

West Haven, Vermont
Local Hazard Mitigation Plan



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Other Key Partners

Poultney Mettowee Natural Resources Conservation District

Western Vermont Floodplain Manager

The Nature Conservancy

Vermont Department of Health

Vermont Agency of Transportation District 3 Program Manager



VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
WATERSHED
MANAGEMENT DIVISION
RIVERS PROGRAM



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1 INTRODUCTION

The impact of expected, but unpredictable natural events can be reduced through community planning and action. The goal of this Plan is to provide a natural hazards local mitigation strategy that makes West Haven (the Town) more disaster resistant and more resilient after a disaster.

Hazard Mitigation is any sustained policy or action that reduces or eliminates long-term risk to people and property from natural hazards and their effects. FEMA and state agencies have come to recognize that it is less expensive to prevent disasters than to repeatedly repair damage after a disaster has struck. This Plan recognizes that communities have opportunities to identify mitigation strategies and measures during all the other phases of Emergency Management – Preparedness, Response and Recovery. Hazards cannot be eliminated, but it is possible to determine what the hazards are, where the hazards are most severe, and identify local actions and policies that can be implemented to reduce the severity of the hazard.

2 PURPOSE

The purpose of this Plan is to assist the Town in identifying all natural hazards facing the community, ranking them according to local vulnerabilities, and developing strategies to reduce risks from those hazards. Once adopted, this Plan is not legally binding; instead, it outlines goals and actions to prevent future loss of life and property.

The benefits of mitigation planning include:

- Identifying actions for risk reduction that are agreed upon by stakeholders and the public.
- Focusing resources on the greatest risks and vulnerabilities.
- Increasing education and awareness of threats and hazards, as well as their risks.
- Reducing the degree of injury and inconvenience to the townspeople and their private and municipal property.
- Communicating priorities to State and Federal officials.
- Aligning risk reduction with other community objectives.

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

3 COMMUNITY PROFILE

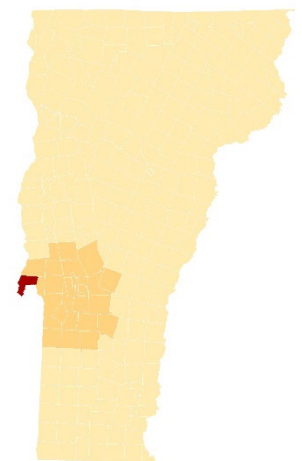
Land Use and Development Patterns

Land use in West Haven reflects its historical tradition as a self-sufficient farming community. The land use pattern of farms separated by farm and forestland predominates the community, though this pattern has begun to give ground to diffuse residential development. Two small concentrations of homes exist; both are along Main Road. The southwestern third of the town is virtually undeveloped and is mostly under land trust easement.

Nearly all development in West Haven takes the form of single-family homes, except for a handful of community and commercial structures. Agricultural and open space uses continue to dominate the town's landscape, except for the southwestern corner of the town, which is primarily forested. The Nature Conservancy and Vermont Land Trust have ownership and / or conservation easements on much of this area.

Land Features

West Haven is located at the southernmost end of the Champlain Lowland region. The landscape features vary in elevation from 100 feet along Lake Champlain to nearly 1,000 feet at the summit of Bald Mountain. Much of the community is located at a low elevation. Most of the town's landscape consists of soils which are generally well suited for the cultivation of crops but have slow permeability and high water tables, which make them problematic for onsite septic systems. Deep and well-drained soils are located along riverbanks, but these areas are also prone to flooding.



Demographics and Growth Potential

The U.S. Census Bureau 2019 American Community Survey Five-Year Estimates shows an estimated population of 361 and 163 households. From 2010 and 2019, the population grew at a rate of 47% from 246 to 361. The median age of residents is 41.8 – slightly lower than the Vermont median age of 42.8. 26% of the population is over 60, compared to 28% in Vermont and 23% in the country. The population density of the Town is 10 people per square mile compared to a state density of 68.

As previously mentioned, the Town has a unique and special character derived from the continued historic rural nature of the community. This character tends to retain the multi-generational Vermonter while welcoming others who also appreciate this sense of community and quiet lifestyle. This is not compatible with rapid growth and intrusive development.

West Haven's demographics and low population density make it unattractive to retail and industrial development. Growth potential is also limited by several other factors including limited utility availability (including cell service), land ownership and control, and natural conditions.

Precipitation and Water Features

Average precipitation is 41 inches of rain; the most rain falls during the 31 days centered around June 12. Average snowfall is 68 inches; the most snow falls during the 31 days centered around January 28.

The prominent water features in West Haven include Lake Champlain, the Poultney River, and Hubbardton River. There are several smaller creeks and brooks – Coggman Creek, Horton, Bumps, Big Hollow Brooks. In addition, there are extensive wetlands and marshes – Drowned Lands, Horton, Schoolhouse, Billings, and Ward Marshes. These play an important function in water absorption and holding capacity that thereby reduce flooding hazards and replenish groundwater supplies.

Drinking Water and Sanitary Sewer

All properties in West Haven rely on private springs and drilled wells for potable water. Similarly, all properties are served by private septic systems.

Transportation

Vermont Route 22A provides the principal access to the town, with Main Road serving as a local collector. The present network of ±40 miles of roads in West Haven serves the needs of current residents.

According to the Town's Road Stormwater Management Plan, approximately 46% of the Town's road mileage is hydrologically connected – meaning it is within 100-feet of a water resource (i.e., perennial/intermittent stream, wetland, lake, or pond). Proximity to water resources can make these sections of road more vulnerable to flooding and fluvial erosion.

There are 9 town-owned bridges in the West Haven highway network, as well as ±170 culverts. Three of the town-owned bridges (one with a span less than 20 feet and two with spans over 20 feet) are part of the VTrans Town Highway Bridge Program. The local road network is maintained by the Town Highway Department whose garage is located on Main and North Road.

Electric Utility Distribution System

Electric service to approximately 150 accounts is provided by Green Mountain Power via one primary circuit. Average annual outage statistics between 2016 and 2020 are summarized in **Table 1**.

Table 1: Power Outage Summary

Average Annual (2016-2020)	
Avg # of times a customer was without power in a year	2.13
Avg length of each outage in hours	3.88
# of hours the typical customer was without power	8.26
2020 only	
Avg # of times a customer was without power in a year	2.91
Avg length of each outage in hours	2.31
# of hours the typical customer was without power	6.73

The longest power outage affecting the greatest number of accounts between 2016 and 2020 was 8.60 hours long and impacted 149 accounts.

Public Safety

The West Haven Volunteer Fire Department is located on North Road. The Fire Department is an active member of Rutland County Fire Mutual Aid.

Law Enforcement is provided by the Vermont State Police and by a locally elected constable.

The nearest hospital is the Rutland Regional Medical Center. Ambulance service is provided by Fair Haven Rescue, as needed.

Emergency Management

The Town's Selectboard Chair serves as the Emergency Management Director (EMD). The EMD works with others in town to keep the Local Emergency Plan up-to-date as well as to coordinate with nearby towns and regional emergency planning efforts.

4 PLANNING PROCESS

Plan Developers

Steffanie Bourque, an Emergency Management Planner at the Rutland Regional Planning Commission (RRPC), assisted the Town with updating its Local Hazard Mitigation Plan. Pre-Disaster Mitigation Program funds from FEMA supported this process.

The Hazard Mitigation Planning Team members who assisted with the update include the current Selectboard Chair / EMD, Selectboard member, Road Commissioner, Selectboard Special Assistant, and former Selectboard Chair.

Plan Development Process

The 2021 West Haven Local Hazard Mitigation Plan is an update to the 2015 single jurisdiction mitigation plan. A summary of the process taken to develop the 2021 update is provided in **Table 2**.

Table 2: Plan Development Process

Dec 8, 2020: Hazard Mitigation Planning Team kick-off meeting. Planning Team members were confirmed. Discussed what a LHMP is; the benefits of hazard mitigation planning; current plan status; the planning process; outreach strategy; and plan sections. Planning Team meetings were not open to the public.

Dec 2020/Jan 2021: Public notice posted on RRPC and Town websites/social media (Facebook) that the Town is engaged in hazard mitigation planning and updating their LHMP. Notice also included in the January 2021 issue of the *Benson Bulletin* community newsletter – see **Appendix D**. Emailed notice to officials (Selectboard and Planning Commission chairs, Town Managers/Supervisors/Mayors and Clerks, Emergency Management Directors) in neighboring Vermont towns of Benson and Fair Haven and New York towns of Hampton, Whitehall, and Whitehall Village as well as Key Partners (Poultney Mettowee Natural Resources Conservation District, Nature Conservancy, Western Vermont Floodplain Manger, Department of Health Emergency Preparedness Specialist, VTrans District 3 Program Manager). Notices included instructions to contact the Rutland Regional Planning Commission for more information on the planning process and opportunities for public input. No inquiries received.

Jan 7, 2021: Planning Team meeting cancelled. Work suspended due to upcoming March 2021 local elections and resulting changes in Planning Team composition.

May 5, 2021: Hazard Mitigation Planning Team kick-off meeting with new Selectboard member and chair. Planning Team members were confirmed. Discussed what a LHMP is; the benefits of hazard mitigation planning; current plan status; the planning process; outreach strategy; and plan sections. Planning Team meetings were not open to the public.

May 2021: Public notice posted on RRPC and Town websites/social media (Facebook, Front Porch Forum) and town bulletin boards that after a brief hiatus, the Town resumed hazard mitigation planning and updating their LHMP.

June 2, 2021: Planning Team meeting – confirmed the plan purpose and completed work on the community profile. Began work on the community hazard risk assessment, storm history, and identifying assets vulnerable to the highest risk natural hazards.

June 30, 2021: Planning Team completed work on the hazard identification and risk assessment. This is a critical milestone in the plan development process and the draft plan was readied for public meeting on July 13, 2021.

July 13, 2021: Draft LHMP presented at joint meeting of the West Haven Selectboard and Planning Commission to encourage public input from local government and the public that could affect the plan's conclusions and better integrate with Town initiatives. Draft shared with Key Partners for input on vulnerable locations and assets. Draft posted online and available at the Town Office for public comment period with instructions to email comments to Kerry Ellis. Comments were accepted until July 27, 2021. No comments submitted.

Aug 4, 2021: Planning Team meeting – discussed whether comments had been received on July draft; completed work on hazard identification and risk assessment. Began work on hazard mitigation strategy – confirmed mitigation goals, discussed community capabilities, and updating the status of the 2015 mitigation actions.

Sept 8, 2021: Planning Team meeting – completed community capabilities; updated status of 2015 mitigation actions; and evaluated range of possible mitigation actions.

Sept 29, 2021: Planning Team meeting – completed work on hazard mitigation strategy; plan maintenance; and changes since the 2015 plan. Draft LHMP finalized for presentation to local officials and the public at the October 12, 2021 Selectboard meeting.

