Pittsfield Local Hazard Mitigation Plan

Pittsfield, Vermont

Adopted: January 21, 2021 FEMA Approved: January 27, 2021

CERTIFICATE OF ADOPTION January 21, 2021 TOWN OF Pittsfield, Vermont Selectboard A RESOLUTION ADOPTING THE Pittsfield, Vermont 2020 Local Hazard Mitigation Plan

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 **Pittsfield**, **Vermont 2020 Local Hazard Mitigation Plan**, which result 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 **Pittsfield**, **Vermont 2020 Local Hazard Mitigation Plan (Plan)** under the requirements of 44 CFR 201.6; 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 mitigations 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 impacts of future hazards; now therefore be it

RESOLVED by Town of Pittsfield Selectboard:

1. The **Pittsfield**, **Vermont 2020 Local Hazard Mitigation Plan** is hereby adopted as an official plan of the Town of **Pittsfield**;

2. 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;

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

4. An annual report on the process of the implementation elements of the Plan will be presented to the Selectboard by the Emergency Management Director or Coordinator.

IN WITHNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of the Town of **Pittsfield** this 21st day of January 2021.

Selectboard Chair

ATTEST

Town Clerk



U.S. Department of Homeland Security FEMA Region I 99 High Street, Sixth Floor Boston, MA 02110-2132



January 28, 2021

Stephanie A. Smith, State Hazard Mitigation OfficerVermont Emergency Management45 State DriveWaterbury, Vermont 05671-1300

Dear Ms. Smith:

As outlined in the FEMA-State Agreement for FEMA-DR-4474, your office has been delegated the authority to review and approve local mitigation plans under the Program Administration by States Pilot Program. Our Agency has been notified that your office completed its review of the Pittsfield Local Hazard Mitigation Plan and approved it effective **January 27, 2021** through **January 26, 2026** in accordance with the planning requirements of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), as amended, the National Flood Insurance Act of 1968, as amended, and Title 44 Code of Federal Regulations (CFR) Part 201.

With this plan approval, the jurisdiction is eligible to apply to Vermont Emergency Management for mitigation grants administered by FEMA. Requests for funding will be evaluated according to the eligibility requirements identified for each of these programs. A specific mitigation activity or project identified in this community's plan may not meet the eligibility requirements for FEMA funding; even eligible mitigation activities or projects are not automatically approved.

The plan must be updated and resubmitted to the FEMA Region I Mitigation Division for approval every five years to remain eligible for FEMA mitigation grant funding.

Thank you for your continued commitment and dedication to risk reduction demonstrated by preparing and adopting a strategy for reducing future disaster losses. Should you have any questions, please contact Melissa Surette at (617) 956-7559 or <u>Melissa.Surette@fema.dhs.gov</u>.

Sincerely,

Paul F. Ford Acting Regional Administrator DHS, FEMA Region I

PFF:ms

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I. Introduction

Natural and human-caused hazards may affect a community at any time. They are not usually avoidable; however, their impact on human life and property can be reduced through community planning. Accordingly, this Plan seeks to provide an all-hazards mitigation strategy that will make the community of Pittsfield more disaster resistant.

Mitigation planning is only one of four phases of emergency management. Preparedness, response, and recovery are the other pieces of the cycle. At any one time, a community may be in more than one phase of emergency management. It is important to distinguish between these four phases, especially between mitigation and preparedness. Mitigation is often confused with preparedness, and vice versa. Below are descriptions of each of the four phases of emergency management:

- Mitigation: preventing future emergencies or minimizing their effects
 - Includes any activities that prevent an emergency, reduce the chance of an emergency happening, or reduce the damaging effects of unavoidable emergencies.
 - Buying flood and fire insurance for your home is a mitigation activity.
 - Mitigation activities take place before and after emergencies.
- **Preparedness**: preparing to handle an emergency
 - Includes plans or preparations made to save lives and to help response and rescue operations. Training and proper equipment are preparation
 - Evacuation plans and stocking food and water are both examples of preparedness.
 - Preparedness activities take place before an emergency occurs.
- **Response**: responding safely to an emergency
 - Includes actions taken to save lives and prevent further property damage in an emergency situation. Response is putting your preparedness plans into action.
 - Rescuing people from flooding or putting out a fire are both response activities.
 - Response activities take place during an emergency.
- **Recovery**: recovering from an emergency
 - Includes actions taken to return to a normal, preferably incorporating mitigation actions to create an even safer situation following an emergency.
 - Recovery includes getting financial assistance to help pay for the repairs.
 - Rebuilding damaged roads or providing loans to businesses are both recovery activities.
 - Recovery activities take place after an emergency.

Previous Federal Emergency Management Agency (FEMA), State and Regional Project Impact efforts have demonstrated that it is less expensive to anticipate disasters than to repeatedly ignore a threat until the damage has already been done. While hazards cannot be eliminated entirely, it is possible to identify prospective hazards, anticipate which might be the most severe, and recognize local actions that can be taken ahead-of-time to reduce the damage. These actions, also known as 'hazard mitigation strategies' can (1) avert the hazards through redirecting impacts by means of a structure or land treatment, (2) adapt to the hazard by modifying structures or standards or, (3) avoid the hazard through improved public education, relocation/removal of buildings in the flood zone, or ensuring development is disaster resistant.

II. Purpose of Mitigation Planning

The purpose of this Local Hazard Mitigation Plan is to assist Pittsfield in identifying all hazards facing the town, ranking them, and identifying strategies to reduce risks from known priority hazards.

The Town of Pittsfield seeks to be in accordance with the strategies, goals, and objectives of the 2018 State Hazard Mitigation Plan.

The 2015 Pittsfield Local Hazard Mitigation Plan was the first stand-alone mitigation plan drafted for the Town. Previously, the Town had a town-specific 2011 Annex in the Regional Pre-Disaster Mitigation Plan.

This 2020 Plan expands upon the 2015 Plan by analyzing existing and new hazards, adding new and relevant data, and create new mitigation actions for the Town to follow over the next five years.

In addition, for identifying hazards and ways to mitigate then in Pittsfield, the Plan also serves as an important financial incentive during federally declared disasters. In October 2014, the state enacted new Emergency Relief and Assistance Fund (ERAF) rules that provide additional state matching funds for federal disaster relief under FEMA's Public Assistance Program (FEMA typically requires a 25% match). To qualify, municipalities must have taken four actions: adopt updated road standards, participate in the National Flood Insurance Program (NFIP) by adopting flood hazard area regulations, annually adopt a local emergency management plan, and have a local Hazard Mitigation Plan approved by FEMA. Under ERAF, there is a financial incentive that allows the town to lessen their financial burden during federally declared disasters. By having taken these four basic actions, the state will contribute half (12.5%) of the 25% match on federal disasters.

A fifth incentive that not many communities in Vermont take advantage of is to adopt either a River Corridor bylaw or participate in the Community Rating System (CRS). River Corridor bylaws regulate lands mapped by the State of Vermont that are usually beyond the FEMA-mapped flood zone, with the concern being erosion that can undermine structures. CRS is a complicated administrative process with a simple premise – that taking additional flood prevention steps will lessen flood damages. Communities in the CRS enjoy lower flood insurance rates.

Having either of the fifth actions will lower the financial burden under the ERAF rule to only a 7.5% match for the town. At the time of this writing, the town is financially responsible for 12.5% on the dollar in federally declared disasters due to the expiration of the local hazard mitigation plan. Every percent saved in a million-dollar disaster is \$10,000.

Separately, in 2014, state planning law (24 V.S.A. Chapter 117) required that all updated municipal comprehensive plans must include a "flood resilience" element, addressing both flooding and fluvial erosion hazards. This requirement was met with the adoption of Pittsfield's Town Plan on August 18, 2015. The flood resilience section references and incorporates material from the 2015 adopted and FEMA-approved hazard mitigation plan.

III. Community Profile

The Town of Pittsfield is a triangular shaped community situated in the northeastern corner of Rutland County, comprising an area of 13, 296 acres or 20.77 square miles. It is bounded by four towns; Stockbridge to the east, Chittenden to the west, Rochester to the north, and Killington to the south. The United States Forest Service (USFS) owns 7,698 acres or approximately 59% of the total land area of Pittsfield.

The physical setting of the Town consists of rather steep mountains rising to an elevation in excess of 3,200 feet in the west to more gradual but rugged mountains in the east, interspersed with valleys and streams in the lower elevations. In the valleys, the terrain is relatively level as compared to the rest of the town.

Pittsfield's population in 2010 was 546 compared to 427 in 2000. During this period, growth was about 28%, compared to an overall rate of approximately 0.38% for the Two Rivers-Ottauquechee Region.

According to the U.S. Census, there were 435 housing units in Pittsfield in 2010. In 2000, there were 393 housing units. This amounted to an increase of 42 units or about 10.7% over the ten year period. A housing unit, as defined by the U.S. Census, includes houses, apartments, mobile homes, and rooms for occupancy. The village area of Pittsfield is the most densely developed section of the town, and it is where the Town Hall/Town Office and the Post Office are located, in addition to several small businesses. Riverside Farm, located just outside the village, is a wedding/event venue and the Amee Farm Lodge is a year-round bed and breakfast, also located just outside the village. As mentioned above, much of the town is included within the Green Mountain National Forest, and, as a result, development is restricted.

The Town lies within the service area of Green Mountain Power which supplies electrical power to all sections of town.

Pittsfield is served by a volunteer fire and rescue department called Pittsfield Fire and Rescue. The fire house, constructed in 1970, is situated in the village and serves as headquarters for the department. The structure has three open door bays and houses the fire engines. The Town belongs to the Rutland County Mutual Aid Organization. They also work cooperatively with the Stockbridge Fire Department.

The department provides services free to the Town's people and is financed by the Town of Pittsfield through its town budget, community fund raising activities, and donations.

For a town of Pittsfield's size, the department is very well organized and equipped. It presently enjoys the reputation of providing a high level of service to the community.

Security for the Town is provided by two constables elected each year at Town Meeting. The constable may call the Vermont State Police, with barracks in Rutland, if the need arises. Additional services are provided by the Rutland County Sheriff's department through a contract arrangement with the Town.

With the increased mobility of our population, it is recommended that the law enforcement system within the Town be periodically reviewed by the citizens to see if a more sophisticated approach is necessary to maintain a reasonable level of law and order.

