Date</u>	<u>Mitigation Support and Resource Documents Not Listed within Capability Assessment Tables</u>
<b>October 2016</b>	CNHREPC Central New Hampshire Regional Emergency Planning Committee Regional Hazardous Materials Emergency Plan
<b>August 2016</b>	CAPHN Capital Area Public Health Network Public Health Emergency Preparedness and Response Plan for the Capital Area
<b>June 2016</b>	NH DHHS NH Arboviral Illness Surveillance, Prevention and Response Plan 2016 (with Maps)
<b>August 2015</b>	NH DOT Recommendations for the Ten-Year Transportation Improvement Plan (Projects) 2017-2026
<b>July 2015</b>	NHHSEM NH Recovery Plan with RSFs
<b>February 2015</b>	Central NH Regional Plan
<b>September 2015</b>	NH DOS Bureau of Emergency Management Services EMS Provider Manual
<b>July 2014</b>	NH DOS Statewide Fire Mobilization Implementation Master Plan
<b>October 2013</b>	State of NH Multi-Hazard Mitigation Plan Update
<b>August 2012</b>	NH DHHS NH Excessive Heat Emergency Response Plan 2012
<b>April 2010</b>	FEMA Flood Insurance Study for Merrimack County
<b>2009</b>	NFPA 1 and NFPA 101
<b>February 2007</b>	NH DHHS NH Influenza Pandemic Public Health Preparedness & Response Plan

*Source: Pittsfield Hazard Mitigation Committee*

## 7 POTENTIAL ACTION EVALUATION

With the completion of the inventory of the **Overall Risks** of hazards in the **Hazard Risk Assessment**, the historical recording of hazard events and declared disasters occurring in Pittsfield and what could happen in the future documented in the **Potential Future Hazards**, and the Town's evaluation of its mitigation and support activities in the **Capability Assessment** have all provided the opportunity to develop mitigation Actions. These mitigation Actions can be evaluated using these tools to develop the **Potential Action Evaluation**. Mitigation Actions developed emphasize both new and existing buildings and infrastructure to better protect populations of Pittsfield.

The **Hazard Mitigation Plan Update 2012** provided a basis to begin Action development. A review of the 2012 Actions is provided by the Hazard Mitigation Committee, determining which Actions have been **Completed, Deleted, or Deferred** to the **2017 Plan**.

**New** Actions were evaluated using the **Problem Statements** discovered during discussion of critical facility and community facility sites' potential vulnerability to hazards in the **Critical Facility and Community Vulnerability Assessment**. Many of these problems were evaluated and later developed into mitigation Actions.

The **Capability Assessment** yielded a wealth of information from the **Future Improvements** of the plans, programs, ordinances, policies, agreements, technical skills, financial resources, and other resources the Town Departments, School District, and Stakeholders had available. Many of these were also evaluated but were not developed into **New** mitigation Actions because they were preparedness, response or recovery items.

The Chapter provides a summary discussion of the Actions the community can consider taking to help mitigate the effects of hazard events.

### Action Status Determination

The status of all Hazard Mitigation Plan Actions varies. Priorities over the previous five years can change, budgets are uncertain, and staff are allocated time for certain tasks. To accommodate the **2012 Plan's** original **38** Actions in addition to the **New** Actions from the **2017 Plan**, there are **4** designated Action types to describe the detailed Actions following within the **7 POTENTIAL ACTION EVALUATION** and/or **8 MITIGATION ACTION PLAN**:

- ☐ Completed
- ☐ Deleted
- ☐ Deferred
- ☐ New

Actions which were **Completed** from the **2012 Plan** are listed in **Table 37**. The date of completion is provided.

Actions which were **Deleted** from the **2012 Plan** might have been no longer necessary or a priority to the Town, no longer relevant to the Town's situation or objectives, could not realistically be undertaken, were not financially feasible, were modified and incorporated into other existing Actions, or duplicated existing efforts of Pittsfield's activities. Deleted Actions are listed in **Table 38**.

Actions which were **Deferred** from the **2012 Plan** are still important to the Town but were not completed because they did not have the staff capability or the funding to undertake them, other Actions took higher priority, more time was required for completion, or they may need to be repeated to be effective. These **Deferred** Actions are in **Table 39** and have been re-prioritized with the **New** Actions in the **Mitigation Action Plan**.

Changes in priority of the **Deferred** 2012 Actions occurred over the last five years. The **2012 Plan** also used the **12-36 Priority Score STAPLEE** system while the **2017 Plan** included both a **Ranking Score** and an **Action Timeframe** to determine priorities with a **12-60 Priority Score** system. Methods are described.

## DEFINITIONS

The following definitions were used to ascertain which Actions should be considered *mitigation* Actions versus which should be considered *preparedness* Actions more suitable for incorporation into the **Town Emergency Operations Plan**. The mitigation Actions are those which are carried forth in this **2017 Plan** into the **Mitigation Action Plan**.

Action Type	Duration	Definition or Characteristics
<b>Mitigation</b>	<b>Long Term</b>	Action supports sustained risk prevention or reduces long-term risk to people, property and infrastructure. ↳ Best suited for <i>Town Hazard Mitigation Plan</i> .
<b>Preparedness</b>	<b>Short Term</b>	Action assists or supports planning, protective activities, public education, training and exercise. ↳ Best suited for <i>Town Emergency Operations Plan</i> .
<b>Response, Recovery, Other Related</b>	<b>Short Term</b>	Action supports preventative, response, recovery-related, repeated or deferred maintenance activities. ↳ Best suited for <i>Town Emergency Operations Plan</i> .

## Review of 2012 Actions

The **2012 Hazard Mitigation Plan** was written in a different format and its content had to comply with less specific review guidelines before the *Local Hazard Mitigation Review Guidebook (FEMA), 2011* became standardized and tailored by each FEMA Region over the years.

Pittsfield's **38** Actions from **2012** were given **Action Numbers** and each **Project's** status was determined by the Hazard Mitigation Committee as either **Completed**, **Deleted** or **Deferred**. Out of the **38** Actions, **0** were **Completed** as shown in **Table 37**. Twenty-four (**24**) Actions were **Deleted** as shown in **Table 38** and the remaining **14** were **Deferred** (**Table 39**) and appear within the **Mitigation Action Plan**.

**Table 37**  
**Completed Mitigation Actions**

Priority Score (2012)	Action Number	Action	Completed By Date	Who is Responsible	Approx. Cost	Hazards Addressed
N/A	N/A	None	2017	N/A	N/A	N/A

*Source: Pittsfield Hazard Mitigation Committee*

Although no official mitigation Actions were completed between **2012-2017**, the Town continued to apply mitigation measures such as removing hazardous trees and upgrading culverts and drainage areas. A number of the actions from the **2012 Plan** fell into the category of **Deleted** and were undertaken by the Town as emergency preparedness measures.

The pink highlighted rows indicate the **25 Deleted** Actions in **Table 38**. Many of the Actions were deleted because they were preparedness, response or recovery items and more appropriately belonged in the Town's *Emergency Operations Plan*.

**Table 38**  
**Deleted Mitigation Actions**

<b>Priority Score (2012)</b>	<b>Action Number</b>	<b>Action</b>	<b>Deleted Date</b>	<b>Who is Responsible</b>	<b>Approx. Cost</b>	<b>Why Deleted? The Action...</b>
36	#01- 2012	Review the Dam Plans Annually	February 2017	Emergency Management Director	\$0	This is a preparedness, response or recovery item
35	#02- 2012	Encourage Security of Three Towers	February 2017	Emergency Management Director	\$35,000	This is a preparedness, response or recovery item
33	#05- 2012	Evaluate Staffing Levels for Emergency Situations	February 2017	Selectmen	\$0	This is a preparedness, response or recovery item
32	#07- 2012	Purchase Additional Signage, Cones, Barricades	February 2017	Highway Superintendent	\$30,000	This is a preparedness, response or recovery item
30	#08- 2012	Improve Municipal Building Security	February 2017	Town Administrator	\$85,000	This is a preparedness, response or recovery item
28	#14- 2012	Construct an Emergency Operations Center or Enhance the Existing EOC	February 2017	Emergency Management Director	\$80,000	Was not financially feasible and duplicates existing Actions
17	#15- 2012	Clear Trees and Debris from Waterways	February 2017	Emergency Management Director	\$65,000	This is a preparedness, response or recovery item
16	#16- 2012	Clear Forest Fire Lanes	February 2017	Forest Fire Warden	\$25,000	Not relevant to Town's situation. This is a preparedness, response or recovery item
35	#19- 2012	Install a Dry Hydrant at Jenness Pond	February 2017	Fire Department	\$1,500	Duplicates existing efforts and is not realistic.
32	#20- 2012	Add a Cistern at Thompson Road & Governor's Road	February 2017	Fire Department	\$40,000	Duplicates existing efforts and is not financially feasible.
30	#21- 2012	Subscribe to Code Red Notification System	February 2017	Emergency Management Director	\$2,500 to purchase system, \$500 annually to maintain	This is a preparedness, response or recovery item

# Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

## 7 POTENTIAL ACTION EVALUATION

Priority Score (2012)	Action Number	Action	Deleted Date	Who is Responsible	Approx. Cost	Why Deleted? The Action...
30	#24- 2012	Develop Informational Brochures on Emergency Preparedness	February 2017	Emergency Management Director	\$0	This is a preparedness, response or recovery item
29	#25- 2012	Hold Emergency Procedure Informational Program for Seniors	February 2017	Emergency Management Director	Under \$100	This is a preparedness, response or recovery item
29	#26- 2012	Offer Community Awareness Programs	February 2017	Emergency Management Director	\$0	This is a preparedness, response or recovery item
36	#27- 2012	Develop Emergency Response Handling Procedures	February 2017	Emergency Management Director	\$2,500	This is a preparedness, response or recovery item
34	#28- 2012	Participate in National Flood Insurance Program (NFIP) Training	February 2017	Building Inspector	\$0	This is a preparedness, response or recovery item
32	#29- 2012	Undertake Pandemic Training and Planning	February 2017	Fire Department	\$0	This is a preparedness, response or recovery item
32	#30- 2012	Require National Incident Management System (NIMS) and Incident Command System (ICS) Training for All First Responders	February 2017	Emergency Management Director	\$0	This is a preparedness, response or recovery item
31	#31- 2012	Hold Training Drills and Mock Exercises with Schools	February 2017	Emergency Management Director	\$8,000 - \$10,000	This is a preparedness, response or recovery item
24	#32- 2012	Obtain Digital Radio Communication Capability for Wastewater, Highway and Town Hall	February 2017	Town Administrator and Emergency Management Director	\$55,000	This is a preparedness, response or recovery item
36	#33- 2012	Study Dam Breach Effect for the Pittsfield Mill Pond Dam	February 2017	Emergency Management Director	\$0	This is a preparedness, response or recovery item
32	#36- 2012	Continue Meetings of the Joint Loss Committee	February 2017	Town Administrator	\$0	This is a preparedness, response or recovery item
31	#37- 2012	Update the Emergency Operations Plan	February 2017	Emergency Management Director	\$200	This is a preparedness, response or recovery item

Priority Score (2012)	Action Number	Action	Deleted Date	Who is Responsible	Approx. Cost	Why Deleted? The Action...
28	#38- 2012	Develop New Standard Operating Guidelines for Fire and Rescue	February 2017	Fire Department	\$400	This is a preparedness, response or recovery item

*Source: Pittsfield Hazard Mitigation Committee*

The tan highlighted rows in **Table 39** indicate the **14 Deferred** mitigation Actions which also appear in the forthcoming **Mitigation Action Plan** for **2017**. Many Action titles will be revised to reflect the new focus on mitigation although the principle for each remains the same. They will all be reevaluated to accommodate **2017** needs.