Oct 12, 2021: Final draft LHMP presented at joint public meeting of the West Haven Selectboard and Planning Commission for review and comment. Plan emailed to neighboring towns and Key Partners. Notice of final draft and public comment period published in the Lakes Region Free Press (see **Appendix D**) and posted online with instructions to email comments to Kerry Ellis. Copy of Plan also available at the Town Office for public comment period through November 9, 2021.

Nov 9, 2021: West Haven Selectboard held a public comment session at the beginning of their regular meeting to discuss the final draft LHMP and receive comments from the public. No comments submitted.

Nov 12, 2021: Final draft LHMP submitted to Vermont Emergency Management for Approval Pending Adoption.

In addition to the local knowledge of Planning Team members and other relevant parties, several existing plans, studies, reports, and technical information were utilized in the preparation of this Plan. A summary of these is provided in **Table 3**.

Table 3: Existing Plans, Studies, Reports & Technical Information

2021 Local Emergency Management Plan
2021 FEMA NFIP Insurance Reports
2020-2016 Green Mountain Power Outage Data
2019 West Haven Town Plan
2019 Road Stormwater Management Plan
2019 American Community Survey Five-Year Estimate
2018 State of Vermont Hazard Mitigation Plan
2014 Zoning & Flood Hazard Area Regulations
2007 Phase 1 Stream Geomorphic Assessment of Select Poultney River Tributaries
2007 Hubbardton River Debris Pilot Project
2006 Poultney River Geomorphic Assessment and Stream Corridor Plan
2005 Fluvial Geomorphology Assessment of the Poultney River and Hubbardton River
RRPC Local Liaison Reports of Storm Damage
National Oceanic and Atmospheric (NOAA) National Climatic Data Center's Storm Events Database
FEMA Disaster Declarations for Vermont
OpenFEMA Dataset: Public Assistance Funded Project Summaries for Vermont
United States Drought Monitor
FEMA Flood Insurance Rate Maps
Vermont Statewide Highway Flood Vulnerability and Risk Map
VTrans Town Highway Bridge Inspection Reports

Changes Since the 2015 Plan

West Haven's Town Plan and land use development regulations aim to guide the direction of growth in a way that is both economically feasible and environmentally acceptable.

As described in the Community Profile section of this Plan, although the Town experienced some increase in population it remains a very small community with a low population density. Since 2015, the community has not experienced any significant change in development.

According to the West Haven Zoning Administrator, a total of 49 zoning permits have been issued between January 1, 2016 and September 26, 2021. Roughly 40% of these permits were for barns and outbuildings, including garages. In addition, there were 6 permits for new residential construction; 5 permits for residential additions; 5 subdivision permits; and a couple of permits for other residential (porches, decks) and commercial (home business, manufacturing, frisbee golf) uses.

Development in West Haven since 2015 has not made the community more vulnerable to natural hazards.

The Town's mitigation priorities have shifted a bit. In 2015, the West Haven Local Hazard Mitigation Plan was an all-hazards (natural and human-caused) plan. Floods, fluvial erosion, severe thunderstorms, and snow/ice storms posed the greatest risks to West Haven.

The 2021 Plan update focused exclusively on natural hazards defined as atmospheric, hydrologic, geologic, and wildfire phenomena. Hazards not necessarily related to the physical environment, such as infectious disease, were excluded from consideration by the Planning Team. The Town again ranked severe thunderstorms (with associated flash flooding, fluvial erosion, high winds, and to a lesser degree inundation flooding) and winter storms (with associated extreme cold, snow, ice, and high winds) as some of the community's highest risk natural hazards.

They also ranked drought (with associated heat and water shortage) as an additional highest risk natural hazard.

In 2021, the Town did not formally assess the risks associated with invasive species; however, they did discuss the potential hazards and risks associated with the Emerald Ash Borer (EAB) given the confirmed detection in Rutland County in October 2020. Invasive species were not included in the 2015 Plan.

West Haven has made some progress completing the mitigation actions identified in the 2015 Plan – see **Appendix C**.

Other significant accomplishments since 2015 include completion of several transportation resiliency projects:

- Stone-lined drainage ditching on Ghost Hollow, Stage, and Cold Springs roads.
- Culvert replacements on Ghost Hollow, River, and Cogman roads.
- Bank stabilization on River Road.
- Bridge replacement on Book Road (B10) in 2019, which involved collaboration with New York State.

Actions taken by West Haven since 2015 have made the community more prepared and less vulnerable to future natural hazard impacts.

Nonetheless, due to an increase in the frequency and intensity of weather events, the Town remains vulnerable to flash flooding, fluvial erosion, and inundation flooding, high winds, severe winter storms, and drought, as well as invasive species (particularly the Emerald Ash Borer).

As a result, the Town has identified a range of mitigation actions to address flooding, extreme cold/snow/ice, high winds, and drought – see **Table 6**.

5 HAZARD IDENTIFICATION AND RISK ASSESSMENT

After engaging in discussions, the Town identified the following “highest risk hazards” that they believe their community is most vulnerable to:

Local Vulnerabilities and Risk Assessment

One of the most significant changes from the 2015 Plan is the way hazards are assessed. To be consistent with the approach to hazard assessment in the 2018 State Hazard Mitigation Plan, the Hazard Mitigation Planning Team conducted an initial analysis of known natural hazard events¹ to determine their probability of occurring in the future.

The Planning Team then ranked the hazard impacts associated with the known natural hazard events based on the probability of occurrence and potential impact to life, the economy, infrastructure, and the environment. The ranking results are presented in **Table 4**.

- *Flash flooding, fluvial erosion, high winds, and to a lesser degree inundation flooding associated with thunderstorms*
- *Extreme cold, snow, ice, and high winds associated with winter storms*
- *Excessive heat and water shortage associated with drought*

Each of these “highest risk hazards” (**orange** in **Table 4**) are further discussed in this section and depicted in the Local Natural Hazards and Vulnerabilities Map in **Appendix B**.

The “lower risk hazards” that are considered to have a low probability of occurrence and low potential impact are not discussed. For information on these hazards, consult the State Hazard Mitigation Plan.

Table 4: Community Hazard Risk Assessment

Hazard Event	Hazard Impacts	Probability	Potential Impact				Average	Score
			Life	Economy	Infrastructure	Environment		
Thunderstorm	Flash Flooding/ Fluvial Erosion	4	1	2	4	2	2.25	9.00
Ice Jam								
Tropical Storm/Hurricane	Inundation Flooding	4	1	2	2	2	1.75	7.00
Tornado	Wind/Hail	4	2	3	2	3	2.50	10.00
Landslide	Landslide	1	1	1	1	1	1.00	1.00
Winter Storm	Cold/Snow /Ice/Wind	4	3	4	3	3	3.25	13.00
Drought	Heat	4	2	3	1	3	2.25	9.00
	Drought	3	2	3	3	3	2.75	8.25
Wildfire	Wildfire	2	2	1	1	2	1.50	3.00
Earthquake	Earthquake	1	1	1	1	1	1.00	1.00

*Score = Probability x Average Potential Impact

	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, no to minimal 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% but <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

¹ This Plan defines natural hazards as atmospheric, hydrologic, geologic, and wildfire phenomena. Hazards not necessarily related to the physical environment, such as infectious disease, were excluded from consideration by the Planning Team.

Invasive Species

The Planning Team did not formally assess the risk associated with invasive species; however, they did discuss the potential hazards and risks associated with the Emerald Ash Borer (EAB) specifically.

Vermont's EAB infestation was first detected in 2018 in northern Orange County. In October 2020, a new detection of EAB in West Rutland was confirmed. This is the first confirmed detection in Rutland County. An inventory of trees within the road right-of-way is needed to determine how many Ash trees are at risk. The potential risk to private woodlots and impacts on the local economy have not been quantified.

While inundation-related flood loss can be a significant component of flood disasters, the more common mode of damage in Vermont is associated with fluvial erosion, often associated with physical adjustment of stream channel dimensions and location during flood events. These dynamic and oftentimes catastrophic adjustments are due to bed and bank erosion of naturally occurring unstable stream banks, debris and ice jams, or structural failure of or flow diversion by human-made structures. An ice jam occurs when the ice layer on top of a river breaks into large chunks which float downstream and cause obstructions (State HMP 2018). The primary place in West Haven that is vulnerable to ice jams is along the Poultney River. This causes flooding of the Book Farm agricultural fields and sections of Book, Coggman, Bay, and Gallick roads, resulting in these roads being temporarily closed.

Highest Risk Hazard Profiles

Inundation/Flash Flooding/Fluvial Erosion

Floods can damage or destroy property; disable utilities; destroy or make impassable roads and bridges; destroy crops and agricultural lands; cause disruption to emergency services; and result in fatalities. People may be stranded in their homes for a time without power, heat, or communication or they may be unable to reach their homes. Long-term collateral dangers include the outbreak of disease, loss of livestock, broken sewer lines or wash out of septic systems causing water supply pollution, downed power lines, loss of fuel storage tanks, fires, and release of hazardous materials.

As noted in the State Hazard Mitigation Plan, "Flooding is the most common recurring hazard event in Vermont" (2018: 55). There are two types of flooding that impact Vermont communities: inundation and flash flooding. Inundation is when water rises onto low lying land. Flash flooding is a sudden, violent flood which often entails fluvial erosion (stream bank erosion).

Inundation flooding of land adjoining the normal course of a stream or river is a natural occurrence. If these floodplain areas are in their natural state, floods likely would not cause significant damage.

Several major flooding events have affected the state in recent years, resulting in multiple Presidential Disaster Declarations. From 2003 to 2010, Rutland County experienced roughly \$2.6 million in property damages due to flood events.

The worst flooding event in recent years came in August of 2011 from Tropical Storm Irene (DR4022), which dropped up to 10-11 inches of rain in some areas of Rutland County. Irene caused 2 deaths and \$55,000,000 in reported property damages and \$2.5 million in crop damages in Rutland County. Although the storm was technically a tropical storm, the effects of the storms are profiled in this flooding section, since the storm brought only large rainfall and flooding to the Town, not the high winds typically associated with tropical storms. This caused most streams and rivers to flood in addition to widespread and severe fluvial erosion.

From 2012 to 2020, Rutland County experienced approximately \$3.5 million in property damages; with \$1.9 million due to a flash flood event in July 2017 (DR4330) and \$1 million due to a flash flood event in April 2019 (DR4445).

In West Haven, flooding is a risk. Damages from Tropical Storm Irene were significant, resulting in just under \$77,000 in impacts. In West Haven, damage due to flooding usually consists of impacts to roads, culverts, and crop lands.

As shown on the Local Natural Hazards and Vulnerabilities Map in **Appendix B**, West Haven is vulnerable to inundation flooding on several roads along the Poultney River – Book, Coggman, Bay, and Gallick – and Burr Road at Bridge #9 on Coggman Creek. Flooding results in road closures and minor to significant repairs. In the case of Book Road, closures typically last for two days or less and repairs are minor because the road is paved.