Medical emergencies are handled by the private, non-profit White River Valley Ambulance, Inc. located in Bethel. They have three ambulances that are fairly new. Pittsfield's volunteer First Response Squad works in conjunction with White River Valley Ambulance providing emergency care until the ambulance arrives. Pittsfield has a first response vehicle housed at the Fire House used for transporting fast squad members and their equipment to emergency calls. The vehicle is not used for patient transportation. Pittsfield's Fast Squad also works cooperatively with the Stockbridge Fast Squad. The closest hospitals are Gifford Medical Center, located in Randolph, and the Rutland Regional Medical Center. Medivac services are available by the DHART helicopter.

IV. The Planning Process

A. Plan Developers

The Town of Pittsfield procured the Two Rivers-Ottauquechee Regional Commission (TRORC) to assist with updating the 2015 Hazard Mitigation Plan. Tory Littlefield, Regional Planner, was the main staff person from TRORC that assisted the town. In conjunction with Ann Kuendig, the Selectboard Chair, the following community members were enlisted to be the steering committee for this Plan update:

- Sarah Gallagher, Planning Commission Chair
- David Colton, Fire Chief of Pittsfield Volunteer Fire & Rescue
- George Deblon, Road Foreman
- Doug Mianulli
- Ann Kuendig, Selectboard Chair
- Joyce Stevens, Selectboard Member
- Caleb Hawley, Lt. of Pittsfield Volunteer Fire & Rescue

B. Plan Development Process

The 2011 Pittsfield Annex was originally part of the 2008 multijurisdictional Regional Hazard Mitigation Plan, drafted by Two Rivers-Ottauquechee Regional Commission, and approved by FEMA on September 30, 2008. The Pittsfield Annex received FEMA approval on September 30, 2008. This plan has been reconstructed as a single jurisdiction, stand-alone Pittsfield Local Hazard Mitigation Plan that will be submitted for individual approval to FEMA.

Summary of 2015 Changes and Additions

New sections were added to discuss the plan development process, mitigation strategies, existing hazard mitigation programs, projects & activities, and plan maintenance. Data updates were made to relevant sections, and hazards were reevaluated with a hazard ranking system used by Vermont Emergency Management (then the Vermont Division of Emergency Management and Homeland Security).

The top hazards that were identified by the Town, and were analyzed in great detail in the 2015 Plan, were; high wind, ice jams, severe weather, flash floods, and extreme cold. Hazardous Material Spill was removed as a top hazard in this Plan. For each new hazard, a

location/vulnerability/extent/impact/likelihood table was been added to summarize the hazard description.

Additionally, maps were added to the 2015 Plan depicting critical facilities, town infrastructure, and the NFIP designated floodway and 100-year floodplain.

Summary of 2015 Planning Process

Several meetings were held during this 2015 Plan creation. A letter was drafted and emailed to the Selectboard in February 2013 to create a committee to start the mitigation plan process. Subsequent meetings were held in 2013 on May 22 and August 15, and in 2014 on February 24, May 20, and July 8. Notices for these meetings were posted in The Valley News, Herald of Randolph, Journal Opinion, and the Vermont Standard. No substantive comments were received from neighboring communities.

2020 Plan Changes

The 2015 Pittsfield Plan provided a good basis for the 2020 Plan. There were several sections that needed updates based on public meetings. Below is a list of the significant changes made to this Plan:

- General
 - Data updates: new hazard incidents, new federal emergency declarations, and census data,
 - Reevaluation of hazards using a hazard ranking system.
 - Maps were updated to reflect new state data layers.
- Hazard Analysis
 - Based on a hazard ranking exercise conducted at a public meeting held on August 24, 2020, all of the top hazards from the 2015 Plan were kept, except Ice Jams was removed as a top hazard. Each hazard is thoroughly analyzed for the Town of Pittsfield to include location, vulnerability, extend, impact, and likelihood.
- Mitigation Strategies
 - A meeting was held on September, 28, 2020 with committee members and the public to develop mitigation strategies for the 2020 Plan.
 - While many of the mitigation strategies that were not completed since 2015 were rolled over into this 2020 Plan, new mitigation strategies were developed for all of the top hazards.
 - Mitigation strategies that were completed since the 2015 Plan were removed and added into a new table that shows what was accomplished since the last plan was adopted.

2020 Planning Process

The 2015 Plan process was an immersive process taken on by the committee and TRORC since it acted as an entirely new Plan (as it was an annex before). For the 2020 Plan, a similarly immersive process was conducted with the committee to gather as much public feedback as possible. Below is a thorough description of each public meeting that was held for this iteration of the Plan

• August 24, 2020

- Summary: a public meeting was notified and held on ZOOM due to the COVID-19 situation. There was a total of four participants. This meeting acted as a kick-off meeting to explain what a hazard mitigation is as well as to conduct the hazard ranking exercise.
- Major outcomes: Four committee members who before this meeting did not know what mitigation planning was learned what a mitigation plan is and how important it is for a town to have a mitigation plan. Four major hazards were then selected based on the ranking exercise. These hazards will be the main focus of the Plan.
- Notifications: a notice was placed in the Rutland Herald, the TRORC website, and on the Pittsfield Town website.
- September 28, 2020
 - Summary: A public meeting was notified and held virtually. There was a total of 4
 participants that included members of the committee and the public. A summary of
 mitigation planning was discussed for any new people to the process, and then the group
 went through past mitigation actions and created new mitigation actions.
 - Major outcomes: New mitigation actions were created based on past actions that were completed for the 'top hazards.'
 - Notifications: a notice was placed in the Rutland Herald, the TRORC website, and on the Pittsfield Town website.
- October 15, 2020
 - Summary: A public meeting was notified and held virtually to go over the draft of the Plan at a regularly scheduled Selectboard meeting. In total there were four participants, all were members of the committee with no members of the public present.
 - Major outcomes: The final draft of the Plan was reviewed with some minor edits made by committee members and the Selectboard. The Selectboard approved this draft of the Plan to be sent to FEMA for review.
 - Notifications: a notice was placed in the Rutland Herald, the TRORC website, and on the Pittsfield Town website.

A final draft of the Pittsfield Mitigation Plan was sent to surrounding communities via email on October 16, 2020 to ask for feedback. Feedback was due via email to TRORC on October 30, 2020. No comments on the draft plan were received.

C. Status Update on Mitigation Actions Identified in 2015

The following table outlines the mitigation actions that were proposed in Pittsfield's 2015 Hazard Mitigation Plan for the Town of Pittsfield.

Participants in the new Plan update process reviewed these actions and reported on the status of each (in order of 2011 priority). Actions related to long-term mitigation of natural hazards are so noted.

It is safe to say that vulnerability related to flooding has gone done, as over the past five years the town has replaced several high-hazard culvert's, so they are able to handle heavy rainstorms better in the future. The town also participated in the T.S. Irene Buyout program and demolished several flood prone homes and buildings to revert the property back to its natural state as flood storage. The Town is proud of its accomplishments over the past five years in reducing its vulnerabilities but recognizes that it still has much left to do.

			Prioritization			
Hazard(s)	Mitigation or	Local	(&	Possible	Time	Status
Mitigated	Preparedness Action	Leadership	Mitigation Plan Status)	Resources**	Frame	
	Ensure that Pittsfield's Local Emergency Operations Plan (LEOP) is kept up-to-date, identifies vulnerable areas and references this Plan. (Preparedness)	Emergency Management Coordinator	High	Local resources; TRORC	1 year from date of Plan Approval	Done annually
All Hazards	Develop a program to consistently document town-owned infrastructure damage after weather events. (Preparedness and Mitigation)	Road Commissioner; Selectboard; Town Clerk	High (new)	Local resources; Vermont Agency of Transportation	1 year from date of Plan Approval	Select Board/Town Clerk setting up filing system to document all April 2019 storm damage and mitigation. Will use for future incidents
	Take advantage of the Annual Report as a way to educate and inform residents; and as an information exchange between the Town and its residents. (Preparedness and Mitigation)	Town Clerk; Selectboard	High (new)	Local resources	1 year from date of Plan Approval	Will Include in the next Annual Town Report
	Investigate the creation of, and develop a resident phone tree for emergency situations in Pittsfield. (Preparedness)	Emergency Management Coordinator	Medium	Local resources	2 years from date of Plan Approval	Not completed.

			Prioritization			
Hazard(s)	Mitigation or	Local	(&	Possible	Time	Chatara
Mitigated	Preparedness Action	Leadership	Mitigation	Resources**	Frame	Status
_			Plan Status)			
	Develop a process to					Completed.
	periodically clear and					
	maintain town road		Medium			
	rights-of-way, and	Deed	(3rd priority	Local resources;	1 year from	
	work with local utilities	Road	of 4 hat. haz. Mit Projects	Green	date of Plan	
	corridors are cleared	Commissioner	in 2011 plan)	Power	Approval	
High Wind//	and maintained, as		**	100001		
Severe	needed.					
Weather //	(Mitigation)					
Extreme	Create a list of town-					Completed.
Cold/Snow/	owned and privately-					
Ice Storm	owned equipment to				1 year from	
	neip with the removal	Poad			date of Plan	
	also list individuals who	Commissioner	Medium	Local resources	Approval;	
	have access and the	commissioner			update bi-	
	ability to operate such				annually	
	equipment.					
	(Preparedness)					
	Develop and maintain					Done on an
	a list that identifies	Fmergency		Local		annual
	to extreme cold and	Management			1 year from	Dasis.
	make a plan to assist	Coordinator:	High	resources;	date of Plan	
	, them, if necessary, in	Local EMS		TRORC; EMS	Approval	
	the event that it occurs.					
	(Preparedness)					
Extreme	Continue to plan for,			Local		Completed
Cold/Snow/Ice	budget and maintain	Selectboard;		resources;	1 year from	and still
Storm	roads for safe winter	Road	High	Vermont	date of Plan	ongoing.
	travel.	Commissioner		Agency of	Approval	
	(Prepareaness)			Transportation		
	Distribute a "safe			Local	1 2 40 2 15	
	namphlet and also	Emergency		resources;	from date of	
	include in the Annual	Management	Medium	Vermont	Plan	
	Report.	Coordinator		Agency of	Approval	
	(Preparedness)			Transportation	-	

			Prioritization			
Hazard(s)	Mitigation or	Local	(&	Possible	Time	
Mitigated	Preparedness Action	Leadership	Mitigation	Resources**	Frame	Status
-	-	-	Plan Status)			
lce Jams	Develop a program to monitor river ice conditions during periods of high ice jam threat. (Preparedness)	Emergency Management Coordinator; Road Commissioner; Adjacent residents/ riparian landowners	High	Local and state resources	1 year from date of Plan Approval	Not completed.
	Develop a plan for responding to ice jams on the West Branch of the Tweed River. (Preparedness)	Emergency Management Coordinator	Medium	Local and state resources	2-3 years from date of Plan Approval	Not completed.
	Develop an education piece about ice jams and the dangers associated with them; and include in the Annual Report. (Preparedness)	Fire Chief, with help from the Planning Commission	Medium	Local and state resources	2-3 years from date of Plan Approval	Not completed.
Ice Jams// Flash Flood/ Flood/ Fluvial Erosion	Maintain, review and enforce the towns newly adopted and strengthened flood hazard regulations, which include river corridor /fluvial erosion hazard language. Use this language for hazard mitigation purposes. (Mitigation)	Administrative Officer; Planning Commission; Selectboard	High (new)	Local resources; TRORC	1 year from date of Plan Approval	Completed, and ongoing.