**Table 39**  
**Deferred Mitigation Actions**

Priority Score (2012)	Action Number	Action	Deferred Date	Who is Responsible	Approx. Cost	Why Deferred? Because...	Hazards Addressed
34	#03- 2012	Improve Roadways Prone to Flooding	February 2017	Highway Superintendent	Varies	Town did not have the funding, Action needs to be repeated regularly to be effective	Flooding, Erosion, Debris Impacted Infrastructure
34	#04- 2012	Communicate with Utility Companies to Cutback Overgrown Limbs	February 2017	Highway / Town Administrator	\$0	Action needs to be repeated regularly to be effective	Severe Winds, Downbursts, Hurricanes & Tropical Storms, Severe Winter Weather
32	#06- 2012	Purchase Smith Street Properties	February 2017	Town Administrator	\$2 million	Town did not have the funding or staff capability	Flooding, Fluvial Erosion
30	#09- 2012	Replace Shaw Road Bridge with a Box Culvert	February 2017	Highway Superintendent	\$165,000	More time is required for completion (NHDOT grant)	Flooding, Erosion, Debris Impacted Infrastructure
30	#10- 2012	Replace Lower Tan Road Near Gravel Pit	February 2017	Highway Superintendent	\$55,000	Town did not have the funding to complete.	Flooding, Erosion, Debris Impacted Infrastructure
30	#11- 2012	Replace Mountain Road Culvert	February 2017	Highway Superintendent	\$48,000	Town did not have the funding to complete.	Flooding, Erosion, Debris Impacted Infrastructure
29	#12- 2012	Replace Upper Tan Road Culvert Near Blake's Pond	February 2017	Highway Superintendent	\$55,000	Town did not have the funding to complete.	Flooding, Erosion, Debris Impacted Infrastructure



## Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

### 7 POTENTIAL ACTION EVALUATION

Priority Score (2012)	Action Number	Action	Deferred Date	Who is Responsible	Approx. Cost	Why Deferred? Because...	Hazards Addressed
29	#13- 2012	Replace Dowboro Road at Epsom Line Culvert	February 2017	Highway Superintendent	\$145,000	Town did not have the funding to complete.	Flooding, Erosion, Debris Impacted Infrastructure
35	#17- 2012	Install a Dry Hydrant at Eaton Pond	February 2017	Fire Department	\$1,500	Action was revised & incorporated into a new Action	Flooding, Erosion, Debris Impacted Infrastructure
35	#18- 2012	Install a Dry Hydrant at Barnstead Road/Suncook River	February 2017	Fire Department	\$1,500	Town did not have the funding or staff capability	Flooding, Erosion, Debris Impacted Infrastructure
34	#22- 2012	Publicize the Availability of Flood Insurance	February 2017	Town Administrator	Under \$500	Town did not have the funding or staff capability	Floods and Flash Floods, Rapid Snow Pack Melt, Erosion, Fluvial Erosion and Channel Movement
32	#23- 2012	Continue to Update the Suncook Landowner Notification List	February 2017	Emergency Management Director	\$0	Action needs to be repeated regularly to be effective	Floods and Flash Floods, Rapid Snow Pack Melt, Erosion, Fluvial Erosion and Channel Movement, Dam Failure
35	#34- 2012	Update the Zoning Ordinance to Comply with NFIP Requirements	February 2017	Planning Board	\$0	Action needs to be repeated regularly to be effective	Flood, Rapid Snow Pack Melt, River Ice Jams, Dam Failure
33	#35- 2012	Develop a Plan to Maintain Public Road Access During Severe Weather	February 2017	Highway Superintendent	\$200	Town did not have the staff capability	Severe Winter Events, Snow Storm, Ice Storm

*Source: Pittsfield Hazard Mitigation Committee*

## New Actions from Community Vulnerability Assessment

After determining the status of the existing Actions, **New** Actions can be determined. The Hazard Mitigation Committee reviewed the **Problem Statements** from the **Critical and Community Facility Vulnerability Assessment** and developed mitigation Actions out of several of them. The Committee also reviewed the **Capability Assessment's Future Improvements** to ascertain whether any mitigation Actions could be developed; however, nearly all yielded preparedness, response or recovery items ineligible for further consideration in the **Hazard Mitigation Plan**.

These **New** Actions (and the existing **Deferred** Actions from 2012) were assessed in **Potential Action Evaluation Tables**.

### MITIGATION ACTION CATEGORIES

The **2012 Plan** used the following 5 Action categories when developing and categorizing their Actions. This grouping followed the general pattern of usage within the Central NH Region:

- Prevention
- Property Protection
- Structural Protection
- Emergency Services
- Public Information and Involvement

However, the **2017 Plan** utilizes a more standardized set of mitigation Action categories that follow FEMA's own guidelines and recommendation within mitigation handbooks:

Local Planning and Regulation  
Structure and Infrastructure Projects  
Natural Systems Protection  
Education and Awareness

Preparedness, response and recovery activities are important to the community. They assist Departments with the procedures, training, regional coordination, mutual aid, planning and purchases needed to perform their duties effectively. These activities in turn increase the capability for mitigating hazard events. For the **2017 Plan**, most of these activities were not utilized as Actions since they are more appropriate for the Town's **Emergency Operations Plan** recommendations. As a result, many **2012 Actions** and potential **2017** Actions were not incorporated into this **Hazard Mitigation Plan** because they were not mitigation-oriented.

The remaining **Deferred** (2012) Pittsfield mitigation Actions and its **New** (2017) mitigation Actions translate well over to these new Action categories which will be used for the **Potential Action Evaluation** and **Mitigation Action Plan**.

## Potential Action Evaluation

A listing of **14 Deferred** mitigation Actions from **2012** and **8 New** mitigation Actions from **2017** important to the Town of Pittsfield was developed for evaluation. Each Potential Action is affiliated with at least one **Hazard Specific Objective**, a short **Description** is provided, and the **Affected Location** is provided to ensure easier understanding and reassessment of the Actions in the future during implementation.

The **Potential Action Evaluation** yields **22** mitigation Actions for the **Hazard Mitigation Plan 2017**. These are displayed in **Table 40**, **Table 41**, **Table 42** and **Table 43**. The tan items are **Deferred** Actions from **2012**.

**Table 40**  
**Evaluation of Local Planning and Regulation Actions**

<b>Fulfills Hazard Objectives</b>	<b>Action Number</b>	<b>Name of Potential Action</b>	<b>Description of Potential Action</b>	<b>Affected Location</b>
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure	#03-2012	<b>Improve Roadways Prone to Flooding by Developing and Enacting a Priority Road Rehabilitation Schedule to Reduce Washouts</b>	Develop a prioritized rehabilitation schedule of the numerous roadways in Town subject to frequent washouts and road closures. Identification of roadway improvements would reduce the current flooding hazards by providing the Town and HD the targeted locations for funding and upgrade.	Town Roadways
Flood, Rapid Snow Pack Melt, River Ice Jams, Dam Failure	#34-2012	<b>Update the Floodplain Zoning Ordinance to Comply with NFIP Requirements to Reduce Flooding Risk</b>	The Floodplain Ordinance protects life and property by regulating distance of structures to flood hazard areas, regulating elevation, clarifying definitions, regulating new structures and encroachments, stating duties of the Code Enforcement Officer, etc. In 2010, the Town adopted the latest required revisions.	Floodplains (Special Flood Hazard Areas)
Severe Winter Events, Snow Storm, Ice Storm	#35-2012	<b>Reduce the Risk to Travelers During Snowstorms by Amending the Winter Road Maintenance Policy to Accommodate Emergency Parking Bans</b>	There is little off-street parking downtown for the many residents and church goers. During snow storms, plow trucks cannot clear Main Street and the side streets effectively. Along with the existing overnight parking ban, include more stringent requirements to ensure emergency vehicles can pass. The new policy will reduce the impact to travelers	Downtown, Main Street

<b>Fulfills Hazard Objectives</b>	<b>Action Number</b>	<b>Name of Potential Action</b>	<b>Description of Potential Action</b>	<b>Affected Location</b>
			and pedestrians after and during heavy snow events.	
Flood, Rapid Snow Pack Melt, Dam Failure, Erosion	<b>#39-2017</b>	<b>Develop Impervious Surface Ordinance to Reduce the Risk of Rapid Snowpack Melt or Heavy Rain Flooding</b>	Planning Board Ordinances for new development do not limit the %percentage of impervious surface created for each site plan or subdivision. This has resulted in a downtown next to the Suncook River with little pervious surface for snow melt or rain to percolate into the ground; instead, runoff is created. Residential subdivisions are similar. Percentages for pervious surface vs. impervious surfaces should be developed for different Town zoning districts.	New Developments
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure	<b>#43-2017</b>	<b>Prioritize the Upgrade of Most Problematic Culverts and Drainage Facilities by Developing an Annual Culvert Upgrade Program</b>	Develop a prioritized culvert and drainage structure replacement program that allows annual upgrade of the worst locations. Prepare a written program that details the problem culvert/drainage areas and modify the whenever a structure is upgraded to add more culverts to the list.	Roadways, Town culverts