Inundation Flooding on Book Road

In contrast, road closures on Bay and Gallick (both Class 3 gravel roads) can last up to two months in the springtime and require significant repairs. There is one full-time residence at the west end of Gallick Road that becomes isolated during these times and accessible only by canoe. There are no full-time residences on Bay Road; only a few seasonal residences and access to The Nature Conservancy lands, including Ward Marsh.

During a 2019 inventory, most of Bay Road was found to have significant erosion issues related to inundation flooding and did not meet Class 3 road standards under the Municipal Roads General Permit. The expense of bringing this road up to standards is thought to be cost prohibitive.

Historically, the Town Office was vulnerable to inundation flooding; but drainage installed behind the building in 2017 has addressed this.

Flash flood can occur any time the area has heavy rain. It can impact areas in Town that are located outside of designated floodplains, including along streams confined by narrow valleys. Sections of several roads are periodically washed out – Gallick, Cold Springs, Pettis, Stage, and Hackadam roads. Any gravel road with a hill can be impacted by flash floods. Impacts can be exacerbated by undersized culverts and inadequate ditching.



Flash Flood Damage on Gallick Road

One structure, a single family dwelling, is in the Special Flood Hazard Area (1% of community structures). According to FEMA, this structure does not have flood insurance.

There are no repetitive loss properties.

Stage, Cold Springs, and Book roads are locally important for resident commuters and are heavily travelled. Stage and Cold Springs are main connectors to Benson and Book is a main connector to New York state. When these roads are impacted by flooding, the Road Commissioner coordinates with the Fire Department and State Dispatch to close the roads and set up detours. The road closures create longer commute times for residents and longer emergency service response times.

None of the roads serving West Haven’s critical facilities are vulnerable to flooding.

The inventory of hydrologically-connected roads completed in 2019 for the Municipal Roads General Permit also identified areas vulnerable to flash flooding and included recommended corrective actions to make these areas more resilient.

Phase I Geomorphic Assessment of the Poultney and Hubbardton Rivers was completed in March 2006. The assessment provided an opportunity to link upland restoration with streambank stabilization efforts to reduce sediment production and nutrient loading in Lake Champlain.

A Stream Corridor Plan for the Poultney River was completed in December 2006. The goals for the Corridor Plan include identification of potential restoration and natural system protection projects that would support stream dynamic equilibrium conditions and reduce potential future conflicts between human investments and stream channels and their associated expenses. Potential natural system protection projects proposed in the plan include vegetative riparian buffers, berm removal, and restoring incised reaches.

Phase 1 Geomorphic Assessment of select Poultney River tributaries, including Coggman Creek in West Haven, was completed in May 2007. The assessment identified the following potential projects: riparian buffer plantings, livestock exclusion fencing, bridge and culvert assessments for possible replacement (many were thought to be severely undersized).

In addition to Coggman and Bay Roads, River Road along a tributary to the Poultney River is vulnerable to fluvial erosion.

As weather patterns shift and we see larger storms and more frequent freeze-thaw cycles, the Town will monitor for signs that rivers that have historically been stable becoming less stable, with increased erosion, widening, trees falling in from its banks, etc.

Flooding Hazard History

These are the most up to date significant events impacting West Haven. Federal declarations are depicted in **bold**.

7/29-30/2021: heavy rain: no reported local damage

8/24/2020: 2-3” rain: \$10,000 local damage

4/15/2019: DR4445 1-2” rain with significant snow melt: \$5,000 local damage

7/1/2017: DR4330 3-4” rain the previous 3-4 days with flash flooding on 7/1/17: \$5,123 local damage

6/25-7/11/2013: DR4140 with heavy rain over multiple days: local damages unknown; \$420,000 regional damage

8/28/2011: DR4022 Tropical Storm Irene with ±5” rain: \$76,985 local damage

5/1/2011: record lake flood levels: \$250,000 regional damage

7/29/2009: very heavy rain: \$18,035 local damage

1/18/2006: 1-2: rain with snow melt: \$50,000 regional damage

7/10/2001: heavy rain: \$18,459 local damage

4/23/2001: lakeshore flooding: \$2,100 local damage

12/16/2000: DR1358 2-4” rain: \$20,612 local damage

High Wind/Hail

Severe thunderstorms can produce high winds, lightning, flooding, rains, large hail, and even tornadoes. Thunderstorm winds are generally short in duration, involving straight-line winds and/or gusts more than 50 mph. Thunderstorm winds can cause power and communication outages, transportation and economic disruptions, significant property damage, and pose a high risk of injuries and loss of life.

From 2004 to 2010, for thunderstorms that caused more than \$200,000 in damage, Rutland County experienced nearly \$2 million in property damage. From 2011 to 2020, thunderstorms resulted in just under \$2.4 million in property damage in Rutland County, with \$525,000 due to a high wind event in May 2017.

Hail is a form of precipitation composed of spherical lumps of ice, which typically range from ¼-2” diameter on average, with much larger hailstones forming in severe thunderstorms. Much of the hail activity in Rutland County is scattered and varies in intensity with resulting damage to buildings, automobiles, and crops. West Haven is not as vulnerable to hail as they are to high winds associated with severe storms.

Violent windstorms are possible here; West Haven is susceptible to high directional winds town-wide. Many storms with high winds result in downed trees, damaged phone and power lines, buildings, and other property. West Haven is vulnerable to power outages and they present a potentially significant risk to many residents.

Downed trees within the road right-of-way are not typically the cause of power outages. Disruptions in the power grid serving West Haven are typically the root cause of outages.



Debris Cleanup Following a Severe Storm on Gallick Road in 2020

All West Haven's public buildings/critical facilities are vulnerable to power outages, including the town office, garage, fire station, and local shelter.

The town office serves as the local shelter and Emergency Operations Center (EOC). During a disaster, the municipal response is managed from the EOC, this would include all communications – from phone calls to internet browsing and 2-way radio.

Connectivity is crucial in times of crisis. Telecommunications are needed for warning systems before disaster, as well as for response during and recover after. Power outages are the main reason for stopping communications, leaving the EOC significantly compromised.

In addition, during a power outage the gas pumps at the town garage are rendered inoperable.

High Wind/Hail Hazard History

These are the most up to date significant events impacting West Haven. Federal declarations are depicted in **bold**.

8/4/2020: 45 mph wind: \$35,000 regional damage
 7/8/2020: 1.5" hail; \$5,000 regional damage
 4/1/2018: 63 mph wind: \$50,000 regional damage
 10/30/2017: 40 mph wind: \$100,000 regional damage
 5/18/2017: ¾" hail; no reported damage
 5/5/2017: 64 mph wind: \$500,000 regional damage
 8/5/2014: ¾" hail; no reported damage
 7/17/2012: ¾" hail; no reported damage
 12/1/2010: 52 mph wind: \$100,000 regional damage
 9/29/2005: 35 mph wind: \$100,000 regional damage

Extreme Cold/Snow/Ice

In the Rutland Region, most winter weather events occur between the months of December and March. Throughout the season, winter weather events can include snowstorms, mixed precipitation events of sleet and freezing rain, blizzards, glaze, extreme cold, the occasional ice storm, or a combination of any of the above. Events can also be associated with high winds or flooding, increasing the potential hazard.

The costs of these storms come in the form of power outages due to heavy snow or ice accumulations, damaged trees, school closings and traffic accidents.

From 2001 to 2010, Rutland County experienced \$2.7 million in property and crop damages from winter storms. 2011 to 2020 experienced \$1.58 million in property damage, with \$300,000 due to a 10" - 20" heavy, wet snowfall across the county on December 9, 2014.

There have been four winter storm-related federally declared Disasters in the county (the ice storm of January 1998 – DR 1201; severe winter storms in December 2000 and 2014 – DR 1358 and DR 4207, respectively; and severe storm and flooding in April 2007 – DR 1698).

Typically, towns' vulnerability to snow and ice storms are power outages and loss of road accessibility. As previously described, the Town is not prepared for a power outage caused by ice/wet snow accumulation on power lines or trees falling on powerlines due to weight of ice accumulation in a storm, especially if the outage coincided with a sheltering event.

In general, snow accumulation has not made the Town vulnerable to loss of road accessibility, except for Bay Road which is not maintained during the winter. With Bay Road closed, the Town must travel via County Route 10 through New York State to access Gallick Road for plowing.

The Town's fleet of snowplows ensures that most roads are accessible, even in major snow accumulation events. Roads adjacent to critical facilities are well maintained. The following locations are prone to significant drifting and are maintained accordingly:

- Main Rd between the Town Office and Best Rd, by the Charron Farm, between Bob Ellis' and Pete Doran's property
- Pettis Rd past the Pettis Farm to Cold Springs Rd
- Ghost Hollow Rd from Main Rd to Jackson's Farm and from the paved end of Main Rd to Adams Rd

Extreme Cold/Snow/Ice Hazard History

These are the most up to date significant events impacting West Haven. Federal declarations are depicted in **bold**.

2/7/2020: 8-12" snow; ¼" ice: \$20,000 regional damage

2/1-2/2015: Record cold month with 15 to 20+ days below zero and 12" snow: \$15,000 regional damage

1/7/2015: 0 to 10 degrees with winds of 15-30 mph creating wind chills colder than -20 to -30 below zero: local damages unknown

12/9/2014: DR4207 10-20" snow: \$100,000 regional damage

3/12-13/2014: 8-24" snow and 35-40 mph wind gusts: \$35,000 regional damage

12/26/2012: Snowfall rate of 1-2" per hour with accumulations of 8-18": \$20,000 regional damage

2/23/2010: 6-30" snow: \$100,000 regional damage

12/11/2008: 5-9" snow/glaze ice: \$50,000 regional damage

4/15-16/2007: DR1698 "Nor'icane" with 3" snow and rain with 60 to 80 mph winds: \$3,500,000 regional damage

3/5/2001: EM3167 2-18" snow: \$3,923 local damage

Drought/Extreme Heat

Drought, in a general sense, is a period of lower-than-average precipitation that results in a water shortage. High winds, low humidity, and extreme heat can all amplify the severity of drought.

It is typically a slow-onset natural hazard that can last for months or years. Drought is a natural part of the climate cycle.

Higher temperatures, water demands that exceed availability, low winter snowpack and lack of rainfall are all causes that can lead to a significant drought.

The USDA rates droughts from D0-D4, depending on the severity of the drought, the amount of time it will take for vegetation to return to normal levels, and the possible effects of the drought on vegetation and water supply:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

Drought is a natural phenomenon that has unique characteristics that make it different from other hazards. Reference the 2018 State Hazard Mitigation Plan for a full discussion of how drought differs from other natural hazards and extreme heat trends in Vermont.

In addition to the obvious effects on the quantity and quality of drinking water, drought and extreme heat can compromise food and nutrition; increase incidents of illness and disease; and diminish the ability of water ecosystems to properly function.