		_	Prioritization			
Hazard(s) Mitigated	Mitigation or Preparedness Action	Local Leadership	(& Mitigation Plan Status)	Possible Resources**	Time Frame	Status
	Support the Route 100 bridge project, at BR 126 over the West Branch of the Tweed River, which will help to mitigate the threat of ice jams (current bridge has a center column where ice and debris can get hung up, and the new bridge will not have a center column). (Mitigation)	Vermont Agency of Transportation; Selectboard	Low (new)	State and federal resources	2-5 years from date of Plan Approval and beyond	Not completed.
	Develop a program to maintain and update town bridge and culvert inventories. Regularly inspect and maintain town bridges and culverts; and develop a schedule to replace undersized culverts. (Mitigation)	Road Commissioner	High (2nd priority of 4 nat. haz. Mit. Projects in 2011 plan) **	Local resources; TRORC; White River Partnership; Vermont Agency of Transportation; VT ANR River's Program	1 year from date of Plan Approval	Done on a frequent basis.
Flash Flood/ Flood/ Fluvial Erosion//	Proceed with and close on the home- buyout property on 113 Park Place. (Mitigation)	Town Lister; Selectboard	High (new)	Local and state resources; FEMA's Hazard Mitigation Grant Program	6-12 months from date of Plan Approval	Completed.
Weather	Complete work on the buyout properties to return these lands to open space. (Mitigation)	Town Lister	High (new)	Local and state resources; FEMA's Hazard Mitigation Grant Program; White River Partnership	6-12 months from date of Plan Approval	Completed.
	Continue the planned road maintenance program and update existing culvert inventory. Upgrade culverts and ditching. (Mitigation)	Road Foreman	High (3rd priority in 2011 plan)	Local resources; VTrans	1-5 years from date of Plan Approval	Completed as culverts are replaced.

Hazard(s) Mitigated	Mitigation or Preparedness Action	Local Leadership	Prioritization (& Mitigation Plan Status)	Possible Resources**	Time Frame	Status
	Support two Route 100 bridge mitigation projects; (1) replace BR 124 over the Tweed River (a temporary bridge), and (2) bridge BR 126 over the West Branch of the Tweed River. (Mitigation)	Vermont Agency of Transportation; Selectboard	Low (new)	State and federal resources	2-5 years from date of Plan Approval and beyond	Was completed in 2019.
	Consult with Vermont ANR's River's Program for potential riverbank and floodplain stabilization projects. Seek grant funding for recommended projects. (Mitigation)	Planning Commission	Low (new)	Local and state resources; TRORC; White River Partnership	3-5 years from date of Plan Approval	Was completed, but still ongoing as new areas are discovered.

Changes in Town Priorities Since the 2015 Plan

This 2020 Local Hazard Mitigation Plan reflects the evolution of the Town's priorities since 2015. A major change to this 2020 plan includes the removal of one 'top hazards' from the 2015. Ice Jams was removed because the committee was not sure why this hazard was first identified as being so important that it was included in the first place, so it was removed to include hazards that are more pressing for the town to address at this time. The other 'top hazards' show no change in priorities, as they are the same from the 2015 plan, save the removal of Ice Jams.

Status of Development in Pittsfield

The Town of Pittsfield is one of the smallest towns, in terms of land area, in the Two Rivers-Ottauquechee region. As previously mentioned, the land area of Pittsfield is 13, 296 acres or 20.77 square miles. Much like the land area of the Town, the population of Pittsfield is also quite small. More than half of the Town's land area is included within the Green Mountain National Forest, which places restrictions on development in much of the Town. As a result of the seven Tropical Storm Irene homebuyouts, there are additional areas in the Pittsfield where future development is prohibited (a condition of the buyout process requires that the land on which a structure previously sat is returned to and maintained as open space in perpetuity). In areas where development is permitted, little development is occurring, save the possibility for the construction of a few new houses. None of them are expected to be in any flood hazard area; dispersed rural growth, however, incrementally increases the town's vulnerability to wildfires and fluvial erosion but the rate of residential growth, 4.2 units per year, is not high. Recently, the Green Mountain Trails Association has completed a linkage between Pittsfield and several of the surrounding communities. It is not yet known the impact of this on Pittsfield, but residents are hopeful it will boost economic development in the village area.

There have been some Act 250 permits submitted to the State in Pittsfield, but these are not theorized to have a major impact on the town. Finally, there are no commercial or large-scale development projects that are currently being constructed or are in the planning stages at the time of this writing. Most development in Pittsfield is the construction of single-family homes.

D. Existing Hazard Mitigation Programs, Projects & Activities

The Town of Pittsfield is currently engaged in the following hazard mitigation programs, projects and activities:

	Type of Existing Authority /	Resources: Staffing &	Ability to Expand/Improve On
	Policy / Program / Action	Funding	
Community Preparedness Activities	Program—Annual update of Pittsfield's Local Emergency Management Plan (LEOP). Last updated and approved on 5/1/2020.	Volunteer time from the Emergency Management Director/ Coordinator; assistance from TRORC. Funding from VEM.	Pittsfield intends to gradually expand upon the LEMP by adding annexes (written plans) for different hazards.
Insurance Programs	Authority/ Program— participation in National Flood Insurance Program (NFIP) [Note: This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(3)(ii).]	The Pittsfield Zoning Administrator serves as the NFIP Administrator. Assistance from TRORC and Vermont ANR. Funding from local resources— annual town budget.	Pittsfield's initial Flood Hazard Boundary Map was identified on Dec. 13, 1974 and their initial Flood Insurance Rate Map (FIRM) was dated Sept. 4, 1991. The Town's FIRM has been updated, and the current effective map date is Aug. 28, 2008. The Town continues its participation in the NFIP by administering and enforcing its Food Hazard Area Regulations, which was last updated and adopted on 02/04/2014. These regulations apply to new construction in the Special Flood Hazard Area, and were strengthened over the previous iteration.
Land Use Planning	Policy/Program— Pittsfield Town Plan. Adopted on 8/18/2015, includes a "Flood Hazard Areas and Floodplains" section and a "Flooding and Land Use" section.	Volunteer time from Planning Commission, and assistance from TRORC and other state agencies on specific subject matter. Funding from Municipal Planning Grants.	The Town Plan is updated every five years, as required by statute. The Planning Commission may expand or improve on any section it deems necessary, or that is required by changes in state statue.

	Type of Existing Authority /	Resources: Staffing &	Ability to Expand/Improve On
	Authority— Flood Hazard Area Regulations Adopted on 02/04/2014, includes a "Special Flood Hazard Area" (SFHA) zoning district. Policy/Program—Pittsfield Hazard Mitigation Plan Adopted on 8/4/2015.	Volunteer time from the Planning Commission, and assistance from TRORC. Funding from Municipal Planning Grants. Volunteer time from Town officials; assistance from TRORC and Vermont DEMHS. Funding from FEMA; Vermont DEMHS; TRORC.	During the Town Plan review/update period, the Zoning Ordinance is also reviewed and updated if needed. Pittsfield's Flood Hazard Area Regulations were recently strengthened, and the Town is content with them at this time. The 2015 Pittsfield Hazard Mitigation Plan will replace the 2011 Plan. The 2015 HMP has evolved from the 2011 Plan and has greatly expanded and improved upon it. Future iterations of the Town's LHMP will be updated by the Town at least every five years.
	Program— Culvert inventory in fall of 2013 This culvert inventory includes georeferenced locations for all Pittsfield culverts and recommendations for culvert upgrades to reduce vulnerabilities to flooding.	Staff time from the Town Road Foreman; assistance from TRORC. Funding from Better Roads grant; local personnel time and funding.	The Town is currently using the culvert inventory to further its culvert improvement program, and seeking funding through the Better Roads grant program for implementation projects.
Hazard Control & Protection of Critical Infrastructur e & Facilities	2019 Road Erosion Inventory This Road Erosion Inventory (REI) will provide the town a list of road segments that are the most vulnerable to fluvial erosion as well as an improvement plan for this road segments to lessen erosion.	Personnel time from Town Road Commissioner/Foreman; assistance from TRORC. Funding from Better Roads grants and local resources.	The Town will use this REI to further its culvert and road improvement program by helping to prioritize culvert and ditching upgrade projects. The Town will keep the REI inventory up-to-date on a five-year basis. This will be the first time Pittsfield has a completed REI to comply with the Municipal Roads General Permit (MRGP).
	Program/Action—Home acquisitions; seven total in Pittsfield	Staff time from Town Clerk and Town Lister; volunteer time from Selectboard; assistance from TRORC and Vermont DEMHS. Funding from FEMA's Hazard Mitigation Grant Program (HMGP) and HUD's Community Development Block Grants (CDBG).	Four properties along Route 100 in the village. Two additional properties are in process (one on Route 100 and another on Park Place). Once these properties are acquired, the land will be returned to green/open space and will remain in perpetuity.
Education/ Public Outreach	Completed Action— Community Recovery Partnership Meeting Meeting held on Jan. 30, 2012 in Rochester, VT.	Organized by the State of Vermont and partnering organizations for the following towns—Rochester, Pittsfield, Stockbridge, Granville and Hancock—in the aftermath of Tropical Storm Irene (Aug. 2011). Staff and volunteer time; funding from the State of Vermont and partnering organizations.	This was a one-time action, and there is no need to expand or improve upon it.