*Source: Pittsfield Hazard Mitigation Committee*

**Table 41**

**Evaluation of Structure and Infrastructure Projects**

<b>Fulfills Hazard Objectives</b>	<b>Action Number</b>	<b>Name of Potential Action</b>	<b>Description of Potential Action</b>	<b>Affected Location</b>
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure, River Ice Jams	#09-2012	<b>Upgrade the Shaw Road Bridge to Reduce the Risk of Floodwater Susceptibility and Erosion</b>	This has been a long-term project, began several years ago. Needed to meet the requirements of the NHDOT bridge 80/20 grant first, to be completed 2017. At present, the engineer design needed reworking and its report needs to be signed off on by DOT. The bridge and the approaches wash away because the Shaw Road bridge does not have proper wing walls or the capacity for the water to flow under the bridge. Replacement of the existing bridge with a box will provide for greater flow of water, will prevent water erosion of the bridge abutment, and will straighten out the approach of the river.	Shaw Road Bridge
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure	#10-2012	<b>Upgrade Lower Tan Road Culvert and Approaches Near Gravel Pit to Reduce Flooding, Erosion, Washouts and Overflow Damage</b>	The culvert and the approaches wash away because the Lower Tan Road at Tan Brook and/or swamp. Culvert is undersized for the storm water flow through the culvert. Replacement of the existing culvert with a larger dimension box culvert will allow for greater flow of water, and will prevent erosion of the roadway.	Lower Tan Road
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure	#11-2012	<b>Upgrade Mountain Road Culvert to Reduce Flooding, Erosion, Washouts and Overflow Damage</b>	The culvert and the approaches wash away (fields) because the Mountain Road Culvert is undersized for the storm water flow through the culvert. Replacement of the existing culvert with a larger dimension culvert will allow for greater flow of water, and will prevent erosion of the roadway.	Mountain Road
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure	#12-2012	<b>Upgrade Upper Tan Road Culvert Near Blake's Pond to Reduce Flooding, Erosion, Washouts and Overflow Damage</b>	The culvert and the approaches wash away because the Upper Tan Road at Tan Brook. Culvert is undersized for the storm water flow through the culvert. Replacement of the existing culvert with a larger dimension box culvert will allow for greater flow of water, and will prevent erosion of the roadway.	Upper Tan Road
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure	#13-2012	<b>Upgrade Dowboro Road Culvert at Epsom Line to Reduce Flooding, Erosion, Washouts and Overflow Damage</b>	The culvert and the approaches wash away at Tan Brook because the Dowboro Epsom Line Culvert is undersized for the storm water flow through the culvert. Replacement of the existing culvert with a larger dimension box culvert, wing walls and the reconstruction of the roadway	Dowboro Road

## Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

### 7 POTENTIAL ACTION EVALUATION

Fulfills Hazard Objectives	Action Number	Name of Potential Action	Description of Potential Action	Affected Location
			approaches and will allow for greater flow of water, and will prevent erosion of the roadway.	
Wildfire, Fire, Lightning	#17-2012	Install a Dry Hydrant at Eaton Pond to Reduce the Impact of Wildfire and Lightning Damage	This rural area has inadequate surface water supply to use in the event of a fire, remote from static water sources. The Fire Department would first need to lay existing pipe to Eaton Pond prior to dry hydrant installation. Landowner permission would be needed. NHDES Wetlands permit will be required.	Eaton Pond neighborhood
Wildfire, Fire, Lightning	#18-2012	Install a Dry Hydrant at Barnstead Road/Suncook River to Reduce the Impact of Wildfire and Lightning Damage	A dry hydrant at the Suncook River is necessary to supplement the municipal water supply for large industrial-type fires. This area has many industries. NHDES Wetlands permit will be required.	Barnstead Road/Suncook River
Flooding, Erosion, Earthquakes, Severe Wind Events, Rainstorms, Hurricanes or Tropical Storms, Downburst, Severe Winter Events, Wildfire	#40-2017	Build a Public Safety Building to Eliminate the Risk of Natural Disasters to the Severe Deteriorated Conditions of the Existing PD, PWD and FD Buildings	The Fire Department and Highway Department reside on opposite ends of a wetland and the FD building supports are sinking. The HD building could soon find itself in a similar situation. The Police Department is located in an old building not able to be retrofit to current fire, seismic, wind and snow codes. There is no separate EOC, a new EOC could be included with a new Public Safety Building. One Public Safety Building could be built on Town owned land to house all 4 functions.	Town land to be purchased
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure	#44-2017	Upgrade the Failing Culverts on Clough Road to Reduce Flooding, Erosion and Overflow Damage	Location is just past Shingle Mill Brook Road, culvert is deteriorating concrete. Upgrade material will a ADS plastic culvert.	Clough Road
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure	#45-2017	Upgrade the 1 Failing Culvert on Eaton Road to Reduce Flooding, Erosion and Overflow Damage	Seasonal brook under Eaton Road. Old corrugated metal pipe is rotting. Upgrade size 12 to 15 and use ADS pipe material.	Eaton Road
Flood, Rapid Snow Pack Melt, Erosion and Bed Scouring, Debris Impacted Infrastructure	#46-2017	Upgrade Single Failing Culvert on Thompson Road to Reduce Flooding, Erosion and Overflow Damage	Seasonal brook under Thompson Road. Old corrugated metal pipe is rotting. Upgrade size 12 to 15 and use ADS pipe material.	Thompson Road

*Source: Pittsfield Hazard Mitigation Committee*

**Table 42**

**Evaluation of Natural Systems Protection Actions**

<b>Fulfills Hazard Objectives</b>	<b>Action Number</b>	<b>Name of Potential Action</b>	<b>Description of Potential Action</b>	<b>Affected Location</b>
Severe Wind Events, Rainstorms, Hurricanes or Tropical Storms, Downburst, Severe Winter Events, Debris Impacted Infrastructure	<b>#04-2012</b>	<b>Ensure Removal of Hazardous Trees or Limbs Along Town Roads to Reduce the Impact of Severe Wind or Winter Weather on Utility Lines and Roadways</b>	Power failures due to limbs falling on power lines during wind or winter storm events are common in Pittsfield. Town removes hazardous trees in the right of way, reducing debris impacted infrastructure and saving lives. Highway Dept provides maps to Eversource and Eversource sends out postcards to landowners when tree trimming is imminent. The HD communicates regularly with utility companies to make sure that branches are cut back from power lines to reduce the potential hazards from wind.	Town roadways, Rights-of-way
Flood, Rapid Snow Pack Melt, River Ice Jams, Dam Failure, Fluvial Erosion	<b>#06-2012</b>	<b>Purchase Smith Street Properties to Remove People and Buildings from the Active Floodplain</b>	Town could purchase the apartment building which is prone to flooding using Town, FEMA or CDBG grant money and remove the structure. Tax deed needed like what occurred with the former Chestnut Street properties. Purchasing and removing apartment buildings located in the floodplain on Smith Street will reduce the flooding hazard that currently exists at that property. Priority properties are: 1 single family & multi-families on the riverside.	Smith Street, Suncook River floodplains
Flood, Rapid Snow Pack Melt, River Ice Jams, Dam Failure, Fluvial Erosion	<b>#41-2017</b>	<b>Retain Tax Deeded Parcels Along the Floodplains or Wetlands to Enhance Flood Storage Capacity</b>	Instead of selling parcels along the Suncook River or other brook or wetland area that have been obtained by tax deed, keep the parcel under Town ownership. Demolish any structures and turn the land into parks and/or flood storage. Evaluate parcels annually as Selectmen consider deeds.	Suncook River, wet areas

*Source: Pittsfield Hazard Mitigation Committee*



**Table 43**

**Evaluation of Education and Awareness Actions**

<b>Fulfills Hazard Objectives</b>	<b>Action Number</b>	<b>Name of Potential Action</b>	<b>Description of Potential Action</b>	<b>Affected Location</b>
Floods and Flash Floods, Rapid Snow Pack Melt, Erosion, Fluvial Erosion and Channel Movement	<b>#22-2012</b>	<b>Develop NFIP Public Awareness Program and Publicize the Availability of Flood Insurance to Suncook River and Downtown Residents to Reduce the Risk of Flood Injury and Property Damage</b>	Obtain selected FEMA publications on the NFIP and make the available to residents, developers, and business owners at Town Hall, Fire & Police Depts, on the Town website. Send application form or information to each property owner in the floodplain, include in tax bill.	Entire Town
Floods and Flash Floods, Rapid Snow Pack Melt, Erosion, Fluvial Erosion and Channel Movement, Dam Failure	<b>#23-2012</b>	<b>Conduct Outreach with Suncook River Landowners and Update the Notification List to Reduce Injuries and Property Damaged Caused by Flooding</b>	The Town will collect email addresses to send out notices of inclement weather to residents in the floodplain. Door to door notifications are conducted as well. Goal is to ensure the people who live & work within the Suncook River floodplain are aware of flooding issues and what to do in the case of an emergency. Many of the apartment buildings in the floodplain are weekly rentals.	Suncook River
Flood, Erosion, Wildfire, Lightning, Drought, Severe Wind Events, Severe Winter Weather, Excessive Heat	<b>#42-2017</b>	<b>Conduct Outreach to Town Residents and Businesses to Promote Natural Disaster Awareness and Mitigation Activities</b>	Website, visiting community groups (churches, civic organizations), brochures about proper shoreland stewardship to reduce flooding and erosion risk, about fire, wildfire and lightning safety at home and at conservation areas, about extreme heat, winter weather and wind hazards with debris impacted infrastructure, and more.	Entire Town

*Source: Pittsfield Hazard Mitigation Committee*

## Natural Hazards Evaluated for Which Specific Actions Were Not Identified

The Hazard Mitigation Committee assessed each of hazards and made determinations whether to specifically develop mitigation Actions for all natural hazards. Nearly all the potential Actions can be applied to multiple natural or other hazards based upon the generality of the Action's effect. Still, there could be no solutions or mitigation Actions developed for some of the more difficult to mitigate natural hazards. Many possible reasons are considered such as feasibility, prohibitive cost, jurisdiction, staff availability to develop and administer the project, lack of local support, unrealistic favorable outcome for the effort and more, all resulting in the point that for some natural hazards, potential Actions would not have worked for the Town.