Municipal water supply and delivery, municipal wastewater, transportation systems, and parks and recreational facilities can all be adversely impacted by drought.

There may be situations where water-intensive industries and agricultural production shift to different locations due to lack of water. Other industries directly affected include energy, tourism, and fisheries. The wide-ranging impacts of drought can include job losses, business failures, and lost investments.

When different natural hazards overlap, such as drought and flood, it can lead to cascading hazards, with one event compounding the other. Drought is likely to be part of a cascading hazard because it can cover a large area and go on for a long time.

In the Rutland region, there have been several instances of moderate drought (D1) and one instance in the last 20 years of severe drought (D2). In November 2020, the USDA issued a drought disaster declaration for that crop year.

Drought impacts of concern in West Haven include:

- Increased occurrences of wildland fires with minor to moderate impacts on human life, built infrastructure, and the natural environment.
- Interruption of water supply with minor to moderate impacts on drinking water supplies and surface waters for fire suppression.
- Crop and agricultural losses with minor to moderate impacts on honey and maple syrup production, hay production, perennial fruit and orchards, and livestock.
- Low water level and poor water quality in local water bodies – Poultney River – with minor impacts on water recreation such as fishing.
- Increases in human/wildlife conflict with minor impacts due to increased rattlesnake sightings.

Drought/Extreme Heat Hazard History

These are the most up to date significant events impacting West Haven. Federal declarations are depicted in **bold**.

Mar – Apr 2021: D1 drought in 100% of county

11/11/2020: USDA Disaster S4869 2020 Crop Year

7/7-10/2020: Heat index values of mid-90°F-100°F

Jun – Sept 2020: D1 drought in 50-100% of county

6/18-23/2020: Heat index values in mid-upper 90s; second longest heatwave in modern history

Jun – Sept 2018: D1 drought in 50-100% of county

6/30-7/5/2018: Heat index values of 95°F-110°F

Sept 2016 – Feb 17: D1 drought in 50-100% of county

Oct – Nov 2016: D2 drought in 60% of county

6/5/2012: USDA Disaster S3249 2012 Crop Year

3/17/2012: Record heat across all of VT with max temps 30-40° above normal; \$300,000 regional crop damages

7/20-23/2011: Heat index values of 100°F - 108°F

8/1-2/2006: Heat index values of 100°F - 105°F

Sept 2001 – Mar 02: D1 drought in 50-100% of county

Vulnerability Summary

Inundation/Flash Flooding/Fluvial Erosion

Location¹: *Inundation Flooding* – Coggman, Gallick, Book, Bay, and Burr Roads, Book Farm

Fluvial Erosion – Coggman, Bay, River Roads

Flash Flooding – Gallick, Cold Springs, Pettis, Stage, Hackadam Roads

Vulnerable Assets¹: Roads, culverts, crop lands

Extent: ±5” rain; extent data for fluvial erosion is unavailable

Impact: \$76,985 local / \$250,000 regional damage

Probability: >75% probability in a year

High Wind/Hail

Location¹: Town-wide

Vulnerable Assets¹: Power lines, telecommunications systems, buildings, trees

Extent: ±64 mph winds; 1.5” hail

Impact: \$500,000 regional damage

Probability: >75% probability in a year

Extreme Cold/Snow/Ice

Location¹: Town-wide; Drifting on Main, Pettis, and Ghost Hollow Roads; Ice Jams on Poultney River

Vulnerable Assets¹: Roads, culverts, trees, power lines, telecommunications systems

Extent: Up to 30” of snow; ¼” ice; 80 mph winds, 15 to 20+ days below zero

Impact: \$3,500,000 regional / \$3,923 local damage

Probability: >75% probability in a year

Drought/Extreme Heat

Location¹: Town-wide

Vulnerable Assets¹: Water supplies, natural ecosystems, agriculture

Extent: D2 drought in 60% of county for 2 months; heat index values in mid-upper 90s for 6 days

Impact: \$300,000 regional crop damages

Probability: Drought: >10% but <75% probability per year / Extreme Heat: >75% probability in a year

¹ See **Appendix B:** Local Natural Hazards and Vulnerabilities Map

6 HAZARD MITIGATION STRATEGY

The highest risk natural hazards and vulnerabilities identified in the previous section of this Plan directly inform the hazard mitigation strategy outlined below, which the community will strive to accomplish over the coming years. The mitigation strategy chosen by the Town includes the most appropriate activities to lessen vulnerabilities from potential hazards.

Mitigation Goals

The Hazard Mitigation Planning Team discussed mitigation goals and identified the following as the community's main mitigation goals:

- Reduce or avoid long-term vulnerabilities to identified hazards.
- Reduce the loss of life and injury resulting from these hazards.
- Mitigate financial losses incurred by municipal, residential, industrial, agricultural, and commercial establishments due to disasters.
- Reduce the damage to public infrastructure resulting from these hazards.
- Encourage hazard mitigation planning as a part of the municipal planning process.
- Encourage the adoption and implementation of existing mitigation resources, such as River Corridor Plans and Fluvial Erosion Hazard Maps, if available.
- Recognize the connections between land use, stormwater management, road design, maintenance, and the effects from disasters.
- Ensure that mitigation measures are sympathetic to the natural features of community rivers, streams, and other surface waters; historic resources; character of neighborhoods; existing land use and the capacity of the community to implement them.

Community Capabilities

Each community has a unique set of capabilities, including authorities, programs, staff, funding, and other resources available to accomplish mitigation and reduce long-term vulnerability. West Haven's mitigation capabilities that reduce hazard impacts or that could be used to implement hazard mitigation activities are listed below.

Administrative and Technical

In addition to the Emergency Management staff described in Section 3, municipal staff that can be used for mitigation planning and to implement specific mitigation actions include: Road Foreman, Town Clerk, and Town Treasurer.

In addition to paid staff, there is a 3-member Selectboard; 5-member Planning Commission; Zoning Administrator; Tree Warden; Health Officer; and Fire Chief.

To augment local resources, the Town has formal mutual aid agreements for emergency response – fire and public works. Technical support is available through the RRPC in the areas of land use planning, emergency management, transportation, GIS mapping, and grant writing. Technical support is also available through the State ANR for floodplain administration and VTrans Districts for hydraulic analyses.

Strengths: staff are trained on hazards and mitigation ● past success in completing grant applications for public infrastructure improvements ● established maintenance programs for cleaning culverts and roadside ditches as well as tree trimming/roadside mowing within the road right-of-way ● strong working relationships with neighboring communities to augment local resources

Areas for Improvement: cell coverage is poor – need to develop an emergency communication plan ● few staff perform multiple functions – lack of redundancy makes Town's administrative and technical capabilities vulnerable ● limited highway department staff ● limited budget for road maintenance with many miles of road

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Examples of planning capabilities that can either enable or inhibit mitigation include land use plans, capital improvement programs, transportation plans, stormwater management plans, disaster recovery and reconstruction plans, and emergency preparedness and response plans. Examples of regulatory capabilities include the enforcement of zoning ordinances, subdivision regulations, and building codes that regulate how and where land is developed, and structures are built.

Strengths: codes and standards are adequately administered and enforced ● elements of hazard mitigation are included in other local plans ● completed road erosion inventory ● protect floodplains from new encroachment

Areas for Improvement: capital planning ● continuity of operations planning

Zoning and Flood Hazard Area (FHA) Regulations: Adopted August 4, 1993, last amended April 24, 2014

Description: Provide for orderly community growth that promotes the health, safety, and general welfare of the community.

Relationship to Natural Hazard Mitigation Planning: Establish site plan review requirements and zoning districts, including a Flood Hazard Overlay District, with specific standards for proposed development. Requirements are designed to prevent overdevelopment; to mitigate the negative impacts to the natural and human environment; minimize effects to the historical and aesthetic character of the community; and ensure the design and construction of development in flood and other hazard areas are accomplished in a manner that minimizes or eliminates the potential for flood loss or damage to life and property.

Road and Bridge Standards: Adopted on September 10, 2019

Description: Provide minimum codes and standards for the construction, repair, and maintenance of all town roads and bridges.

Relationship to Natural Hazard Mitigation Planning: The standards include management practices and are designed to ensure the safety of the traveling public, minimize damage to road infrastructure during flood events, and enhance water quality protections.

Fire Department ISO Rating: Issued in 2021

Description: The West Haven Fire Department's ISO rating is 9. This rating is a score from 1 to 10 that indicates how well-protected the community is by the local fire department.

Relationship to Natural Hazard Mitigation Planning: Everyone wants to keep family, home, and business safe from fires. The ISO rating is a measure of the effectiveness of a community's fire services.

Municipal Plan: Adopted March 1, 2019

Description: A framework for defining and attaining community aspirations through public investments, land use regulations, and other implementation programs.

Relationship to Natural Hazard Mitigation Planning: Includes specific goals and policies related to mitigating natural hazards.

Local Emergency Management Plan: Last adopted on May 11, 2021

Description: Establishes lines of responsibility and procedures to be implemented during a disaster and identifies high risk populations, hazard sites, and available resources.

Relationship to Natural Hazard Mitigation Planning: Includes actions for tracking events and response actions including damage reports to facilitate funding requests during recovery. This type of information can be essential to preparing hazard mitigation project applications for FEMA funding.

Road Stormwater Management Plan: December 2019

Description: Prioritizes those infrastructure projects necessary to improve transportation network resiliency and water quality.

Relationship to Natural Hazard Mitigation Planning: Improvements are designed to minimize or eliminate flood impacts on hydrologically-connected road segments.

Financial

Financial capabilities are the resources that a community has access to or is eligible to use to fund mitigation actions.

West Haven's current annual town general fund budget is approximately \$109,350, with \$241,870 to fund the Highway Department. Although the Town has not done so in the past, it is eligible to incur debt through general obligation bonds to fund mitigation actions.

Strengths: maximize grant opportunities ● past success securing grant funding for infrastructure projects ● every department has a depreciation fund with a replacement schedule

Areas for Improvement: limited budget ● dedicated reserve funds that can be used to fund mitigation actions ● capital improvement planning and budgeting for reserve funds ● tax revenues are sufficient for daily operations to maintain the status quo, but insufficient to handle contingencies and/or improvements

Education and Outreach

West Haven has a few education and outreach opportunities that could be used to implement mitigation activities and communicate hazard-related information:

- Front Porch Forum/Town Facebook Page
- Volunteer Fire Department
- Historical Society

Strengths: close knit small community with robust "word of mouth" network ● social media presence

Areas for Improvement: better coordination is needed to help implement future mitigation activities

National Flood Insurance Program Compliance

The Town joined the National Flood Insurance Program (NFIP) in 2008. The effective date of the current Flood Insurance Rate Map (FIRM) is August 28, 2008. The Zoning Administrator enforces NFIP compliance through permit review requirements in its Flood Hazard Area regulations. West Haven's regulations outline detailed minimum standards for development in flood hazard areas defined as FEMA Special Flood Hazard Areas and Floodway Areas.