E. Plan Maintenance

This Plan (the Pittsfield Local Hazard Mitigation Plan) will be updated and evaluated, by discussing its effectiveness and making note to incorporate any necessary revisions in the update process, annually at an April Selectboard meeting, along with the review of their Local Emergency Operations Plan (LEOP). At this meeting, the Selectboard will monitor the implementation of the hazard mitigation strategies outlined in this Plan, by noting those that have been completed, are in the process of completion, or any issues with initiating the activity. Any comments from local officials and the public will be incorporated when relevant. This meeting will constitute an opportunity for the public and other town officials to hear about the town's progress in implementing mitigation strategies and to give input on future activities and Plan revisions. The public will be given the opportunity to comment at this meeting, and the comments will be incorporated when relevant.

Updates and evaluation of this Plan by the Selectboard and the local Emergency Coordinator/Director will also occur within three months after every federal disaster declaration directly impacting the Town of Pittsfield. The Town will monitor, evaluate and update this Local Hazard Mitigation Plan at every April Selectboard meeting and after every federally declared disaster. The Town shall reference the Local Hazard Mitigation Plan when working on Town Plan amendments or changes to the Town's bylaws.

At least one year before the Plan expires, the update process will begin (though annual updates, monitoring of progress and evaluation will occur at the April Selectboard meeting). For this next Plan update, the Two Rivers-Ottauquechee Regional Commission (TRORC) will help with Plan updates if assistance is requested by the Town of Pittsfield and if funding is available. If TRORC is unable to assist the Town, then Pittsfield's Town Clerk, Planning Commission, or Selectboard will update the Plan, or the Selectboard may appoint a committee of interested citizens (including the current local Emergency Coordinator/Director) to draft changes. Ultimately, it will be the Town's responsibility to update their Local Hazard Mitigation Plan.

The process of evaluating and updating the plan will include continued public participation through public notices posted on the municipal website, notice within the municipal building, and notice in The Herald of Randolph and the TRORC newsletter, inviting the public to the scheduled Selectboard (or specially scheduled) meeting. The public will be given the opportunity to comment during these public meetings. Additional stakeholders should be invited to the meeting; these include: White River Valley Ambulance, Inc., the National Forest Service, and the Vermont Agency of Natural Resources (VT ANR). VT ANR will be invited because they can provide assistance with NFIP outreach activities in the community, models for stricter floodplain zoning regulations, delineation of fluvial erosion hazard areas, and other applicable initiatives. These efforts will be coordinated by the Town Clerk.

Updates may include changes in community mitigation strategies; new town bylaws, zoning and planning strategies; progress on the implementation of initiatives and projects; effectiveness of implemented projects or initiatives; and evaluation of challenges and opportunities and overall effectiveness in reducing town's vulnerabilities and meeting plan goals. If new actions are identified in the interim period, the plan can be amended without formal re-adoption during regularly scheduled Selectboard meetings.

Pittsfield shall also incorporate mitigation planning into their long-term land use and development planning documents. The 2013 Vermont Legislature passed a law requiring all towns to incorporate flood resiliency elements into their town plans as of July 2014. To do so, flood hazard and fluvial erosion hazards will be identified, and strategies and recommendations will be provided to mitigate risks to public safety, critical infrastructure, historic structures and public investments. This Local Hazard Mitigation Plan will help the town to comply with the new community flood resiliency requirement for town plans adopted after July 2014.

It is also recommended that the process work both ways and the Town review and incorporate elements of the Local Hazard Mitigation Plan into updates for the municipal plan, zoning regulations, and flood hazard/ fluvial erosion hazards (FEH) bylaws. The incorporation of the goals and strategies listed in the Local Hazard Mitigation Plan into the municipal plan, zoning regulations, if ever enacted, and flood hazard/FEH bylaws will also be considered after declared or local disasters. The Town shall also consider reviewing any future TRORC planning documents for ideas on future mitigation projects and hazard areas.

V. Community Vulnerability by Hazard

A. Hazard Identification

Mitigation efforts must be grounded in the rational evaluation of hazards to the area and the risks these hazards pose. This is done through a process, which in essence asks and answers three basic questions:

- What bad things can happen?
- How likely are they to occur?
- How bad could they be?

This process, which is laid out in the table below, is an attempt to inventory the known hazards, establish the likelihood of them occurring in the future, and then assess the community's potential vulnerability to each. In performing this analysis, we are then able to prioritize actions that are designed to mitigate the effects of each of these disaster types and ultimately make Pittsfield a safer place.

It is important that we learn from the past in order to avoid the same disasters and their outcomes. Disasters that have occurred within the Town of Pittsfield, the larger region, and the State of Vermont can give us good information about what types of disasters we can expect in the future and what kinds of damage they might cause. However, while this historical data can inform our perspective of what might happen in the future, it is by no means a prophecy. While Pittsfield might not have been impacted by a specific hazard in the past, this does not necessarily mean it will never be affected in the future. Indeed, the advance of climate change means that old weather patterns may not hold. For instance, in recent years, Vermonters have seen an increase in the number and severity of storms, especially rainfall events. Armed with historical data and a healthy respect for climate change and the unknown, we have tried our best to identify hazards and prepare for the future.

The following table reflects the hazards that we believe can be expected, or are at least possible, in the central Vermont area. In the 2020 Plan, it was decided to model the hazard ranking off of the 2018 Vermont State Hazard Mitigation Plan to simplify the process. The table below shows the ranking criteria that was used.

Ha	zard Assessment Ranking Criteria	
	Frequency of Occurrence: Probability of a plausibly significant event.	Potential Impact: Severity and extent of damage and disruption to population, property, environment and the economy.
1	Unlikely: ,1% probability of occurrence per year	Negligible: isolated occurrences of minor property and environmental damage, potential for minor injuries, minor economic disruption.
2	Occasionally: 1-10% probability of occurrence per year, or at least one chance in next 100 years	Minor: isolated occurrences of moderate to severe property and environmental damage, potential for injuries, minor economic disruption
3	Likely: >10% by <75% probability per year, at least 1 chance in next 10 years.	Moderate: severe property and environmental damage on a community scale, injuries or fatalities, short-term economic impact
4	Highly Likely: .75% probability in a year	Major: severe property and environmental damage on a community or regional scale, multiple injuries or fatalities, significant economic impact

Using this ranking criterion, the table on the next page shows a list of hazards that may affect Pittsfield in the future, along with their ranking on which hazards are most likely to be severe. Out of this table, a list of five hazards that are believed to be the worst threats (bolded in the table, below) are then followed-up with discussion and mitigation strategies throughout the rest of this Plan.¹ It should be noted that hazards assigned with the same "Hazard Score" are not in order and their placement in the table should not be assumed to reflect their potential to create hazards for the town.

¹ It's important to note that those hazards which were not found to pose the greatest threats may still occur in Pittsfield's future; however, they are not the focus of this Plan.

Hazard Assessment							
	Potential Impact						
	Probabili	Infrastructu	Lif	Econo	Environme	Averag	Scor
Hazards	ty	re	e	my	nt	e	e
Flash							
Flood/Floods/Flu							
vial Erosion	4	4	3	3	3	3.25	13
Corrers Meather							10
Severe weather	4	4	2	3	3	3	12
Investvo Specios	0	0	-1	0	4	0.05	6 75
Extreme Leet	3	2	1	2	4	2.25	0./5
	3	1	2	1	2	1.5	4.5
Extreme Cold/	4	9	9	9	9	2 5	10
Hazandoug Matariala	4	<u> </u>			<u> </u>	2.3	10
Spill	2	1	1	1	1	1 75	5 25
Severe Wind		1	2	9	2	2 75	11
	4	4	-	-	ð	2./3	
Eine Herenda							
Fire Hazards							
Wildlife/Brushfire)	3	3	1	1	2	1.75	5.25
Londalidoa/	5		-	-		/0	<u> </u>
Landshues/							
Rockslides	2	4	1	1	2	2	4
Hail Storms	1	3	1	1	1	1.5	1.5
Ice Jams	3	3	2	1	3	2.25	6.75
Earthquake	2	3	1	1	2	1.75	3.5
· ·						/0	
Hurricane/ Tropical							
Storms	4	4	2	2	3	2.75	11
Tornado	1	4	2	2	3	2.75	2.75
		•				, ,	, 0
Tsunami (Vermont is			N/				
landlocked)	N/A	N/A	A	N/A	N/A	N/A	N/A
	, í	,		ĺ	<u> </u>		
Volcano (Vermont							
has no active			N/				
volcanoes)	N/A	N/A	Á	N/A	N/A	N/A	N/A

The Pittsfield LHMP committee discussed the results of the hazard ranking activity and decided to focus on hazards that had the potential to impact the Town on a town-wide scale and had the potential to occur frequently

After engaging in discussions using their best available knowledge, the Town of Pittsfield identified the following "top hazards" (based on frequency of occurrence and potential impact and the need for further analysis) which they believe their community is most vulnerable to:

- Severe Weather (Thunderstorm, Lightning, High Winds, Hail, Hurricanes, Tropical Storms and Flooding)
- High Wind
- Flash Flood/Flood/Fluvial Erosion
- Extreme Cold/Snow/Ice Storm

Federal Disaster Declarations: Rutland County (1969-2020)								
Disaster Number	Date	Incident Type	Description					
4532	4/8/2020	COVID-19	Pandemic					
4445	6/14/2019	Flood	Severe Storms, Flooding					
4330	8/16/2017	Flood	Severe Storms, Flooding					
4207	2/3/2015	Winter Storm	Severe Winter Storm					
4140	8/2/2013	Flood	Severe Storms, Flooding					
4022	9/1/2011	Tropical Storm Irene	Tropical Storm					
1698	5/4/2007	Flood	Severe Storms, Flooding					
1358	1/18/2001	Winter Storm	Severe Winter Storm					
1336	7/27/2000	Flood	Severe Storms, Flooding					
1307	11/10/1999	Tropical Storm Floyd	Tropical Storm					
1228	6/30/1998	Flood	Severe Storms, Flooding					
1101	2/13/1996	Flood	Storms and Flooding					
518	8/5/1976	Flood, High Winds	Severe Storms, High Winds, Flooding					
397	7/6/1973	Flood, Landslides	Severe Storms, Flooding, Landslides					

Each of these "top hazards" will be discussed in the proceeding sections. Data for these hazards were gathered from several federal resources, and are often only available at the county level. As such, information specific to Windsor County was used to identify and evaluate the type, frequency and relative impact of past events within the larger Pittsfield region, which could therefore be expected to affect the community in the future.