Many Actions are general in nature and have the capacity to mitigate multiple types of natural hazards. Those hazards for which no specific or feasible Action was identified are displayed in **Table 44**.

**Table 44**

**Committee Assessment of Natural Hazards with No Mitigation Actions**

Natural Hazard	Committee Assessment
Drought	The Committee felt Drought is a wide-spread, long-term hazard for which no specific mitigations Actions could be proposed for the entire Town. Private water systems (homeowner associations) or the Town's water treatment facility can require water usage restrictions or the Town could request townspeople undertake voluntary water conservation measures for an indefinite time period to help conserve water.
Excessive Heat	The Committee believes Excessive Heat issues may be better addressed at the public education level than by mitigation projects. The Fire Department has lists of vulnerable residents to check on. The Committee did not feel additional mitigation Actions could be proposed for Excessive Heat beyond those which generally cover public education.
Tornadoes	The Committee felt Tornadoes would be a difficult, unpredictable hazard event to mitigate. Although if a Tornado were to occur, existing activities such as the State Building Code, current Highway Department's notification of Eversource (for tree removal) are in place. Several of the Severe Wind-related Actions could also apply to Tornadoes. The Committee felt no specific Actions were within the scope of their jurisdiction.
Hurricanes and Tropical Storms	Hurricanes and Tropical Storms often carry heavy rains, debris, and flooding along with high winds. The Committee's assessment looks to the other wind and flood hazards for Action modeling. The Committee felt the Town could not further mitigate these hazards beyond what was being proposed for Severe Wind-related hazards.
Downbursts	The Committee's assessment of Downbursts is the same as Tornadoes and Hurricanes and Tropical Storms. The Committee did not feel specific mitigation Actions for Downbursts could be pursued.
Earthquake	The Committee recognizes Earthquakes will continue to occur in this area but are likely to be small in nature. Beyond the existing State Building Code and the long-term and very expensive option of building a new Community Services Building, the Committee felt no mitigation Actions would be within the scope of their jurisdiction or would be financially feasible at this time.
River Ice Jams	The Committee is concerned about the proximity of the Suncook River in general and its force on the State-owned Pittsfield Mill Pond Dam. Ice Jams may occur here, but the Committee did not feel they could reasonably pursue specific mitigation Actions. Indirect Actions may help to remove the population and buildings from the immediate area but not fix possible future ice jams.
Landslide	The Committee feels Landslide (and/or Erosion) is not a significant hazard in Town although road washouts could experience both. Steep slopes (over 15-25%) and local roads are reconstructed as

Natural Hazard	Committee Assessment
	needed and when funds are available. At this time, the Committee felt no mitigation Actions could be proposed beyond the upgrade of drainage facilities along roadways.

*Source: Pittsfield Hazard Mitigation Committee*

## 8 MITIGATION ACTION PLAN

The **Mitigation Action Plan** is the culmination of the work of the previous Assessments, inventories, and evaluations from the previous Chapters. Actions to help Pittsfield mitigate the damages caused by disasters have been developed and prioritized by Hazard Mitigation consensus in consideration of both existing and new development.

As noted in **7 POTENTIAL ACTION EVALUATION**, each Action falls into (at least) one of these 4 mitigation Action categories:

Local Planning and Regulation  
Structure and Infrastructure Projects  
Natural Systems Protection  
Education and Awareness

Each Action, including the **Deferred 2012** Actions and the **New 2017** Actions, is evaluated by the relative ease of completion using a numeric **Ranking Score** generated by the STAPLEE prioritization, by the **Action Timeframe** by which the Hazard Mitigation Committee would like to see the Action implemented, and by a basic **Cost to Benefit Analysis** as contained within the STAPLEE.

The Actions are numbered for easier tracking. The **2012** Actions received the designation of **#01- 2012** through **#38- 2012**. The **2017** Actions picked up where the prior Actions left off, beginning with **#39- 2017** through to **#46- 2017**. Over time, the Actions can be tracked to see which have been **Deferred** and to notice, with the missing numbers, how many have been **Completed** or **Deleted**.

The **Responsible Department** is indicated for each Action as the party who will ensure the Action gets completed. An **Approximate Cost** is provided, although no definitive cost estimates or quotes have been obtained now. Ways the Action can be **Funded** is identified and offered as an avenue to explore during implementation. The purpose is to offer an idea of how much funding is provided for each Action and how it may be paid for.

## Pittsfield's Mitigation Action Plan 2017

At the meetings, the Hazard Mitigation Committee identified by consensus these mitigation Actions from the various **Assessments** and evaluations conducted. The process for Action development has been described in previous Chapters and sections. Combined with the visual Maps of the **Hazard Mitigation Plan 2017**, the **Mitigation Action Plan** shown in **Table 45**, **Table 46**, **Table 47** and **Table 48** should be able to guide future hazard mitigation efforts in the Town through an annual implementation process.

Fourteen (**14**) **Deferred** Actions from **2012** and **8 New** Actions from **2017** combine to develop the **22** Actions of the **2017 Mitigation Action Plan**. The **Deferred** Actions' cells are highlighted in tan.

**Table 45**  
**Local Planning and Regulation Actions**

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	What Cost Will Pay For	How Funded
#03-2012	Improve Roadways Prone to Flooding by Developing and Enacting a Priority Road Rehabilitation Schedule to Reduce Washouts	<u>Short Term</u> 1-2 Years then <u>Ongoing</u>	0	Highway Superintendent	\$0	In-kind staff and/or volunteer labor to develop plan.	N/A
#34-2012	Update the Floodplain Zoning Ordinance to Comply with NFIP Requirements to Reduce Flooding Risk	<u>Short Term</u> 1-2 Years then <u>Ongoing</u>	59	Planning Board	\$0	In-kind staff and/or volunteer labor to update ordinance.	N/A
#35-2012	Reduce the Risk to Travelers During Snowstorms by Amending the Winter Road Maintenance Policy to Accommodate Emergency Parking Bans	<u>Short Term</u> 1-2 Years	54	Board of Selectmen with Highway Superintendent assistance	\$0	In-kind staff and/or volunteer labor to revise policy.	N/A
#39-2017	Develop Impervious Surface Ordinance to Reduce the Risk of Rapid Snowpack Melt or Heavy Rain Flooding	<u>Medium Term</u> 3-4 Years	59	Planning Board	\$1,000	In-kind staff and/or volunteer labor to develop regulations and legal review.	Planning Board Budget
#43-2017	Prioritize the Upgrade of Most Problematic Culverts and Drainage Facilities by Developing an Annual Culvert Upgrade Program	<u>Short Term</u> 1-2 Years then <u>Ongoing</u>	0	Highway Superintendent	\$0	In-kind staff and/or volunteer labor to develop program.	N/A

*Source: Pittsfield Hazard Mitigation Committee*

**Table 46**

**Structure and Infrastructure Projects**

<b>Action Number</b>	<b>Action</b>	<b>Action Timeframe</b>	<b>Ranking Score</b>	<b>Who is Responsible</b>	<b>Approx Cost to Town</b>	<b>What Cost Will Pay For</b>	<b>How Funded</b>
#09-2012	Upgrade the Shaw Road Bridge to Reduce the Risk of Floodwater Susceptibility and Erosion	<u>Short Term</u> 1-2 Years	60	Board of Selectmen	\$300,000	Design, engineering, materials, labor of a rehabilitated bridge.	NHDOT Bridge Aid 80%, Town Capital Reserve Fund 20%
#10-2012	Upgrade Lower Tan Road Culvert and Approaches Near Gravel Pit to Reduce Flooding, Erosion, Washouts and Overflow Damage	<u>Long Term</u> 4-5 Years	57	Highway Superintendent	\$250,000	Cost is for labor, design and engineering, and the box culvert for Lower Tan Road.	No currently known grants available, no HW Dept budget large enough to pay for project.
#11-2012	Upgrade Mountain Road Culvert to Reduce Flooding, Erosion, Washouts and Overflow Damage	<u>Medium Term</u> 3-4 Years	57	Highway Superintendent	\$50,000	Cost is for labor, design and engineering, and the box culvert for the Mountain Road Culvert.	No currently known grants available, no HW Dept budget large enough to pay for project.
#12-2012	Upgrade Upper Tan Road Culvert Near Blake's Pond to Reduce Flooding, Erosion, Washouts and Overflow Damage	<u>Medium Term</u> 3-4 Years	57	Highway Superintendent	\$55,000	Cost is for labor, design and engineering, and the box culvert for Upper Tan Road.	No currently known grants available, no HW Dept budget large enough to pay for project.
#13-2012	Upgrade Dowboro Road Culvert at Epsom Line to Reduce Flooding, Erosion, Washouts and Overflow Damage	<u>Long Term</u> 4-5 Years	57	Highway Superintendent	\$145,000	Cost is for labor, design and engineering, the box culvert, and roadway approach improvement for Dowboro Epsom Line Culvert.	No currently known grants available, no HW Dept budget large enough to pay for project.
#17-2012	Install a Dry Hydrant at Eaton Pond to Reduce the Impact of Wildfire and Lightning Damage	<u>Medium Term</u> 3-4 Years	57	Fire Department	\$5,000	Permitting, labor, pipe, and materials.	USDA Rural Forest Fire Protection Grant (?), Fire Department Operating Budget, Emergency Management Operating Budget
#18-2012	Install a Dry Hydrant at Barnstead Road/Suncook River to Reduce the Impact of Wildfire and Lightning Damage	<u>Medium Term</u> 3-4 Years	57	Fire Department	\$5,000	Permitting, labor, pipe, and materials.	USDA Rural Forest Fire Protection Grant (?), Fire Department Operating Budget,

## Town of Pittsfield, NH Hazard Mitigation Plan Update 2017

### 8 MITIGATION ACTION PLAN

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	What Cost Will Pay For	How Funded
							Emergency Management Operating Budget
#40-2017	Build a Public Safety Building to Eliminate the Risk of Natural Disasters to the Severe Deteriorated Conditions of the Existing PD, PWD and FD Buildings	<u>Long Term</u> 4-5 Years	44	Board of Selectmen	\$3.5 million	Land and new building for HD, FD, PD, EOC, and furnishing the Depts, computers, phones, monitors, radio antennas, ADA access etc.	Bond, EMPG for some furnishings
#44-2017	Upgrade the Failing Culverts on Clough Road to Reduce Flooding, Erosion and Overflow Damage	<u>Long Term</u> 4-5 Years	57	Highway Superintendent	\$15,000	Cost is for materials (gravel & ABS pipe)	Public Works Department Budget
#45-2017	Upgrade the 1 Failing Culvert on Eaton Road to Reduce Flooding, Erosion and Overflow Damage	<u>Short Term</u> 1-2 Years	59	Highway Superintendent	\$1,500	Cost is for materials (gravel & ABS pipe)	Public Works Department Budget
#46-2017	Upgrade Single Failing Culvert on Thompson Road to Reduce Flooding, Erosion and Overflow Damage	<u>Short Term</u> 1-2 Years	59	Highway Superintendent	\$1,500	Cost is for materials (gravel & ABS pipe)	Public Works Department Budget