The Town discussed the following as possible actions to continue NFIP compliance:

- 1) Provide information to residents on safe building initiatives and availability of flood insurance.
- 2) Adopt river corridor protection language in the flood hazard regulations bylaw.
- 3) Work with the RRPC to ensure that floodplain and river corridor maps are kept up to date.

State Incentives for Flood Mitigation

Vermont's Emergency Relief Assistance Funding (ERAF) provides state funding to match FEMA Public Assistance after federally-declared disasters. Eligible public costs are generally reimbursed by FEMA at 75% with the State matching 7.5%. The State will increase its match to 12.5% or 17.5% of the total cost if communities take steps to reduce flood risk as described below.

12.5% funding for eligible communities that have adopted four (4) mitigation measures:

- 1) NFIP participation
- 2) Town Road and Bridge Standards
- 3) Local Emergency Plan
- 4) Local Hazard Mitigation Plan

17.5% funding for eligible communities that also participate in FEMA's Community Rating System OR adopt Fluvial Erosion Hazard or other river corridor protection bylaw that meets or exceeds the Vermont ANR model regulations.

West Haven's current ERAF rate is 7.5%. Adoption of a FEMA-approved Local Hazard Mitigation Plan will increase this rate to 12.5%.

Mitigation Action Identification

The Hazard Mitigation Planning Team discussed the mitigation strategy, reviewed projects from the 2015 Plan, and identified possible new actions from the following categories for each of the highest risk natural hazards identified in Section 5:

- 1) **Local Plans and Regulations:** These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.
- 2) **Structure and Infrastructure Projects:** These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This applies to public or private structures as well as critical facilities and infrastructure. Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance Program.
- 3) **Natural Systems Protection:** These are actions that minimize damage and losses and preserve or restore the functions of natural systems.
- 4) **Education and Awareness Programs:** These are actions to inform and educate the public about hazards and potential ways to mitigate them. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk is more likely to lead to community support for direct actions.

Local Plans and Regulations

Integrate Mitigation into Capital Improvement Programs: Hazard mitigation can be included in capital improvement programs by incorporating risk assessment and hazard mitigation principles into the capital planning efforts.

Manage Development in Erosion Hazard Areas: The intent of River Corridor Bylaws is to allow for wise use of property within river corridors that minimizes potential damage to existing structures and development from flood-related erosion.

Improve Stormwater Management Planning: Rain and snowmelt can cause flooding and erosion in developed areas. A community-wide stormwater management plan can address stormwater runoff.

Reduce Impacts to Roadways: The leading cause of death and injury during winter storms is from automobile or other transportation accidents, so it is important to plan for and maintain adequate road and debris clearing capabilities.

Develop a Drought Contingency Plan: A strategy for monitoring the progression of a drought and preparing a response to potential water supply shortages resulting from severe droughts or other water supply emergencies.

Structure and Infrastructure Projects

Remove Existing Structures from Flood Hazard Areas: FEMA policy encourages and may provide funding for the removal of structures from flood-prone areas to minimize future flood losses and preserve lands subject to repetitive flooding.

Improve Stormwater Drainage Capacity: Improving the stormwater drainage capacity can help to minimize inundation flooding and fluvial erosion by 1) increasing drainage/absorption capacities with green stormwater management practices; 2) increasing dimensions of undersized drainage culverts in flood-prone areas; 3) stabilizing outfalls with riprap and other slope stabilization techniques; and 4) re-establishing roadside ditches.

Conduct Regular Maintenance for Drainage Systems: Regular maintenance will help drainage systems and flood control structures continue to function properly. Techniques include 1) routinely cleaning and repairing stormwater infrastructure – culverts, catch basins, and drain lines; 2) routinely cleaning debris from support bracing underneath low-lying bridges; and 3) inspecting bridges and identifying if any repairs or retrofits are needed to maintain integrity or prevent scour.

Protect Infrastructure and Critical Facilities: Mitigation techniques can be implemented to help minimize losses to infrastructure and protect critical facilities from flood events by 1) elevating roads above the base flood elevation to maintain dry access; 2) armoring the banks of streams near roadways to prevent washouts or 3) rerouting a stream away from a vulnerable roadway; and 4) floodproofing critical facilities.

Protect Power Lines: Power lines can be protected from the impacts of natural hazards by 1) inspecting and maintaining hazardous trees in the road right-of-way during drainage system maintenance and 2) burying power lines.

Protect Critical Roadways: Use snow fences or living snow fences (e.g., rows of trees or other vegetation) to limit blowing and drifting of snow.

Retrofit Critical Facilities: Critical facilities can be protected from the impacts of high winds and winter storms by 1) retrofitting critical facilities to strengthen structural frames to withstand wind and snow loads; 2) anchoring roof-mounted mechanical equipment; and 3) installing back-up generators or quick connect wiring for a portable generator.

Retrofit Water Supply Systems: Consider investing in infrastructure (like dry hydrants) to expand water supplies for fire suppression to ensure adequate supply during times of drought.

Natural Systems Protection

Protect and Restore Natural Flood Mitigation Features: Natural conditions often provide floodplain protection, riparian buffers, groundwater infiltration, and other ecosystem services that mitigate flooding. It is important to preserve such functionality. Possible projects include 1) establishing vegetative buffers in riparian areas; 2) stabilizing stream banks; 3) removing berms; 4) minimizing impervious area development; and 5) restore incision areas.

Education and Awareness Programs

Educate Property Owners About Freezing Pipes: Extreme cold may cause water pipes to freeze and burst, which can cause flooding inside a building. Consider 1) educating owners how to protect their pipes and 2) informing them that letting a faucet drip may prevent freezing and the buildup of excessive pressure, avoiding bursting.

Assist Vulnerable Populations: Measures could be taken to ensure vulnerable populations are adequately protected from the impacts of natural hazards, such as 1) organizing outreach and 2) establishing and promoting accessible heating or cooling centers in the community.

Educate Residents on Drought-related Hazards and Water Saving Techniques: Increase awareness of drought-related hazards - brush fire, diminished water quality and quantity. Encourage residents to take water-saving measures, such as 1) install low-flow water saving showerheads and toilets; 2) check for leaks in plumbing or dripping faucets; and 3) install rain-capturing devices for irrigation.

Mitigation Action Evaluation and Prioritization

For each mitigation action identified, the Hazard Mitigation Planning Team evaluated its potential benefits and/or likelihood of successful implementation. Each action was evaluated against a broad range of criteria, including a planning level assessment of whether the costs are reasonable compared to the probable benefits. Results of this evaluation are presented in **Table 5**.

Mitigation Action Implementation

After careful evaluation and prioritization, the Planning Team agreed upon a list of actions that are acceptable and practical for the community to implement.

Those actions without overall public support/political will were not selected for implementation. Those actions whose costs were not reasonable compared to the probable benefits were also not selected.

For the selected actions, the Planning Team then 1) assigned a responsible party to lead the implementation of each action; 2) identified potential funding mechanisms; and 3) developed a timeframe for implementing each action. This action plan is presented in **Table 6**.

Note that the Town will make every effort to maximize use of future Public Assistance Section 406 Mitigation opportunities when available during federally declared disasters.

Table 5: Mitigation Action Evaluation and Prioritization

Mitigation Action	Life Safety	Prop Protect	Tech	Political	Admin	Other Obj	Benefit Score	Est Cost	C/B
Local Plans and Regulations									
Integrate Mitigation into Capital Improvement Programs	1	1	1	1	1	1	6	1	Yes
Plan for and Maintain Adequate Road and Debris Clearing Capabilities	1	1	1	1	1	1	6	1	Yes
Update Road Erosion and Culvert Inventories	1	1	1	1	1	1	6	1	Yes
Review VTrans Bridge Inspection Reports ¹ and Plan for Identified Repairs to Prevent Scour	1	1	1	1	1	1	6	1	Yes
Manage Development in Erosion Hazard Areas with River Corridor Bylaws	1	1	1	0	1	1	5	1	Yes
Improve Stormwater Management Planning by Completing a Stormwater Management Plan	1	1	1	0	-1	1	3	1	Yes
Develop a Drought Contingency Plan	1	1	1	-1	-1	1	2	1	No
	Planning Team recommended this action be referred to the West Haven Volunteer Fire Department for consideration. A contingency plan for the town's dry hydrant system may be of interest.								
Structure and Infrastructure Projects									
Increase Dimension of Drainage Culverts in Flood-Prone Areas	1	1	1	1	1	1	6	1	Yes
Stabilize Outfalls	1	1	1	1	1	1	6	1	Yes
Install/Re-establish Roadside Ditches	1	1	1	1	1	1	6	1	Yes
Routinely Clean and Repair Stormwater Infrastructure	1	1	1	1	1	1	6	1	Yes
Protect Power Lines and Roadway by Inspecting and Removing Hazardous Trees in Road ROW	1	1	1	1	1	1	6	1	Yes
Install Back-up Generators or Quick Connect Wiring at Critical Facilities	1	1	1	1	1	1	6	1	Yes
Expand Water Supplies for Fire Suppression	1	1	1	1	1	1	6	1	Yes
Use Snow Fence on Critical Roadways	1	1	1	0	1	1	5	1	Yes
Increase Drainage/Absorption Capacities with Green Stormwater Management Practices	0	1	1	1	1	1	5	1	Yes
	Planning Team did not recommend this action for implementation due to lack of information about appropriate locations for these practices. Once the Town completes a Stormwater Management Plan, appropriate locations may be identified and addressed accordingly.								
Remove Existing Structures from Flood-Prone Areas	1	1	1	-1	-1	1	2	2-3	No
Elevate Roads Above Base Flood Elevation to Maintain Dry Access	1	1	1	-1	-1	1	2	2-3	No
	Although sections of Bay and Gallick roads are below base floodplain elevation and prone to inundation flooding, the Planning Team did not believe the cost of elevating the roads was reasonable compared to the anticipated benefits. Rather, the Town is considering other options to mitigate the flooding risk in these locations (e.g., re-classifying Bay Road to a Legal Trail).								
Bury Power Lines	1	1	1	-1	-1	1	2	3	No
Routinely Clear Debris from Support Bracing Underneath Low-Lying Bridges	No low-lying bridges with support bracing, so the Planning Team did not evaluate this action								
Floodproof Critical Facilities	No critical facilities that require floodproofing, so the Planning Team did not evaluate this action.								

¹ VTrans inspects all town-owned bridges in the State's Town Highway Bridge Program every two years. Bridge inspection reports are available on the VTrans website.