According to FEMA, there were fourteen federally-declared major disasters for Rutland County between 1973 and 2020 averaging one about every three years - though not all impacted Pittsfield directly. As indicated in Federal Disasters Declaration table, the majority of declared disasters was due to flooding or other types of severe storms. Most recently, and one that has never before been declared for, was the COVID-19 pandemic (or coronavirus).

The National Oceanic andAtmosphericAdministration(NOAA) compiles storm events

data, dating from 1950 to present. For the purposes of this HMP, storm events from 2000 and onward were analyzed. These cover "regional" weather events for the larger Rutland County area (National Weather Service Forecast Zone) for periods of cold/wind chill, extreme cold/ wind chill, flash flood, flood, frost/freeze, hail, heat, heavy snow, high wind, strong wind, thunderstorm wind, winter storm, and winter weather. Over this 20-year reporting period, 522 reported regional storm events (averaging around 26 per year) were catalogued – including four events specific to Pittsfield. In some cases, several events are reported for the same storm system. Database entries also include more general estimates of related property and crop damage – totaling \$69.5 million over this twenty-year period.

As expected, the majority of recorded regional events relate to winter storms and winter weather, while the majority of more localized events are associated with severe thunderstorms (to include wind, heavy rain, and hail). In addition to flooding and flash flooding, storm-related hazards include high winds, with estimated gusts ranging from 35 to 50 knots (40 to 60 miles per hour) and hail up to 1.75 inches. Hazards related to cold temperatures – including unseasonal frosts, and periods of extreme cold during winter months – are more common than heat spells.



B. Hazard Profiles of "Top Hazards"

1. Severe Weather (Thunderstorm, Lightning, High Winds, Hail, Hurricanes, Tropical Storms, and Flooding)

In the 2018 State Hazard Mitigation Plan, fluvial erosion is the number one hazard that threatens Vermont. Flash Floods and Floods from tropical storms and heavy rain events result in fluvial erosion of our roads and properties. Flooding can happen at any time of the year, but historically has resulted from ice jams and snowmelt runoff in the spring, and severe storms in late summer and fall. The most widespread and damaging floods – including the November 1927 flood and Tropical Storm Irene in August 2011 – have all been associated with hurricanes or tropical storms tracking up the northeast coast. In each case heavy rainfall, on top of already saturated soil conditions, resulted in very large volumes of runoff over a short period of time.

More common than hurricanes or tropical storms are severe thunderstorms (usually in the summer), which can cause flooding as noted above, and are associated with lightning, high winds, hail and tornadoes. Hailstorms have occurred in Vermont, usually during the summer months. While local in nature, these storms are especially significant to area farmers, who can lose entire fields of crops in a single hailstorm. Large hail is also capable of property damage. 51 hail events were recorded between 2000 and 2020 in Rutland County alone, making hail an annual occurrence in this region. Most of these events had hail measuring .75 inches, but many had hail at least 1.5 inches in size. The largest hail recorded in the State of Vermont was 3-inch hail that fell in Chittenden County in 1968 (NCDC). Tennis ball-sized hail was reported in the town of Chittenden (which neighbors Pittsfield) during a storm in the summer of 2001. Thunderstorms can generate high winds, such as hit the region on July 6, 1999, downing hundreds of large trees in a few minutes.

In Pittsfield, severe weather is quite common, typically in the late spring and summer months when the region experiences high temperatures. Severe thunderstorms tend to bring other hazards such as high winds, hail, lightning, and flooding, and these hazards are often experienced in combinations which create many unique weather and emergency management situations. Over the years, Pittsfield has been hit with high winds that have downed and uprooted numerous trees, and knocked out electricity to residents in the Town. Town specific wind data could not be found, but the "Remarks" section of NCDC Database helps to illuminate the impact strong winds can have on Pittsfield. Sizeable hail has also accompanied storms moving through the Town and region.

The table below shows the top ten most costly severe storms that have occurred in Rutland County (given the small population of Pittsfield, town specific data is limited or not available). Tropical Storm Irene was the costliest severe storm to hit the State of Vermont, and is not included in this table. Data for this list was generated using the NOAA Storms Database data from the past twenty years (2000-2020), no tropical storms or hurricanes (other than T.S. Irene) are in this top ten list. Past iterations of this Plan broadened this list to include storms since the 1970s, but for this Plan more recent and relevant data is being used.

	Top Ten Most Costly Severe Weather Storms for Rutland County (2000-2020)									
	Date of Occurrence	Thunderstorm/ severe storm	Flooding	Hail	High Winds	Lightning	Location	Description	Damage (\$)	
1	7/1/2017	Y	Y		Y	Y	Central Vermont	Already heavily saturated soils were hit with a series of heavy rainfall and thunderstorms, causing widespread flooding and downed trees.	\$2 million	
2	4/15/2019	Y	Y				Southern & Central VT	Heavy rain paired with melting snow.	\$1 million	
3	5/5/2017				Y		Southern & Central VT	Strong Winds in excess of 50 mph	\$500,000	
4	12/1/2010				Y		Statewide	Strong Winds in excess of 50 mph	\$250,000	
5	6/23/2013	Y	Y			Y	Rutland County	Stationary front produced heavy rainfall with resulting flash floods.	\$250,000	
6	7/16/2000	Y	Y				Chittenden, VT area	Heavy rainfall led to flooding and road washouts.	\$200,000	
7	12/17/2000	Y	Y				Rutland County	Heavy rainfall that led to widespread flooding.	\$100,000	
8	9/29/2005	Y			Y		Killington, VT area	High wind event that caused downed trees and power lines.	\$100,000	
9	5/26/2010	Y		Y	Y	Y	Southern Vermont	Strong thunderstorms, high winds, hail up to one inch, and lightning strikes.	\$100,000	
10	7/9/2013	Y	Y				Statewide	Multiple heavy rain showers and thunderstorms.	\$100,000	

One of the main hazards caused by severe storms in the Town is flooding. The Town maintains an up-todate culvert inventory and road erosion inventory in conjunction with TRORC, and its work to upgrade culverts remains in process. Several steel culverts have been replaced with plastic culverts.

One of the most recent storms that caused heavy damage in Pittsfield was the heavy rain event on April 15, 2019. Pittsfield and neighboring Bethel were particularly hard hit because of steep slopes, melting snow, and heavy rainfall. Those two towns alone made up the majority of damages in the state from this event. The State of Vermont requested a federal disaster declaration for this event from FEMA and it was eventually granted so financial aid could be brought to the town to repair roads and other public infrastructure.



2. High Wind

Generally speaking, wind is the result of differences in atmospheric pressure, and moves from an area of high pressure to an area of lower pressure. Slight or moderate winds are unlikely to be dangerous, and often have beneficial effects. However, high winds may pose a threat to lives, property and critical utility infrastructure. Light construction, such as manufactured homes, is often the most damaged by high wind events. High winds typically occur as a result of various weather events, such as severe storms, tropical storms or hurricanes.

To date, there have been no reported and documented tornados in the Town of Pittsfield; however, tornadic events have occurred in Rutland County and surrounding areas. Thus, all that is needed for a tornado to occur in the Town of Pittsfield are the "right" conditions. These events are capable of damaging or destroying structures, downing trees and power lines and creating injuries and death from collapsing buildings and flying objects. Tornadoes are less common than hail storms and high winds, but have occurred throughout Vermont. In fact, 45 tornadoes were recorded between 1953 and 2012, injuring 78 people and causing over \$5 million dollars in estimated property damage. Nearly all of these occurred from May through August, and most of these occurred in the afternoon when thunderstorm activity is highest due to heating of the atmosphere. Tornadoes are classed by wind speeds from 40 –318 miles per hour (mph) and placed into five categories (F0-F5). All recorded tornadoes in Vermont have either been FO (40-72 mph winds), F1 (73-112 mph winds) or F2 (113-157 mph winds). Interestingly, F2 tornadoes are the most common of the three classes recorded in the state.

One of the strongest and most damaging types of high winds is straight-line winds. Unlike tornadoes, which demonstrate a rotational damage pattern, damage caused by straight-line winds tends to be very

linear. This type of wind can be very strong, producing wind speeds as high as 80 to 90 mph, and can last twenty minutes or more. They often occur at the gust front of a thunderstorm or originate with a downburst from a thunderstorm. Straight-line winds are notorious for downing forest stands in linear swaths.

Another extremely dangerous weather event that produces high winds is a derecho. Derechos are widespread, long-lived wind storms that are associated with a fast-moving band of severe thunderstorms. They are also capable of producing very high, straight-line winds and even tornadic winds. They are considered a warm-weather phenomenon, as they occur most often in the summer months—in June and July in the Northern Hemisphere. According to a National Weather Service map, the state of Vermont, the northern half of New York State and the rest of New England, derechos have a frequency of occurring about once every four years. There have been a few derechos that have occurred in Vermont in the last 15 years: on July 14-15 of 1995 ("the Adirondacks/Ontario Derecho"), on September 7, 1998 ("the Syracuse Derecho of Labor Day 1998"), on July 4-5 1999 ("the Boundary Waters-Canadian Derecho") and most recently on July 15, 2005 (storm unnamed). It is thought that the worst derecho to hit Vermont was the "Boundary Waters-Canadian Derecho," killing one camper in the Northeast Kingdom.

It is important to note that none of the fourteen federally declared disasters were primarily wind related. Because of this, locations that are hit by severe wind are random, hard to predict, and hard to quantify. The NOAA Storms Data that was collected for Rutland County has the best available data related to high wind events. Of all the data analyzed from 2000 to 2020, 177 (33%) instances were categorized as high wind, strong wind, or thunderstorm wind. Even though the Town of Pittsfield is on the east side of the Green Mountains, compared to the rest of Rutland County that sits on the west side, Pittsfield still sees a fair number of high wind events that have caused extensive damage in the past. The costliest wind event occurred on May 5, 2017 when high winds in excess of 50 mph hit Rutland County and higher elevations on the eastern side of the green mountains and caused over 20,000 power outages statewide, with 17,000 in Rutland County alone.