*Source: Pittsfield Hazard Mitigation Committee*



**Table 47**

**Natural Systems Protection Actions**

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	What Cost Will Pay For	How Funded
#04-2012	Ensure Removal of Hazardous Trees or Limbs Along Town Roads to Reduce the Impact of Severe Wind or Winter Weather on Utility Lines and Roadways	<u>Short Term</u> 1-2 Years then <u>Ongoing</u>	59	Highway Superintendent	\$0	In-kind staff labor.	N/A
#06-2012	Purchase Smith Street Properties to Remove People and Buildings from the Active Floodplain	<u>Long Term</u> 4-5 Years	48	Board of Selectmen	N/A at this time	Real estate acquisition, deeds, legal, demolition, reseeding to parkland.	Bond, FEMA match acquisition grants
#41-2017	Retain Tax Deeded Parcels Along the Floodplains or Wetlands to Enhance Flood Storage Capacity	<u>Short Term</u> 1-2 Years then <u>Ongoing</u>	52	Board of Selectmen	About \$30,000 per property	Title search, legal work, demolition, reseeding to parkland.	Town Operating Budget

*Source: Pittsfield Hazard Mitigation Committee*

**Table 48**

**Education and Awareness Actions**

Action Number	Action	Action Timeframe	Ranking Score	Who is Responsible	Approx Cost to Town	What Cost Will Pay For	How Funded
#22-2012	Develop NFIP Public Awareness Program and Publicize the Availability of Flood Insurance to Suncook River and Downtown Residents to Reduce the Risk of Flood Injury and Property Damage	<u>Short Term</u> 1-2 Years	60	Town Administration	\$0	Cost is for in-kind volunteer labor and free materials from FEMA.	N/A
#23-2012	Conduct Outreach with Suncook River Landowners and Update the Notification List to Reduce Injuries and Property Damaged Caused by Flooding	<u>Short Term</u> 1-2 Years then <u>Ongoing</u>	60	Emergency Management Director	\$0	Cost is for in-kind volunteer labor and free materials from FEMA.	N/A
#42-2017	Conduct Outreach to Town Residents and Businesses to Promote Natural Disaster Awareness and Mitigation Activities	<u>Short Term</u> 1-2 Years then <u>Ongoing</u>	60	Emergency Management Director	\$0	Cost is for in-kind volunteer labor and free materials from FEMA.	N/A

*Source: Pittsfield Hazard Mitigation Committee*

### **Great Projects... And the Realities of Project Implementation in New Hampshire**

These important but costly and/or time consuming mitigation projects identified in the **Mitigation Action Plan** represent the best case scenarios (or to some, “wish-list” items) for completion. There are many barriers to successful implementation of any project which is outside the typical duties of a Town staff member. The annual struggle to obtain municipal funding at Town Meetings and the uncertainty of political & local support needed for hazard mitigation projects, the limited staff time available to administer and complete the projects, and dwindling volunteer support to help locate grants and work on the Action Plan items all reduce the Town’s ability to complete successful hazard mitigation projects within the Plan’s **5**-year lifespan. Town staff and volunteers are usually forced to be reactive to their numerous daily duties or annual processes and have little availability to be proactive. This is especially true for the Central NH region’s smaller communities that rely on voter support for staff hiring and/or hazard mitigation project budget funding, which is 19 out of 20 municipalities.

Therefore, mitigation and other projects are generally completed on an “as-needed basis” or on an “as-available basis” despite the different ways of evaluation and prioritization shown within the **Hazard Mitigation Plan 2017**. Small New Hampshire communities do the best they can with the resources available to them to make ends meet, particularly in times of economic duress or hardship and our aging population. Town Meeting voters decide whether to approve new zoning ordinances which can help mitigate hazards, vote to approve Department Budgets which usually are sustainable and do not allow enough flexibility to plan ahead, and vote to approve Warrant Articles for a hazard mitigation project. Town Volunteers are relied upon to do much of the hazard mitigation work as Town staff are already engaged in real-time, constant public engagement issues and have little additional time available for planning. Few younger people are stepping up to the plate of community volunteering when our existing volunteers are retiring. Indeed, many staff or volunteers have dual or triple roles in the community to fill vacancies, such as a Town Administrator serving as Health Officer and Human Services Officer and a volunteer Fire Chief serving as volunteer Emergency Management Director.

NH communities are used to “toughing it out” and will try to accomplish all they can with the time, funding and resources available to them. However, many of these **2017** Actions may end up **Deferred** to **2022** simply because of the unique nature of our independent State and community culture.

## Action Evaluation and Prioritization Methods

A variety of methods were utilized to evaluate and prioritize the Actions. These methods include the enhanced STAPLEE (Social Technical Administrative Political Legal Environmental and Economics) criteria, designating the Action to be completed within a certain timeframe, and completing a basic **Cost to Benefits Analysis**, a later section. These prioritization methods are meant to enable the community to better identify which Actions are more important and are more feasible than others.

### STAPLEE METHOD

The Hazard Mitigation Committee ranked each of the mitigation Actions derived from the evaluation process. The total **Ranking Score** serves as a guide to the relative ease of Action completion by scoring numerous **societal and ethical impact questions** and does not represent the Town's Action *importance* priority. Instead, the STAPLEE process evaluates each Action and attempts to identify some potential barriers to its success. A score of **60** would indicate that the mitigation strategy, or Action, would be relatively among the easiest Actions to complete from a social and ethical standpoint.

All STAPLEE answers are subjective and depend on the opinions of the Committee members discussing them. The Committee answered these **12** questions with a numeric score of "**1**" indicating a **NO/Very Poor** response, "**2**" indicating an **UNCERTAIN/Below Average** response, "**3**" indicating a **MAYBE/Average** response, "**4**" indicating a **LIKELY/Above Average** response or "**5**" indicating a **YES/Excellent** response, a scale of *how well* or *can* the Action fulfill the criteria:

- Does the action reduce damage and human losses?
- Does the action contribute to community objectives?
- Does the action meet existing regulations?
- Does the action protect historic structures?
- Can the action be implemented quickly?
- Is the action socially acceptable?
- Is the action technically feasible?
- Is the action administratively possible?
- Is the action politically acceptable?
- Is the action legal?
- Does the action offer reasonable benefits compared to its cost in implementing?
- Is the action environmentally sound?

Action Completion	
Rating	SCORE
Easiest	48 - 60
Easy	47 - 35
Normal	24 - 36
Hard	13 - 25
Hardest	12

The STAPLEE scores can range from a low of **12** to a high **60**. Pittsfield's **Mitigation Action Plan** STAPLEE rating is shown in **Figure 20**.

**Figure 20**  
**STAPLEE Ranking of Mitigation Actions**

Action Number	Does/Is the Action..... Action	Reduce Damage?	Contribute to Town Objectives?	Meet Regulations?	Protect Sensitive Structures?	Implemented Quickly?	Socially Acceptable?	Technically Feasible?	Administratively Realistic?	Politically Acceptable?	Legal?	Have a Reasonable Cost to Benefits?	Environmentally Sound?	Ranking Score (Out of 60)
#03- 2012	Improve Roadways Prone to Flooding by Developing and Enacting a Priority Road Rehabilitation Schedule to Reduce Washouts	5	5	5	5	3	4	5	4	4	5	5	5	55
#04- 2012	Ensure Removal of Hazardous Trees or Limbs Along Town Roads to Reduce the Impact of Severe Wind or Winter Weather on Utility Lines and Roadways	5	5	5	5	5	4	5	5	5	5	5	5	59
#06- 2012	Purchase Smith Street Properties to Remove People and Buildings from the Active Floodplain	5	5	5	5	1	2	5	2	3	5	5	5	48
#09- 2012	Upgrade the Shaw Road Bridge to Reduce the Risk of Floodwater Susceptibility and Erosion	5	5	5	5	5	5	5	5	5	5	5	5	60
#10- 2012	Upgrade Lower Tan Road Culvert and Approaches Near Gravel Pit to Reduce Flooding, Erosion, Washouts and Overflow Damage	5	5	5	5	3	5	5	5	4	5	5	5	57
#11- 2012	Upgrade Mountain Road Culvert to Reduce Flooding, Erosion, Washouts and Overflow Damage	5	5	5	5	3	5	5	5	4	5	5	5	57
#12- 2012	Upgrade Upper Tan Road Culvert Near Blake's Pond to Reduce Flooding, Erosion, Washouts and Overflow Damage	5	5	5	5	3	5	5	5	4	5	5	5	57
#13- 2012	Upgrade Dowboro Road Culvert at Epsom Line to Reduce Flooding, Erosion, Washouts and Overflow Damage	5	5	5	5	3	5	5	5	4	5	5	5	57
#17- 2012	Install a Dry Hydrant at Eaton Pond to Reduce the Impact of Wildfire and Lightning Damage	5	5	5	5	3	5	5	4	5	5	5	5	57
#18- 2012	Install a Dry Hydrant at Barnstead Road/Suncook River to Reduce the Impact of Wildfire and Lightning Damage	5	5	5	5	3	5	5	4	5	5	5	5	57
#22- 2012	Develop NFIP Public Awareness Program and Publicize the Availability of Flood Insurance to Suncook River Landowners and Downtown Residents to Reduce the Risk of Flood Injury and Property Damage	5	5	5	5	5	5	5	5	5	5	5	5	60
#23- 2012	Conduct Outreach with Suncook River Landowners and Update the Notification List to Reduce Injuries and Property Damaged Caused by Flooding	5	5	5	5	5	5	5	5	5	5	5	5	60
#34- 2012	Update the Floodplain Zoning Ordinance to Comply with NFIP Requirements to Reduce Flooding Risk	5	5	5	5	4	5	5	5	5	5	5	5	59
#35- 2012	Reduce the Risk to Travelers During Snowstorms by Amending the Winter Road Maintenance Policy to Accommodate Emergency Parking Bans	5	5	5	5	3	3	5	4	4	5	5	5	54
#39- 2017	Develop Impervious Surface Ordinances to Reduce the Risk of Rapid Snowpack Melt or Heavy Rain Flooding	5	5	5	5	4	5	5	5	5	5	5	5	59
#40- 2017	Build a Public Safety Building to Eliminate the Risk of Natural Disasters to the Severe Deteriorated Conditions of the Existing PD, PWD and FD Buildings	5	5	5	5	1	2	5	2	1	5	3	5	44
#41- 2017	Retain Tax Deeded Parcels Along the Floodplains or Wetlands to Enhance Flood Storage Capacity	5	5	5	5	3	2	5	3	4	5	5	5	52
#42- 2017	Conduct Outreach to Town Residents and Businesses to Promote Natural Disaster Awareness and Mitigation Activities	5	5	5	5	5	5	5	5	5	5	5	5	60
#43- 2017	Prioritize the Upgrade of Most Problematic Culverts and Drainage Facilities by Developing an Annual Culvert Upgrade Program	5	5	5	5	5	5	5	5	5	5	5	5	60
#44- 2017	Upgrade the Failing Culverts on Clough Road to Reduce Flooding, Erosion and Overflow Damage	5	5	5	5	3	5	5	5	4	5	5	5	57
#45- 2017	Upgrade the 1 Failing Culvert on Eaton Road to Reduce Flooding, Erosion and Overflow Damage	5	5	5	5	5	5	5	5	4	5	5	5	59
#46- 2017	Upgrade Single Failing Culvert on Thompson Road to Reduce Flooding, Erosion and Overflow Damage	5	5	5	5	5	5	5	5	4	5	5	5	59