Mitigation Action	Life Safety	Prop Protect	Tech	Political	Admin	Other Obj	Benefit Score	Est Cost	C/B
Retrofit Critical Facilities to Strengthen Structural Frames to Withstand Wind and Snow Loads	No critical facilities that require structural retrofits, so the Planning Team did not evaluate this action.								
Anchor Roof-Mounted Mechanical Equipment on Critical Facilities	No critical facilities with roof-mounted mechanical equipment, so the Planning Team did not evaluate this action.								
Natural Systems Protection									
Stabilize Stream Banks	1	1	1	1	1	1	6	1	Yes
	Planning Team did not recommend this action for implementation because all known issues have been addressed, including recent project on River Road. Town will monitor for signs that rivers that have historically been stable becoming less stable, with increased erosion, widening, trees falling in from its banks, etc. and identify stream bank stabilization projects as needed.								
Establish Vegetative Buffers in Riparian Areas	Planning Team did not evaluate these actions because there are no known areas; however, the Town will collaborate with the Poultney Mettowee Natural Resources Conservation District to identify and implement natural systems protection projects that meet the goals of this Plan.								
Remove Berms and/or Accumulated Debris from Stream to Restore Flood Capacity									
Restore Incision Areas									
Education and Awareness Programs									
Educate Property Owners about Freezing Pipes	1	1	1	1	1	1	6	1	Yes
Keep the Ditches Clean Campaign	1	1	1	1	1	1	6	1	Yes
Educate Residents on Drought-related Hazards and Water Saving Techniques	1	1	1	1	1	1	6	1	Yes
Assist Vulnerable Populations	West Haven already has a system in place to assist vulnerable populations – see 2021 Local Emergency Management Plan.								

Table 5 Evaluation Criteria:

Life Safety – How effective will the action be at protecting lives and preventing injuries?

Property Protection – How effective will the action be at eliminating or reducing damage to structures and infrastructure?

Technical – Is the mitigation action a long-term, technically feasible solution?

Political – Is there overall public support/political will for the action?

Administrative – Does the community have the administrative capacity to implement the action?

Other Community Objectives – Does the action advance other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation?

Rank each of the above criteria in Table 5 with a -1, 0, or 1 using the following table:

1= Highly effective or feasible

0 = Neutral

-1 = Ineffective or not feasible

Estimated Cost – 1 = less than \$50,000; 2 = \$50,000 to \$100,000; 3 = more than \$100,000

C/B – Are the costs reasonable compared to the probable benefits? Yes or No

Table 6 Community Lifelines Description: A Community Lifeline enables the continuous operation of critical government and business functions and is essential to human health and safety or economic security. The primary objective of lifelines is to ensure the delivery of critical services that alleviate immediate threats to life and property when communities are impacted by disasters. These critical services are organized into one of seven lifelines:








 Safety and Security	 Food, Water, Shelter	 Health and Medical	 Energy (Power & Fuel)	 Communications	 Transportation	 Hazardous Materials
<ol style="list-style-type: none"> 1. Law Enforcement 2. Fire Service 3. Search & Rescue 4. Government Service 5. Community Safety 	<ol style="list-style-type: none"> 1. Food 2. Water 3. Shelter 4. Agriculture 	<ol style="list-style-type: none"> 1. Medical Care 2. Public Health 3. Patient Movement 4. Medical Supply Chain 5. Fatality Management 	<ol style="list-style-type: none"> 1. Power Grid 2. Fuel 	<ol style="list-style-type: none"> 1. Infrastructure Responder 2. Communications 3. Alerts, Warnings, & Messages 4. Finance 5. 911 & Dispatch 	<ol style="list-style-type: none"> 1. Highway/Road/Motor Vehicle 2. Mass Transit 3. Railway 4. Aviation 5. Maritime 	<ol style="list-style-type: none"> 1. Facilities HAZMAT, Pollutants, Contaminants

Table 6: Mitigation Action Implementation

Plan for and Maintain Adequate Road and Debris Clearing Capabilities: This includes capital planning and funding to support the appropriate number of staff and equipment needed to maintain the transportation network in West Haven. All equipment (grader, pay loader, two dump trucks) was upgraded within the last seven (7) years.

ADDRESSED HAZARDS

-  **Winter Storm**
Primary Hazard
-  **High Winds**

Lead Party

Selectboard

Type of Project

Local Plans and Regulations

COMMUNITY LIFELINES TARGETED

-  **Safety & Security**
-  **Transportation**
Primary Lifeline

Area of Impact

Town-wide; ±40 mile road network

FUNDING SOURCES

- Local funding

PARTNERSHIPS

- Road Foreman

BENEFIT SCORE = 6

PROJECT TIMELINE

To coincide with preparing the annual Town budget each fall

Update Road Erosion and Culvert Inventories: These inventories were completed in 2018 and 2015, respectively and serve as the basis for asset management and should be kept up-to-date annually, with a full re-assessment every 5 years. Driveway culverts should be included in the next culvert inventory re-assessment.

ADDRESSED HAZARDS

-  **Flooding**

Lead Party

Road Foreman

Type of Project

Local Plans and Regulations

COMMUNITY LIFELINES TARGETED

-  **Safety & Security**
-  **Transportation**
Primary Lifeline

Area of Impact

Town-wide; ±19 miles of hydrologically-connected roads and ±170 culverts

FUNDING SOURCES

- Local funding
- VTrans Grant Programs

PARTNERSHIPS

- Selectboard
- Rutland Regional Planning Commission (RPC)

BENEFIT SCORE = 6

PROJECT TIMELINE

Re-assessment in 2022-2023 construction seasons

Plan for Bridge Repairs: Every two years, VTTrans inspects all town-owned bridges that are in the State’s Town Highway Bridge Program. These inspection reports will be reviewed and used to plan for any identified flood-related bridge repairs. The Town will do their own periodic inspections of other bridges, not part of the State Program, and plan for repairs as needed.

ADDRESSED HAZARDS**Flooding****Lead Party**

Road Foreman

Type of Project

Local Plans and Regulations

COMMUNITY LIFELINES TARGETED**Safety & Security****Transportation**

Primary Lifeline

Area of Impact

3 bridges in State Program: B4, B10, B11

6 other town-owned bridges: B4, B5, B6, B7, B8, B9

FUNDING SOURCES

- Local funding
- VTTrans Grant Programs
- FEMA Hazard Mitigation Grant

PARTNERSHIPS

- Selectboard
- VTTrans

BENEFIT SCORE = 6**PROJECT TIMELINE**

Annual inspection of town-owned bridges not enrolled in State program

Manage Development in Erosion Hazard Areas with River Corridor Bylaws: River Corridor Bylaws can be used in conjunction with Flood Hazard Area Regulations to manage development in areas prone to flood impacts. West Haven will explore the feasibility of adopting River Corridor Bylaws.

ADDRESSED HAZARDS**Flooding****Lead Party**Selectboard /
Planning Commission**Type of Project**

Local Plans and Regulations

COMMUNITY LIFELINES TARGETED**Safety & Security****Transportation**

Primary Lifeline

Area of Impact

Town-wide

FUNDING SOURCES

- Local funding
- Municipal Planning Grant

PARTNERSHIPS

- Rutland RPC

BENEFIT SCORE = 5**PROJECT TIMELINE**

Gauge public support in Jul 2022
 Determine administrative capacity to adopt and implement by Sept 2022
 Decide whether to develop and adopt by Dec 2022

Develop a Stormwater Management Plan: A Stormwater Management Plan can guide the town in planning, funding, and implementing a comprehensive program for addressing current and future requirements for managing stormwater runoff, flooding problems, and the Town’s natural resources. West Haven will explore the feasibility of developing this Plan.

ADDRESSED HAZARDS**Flooding****Lead Party**

Selectboard

Type of Project

Local Plans and Regulations

COMMUNITY LIFELINES**Safety & Security****Transportation**

Primary Lifeline

Area of Impact

Town-wide

FUNDING SOURCES

- Local funding

PARTNERSHIPS

- Poultney Mettowee Natural Resources Conservation District (NRCD)

BENEFIT SCORE = 3**PROJECT TIMELINE**

Outreach to Poultney Mettowee NRCD to explore funding and technical assistance in Jul 2022

Adequately Size Drainage and Perennial Stream Culverts in Flood-Prone Areas: Undersized culverts can lead to road washouts and flooding. West Haven has identified several locations where upsized culverts are needed.

ADDRESSED HAZARDS**Flooding****Lead Party**

Road Foreman

Type of Project

Infrastructure

COMMUNITY LIFELINES**Safety & Security****Transportation**

Primary Lifeline

Area of Impact

- 1) Pettis Road
- 2) Stage Road
- 3) Others, including driveway culverts, as required by MRGP

FUNDING SOURCES

- Local funding
- VTrans Grant Programs
- FEMA Hazard Mitigation Grant

PARTNERSHIPS

- Selectboard
- ANR Stream Engineer
- US Army Corps of Engineers

BENEFIT SCORE = 6**PROJECT TIMELINE**

- 1) 2023 construction season
- 2) 2023 construction season
- 3) Others See MRGP

Stabilize Culvert Outfalls: Erosion at the outlet of culverts is common and can cause structural failure with serious downstream consequences. Properly stabilized outfalls protect channel bank stability and reduce erosion. West Haven has identified the following locations where culvert outlet stabilization is needed.

ADDRESSED HAZARDS**Flooding****Lead Party**

Road Foreman

Type of Project

Infrastructure

COMMUNITY LIFELINES TARGETED**Safety & Security****Transportation**

Primary Lifeline

Area of Impact

- 1) Stage Road
- 2) Ghost Hollow Road
- 3) Others as required by MRGP

FUNDING SOURCES

- Local funding
- VTrans Grant Programs
- FEMA Hazard Mitigation Grant

PARTNERSHIPS

- Selectboard
- ANR Stream Engineer
- US Army Corps of Engineers

BENEFIT SCORE = 6**PROJECT TIMELINE**

- 1) 2021 construction season
- 2) 2022 construction season
- 3) See MRGP

Re-work Roadside Ditches: Properly installed and stabilized roadside ditches are critical to protect the integrity of the road. Although West Haven has an extensive network of ditches, the areas noted below either need new ditches or have ditches that need to be re-worked to bring them up to current municipal Road Standards.

ADDRESSED HAZARDS**Flooding****Lead Party**

Road Foreman

Type of Project

Infrastructure

COMMUNITY LIFELINES TARGETED**Safety & Security****Transportation**

Primary Lifeline

Area of Impact

- 1) Hackadam Road
- 2) Ghost Hollow Road
- 3) Others as required by MRGP

FUNDING SOURCES

- Local funding
- VTrans Grant Programs

PARTNERSHIPS

- Selectboard

BENEFIT SCORE = 6**PROJECT TIMELINE**

- 1) 2022 construction season
- 2) 2022 construction season
- 3) See MRGP

Routinely Clean and Repair Stormwater Infrastructure: Regular maintenance is one of the most effective ways to mitigate the impacts of flooding. Routine cleaning and repairs of ditches, culverts, and catch basins will be done according to the Highway Department’s maintenance schedule and the Municipal Roads General Permit (MRGP).