Despite the threat of straight-line winds and derechos, the most common type of high winds, are strong, sustained winds or wind gusts or gales. These high wind events can still damage critical infrastructure or down trees, which can knock out electricity, block roads and cause bodily harm. The table below shows the top five costliest high wind storms to have affected Rutland County.

Top 5 Costliest Wind Storms in Rutland County			
Date	Damage (\$)	Description	
5/5/2017	\$500,000	Damaging wind gusts in excess of 60-80 mph caused	
		significant tree, power poles, and roof damage throughout	
		Rutland County. 20,000 customers lost power.	
12/1/2010	\$250,000	Strong winds over 50 mph caused 35,000 customers to	
		lose power.	
9/29/2005	\$100,000	35-45 mpg wind gusts caused extensive downed tree	
		damage.	
5/26/2010	\$100,000	Strong winds caused 20,000 customers to lose power.	
8/28/2011	\$100,000	Tropical Storm Irene caused winds in excess of 60mph	
		statewide.	

The utility company is scheduled to trim around the power lines regularly. This practice helps to reduce the number of customers who lose power and the amount of damage to power lines caused by falling trees and tree limbs. The Town also clears low hanging branches, dead or dying trees, etc. from their right-ofway.

4. Flash Flood/Flood/Fluvial Erosion

In the 2018 State Hazard Mitigation Plan, fluvial erosion is the number one hazard that threatens Vermont. Flash Floods and Floods from tropical storms and heavy rain events result in fluvial erosion of our roads and properties. Flooding can happen at any time of the year, but historically has resulted from ice jams and snowmelt runoff in the spring, and severe storms in late summer and fall. The most widespread and damaging floods – including the November 1927 flood and Tropical Storm Irene in August 2011 – have all been associated with hurricanes or tropical storms tracking up the northeast coast. In each case heavy rainfall, on top of already saturated soil conditions, resulted in very large volumes of runoff over a short period of time.

Flooding is one of the worst threats to Pittsfield's residents and infrastructure. Past instances of flooding in Pittsfield have included rain and/or snowmelt events that cause flooding in the major rivers' floodplains and intense rainstorms over a small area that cause localized flash-flooding. Both kinds of events can be worsened by the build-up of ice or debris, which can contribute to the failure of important infrastructure (such as culverts, bridges, and dams).

The worst flood disaster to hit the Town of Pittsfield, as well as the overarching region and the State of Vermont, occurred on November 3, 1927. This event was caused by nearly 10 inches of heavy rain from the remnants of a tropical storm that fell on frozen ground. 84 Vermonters, including the Lieutenant Governor, were killed. The flooding in the White River valley was particularly violent, with the river flowing at an estimated 900,000 gallons per second on the morning of the 4th (Vermont Weatherbook). Like many towns in the region, the Town of Pittsfield received heavy precipitation, in the region of eight inches of rain over the course of the storm.

A more recent flood that devastated the region and the state was the result of Tropical Storm Irene, which occurred on August 28, 2011. Record flooding was reported across the state and was responsible for several deaths, and millions of dollars of home, road and infrastructure damage. Due to the strong winds, 50,000 Vermont residents were initially without power, and many did not have electricity restored to their homes and businesses for over one week. Despite the damage wrought, the flooding caused by Tropical Storm Irene is considered to be the second greatest natural disaster in 20th and 21st century Vermont; second only to the Flood of 1927.

The Town of Pittsfield suffered major damage to property and infrastructure during Tropical Storm Irene, although no lives were lost. It is estimated that Tropical Storm Irene dropped 6-7 inches of rain over the Town of Pittsfield in a very short span of time, and 5-7 inches across the county. It is thought that the flooding that occurred as a result of the storm was close to or a full-fledged 500 year flood. Many of Pittsfield's roads and culverts were damaged by the storm, notably destroying parts of VT Route 100 between Killington and Stockbridge. As a consequence of this damage, vehicular travel in and out of Pittsfield was hampered for weeks, making the town one of the most isolated in the state following the

flood. Floodwaters completely destroyed the Giorgetti Covered Bridge as well as eight homes. The county-wide property damage totaled \$12.5 million along with \$1.5 million in crop damage. Following the flood damage, the State of Vermont and FEMA have coordinated on the home buy-out process across the state. There have been six buy-outs in the town (seven total), which have been purchased by the town.

Unfortunately, flooding is very common across the region, with many events impacting the Town of Pittsfield specifically. Flooding is one of the worst threats to Pittsfield's residents and infrastructure. The following list indicates the history of occurrence with regard to this hazard in Rutland County (given the small population of Pittsfield, town-specific data is limited); an asterisk "*" denotes the few instances in which town-specific data is available, and federal disaster numbers are listed where appropriate. Extent data for flooding in Pittsfield is unavailable.

Date	Event	Location	Extent
4/15/2019 (DR	Flash	Pittsfield,	Rain of 0.5 to 1.5 inches with rapidly melting snow caused flash flooding.
4445)	flooding	County-wide	Pittsfield experienced extensive damage to roads and bridges from this
			event.
7/1/2017 (DR	Flash	Pittsfield,	Heavy rainfall of 3 to 4 inches over a short period of time caused flash
4330)	flooding	County-wide	flooding and localized rainfall. Strong winds also toppled a few trees as
			well. Damage to roads and bridges was widespread.
06/25/2013-	Flooding	County-wide	Severe storms and flooding across the region between 6/25-7/11/2013.
07/11/2013			Severe storms, lightning, wind and hail were reported along with damage
(DR-4140)	~		throughout the county and surrounding areas.
08/28/2011* (DR	Severe Flash	Pittsfield,	5-7" of rain across region, significant damage to roads/culverts.
4022 VT for period	Flooding	County-wide	\$1,062,516.07 in damage total for Pittsfield according to FEMA's Public
of $\frac{8}{26}$			Assistance database (captures at least 70% of total damage)
9/2/2011)	T11	Contraction 1	
00/28/2008	Flash	County-wide	Heavy alternoon and evening rains from numerous snowers and thunderstorms equal flesh fleeding throughout the Dutland County
	Flooding		ragion Many road closures and flooded becoments were reported along
			with \$100k in property damage in the region
06/14/2008	Flash	County-wide	Numerous showers and thunderstorms hit Rutland County during the
00/11/2000	Flooding	county white	afternoon and evening causing localized heavy rainfall of 3-5 inches in
	Treeung		Rutland County. Many roads and culverts were washed out in the
			flooding. Over \$800k in property damage was reported in the region.
4/15/2007 -	Flooding	County-wide	The storms of April 15-21 caused heavy rain and snow and high winds
4/21/2007		-	across Vermont leading to considerable utility and road damage.
(DR 1698 VT)			
4/12/2001-	Flooding	County-wide	1-2" of rain and snowmelt caused flooding throughout the region.
4/14/2011			
12/16/2000-12/18-	Flooding	County-wide	Severe storms caused flooding and damage to public property over the
2000 (DR-1358)			period of December 16-18.
7/14/2000 -	Flooding	County-wide	Severe storms caused flooding and damage to public property over the
7/18/2000			period of July 14-18.
(DR 1336 VT)	T 1 1'	a	
9/16/1999 -	Flooding	County-wide	Front and floyd brought heavy rains, high winds and flooding from C_{1} + 16.21
9/21/1999 (DR 1207 VT)			Sept. 16-21.
(DK 150 / V1) 6/17/1009	Flooding	County wide	Savara storms caused flooding and demage to public property over the
7/13/1998	riooding	County-wide	period of June 17-Aug. 17
(DR 1228 VT)			period of sume 1/-raug. 1/.

History of Occurrences:

Date	Event	Location	Extent
6/28/1973 -	Flooding	Pittsfield,	8.53" reported in nearby Rochester, Vermont. Pittsfield-specific data
6/30/1973		County-wide	could not be found.
11/2/1927 -	Flash	Pittsfield,	8" of rain fell in the area, prompting significant flooding.
11/4/1927*	flooding	County-wide	
("The 1927	_	-	
Flood")			

The Town of Pittsfield Flood Hazard Area Regulations prohibits new structures in floodway areas and places restrictions on other types of activities located in special flood hazard areas outside of the floodway. The regulations establish that all development shall be reasonably safe from flooding. All new construction and substantial improvements to existing structures must be elevated to at least flood elevation levels, and manufactured homes must meet this requirement also or be securely anchored to resist flotation, collapse and lateral movement.

There are 22 buildings in the Special Flood Hazard Area (SFHA). 23% of these properties have flood insurance in effect. Several of these properties have been damaged repeatedly due to larger storms such as Tropical Storm Irene or due to smaller flash flooding events. Since T.S. Irene, eight homes have been bought out and demolished through the FEMA/HUD Buyout program. Depending on funding availability, there are several more homes that are in the queue to be bought out to mitigate against future flood damages.

Across Vermont, most child and elder care facilities are not registered with the State. Most child day care is private in-home in Pittsfield, and there are no licensed facilities. There are no elder care facilities in the Town of Pittsfield, though there is a growing need for both elder housing and childcare facilities for the Town's residents. In the event of severe flooding, any future facilities established in the Town would be evacuated. Finally, low income housing is not registered with the State, and there are no mobile home parks in Pittsfield.

Recent studies have shown that the majority of flooding in Vermont is occurring along upland streams, as well as along road drainage systems that fail to convey the amount of water they are receiving. These areas are often not recognized as being flood prone and property owners in these areas are not typically required to have flood insurance (DHCA, 1998). It should be noted that, while small, mountainous streams may not be mapped by FEMA in NFIP FIRMs (Flood Insurance Rate Map), flooding along these streams is possible, and should be expected and planned for. Flash flooding in these reaches can be very erosive, causing damage to road infrastructure and to topographic features including stream beds and the sides of hills and mountains. The presence of undersized or blocked culverts can lead to further erosion and stream bank/mountain side undercutting. Furthermore, precipitation trend analysis suggests that intense, local storms are occurring more frequently. There is one residential structure located in the fluvial erosion hazard zone.