*Source: Pittsfield Hazard Mitigation Committee*

## ACTION TIMEFRAMES

The Actions are also prioritized by an estimated **Action Timeframe** for completion based upon the other Town activities (hazard mitigation-related or not), funding potential for the Action, the need for the Action project, and possible staff time and volunteers available to complete the Action. This relative Action importance priority is measured by the **time indicated for project completion**. All Action projects within the **Mitigation Action Plan** have been assigned an **Action Timeframe**.

Action Timeframe	Description of Timeframe
Ongoing	Action undertaken throughout the life of the 5-year Plan
Short Term	Action should be undertaken during Years 1-2 of the Plan
Medium Term	Action should be undertaken during Years 3-4 of the Plan
Long Term	Action should be undertaken during Years 4-5 of the Plan

Those projects which are designated as **Ongoing** mean the Action should be undertaken on a regular basis throughout the five-year lifespan of the Plan. Actions that could qualify as **Ongoing** include public education, zoning ordinance or regulation revisions, essential mitigation maintenance and more. However, even **Ongoing** Actions are completed once before repetition. As a result, those Actions with an **Ongoing Action Timeframe** also include a duration (**Short**, **Medium** or **Long Term**) included.

**Short Term** projects are those which are the more important Actions and should be undertaken during **Years 1-2** of the Plan's lifespan if possible. **Medium Term** Actions are recommended by the Hazard Mitigation Committee to be undertaken during **Years 3-4** of the Plan's lifespan, while **Long Term** Actions are those which should wait until last, with suggested implementation undertaken during Plan **Years 4-5**. It is important to remember the **Action Timeframes** are relative to each other and are another indication of Action importance. If an Action cannot be completed within the **Action Timeframe**, it may still be a higher priority than other Actions but was unable to be implemented for some reason.

Both the **Action Timeframe** and the **Ranking Score** are incorporated into the **Mitigation Action Plan** to assist the Town with implementing the hazard mitigation Actions. The Actions can be sorted within their Action Category by either priority for easy display of the desired characteristic; Actions can also be sorted by **Responsible Department** to keep them all together for ease of completion.

## COST TO BENEFIT ANALYSIS

A simple **Cost to Benefit Analysis** ranking is contained within the STAPLEE criteria.



## **9 ANNUAL IMPLEMENTATION AND EVALUATION**

The Town received FEMA approval for the prior **Hazard Mitigation Plan** in **April 2012**. The completion of a planning document is merely the first step in its life as an evolving tool. The **Hazard Mitigation Plan Update** is a dynamic document that should be considered by all Town Departments, Boards, and Committees within their normal working environments. While evaluating the effectiveness of Actions in its everyday implementation, everyone should be able to contribute to the relevancy and usefulness of the Plan and to communicate with the Hazard Mitigation Committee where changes should be made. An annual effort will be undertaken to complete Actions and add new Actions as old tasks are completed and new situations arise. This Chapter will discuss the methods by which the Town of Pittsfield will review, monitor, and update its new **Pittsfield Hazard Mitigation Plan Update 2017**.

### **Annual Monitoring and Update of the Mitigation Action Plan**

The Board of Selectmen should vote to establish a permanent Hazard Mitigation Committee within **3 months** of receiving the FEMA **Letter of Formal Approval** as indicated in **1 PLANNING PROCESS**. The purpose is to meet on a regular basis to ensure the **Hazard Mitigation Plan's** Actions are being actively worked on and the Plan is evaluated and revised to fit the changing priorities of the Town.

The Emergency Management Director or designee should continue to serve as Chair of the Committee for Hazard Mitigation meetings, and should be appointed in such a capacity by the Board of Selectmen. Current Hazard Mitigation Committee members can be appointed to continue to participate as members of the permanent Committee. More information is provided in **APPENDIX B**.

Committee membership should include:

- |                                 |                                    |
|---------------------------------|------------------------------------|
| ✓ Emergency Management Director | ✓ 1 Selectman                      |
| ✓ Town Administrator            | ✓ 1 Planning Board member          |
| ✓ Fire Chief                    | ✓ 1 Conservation Commission member |
| ✓ Police Chief                  | ✓ 1 School District Representative |
| ✓ Highway Superintendent        | ✓ Members at Large (Stakeholders). |
| ✓ Building Inspector            |                                    |
| ✓ Land Use Coordinator          |                                    |

Stakeholders who should be solicited to attend meetings and to participate equitably in the Plan development process include Business Community members, Non-profits, and local, State or Federal agency representatives and members of the public. This composition provides a wide spectrum of potential interests and opportunities for partnership to develop and accomplish Actions.

This Committee will **aim to meet up to 4-6 times per year** with the following potential future meeting activities to update the **Mitigation Action Plan** and complete the Plan's annual evaluation as displayed in **Table 49**.

**Table 49**







**Hazard Mitigation Committee Preliminary Annual Future Meeting Activities**

<b>Month</b>	<b>Preliminary Interim Meeting Agenda Items</b>
<b>February</b>	HMC sends <b>Progress Reports #3</b> to Departments for completion by beginning of March. Committee continues update to the <b>Mitigation Action Plan</b> using <b>Department Mitigation Action Progress Reports</b> and an updated <b>Action Status Tracking sheet</b> . Committee provides revised copies to Department Heads, keeps original Word and Excel files accessible on Town computer system.
<b>March</b> <b>HMC Meeting</b> <i>\$ available</i>	<b>Annual funding is received from Town Meeting.</b> Committee completes annual update of the <b>Mitigation Action Plan and the associated Plan Chapter and sections</b> . Committee determines Action Plan items to pursue for this year, including \$0 cost items.
<b>March – June</b>	<b>Committee ensures Department Heads are provided with information to work on their Actions.</b> Committee meets with Department Heads to inform about the Action priorities and requests attention: begin working on Action.
<b>June</b> <b>HMC Meeting</b> <i>Infrastructure projects underway</i>	<b>Infrastructure projects will be underway.</b> Committee provides a <b>Progress Report #1</b> for all Actions to responsible Depts/Boards for response by beginning of July. Committee prepares <b>Annual Evaluation of the Plan</b> . Depts to begin placement of next year's high-cost Action Plan items into the CIP.
<b>August</b>	Committee to assist Department Heads with their budget requests to include Action Plan items, and to determine which Action Plan items should have warrant articles. HMC continues assistance to Departments for Action Plan items. Committee begins to update the <b>Action Status Tracking Sheet</b> . Committee ensures Haz Mit Actions are added into the CIP.
<b>September</b> <b>HMC Meeting</b>	Committee will identify projects to accomplish (including \$0) for the upcoming year. Committee provides a <b>Progress Report #2</b> for all Actions to responsible parties for response by beginning of October. The <b>Action Status Tracking Sheet</b> is sent to Department/Boards to show Action progress. HMC attends Selectmen budget meetings and suggests warrant articles for Action Plan items. Committee attends Budget Committee meetings scheduled through January to champion Action item funding.
<b>December</b> <b>HMC Meeting</b> <i>Budget determined</i>	<b>Town operating budgets are determined for the next year.</b> HMC assists Board of Selectmen and Budget Committee with getting their mitigation projects funded and written into budgets. Action implementation continues. Committee continues update to the <b>Action Status Tracking Sheet</b> using the <b>Department Mitigation Action Progress Reports from October</b> .

*Sources: Pittsfield Hazard Mitigation Committee*



Annually and independent of the Town's budget cycle, a simpler listing of the Hazard Mitigation Committee's tasks should include:

-  **Document New Hazard Events that Occurred in Town**
  - Hazard Risk Assessment
  - Local and Area History of Disaster and Hazard Events
-  **Coordinate Completion of Annual Mitigation Actions by Assigning to Departments**
  - Appendix B Mitigation Action **Progress Report**
-  **Seek and Help Departments Acquire Funding for Actions & Fill in Tracking File**
  - Appendix B Mitigation **Action/Project Status Tracking**
-  **Evaluate Effectiveness of the Plan and Its Actions Yearly**
  - Appendix B Plan **Evaluation Worksheet**
-  **Obtain Semi-Annual Progress Reports from Departments & Update Tracking File**
  - Appendix B Mitigation **Action/Project Status Tracking**
-  **Update & Reprioritize Mitigation Action Plan and Update Supporting Plan**
  - Document Sections**
    - Mitigation Action Plan
    - Enhanced STAPLEE Prioritization
    - Hazard Mitigation Plan Update **2017** sections as needed (make a note of the new information added/changed)
-  **Repeat**

For each of the Hazard Mitigation Committee meetings, the Emergency Management Director (or Staff Coordinator) will invite other Department members, Board and Committee members, Town Staff, Pittsfield School District Staff, and other participants of the **2017 Plan** Committee meetings. Identified and general members of the public will also be invited as indicated previously. Their purpose is to attend and participate in the meetings as full participants, providing input and assisting with decision making. Public notice will be given as press releases in local papers, will be posted in the public places in Pittsfield, and will be posted on the Town of Pittsfield website at [www.pittsfieldnh.gov](http://www.pittsfieldnh.gov).