ADDRESSED HAZARDS**Flooding****Lead Party**

Road Foreman

Type of Project

Infrastructure

COMMUNITY LIFELINES**Safety & Security****Transportation**
Primary Lifeline**Area of Impact**

Town-wide; ±40 mile road network and ±170 culverts

FUNDING SOURCES

- Local funding
- VTrans Grant Programs

PARTNERSHIPS

- Selectboard

BENEFIT SCORE = 6**PROJECT TIMELINE**

See Highway Department’s Maintenance Schedule and MRGP

Inspect and Remove Hazardous Trees in Road Right-of-Way: Hazardous trees in the road right-of-way can contribute to power and communication outages as well as debris in the roadway during winter storms and high wind events. This hazard is exacerbated by the possibility of an Emerald Ash Borer infestation. West Haven will remove hazardous trees within their road right-of-way as needed and/or request removal by Green Mountain Power if also within the power line right-of-way.

ADDRESSED HAZARDS**Winter Storm****High Winds****Lead Party**

Road Foreman

Type of Project

Infrastructure

COMMUNITY LIFELINES TARGETED**Energy**
Primary Lifeline**Transportation****Communications****Area of Impact**

Town-wide

FUNDING SOURCES

- Local funding

PARTNERSHIPS

- Tree Warden
- Green Mountain Power
- Selectboard

BENEFIT SCORE = 6**PROJECT TIMELINE**

As needed

Install Back-up Power at Critical Facilities: Generators are emergency equipment that provide a secondary source of power to a facility. West Haven has identified four (4) critical facilities in need of back-up power.

ADDRESSED HAZARDS**All Hazards****Lead Party**

Selectboard

Type of Project

Infrastructure

COMMUNITY LIFELINES TARGETED**Energy**
Primary Lifeline**Food, Water, Shelter****Area of Impact**

- 1) Both Town Garages
- 2) Fire Department
- 3) Town Office (local shelter / EOC)

FUNDING SOURCES

- Local funding
- FEMA Hazard Mitigation Grant

PARTNERSHIPS

- Volunteer Fire Dept.

BENEFIT SCORE = 6**PROJECT TIMELINE**

- 2022 Research funding options
- 2026 Complete installations

Expand Water Supplies for Fire Suppression: Lacking municipal drinking water infrastructure, West Haven relies exclusively on a system of dry hydrants for fire suppression. During times of drought, surface water sources relied upon could become compromised. To improve fire suppression, West Haven will assess the functionality of all existing dry hydrants and explore locations for additional hydrants that might be needed.

ADDRESSED HAZARDS**Drought****Lead Party**

Volunteer Fire Dept.

Type of Project

Infrastructure

COMMUNITY LIFELINES**Safety & Security****Area of Impact**

Town-wide

FUNDING SOURCES

- Local funding
- Vermont Rural Fire Protection Task Force

PARTNERSHIPS

- Selectboard

BENEFIT SCORE = 6**PROJECT TIMELINE**

Complete assessment summer 2023

Use Snow Fence or Equivalent Technique on Critical Roadways: Using snow fences or an equivalent technique to limit blowing and drifting of snow over critical road segments can reduce the risks of auto or other transportation accidents.

ADDRESSED HAZARDS**Winter Storm**

Primary Hazard

**High Winds****Lead Party**

Road Foreman

Type of Project

Structure and Infrastructure

COMMUNITY LIFELINES TARGETED**Safety & Security****Transportation**

Primary Lifeline

Area of Impact

Main Road

FUNDING SOURCES

- Local funding

PARTNERSHIPS

- Private Property Owners
- Selectboard

BENEFIT SCORE = 5**PROJECT TIMELINE**

2021 Install temporary snow fence
 2021 Secure landowner permission to install living snow fence
 2022 Install living snow fence

Educate Property Owners about Severe Winter and Drought-related Hazards; and Keep the Ditches Clean Campaign: West Haven will conduct educational outreach by posting information on the Town website and Facebook page about 1) severe winter storm-related hazards (e.g., freezing pipes); 2) drought-related hazards (e.g., brush fires, diminished water quality, water conservation); and 3) the importance of keeping the municipal ditches free of yard waste and other debris.

ADDRESSED HAZARDS**Winter Storm****Drought****Flooding****Lead Party**

Selectboard

Type of Project

Education and Awareness

COMMUNITY LIFELINES**Safety & Security****Transportation**

Primary Lifeline

Area of Impact

Town-wide

FUNDING SOURCES

- Local funding

PARTNERSHIPS

- Fire Warden
- West Haven Vol Fire Dept

BENEFIT SCORE = 6**PROJECT TIMELINE**

Jul 2022 – Dec 2022

Process for Incorporating Plan Requirements into Other Planning Mechanisms

Information and recommendations from the 2015 West Haven Local Hazard Mitigation Plan were incorporated into the West Haven Town Plan, adopted in March 2019. The 2019 Town Plan includes an entire chapter dedicated to West Haven's Flood Resilience.

Key municipal regulations, like zoning and flood hazard area regulations, have not been updated since 2015.

For West Haven to succeed in reducing long-term risks, the information and recommendations of this Plan should be integrated throughout government operations.

The following are specific examples of how the Town will incorporate this Plan into other plans, programs, and procedures:

- The Selectboard will work with the Road Foreman to incorporate risk assessment and hazard mitigation goals into capital planning efforts and improvement programs.
- The Planning Commission will integrate the hazard mitigation goals for disaster resiliency, including NFIP compliance, into the goals and objectives of the next updates to the Town Plan and Flood Hazard Area Regulations.
- The Road Foreman will implement several mitigation infrastructure projects (e.g., upsize perennial and drainage culverts in flood-prone areas, re-work roadside ditches) through existing plans (2018 Road Erosion Inventory and Report for hydrologically-connected road segments).
- The Selectboard (or an appointed committee) will work with the Poultney Mettowee Natural Resources Conservation District to identify opportunities to collaborate on implementing natural resource protection projects that meet the goals of this Plan.

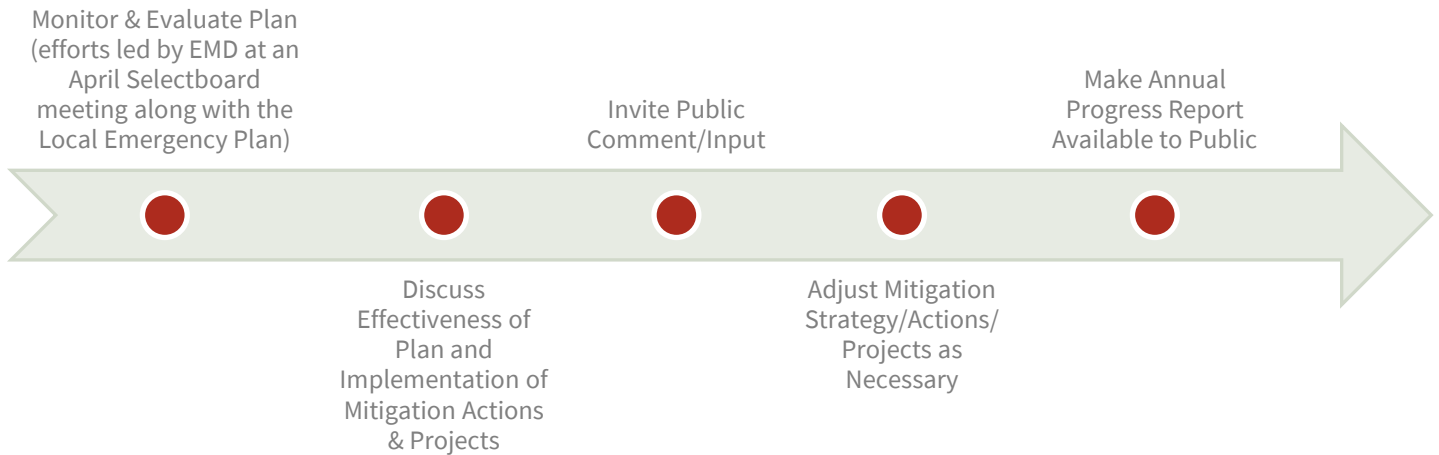
- The Selectboard will work with the Vermont Agency of Transportation and Nature Conservancy to possibly re-classify Bay Road to a Legal Trail.
- The Selectboard will support the West Haven Volunteer Fire Department in the development of a Drought Contingency Plan for fire suppression.
- The Selectboard will work with the Vermont Agency of Transportation to improve winter maintenance of VT Route 22A from the bottom of Long Hill to the Benson town line.
- The Selectboard will work with the Town Clerk and Treasurer to develop a Continuity of Operations Plan, which will include procedures for file-backup systems on all town computers.
- The Selectboard will work with the Town Clerk to provide NFIP informational materials at town hall and on the Town's Facebook page – including promotion of flood insurance, public safety information, and development regulations.
- The Selectboard will encourage the Zoning Administrator to participate in regular NFIP-related trainings.

7 PLAN MAINTENANCE

This Plan is dynamic. To ensure the Plan remains current and relevant, it is important it be monitored, evaluated, and updated periodically.

Monitoring and Evaluation

This Plan will be monitored and evaluated annually starting in 2022 in accordance with the following process:



The status (e.g., in progress, complete) of each mitigation action should be recorded in **Table 7**. If the status is “in progress” note whether the action is on schedule. If not, describe any problems, delays, or adverse conditions that will impair the ability to complete the action.