Pittsfield maintains an up-to-date list of culverts and culvert condition, and has engaged in culvert upgrading since the 2011 Pittsfield Annex was drafted. The process of upgrading culverts is currently in process. No development projects are planned in Pittsfield in areas that would be vulnerable to flooding. There are no repetitive loss properties in Pittsfield on FEMA's NFIP list. Finally, in an effort to help reduce the Town's vulnerabilities to flooding and protect structures and road infrastructure, it is important to restore floodplain, improve areas and/or increase the number of areas for retention wherever possible. Equally important to reduce vulnerabilities to flooding is the process of stabilizing river banks in areas that are vulnerable to slides and/or have the potential to damage critical or important infrastructure. In Pittsfield, this is being accomplished in part by proceeding with the Town's eight property acquisitions. As a condition of the buyout process, the land will be returned to open space with no or minimal development (ex. park or river access), which will help reduce the vulnerabilities to flooding elsewhere. One of the buyout properties along VT Route 100 was converted into a public park for residents to enjoy the Tweed River. The Town of Pittsfield also regularly works with the White River Partnership to identify areas that need stream side plantings.

5. Extreme Cold/Snow/Ice Storm

Winter storms are a regular occurrence in Vermont. However, severe winter storms can cause serious damage, including collapse of buildings due to overloading with snow or ice, brutal wind chills, downed trees and power lines and stranded vehicles. People can be at risk of freezing in extended power outages if they lack wood heat or backup power, and individuals shoveling large accumulations of snow can also be at risk from frostbite, hypothermia and heart attacks due to cold and overexertion. While snow removal from the transportation system is standard fare in Vermont winters, extreme snow or ice can close rail and road systems, further jeopardizing any stranded persons that are in danger of freezing or needing medical assistance.

Severe winter storms include a blizzard on February 15-17 in 1958 that dumped over 30 inches and resulted in 26 deaths in New England. On December 26-27 in 1969, another blizzard left 18-36 inches of snow in northwestern Vermont and a whopping 45 inches in Waitsfield. A string of storms in March 2001 hit the state, beginning with 15-30 inches on March 5-6 (later declared a federal disaster), 10-30 inches on the 22nd and 10-20 inches on the 30th. Recent years have seen wet snow storms that have leveled trees and caused widespread power outages.

The worst winter storm in terms of damage to hit the state recently was not a snow storm, but an ice storm. In January of 1998, just the right combination of precipitation and temperature led to more than three inches of ice in spots, closing roads, downing power lines, and snapping thousands of trees. This storm was estimated as a 200-500 year event. Power was out up to 10 days in some areas and 700,000 acres of forest were damaged in Vermont. Amazingly, there were no fatalities in Vermont, unlike Quebec where 3 million people lost power and 28 were killed.

Over the past few winters, Pittsfield has received numerous snow storms that have dropped significant amounts of snow over a day or two. However, the details of these events and the damage they caused are overshadowed by winter weather events of the past. This is not to say such extreme events will not repeat themselves. It should be assumed that extreme winter weather events will occur at some point in the future. The following table documents the occurrence of extreme cold/snow/ice storms in the Town of Pittsfield and Rutland County.



Figure 1: Outages in the October 2019 Storm



Figure 2: GMPs High Hazard Electric Infrastructure

Depending on the event, particularly with heavy, wet snow or ice, electricity may be knocked out for a few hours or days. Green Mountain Power (GMP) is the utility in Pittsfield, and in conjunction with the Pittsfield road crew, has a regular tree trimming schedule to mitigate damage on power lines during these events. GMP is aware of communities that need more attention than others. By climate hardening their lines from future ice storms and high wind events, it will mitigate future damages and costs by the utility. Figure 2 is a map of GMPs service area, the red, orange, and yellow areas are the most vulnerable to these types of events that typically take place in the winter. The TRORC region is one of the worst in their region, which includes Pittsfield.

One such instance where electric lines were heavily impacted was during the Halloween 2019 Storm that dropped several inches of heavy wet snow and caused high winds. Some communities were without power for five days. The lack of electricity was an issue for many residents who were unable to heat their homes, have access to the internet, and had a lack of cell service. Figure 1 is a map provided by GMP on the number of outages they had in their service area from this storm. A total of 55,000 customers were without power at its peak, but total over 114,000 customers were without power at one point or another.

Heavy, wet snow or large quantities of snow may also leave structures vulnerable to roof collapse. Roof collapse occurs when the structural components of a roof can no longer hold the weight of the snow. Flat roofs are most vulnerable to collapse because they do not drain well, and the snow on the roof soaks up water like a sponge, increasing the weight the roof must bear. In general, winter weather is most hazardous to travelers. Icy and snow-covered roads present multiple examples of dangerous driving conditions and situations. The Town relies on Travel Advisories issued by VEM and the National Weather Service to alert residents of dangerous travel weather. However, it is difficult, if impossible, to prohibit people from driving during winter weather events. As a result, emergency services personnel must always be prepared to provide assistance to stranded drivers or to those who have been in an accident. To increase awareness in the event of hazardous weather, the Town also encourages residents to utilize 211, social media outlets, and the Town website.

Winter temperatures can also have a negative effect on the community. Vermont is often known for their bitterly cold temperatures in the winter months, but exactly how cold can it get in Pittsfield? The record low temperature for Pittsfield is unable. The coldest temperature ever recorded in Vermont was -50 degrees Fahrenheit on December 30, 1933 in Bloomfield. Average monthly temperature data is available for Pittsfield. January is the coldest month of the year, with an average nightly temperature of 6 degrees. This makes Pittsfield colder than most communities in Vermont. There is no data available on past occurrences related to cold weather.

NOAA storm data breaks out damaging storm events by type. Since 2000, 44% of storms in Rutland County were related to heavy snow and extreme cold. This data is broken out in the following for Rutland County over 229 incidents:

- Cold/Wind Chill 3.1%
- Extreme Cold/Wind Chill .38%
- Frost/Freeze 1%
- Heavy Snow 1%
- Winter Storm 21.2%
- Winter Weather 18.2%

A winter storm that took place on February 23, 2010 caused over \$200,000 in damages in Rutland County alone. In neighboring Windsor County, this winter storm caused over one million dollars in damages and was classified as a blizzard that dropped 12 to 24 inches of snow across New England, New York, and Pennsylvania. The heaviness of the snow resulted in several roof collapses. Since Pittsfield is on the eastern side of the Green Mountains, it is likely that the town experienced a lot of damages relative to Windsor County than Rutland County.

Date	Event	Location	Extent
2/7/2020	Winter storm	County-wide	A multi-day storm dropped 10 to 20 inches with a 1/4 inch of ice across the
			region, resulting in power outages.
3/22/2019	Winter storm	County-wide	12 to 20+ inches of heavy wet snow fell on higher elevations, bringing with
			its strong winds and higher wind gusts. This resulted in extensive power
			outages and downed trees.
11/26/2018	Winter storm	County-wide	12-15 inches of heavy wet snow fell across the region, resulting in over
			100,000 customers without power due to downed power lines and trees.
3/14/2017	Blizzard	County-wide	12 to 36+ inches fell across Vermont. Snow fall was 1 to 3 inches per hour.
			Numerous schools, businesses and local government offices closed for
			several days.
12/9/2014	Winter Storm	County-wide	12 to 20 inches fell along the spine of the Green Mountains. Heavy snow
			resulted in extensive power outages and downed trees.
02/13/2014	Winter Storm	County-wide	Roughly 16 inches of snow fell throughout the region, closing schools and
			causing many road accidents throughout the state.
01/02/2014	Winter Storm	County-wide	Winter Storm Hercules brought over a foot of snow to the region. This was
			followed by freezing rain and ice in the days that followed, impacting road
			travel for many.
03/18/2013 -	Winter storm	County-wide	8-14" of snow fell across the county, with higher amounts above 1000 ft.
03/19/2013			Numerous vehicle accidents.

History of Occurrences:

Date	Event	Location	Extent
02/27/2013—	Winter storm	County-wide	Snow across the county, 6-12" of snow fell across the southern Green
02/28/2013			Mountains.
12/29/2012—	Winter storm	County-wide	Snowfall totals across the county were generally 5-8".
12/30/2012			
03/01/2012	Winter storm	County-wide	10-14" inches along the eastern slopes of the Green Mountains.
11/22/2011—	Winter storm	County-wide	6-12" across the county. Numerous vehicle accidents, scattered power
11/23/2011	(heavy, wet		outages due to heavy snow on trees.
	snow mixed with		
00/06/0011	rain and sleet)		
03/06/2011— 03/07/2011	Winter storm	County-wide	4-16" across the county.
10/25/2010	Winter Storm	County-wide	A winter storm struck Rutland Co., causing \$115k in property damage.
02/23/2010	Winter Storm	County-wide	A winter storm struck Rutland Co., causing \$208k in property damage.
04/12/2007	Winter Storm	County-wide	A wintry mix of heavy wet snow, sleet and rain fell on Vermont, leaving as
			much as 6—10 inches in higher elevations, causing treacherous road
			conditions, downed tree limbs, and downed power lines. Pittsfield received
			7 inches during the storm, and there was \$5k in property damage county-
00/14/0007	W. C.		
02/14/2007	Winter Storm	County-wide	A winter storm struck Rutland Co., causing \$237k in property damage.
04/04/2003—	Winter Storm	County-wide	Snowfalls of between 10 to 20 inches fell throughout the region, including
04/05/2003			18.5 inches in the nearby city of Rutland. Numerous traffic accidents were
			reported, and I-91 was closed for a time. \$40k in property damage was
			reported for Rutland Co.
01/07/2002	Heavy Snow	County-wide	Residents woke to between 6-15 inches of snowfall the morning of the 7 th .
			Power outages were reported throughout Rutland County, and a number of
			schools were forced to close. Property damage in Rutland Co. was
02/05/2001	W' to Ct	Construction 1	estimated to be around $\frac{20k}{10}$
03/05/2001-	winter Storm	County-wide	Snow overspread vermont on 3/5, becoming steady by alternoon and
(FM_{-3167})			nearly at times. Wany schools were reported and portions of L 91 were
(LIVI-5107)			closed for a time Roughly 20-30 inches of snow fell in the region. A total
			of \$100k in property damage was reported for the region.
12/16/2000-	Severe Storms	County-wide	Storms and subsequent flooding caused damage to public property over the
12/18/2000		5	period of December 16-18.
(DR-1358)			
03/21/1998	Heavy Snow	County-wide	Heavy snows over the weekend caused numerous traffic accidents and brief
		-	power outages. Snow accumulations totaled between 15-20 inches in most
			areas. \$15k in property damage was reported for the region.
01/07/1998 -	Ice Storm	County/region-	Catastrophic ice storm throughout New England and portions of Canada.
01/09/1998		wide	Power outages and fallen trees reported.
(DR 1201 VT)			