The **Hazard Mitigation Plan's Mitigation Action Plan** will be updated and evaluated annually generally following the suggestions outlined within the Chapter. All publicity information, Agendas, and Attendance Sheets, should be retained and compiled for inclusion into **APPENDIX C**.

The Emergency Management Director and Department heads will work with the Board of Selectmen to discuss the funding of Action projects as part of the budget process cycle in the fall of each year. The

projects identified will be placed into the following fiscal year's budget request if needed, including the Capital Improvements Program (CIP), Town Operating Budgets, and other funding methods.

The Federal Emergency Management Agency (FEMA) encourages communities to upload their Hazard Mitigation Plan Actions into an online database. The **Mitigation Action Tracker** follows municipal Actions through their completion. This added attention to the Town's Actions could enable additional support for grant opportunities when it is shown the Town can complete its mitigation projects. The Town would need to set up an account to enter their Actions into the **FEMA Mitigation Action Tracker** at <https://mat.msc.fema.gov>.

## Tasks of the Plan Update

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A number of tasks will be accomplished for the complete (five-year, FEMA approved) update to the Hazard Mitigation Plan. Note that information from many Chapters will be used or referenced by other Chapters. The annual **Mitigation Action Plan** update tasks for the Hazard Mitigation Committee are indicated in bulleted list above and are noted below under the brief instructions for chapter updates.

### 1 PLANNING PROCESS

Add the new Hazard Mitigation Committee members, contributors, and the public who participated in meetings. Add any new Agendas to the Table. Retain all meeting, attendance, publicity and invitation documents in updated **APPENDIX C Meeting Information**.

### 2 COMMUNITY PROFILE

Revise the Tables with new demographic and housing information as it becomes available. Update the building permit figures. Revise land use data from the Vision Appraisal System and compare to previous years' data. Update any zoning changes. The text analysis will need to be revised to reflect all changes.

### 3 GOALS AND OBJECTIVES

Review and update the general and hazard-specific objectives (Flood, Wind, Fire, Extreme Temperature, Earth, Technological, Human) to ensure their continued relevance.

### 4 HAZARD RISK ASSESSMENT

Review and update the **Hazard Risk Assessment**. Add new disasters, new Public Assistance funding received, and significant new hazard events since the last Plan into the Tables and Appendices. Determine the magnitude of new declared disasters. Add any specific narrative dialogue about new hazard events occurring in Pittsfield. Update **Local and Area Hazard Event History** with new disasters or hazard events and review the **Hazard Risk Assessment** for necessary changes. Update **Potential Future Hazards** to document the possible new hazards that could occur in Town based on historic or current evidence.

## **5 COMMUNITY VULNERABILITY AND LOSS ESTIMATION**

Review and update the **APPENDIX A Critical and Community Facility Vulnerability Assessment** Tables to ensure accuracy. Update the Structure Valuation cost when new Avitar assessing data becomes available. Generate additional **Problem Statements** that arise because of issues with facilities. Update the Culvert Upgrade Table. Revise the number and type of buildings in the Special Flood Hazard Areas (floodplains) including new structure valuation and recalculate the discussion values. Once the new structure assessments are available, recalculate the building dollar losses by the other natural hazards. Update the NFIP Tables and changes to the Floodplain Ordinance.

## **6 CAPABILITY ASSESSMENT**

Review and update the **Capability Assessment** for adoption date revisions, changes since the last plan, or future improvements. List additional example capabilities in the Chapter. Add additional mitigation support resource documents to the Table.

## **7 POTENTIAL ACTION EVALUATION**

Review the Actions for validity and revise as needed to place them in different categories: Completed, Deferred or Deleted. Explain why each Action was Deleted or Deferred and indicate when each Action was Completed. Determine any new Actions can be developed from new Problem or new Capability Assessment Future Improvements. List some examples of each type of the 5 actions in the Plan. Revise the **Potential Action Evaluation** to accommodate the Action changes.

## **8 MITIGATION ACTION PLAN - ANNUAL UPDATE**

Remove Completed and Deleted Actions and move to **7 POTENTIAL ACTION EVALUATION**. Add New Actions to the **Mitigation Action Plan 2017** and ensure they are reviewed in the previous Chapter, listed above. Reevaluate Actions not yet completed, remove the Deleted, and evaluate any New Actions utilizing the enhanced **STAPLEE Mitigation Action Prioritization** matrix. Modify the approximate cost, date for completion, and funding changes as needed.

## **9 ANNUAL PLAN IMPLEMENTATION AND EVALUATING - ANNUAL ACTIVITY**

The Hazard Mitigation Committee (HMC) should be permanently appointed by the Board of Selectmen to hold up to **4** meetings yearly to review, implement, and evaluate the Plan. Updates any procedures or processes in the Chapter. Use the **APPENDIX B Annual Plan Evaluation and Implementation Worksheets** to guide the annual update of **8 MITIGATION ACTION PLAN**. Keep track of publicity, Department Reports, and all progress made towards the identified Actions. Add progress since the last Plan for implementation programs. Review continued public involvement for accuracy. Add other new information to the Chapter or revise as needed if new information becomes available.

## **10 APPENDICES**

Revise the **APPENDICES A-D** as needed to update the data and documentation for Pittsfield. Ensure all the publicity documents, Agendas, Attendance Sheets, revised files and more are available for transfer

to CNHRPC when the **5-year** Plan update is due. These interim files will be placed into an updated **APPENDIX C Meeting Information**.

## **11 MAPS**

Update *Map 1*, *Map 2*, *Map 3*, and *Map 4* of the Plan as needed to reflect the changes of the hazard event locations and site locations. Mapping assistance may be sought elsewhere, such as with the Central NH Regional Planning Commission (CNHRPC).

## **Implementing the Plan through Existing Programs**

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In addition to work by the Hazard Mitigation Committee and Town Departments, several other mechanisms exist which will ensure that the **Pittsfield Hazard Mitigation Plan Update 2017** receives the attention it requires for optimum benefit. Incorporating Actions from the Plan is often the most common way the Hazard Mitigation Plan can be integrated into other existing municipal programs, as described below.

### **MASTER PLAN**

The **Pittsfield Master Plan** was adopted in **2005**, developed by the Planning Board with assistance from the CNHRPC. The Planning Board has begun the update of its Master Plan for **2017-2018**.

The Planning Board should consider adopting the Hazard Mitigation Plan Update as a separate Chapter to its Master Plan in accordance with **RSA 674:2.II(e)**. The **Hazard Mitigation Plan** should be presented to the Planning Board after FEMA's **Formal Approval**. The Plan can be considered for adoption after a duly noticed public hearing, just as any typical Chapter of a Master Plan.

### **Process to Incorporate Actions**

The Hazard Mitigation Committee will present the approved **Hazard Mitigation Plan** to the Planning Board within **6** months after FEMA's **Letter of Formal Approval is received** for consideration and adoption into the Master Plan after a duly noticed public hearing. This is the same process used to adopt other components of the Master Plan. The NH State law supporting the development of a natural hazard mitigation plan as a component of a community Master Plan is **RSA 674:2-III(e)**. The Hazard Mitigation Committee will oversee the process to begin working with the Planning Board to ensure that the relevant **Hazard Mitigation Plan** Actions are incorporated into the Master Plan.

### **Implementation Progress through the Master Plan Since the 2012 Plan**

The existing **2005** Master Plan developed by the Planning Board does not contain the **Hazard Mitigation Plan 2012** (or **2017**) as an Appendix.

#### **How Was This or Will This Be Accomplished?**

The **2005** Master Plan may be updated by the Planning Board in **2017-2018**. This will be an opportune time to integrate the **Hazard Mitigation Plan**. The Planning Board will be given a copy of the **2017 Plan** and can choose to incorporate several Action items that pertain to the Planning Board or incorporate the entire Plan by reference. Several Actions include revisions to Board regulations and to Capital Improvements, Zoning Amendments, or Subdivision and Site Plan Review regulations. The Floodplain Ordinance under the purview of the Planning Board was updated since the last Plan, in **2010**. The Emergency Management Director will recommend that the Board incorporate the identified Planning Board-responsibility Actions as appropriate into the Future Land Use, Implementation, and Community Facilities Chapters and include the **Hazard Mitigation Plan** into the Master Plan Appendix whenever the Planning Board updates the Master Plan.

### **CAPITAL IMPROVEMENTS PROGRAM**

Pittsfield's newest **Capital Improvements Program (CIP)** is a **10**-year plan for **2010-2020** with the intention of an decennial update. The HMC would like to ensure Actions requiring capital improvements funding from the **Hazard Mitigation Plan Update** will be inserted into the Capital Improvements Program for funding during the CIP's next update. Depending on the Town's funding needs, a Capital Reserve Fund for Hazard Mitigation Program Projects may be established to set aside funding for the many projects identified in the Hazard Mitigation Plan Update.

### **Process to Incorporate Actions**

The Hazard Mitigation Committee will oversee the process to begin working with the Planning Board's CIP Committee to incorporate the various Hazard Mitigation Plan projects into the next CIP. As the CIP is updated, a representative from the Hazard Mitigation Committee could request to sit on the CIP Committee to ensure the projects are added, especially if the CIP is updated once every **10** years.

### **Implementation Progress through the CIP Since the 2012 Plan**

Many of the Completed Actions could be completed because of their placement into and purchase out of the Capital Improvements Program.

**How Was This or Will This Be Accomplished?**

The Town Departments and Town Administrator will work together with Planning Board to identify the items needed for the **Hazard Mitigation Plan** Action implementation. The Actions identified will be requested to be added to the next CIP or any of its interim updates.

**ZONING ORDINANCE AND REGULATIONS**

Several of the implementation strategies proposed involve revisions to the Zoning Ordinance, Subdivision Regulations, and/or the Site Plan Review Regulations. The Town staff and Planning Board annually draft Zoning Ordinance amendments for Town Meeting approval, and will be requested to do so in order to accommodate Actions. The Land Use Regulations are updated by the Planning Board as needed.

**Process to Incorporate Actions**

A Hazard Mitigation Committee member, perhaps the Town Administrator or a Land Use Coordinator, will work with Planning Board to develop appropriate language for modifications to the Zoning Ordinance and the Subdivision and Site Plan Regulations as they deem appropriate as appropriate to accommodate Actions in the **Hazard Mitigation Plan**. Other Committee members, if requested, could help Town staff draft language for respective changes to the Regulations or the Zoning Ordinance, and assist Town staff with presenting the language to the Planning Board for consideration.

The Hazard Mitigation Committee representative will request from the Planning Board a copy of future required language for any FEMA Zoning Ordinance Updates for incorporation into the Plan.

**Implementation Progress through Zoning Since the 2012 Plan**

The Town adopted the **April 19, 2010 NFIP** DFIRM Maps and respective updates to the Zoning Ordinance. Other Zoning Ordinance changes did not pertain to mitigation.

**How Was This or Will This Be Accomplished?**

The Planning Board directly obtains the required NFIP floodplain ordinance revision information from the NH Office of Energy and Planning and provides it to the Board of Selectmen for approval, a legislative power granted to them. For any future updates to the Floodplain Development Ordinance not required by FEMA, the changes will have to be approved at Town Meeting.

**TOWN MEETING**

In Pittsfield, the annual Town Meeting is held in March where the voters of the Town vote to raise money for capital projects and approve the annual operating budget of the Town. This is an opportunity to get some of the Actions of the **Hazard Mitigation Plan Update** funded.

### **Process to Incorporate Actions**

The Hazard Mitigation Committee members will work with the Budget Committee and Board of Selectmen to develop warrant article language for appropriate Actions. A representative from the Hazard Mitigation Committee will provide a copy of the **Mitigation Action Plan** to both the Budget Committee and Board of Selectmen and validate the need for funding at the annual Town Meeting to accomplish the projects. The representative will work with the Town Administrator to write warrant article language for approval Action items if needed or to get the items placed into Department Operating Budgets.

### **Implementation Progress through Town Meeting Since the 2012 Plan**

Town Meetings are used to accomplish many of the Action purchases. **Mitigation Actions Completed** could be implemented through various local funding sources: separate warrant articles, warrant articles to remove funds from the Capital Improvements Program, or through adoption of Department Operating Budgets and the General Fund.

### **How Was This or Will This Be Accomplished?**

The Emergency Management Director, a member of the Hazard Mitigation Committee, brings Action items to be purchased to the Board of Selectmen and Budget Committee for consideration. The CIP contains many of the Actions, as discussed previously. The Board of Selectmen and Budget Committee bring Actions to the Town Meeting via warrant articles, as well as the Operating Budgets, additional warrant articles which may include Action items in the CIP, and warrant articles to add funding into the capital reserve funds. Many of the Action items are funded in this manner.

## **OPERATING BUDGETS**

Many of the Actions will not require specific funding but are identified as requiring in-kind Staff labor to perform the work required to undertake the Actions. Town Departments and Staff have rigorous job functions that demand their undivided attention to the tasks required to run their respective Departments. Additions to the work load to accommodate the Actions can put a strain on their ability to serve the public during performance of their normal job duties. When possible, Pittsfield Departments and Staff will be able to prioritize their tasks to work on **Hazard Mitigation Plan Update 2017** Actions. The in-kind work performed comes out of the Operating Budget for that particular Department.

### **Process to Incorporate Actions**

With getting started help from the HMC, the Department or Board given the responsibility to ensure the Action gets completed will work on the Actions allocated to him/her or delegate the Action to another person, when their normal job duties permit. The funding for the Actions comes out of the Department's operating budget as work is undertaken by the Staff person on an as-time-permits basis unless the Action is a component of the Town staff members' normal work duties.



Staff or volunteers will attempt to follow the **Action Timeframe** as a guideline for completion. A yearly review of the **Mitigation Action Plan** by the Hazard Mitigation Committee will reprioritize the Actions, and the members can report on their progress, asking for assistance or more time as needed.

### **Implementation Progress through Operating Since the 2012 Plan**

The Operating Budgets of the Town Departments typically served to implement many of the Actions displayed in **Mitigation Action Plan**.

### **How Was This or Will This Be Accomplished?**

Department heads who participated in the Hazard Mitigation Committee submitted their Action items to Board of Selectmen and Budget Committee for consideration. Individual Department needs are recognized as part of their respective Operating Budgets and are proposed to the Board of Selectmen and Budget Committee. All Operating Budgets are approved (and often amended) by voters at the annual March Town Meeting.

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## Continued Public Involvement

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On behalf of the Hazard Mitigation Committee, the Emergency Management Director and the Staff Coordinator, under direction of the Town Administrator, will be responsible for ensuring that Town Departments and the public have adequate opportunity to participate in the planning process. Administrative staff may be utilized to assist with the public involvement process.

For each interim meeting in the annual update process, and for the five-year update process procedures that will be utilized for public involvement include:

- Provide personal invitations to Town volunteer Board and Committee Chairs, and Budget Committee members;
- Provide personal invitations to Town Department heads;
- Provide personal invitations to the following entities listed below;
- Post public meeting notice flyers on the Town's website at [www.pittsfieldnh.gov](http://www.pittsfieldnh.gov) and in the Town Offices, Town Library, and at the Post Office and/or local business(es);
- Submit media releases to the daily Concord Monitor (a regional newspaper serving **39** communities around the Concord area) and the weekly Suncook Valley Sun (serving **5** local communities).

Agencies and businesses to invite to future **Hazard Mitigation Plan Update** meetings include the Pittsfield School District, NH Department of Environmental Services (Pittsfield Mill Pond Dam), and representatives from business and non-profit communities (see **APPENDIX A Critical and Community Facilities Vulnerability Assessment** Tables: Vulnerable Populations, Economic Assets and Recreational and Gathering Sites). The Emergency Management Directors of the neighboring communities will again be invited as will the NH Homeland Security and Emergency Management Field Representative for Merrimack County. The Town will contact the Central NH Regional Planning Commission with Agendas, Minutes and other materials for archiving, to be used when the **5-year** update again becomes necessary.

The Hazard Mitigation Committee will ensure that the Town website's Emergency Management calendar at [www.pittsfieldnh.gov](http://www.pittsfieldnh.gov) is updated with the Hazard Mitigation meeting notices that first appear on the welcoming Home page. A number of Action Plan items which will be undertaken relate to public education and involvement. The website could be a good way to get the word out.

## Implementation and Evaluation of the Plan

During the Committee's annual review of the **Mitigation Action Plan**, the Actions are evaluated as to whether they have been **Completed**, **Deleted**, or **Deferred**. Those Action types are placed into their respective Tables. Any **New** Actions will be added as necessary. Each of the Actions within the updated **Mitigation Action Plan** will undergo the enhanced STAPLEE ranking as discussed in **8 MITIGATION ACTION PLAN**.

A set of comprehensive **Annual Interim Plan Evaluation and Implementation Worksheets** is available to assist the community with Plan implementation in **APPENDIX B**. These worksheets are to be used during the Hazard Mitigation Committee basic meeting schedule outlined previously in **Table 49**.

The worksheets include administrative and organizational documents, those that are used with the Appendices spreadsheets developed, and two Agendas to get started with HMC Interim Update meetings:

- **Permanent Hazard Mitigation Committee Establishment**
- **Organization of Public Invitees to Join Meetings**
- **HMC Interim Meeting (IM) Publicity Tracking 2017-2022**
- **Annual Interim Plan Update Evaluation Worksheet 2017-2022**
- **Hazard Mitigation Actions Status Tracking 2017-2022**
- **Department Mitigation Action Progress Report 2017-2022**
- **Attendance Sheet Example**
- **Agenda IM1 Example**
- **Agenda IM2 Example**

The five-year full Plan update will evaluate the Actions in the same manner in addition to fulfilling all of the **TASKS OF THE PLAN UPDATE** earlier in this Chapter.

## **10 APPENDICES**

The following **APPENDICES A-D** are included under a separate electronic or paper document to maintain the relative brevity of this **Hazard Mitigation Plan Update**.

### **Listing of Pittsfield Hazard Mitigation Plan Update 2017 Appendices**

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Some of these documents should be updated annually as part of the interim Action implementation and Plan evaluation process\*. The remaining **APPENDICES** could be amended as a result of the new or revised annual information, but they are optional. It is necessary to establish a location for placing any new or updated hazard, Action, meeting or Plan data over the 5-year interim until the Plan is fully updated again.

- A Critical and Community Facility Vulnerability Assessment**
- B Annual Plan Evaluation and Implementation Worksheets \***
- C Meeting Information \***
- D Plan Approval Documentation**

## 11 MAPS

Four detailed Maps were created during the development of the **Hazard Mitigation Plan 2017**. Data from the previous Plan maps were used, new standardized data layers were available, and Hazard Mitigation Committee members added their own knowledge of sites and hazard events.





### Plan Update 2017 Maps

*Map 1 - Potential Hazards* illustrates potential hazard event locations in Pittsfield that have the possibility of damaging the community in the future. The *Map 1* legend includes (technology) infrastructure hazards such as dams, bridges, water lines, gas lines, sewer lines, electric transmission lines, and evacuation routes. Natural hazards are displayed such as Special Flood Hazard Areas (SFHAs), locations of potential road washout, fire/wildfire, and more.

*Map 2 - Past Hazards* illustrates the locations of where hazard events have occurred in Pittsfield in the past, including areas of flooding, washouts, transportation accidents, fire, lightning, and more.

*Map 3 - Critical and Community Facilities* includes all of the infrastructure included in *Map 1 Potential Hazards* on a background of aerial photography to give readers a better, real world perspective. The locations of all critical facilities and community facilities as recorded in the Community Vulnerability Assessment are displayed on the Map. Each of these sites is numbered on a key listing the names of each facility.

*Map 4 - Potential Hazards and Losses* utilizes all the features of *Map 3* on an aerial photography background and includes the *Map 1 Potential Hazards* and any realistic *Map 2 Past Hazards* locations where hazard events can occur again.

-  **Map 1 - Potential Hazards**
-  **Map 2 - Past Hazards**
-  **Map 3 - Critical and Community Facilities**
-  **Map 4 - Potential Hazards and Losses**