Heavy, wet snow or large quantities of snow may also leave structures vulnerable to roof collapse. Roof collapse occurs when the structural components of a roof can no longer hold the weight of the snow. Flat roofs are most vulnerable to collapse because they do not drain well and the snow on the roof soaks up water like a sponge, increasing the weight that the roof must bear. More common it seems is the collapse of barns commonly used for livestock sheltering and other agricultural purposes. Unfortunately, livestock in the barn are often killed and equipment stored in the barn may be damaged or ruined. It is difficult to determine whether a residential structure or a barn would be rebuilt after a roof collapse, because the decision to rebuild would likely depend on the extent of damage. The collapse of a barn roof is likely to

be a total loss, and the collapse of a house roof may be a 50% loss. While roof collapse has not occurred in Pittsfield recently, very heavy snow in the region on February 14, 2007 resulted in the partial or total collapse of 20 or more barn roofs, and led to the deaths of more than 100 cattle.

In general, winter weather is most hazardous to travelers. Icy and snow-covered roads present multiple examples of dangerous driving conditions and situations. In Pittsfield, the mountainous terrain, steep slopes, and remoteness of some roads further complicate travel. The Town relies on Travel Advisories issued by the State of Vermont Department of Emergency Management Homeland Security and the National Weather Service to alert residents of dangerous travel weather. However, it is difficult to prohibit people from driving during winter weather events. As a result, emergency services personnel must always be prepared to provide assistance to stranded drivers or to those who have been in an accident.

VI. Mitigation

A. Mitigation Goals

- 1. reduce injury and losses from the natural hazard of high winds.
- 2. reduce injury and losses from the natural hazard of extreme cold/snow/ice storms.
- 3. reduce injury and losses from the natural hazard of flash flooding/floods/fluvial erosion.
- 4. reduce injury and losses from the natural hazard of severe weather.

B. Town Plan Goals & Objectives Supporting Local Hazard Mitigation

- To encourage the healthful and convenient distribution of population, employment opportunities, and other activities, and to protect residential, agricultural, and other areas from undue concentrations of population and overcrowding of land and buildings from traffic, congestion, from inadequate parking and invasion of through traffic, and from the loss of peace and privacy (page 12).
- Pittsfield should continue working to develop mitigation plans, and emergency preparedness and recovery procedures from flooding. (p. 57)
- Existing homes and businesses at serious risk of flood damage in Pittsfield should be

identified and prioritized by the Pittsfield Zoning Board (planning commission) in concert

with the ANR River Management Section and the Regional Planning Commission for

mitigation actions such as elevation/relocation or purchase and demolition. (pg. 57)

• To maintain or improve surface water quality and quantity (p. 92).

The Pittsfield Town Plan was updated and adopted on August 18, 2015, and has an 8 year lifespan.

C. Hazard Mitigation Strategies: Programs, Projects & Activities

Vermont Division of Emergency Management & Homeland Security encourages a collaborative approach to achieving mitigation at the local level through partnerships with Vermont Agency of Natural Resources, VTrans, Vermont Agency of Commerce and Community Development, Regional Planning Commissions, FEMA Region 1 and others. That said, these agencies and organizations can work together to provide assistance and resources to towns interested in pursuing hazard mitigation projects.

With each mitigation strategy, general details about the following are provided: local leadership, possible resources, implementation tools, and prioritization. The prioritization category is based upon the economic impact of the action, Pittsfield's need to address the issue, the cost of implementing the strategy, and the availability of potential funding. The cost of the strategy was evaluated in relation to its benefit as outlined in the STAPLEE guidelines (includes economic, political, environmental, technical, social, administrative, and legal criteria). A range of mitigation strategies was vetted by the committee, and those that were determined to be feasible are included in the table below.

Strategies given a "High" prioritization indicate they are either critical or potential funding is readily available, and should have a timeframe of implementation of less than two years. A "Medium" prioritization indicates that a strategy is less critical or the potential funding is not readily available, and has a timeframe for implementation of more than two years but less than four. A "Low" prioritization indicates that the timeframe for implementation of the action, given the action's cost, availability of funding, and the community's need to address the issue, is more than four years.

The Town of Pittsfield understands that in order to apply for FEMA funding for mitigation projects that a project must meet more formal FEMA benefit cost criteria. The Town must have a FEMA approved Hazard Mitigation Plan as well.

The following strategies will be incorporated into the Town of Pittsfield's long-term land use and development planning documents. In addition, the Town will review and incorporate elements of this Local Hazard Mitigation Plan into updates for the municipal plan, zoning regulations, if ever enacted, and flood hazard/ fluvial erosion hazards (FEH) bylaws. The incorporation of the goals and strategies listed in the Local Hazard Mitigation Plan into the municipal plan, zoning regulations, if ever enacted, and flood hazard/FEH bylaws will also be considered after declared or local disasters. The Town shall also consider reviewing any future TRORC planning documents for ideas on future mitigation projects and hazard areas.

Mitigation Actions	Local Leadership	Prioritization	Possible Resources	Time Frame
All Hazards				
Ensure that Pittsfield's Local Emergency Management Plan (LEMP) is kept up-to- date.	Selectboard	High	Local resources; TRORC; VEM	Annually by May 1
Develop a system on effective communication of hazards to town	Selectboard; EMD; Fire Department	Medium	Local Resources	2022-2023

Mitigation Actions	Local Leadership	Prioritization	Possible Resources	Time Frame
departments and residents of Pittsfield.				
Develop a methodology the Town can use for consistently documenting infrastructure damage after weather events.	Road Foreman	High	Local resources; TRORC	2021-2022
Meet with VEM regarding setting up VT Alert in Pittsfield. SB is getting training	Selectboard	Low	Local resources; VEM	2022-2023
Develop an educational program for Pittsfield residents regarding mitigation actions homeowners and renters can undertake to lessen risks to their lives and properties.	EMD, Health Officer, Fire Department	Low	Local resources; TRORC	2 years after date of Plan Approval, then annually
Severe Weather (Thu	inderstorm, Lig	htning, High Win	nds, Hail, Flood	ling,
Create and maintain mutual aid agreements with neighboring community's road crews.	Selectboard; Road Foreman	Low-Medium	Local resources	2022-2023
Continue to educate residents about VTAlert to receive alerts about severe weather events.	EMD; Selectboard	Medium	Local resources; VEM	2021-2022
Enforce the Pittsfield Flood Bylaw to prevent development in the floodplain and floodway of Pittsfield's rivers.	Zoning Administrator	Medium	Local resources	Ongoing

Mitigation Actions	Local Leadership	Prioritization	Possible Resources	Time Frame		
Pittsfield should explore funding sources to purchase backup generators for municipally owned buildings	Selectboard; Fire Department; EMD	High	Local resources; FEMA	2020-2021		
Protect critical infrastructure on municipally owned buildings from lightning by installing surge protection devices and lightning rods.	Selectboard	Low	Local resources	2022-2024		
Flash Floods / Floods	Flash Floods / Floods / Fluvial Erosion					
Maintain the geo- referenced culvert inventory.	Road Foreman	High	Local resources; TRORC;	As culverts are replaced and/or upgraded		
Maintain the program to regularly inspect culvert and bridges, as well as keeping to the culvert replacement schedule as recommended in the culvert inventory.	Road Foreman	High	Local resources; TRORC	As culverts are replaced and/or upgraded		
Update the Pittsfield Road Erosion Inventory in order to properly identify and mitigate high erosion areas in town.	Road Foreman	High	Local resources; Vtrans; TRORC	2024-2025		
Clear and maintain town road rights-of- way, and work with local utilities to request that utility corridors are cleared and maintained, as needed.	Road Foreman	High	Local resources	As needed		

Mitigation Actions	Local Leadership	Prioritization	Possible Resources	Time Frame
Identify frequently flooded roads and bridges.	Road Foreman; Selectboard; EMD; Fire Department	Medium	Local resources	Annually
Replace and/or repair any high risk culverts, bridges, and high erosion areas as identified in the culvert and road erosion inventories.	Road Foreman	High	Local resources; Vtrans; DEC	Ongoing / as needed
Consult with Vermont ANR's River's Program for potential riverbank and floodplain stabilization projects. Seek grant funding for recommended projects.	Road Foreman, Selectboard	Low	Local and state resources; White River partnership	Ongoing
Extreme Cold / Snow	/ Ice			
Plan for, budget and maintain roads for safe winter travel.	Road Foreman, Selectboard	High	Local resources	Annually
Identify populations in the LEMP that are vulnerable to extreme cold and make a plan to assist them, if necessary, in the event that it occurs.	EMD, Health Officer, Fire Department	High	Local resources	Annually / On-Going
Develop a plan for communicating shelter information to residents and especially to populations that are vulnerable to extreme temperatures.	EMD; American Red Cross	High	Local resources; VEM	2021-2022
Make available a "safe winter driving" pamphlet and also include in the Annual Report.	EMD	Medium	Local resources	2021-2022

Mitigation Actions	Local Leadership	Prioritization	Possible Resources	Time Frame
High Wind				
Identify hazard trees in town rights-of-way (and those at risk at damaging other public infrastructure) and remove them to mitigate damage from severe wind storms.	Road Foreman; Tree Warden	High	Local resources	On- going/as needed
Work with Green Mountain Power to identify vulnerable power lines and other infrastructure in Pittsfield.	Road Foreman; Tree Warden	High	Local resources	2021-2022

Appendices

Appendix A: Five-Year Review and Maintenance Plan



Fifth Year, and After a Major or Federally Declared Disaster Directly Impacting the Town Evaluate & Revise



Attachments

Attachment A: Map of the Town of Pittsfield