Updating

This Plan will be updated at a minimum every five (5) years in accordance with the following process:

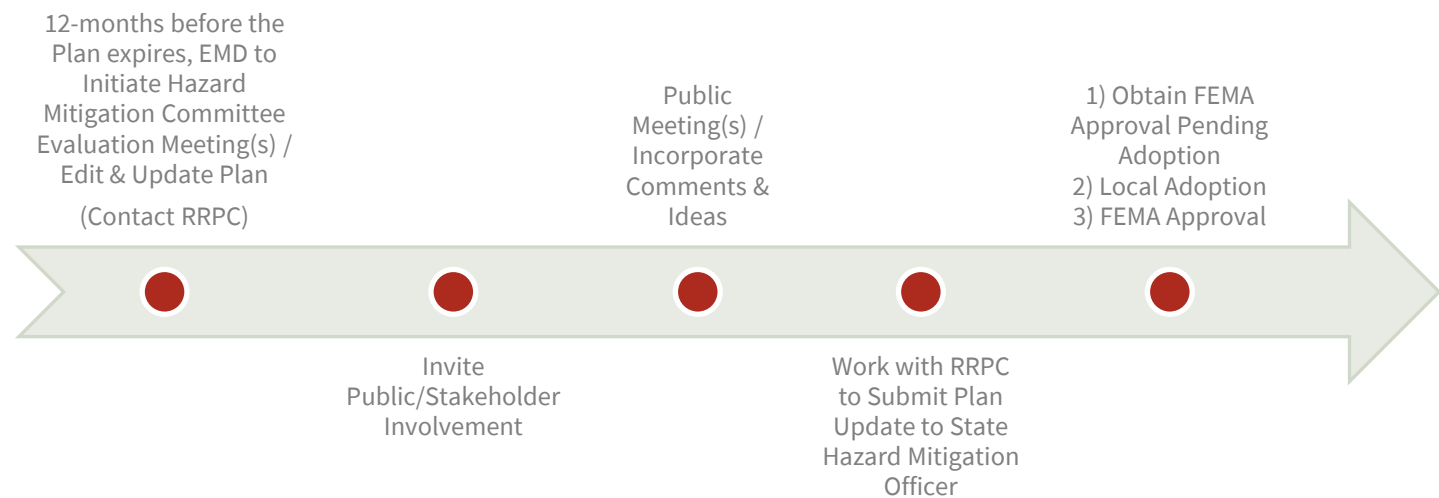


Table 7: Mitigation Action Status

Mitigation Action	2022	2023	2024	2025	2026
Local Plans and Regulations					
Plan for and Maintain Adequate Road and Debris Clearing Capabilities					
Update Road Erosion and Culvert Inventories					
Plan for Flood-related Bridge Repairs					
Manage Development in Erosion Hazard Areas with River Corridor Bylaws					
Develop a Stormwater Management Plan					
Inventory Ash Trees within Road Right-of-Way					
Structure and Infrastructure Projects					
Adequately Size Drainage and Perennial Stream Culverts in Flood-prone Areas					
Stabilize Culvert Outfalls					
Re-work Roadside Ditches					
Routinely Clean and Repair Stormwater Infrastructure					
Inspect and Remove Hazardous Trees in Road Right-of-Way					
Install Back-up Power at Critical Facilities					
Expand Water Supplies for Fire Suppression					
Install Green Stormwater Management Practices					
Use Snow Fence on Critical Roadways					
Natural Systems Protection					
Stabilize Stream Banks					
Education and Awareness Programs					
Severe Winters Storm Preparedness Outreach					
Emerald Ash Borer Educational Outreach					
Keep the Ditches Clean Campaign					
Drought-related Hazards Educational Outreach					

CERTIFICATE OF ADOPTION
TOWN OF West Haven, Vermont Selectboard
A RESOLUTION ADOPTING THE West Haven, Vermont 2021 Local Hazard Mitigation Plan

WHEREAS, the Town of West Haven has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the **2021 West Haven, Vermont 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 West Haven has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its **2021 West Haven, Vermont 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 West Haven; and

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

RESOLVED by Town of West Haven Selectboard:

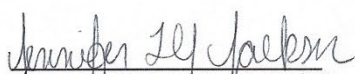
1. The **2021 West Haven, Vermont Local Hazard Mitigation Plan** is hereby adopted as an official plan of the Town of West Haven;
2. The respective officials identified in the mitigation action plan of the **Plan** are hereby directed to pursue implementation of the recommended actions assigned to them;
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 WITNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of the Town of West Haven this 8th day of February 2022.



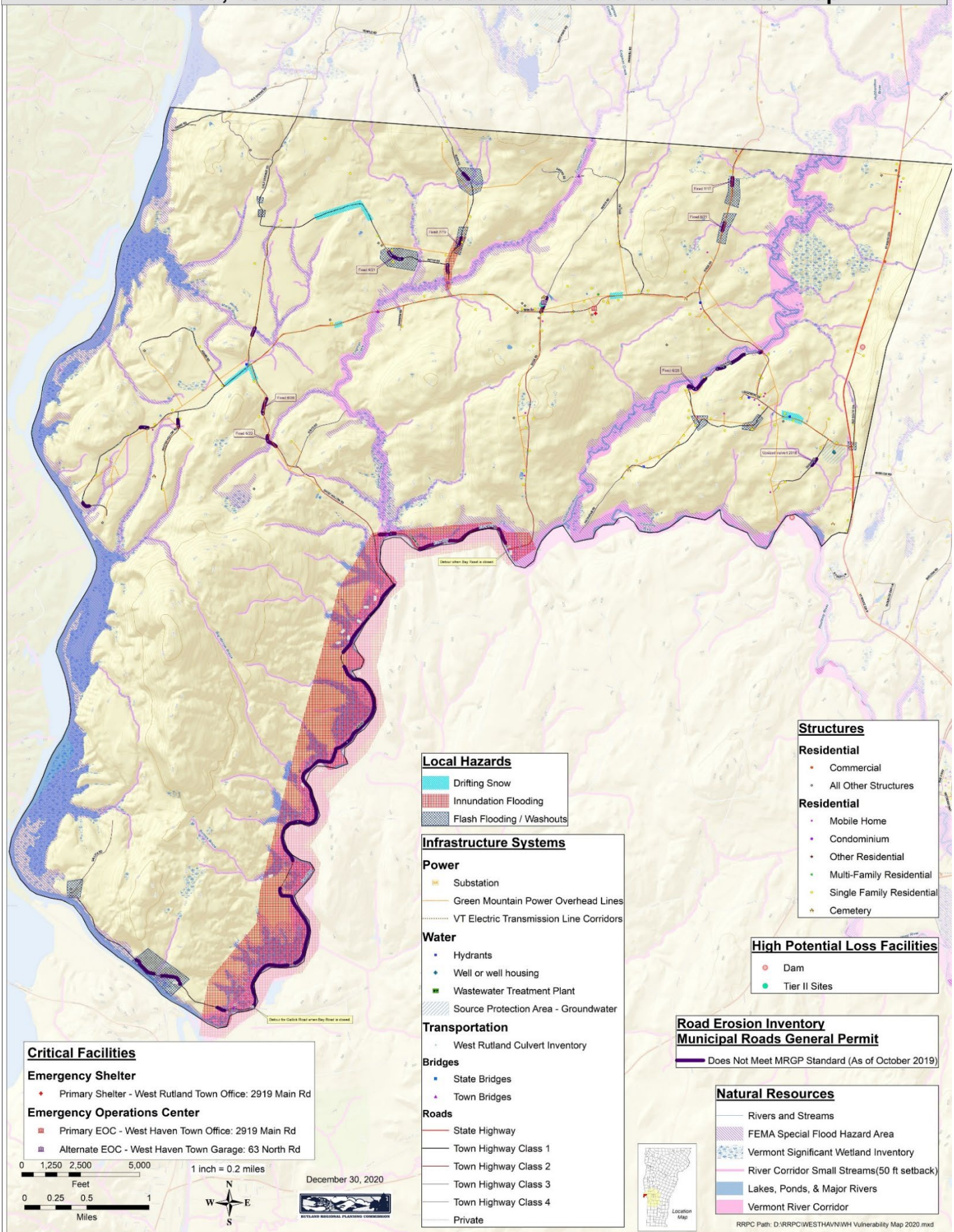
Selectboard Chair

ATTEST


Town Clerk 2/14/22



West Haven, Vermont: Local Natural Hazards and Vulnerabilities Map



2015 Mitigation Actions and Projects

Hazards Mitigated	Mitigation Action	Local Leadership	Funding Resources	Target Start	Target End	2021 Status
Floods, Fluvial Erosion	Investigate sinking section of road adjacent to bridge on Main Road.	Selectboard, Highway Garage	Town Budget, HMGP	July 2015	Dec. 2015	Completed
Snow and Ice Storms	Work with the state to maintain Route 22A (from bottom of Long Hill to Benson town line) better in winter, fix sight lines, and improve banking and shoulders.	Selectboard, Highway Garage	AOT	July 2015	June 2018	Incomplete – remains a priority (see page 25 bullet 7)
Multiple Hazards	Install signage or repair bad corner of Best Road.	Selectboard, Highway Garage	Town Budget, HRRR	July 2015	June 2017	Complete
Hazardous Materials	Reach out to farms and businesses in town to discuss hazardous material storage/Tier 2 reporting requirements.	Selectboard, Fire Department	Town Budget	July 2015	June 2018	Not a natural hazard, not addressed in this plan
Floods, Fluvial Erosion, Ice Jams	Replace bridge over Cogman River, which will enable it to accommodate higher water flows.	AOT, State of NY, Selectboard	AOT, and other state and federal funds	July 2015	June 2020	Complete
Floods, Fluvial Erosion, Ice Jams	Investigate and determine which specific culverts should be planned to be replaced with a larger size.	Selectboard, Highway Garage	HMGP, PDM, FMA, Town Highway Class 2 Roadway Program, Town Highway Structures Program	July 2015	June 2020	Complete
Floods, Fluvial Erosion, Ice Jams	Stabilize the banks on River Road.	Selectboard, Highway Garage	HMGP, PDM, FMA, BBR, Town Budget	July 2015	June 2018	Complete
Floods, Fluvial Erosion, Ice Jams	Engage in a comprehensive review of town rules and policies, to ensure compliance with NFIP requirements.	Planning Commission, Zoning Administrator, Selectboard	MPG, Town Budget	July 2015	June 2018	Remains a priority (see page 25 bullet 2)
Severe Thunderstorms, Snow and Ice Storms	Remove dead trees that could impact power lines or critical structures.	Tree Warden, Highway Garage	Town Budget	July 2015	June 2017	Ongoing
Snow and Ice Storms	Investigate the use of “living snow fences” along drift-prone areas of Main Road.	Selectboard, Highway Garage	Town Budget	July 2015	June 2018	Complete
Floods, Fluvial Erosion, Ice Jams	Address flooding issues on Bay Road, Galick Road, and Cogman Road.	Selectboard, Highway Garage	HMGP, PDM, FMA, Town Budget	July 2015	June 2020	Remains a priority (see page 25 bullet 6)

2015 Preparedness Actions

Hazards Addressed	Preparedness Action	Local Leadership	Funding Resources	Target Start	Target End	2021 Status
Floods, Fluvial Erosion	Install automatic file-backup software on all town computers.	Selectboard	Town Budget	July 2015	Dec. 2015	Incomplete – remains a priority (see page 25 bullet 8)
Hazardous Materials	Encourage fire department members to engage in more hazardous material response training.	Selectboard, Fire Department	AFG, Town Budget	July 2015	June 2017	Not a natural hazard, not addressed in this plan
Wildfire	Educate residents (especially children) about wildfire risk and ways to mitigate it, including putting information in the Town Report.	Fire Warden, Fire Department	Town Budget	July 2015	June 2017	No longer perceived as a priority or risk
Snow and Ice Storms	Discuss winter weather safety issues and carbon monoxide detectors in town.	Zoning Administrator, Fire Department	Town Budget	July 2015	June 2016	Ongoing
Snow and Ice Storms, Multiple Hazards	Identify at-risk members of town that would be severely impacted by an extended power outage/emergency and designate a person or group to check on these people in the event of an extended emergency.	Selectboard, Fire Department, Health Officer	Town Budget	July 2015	June 2018	Ongoing – addressed in the Local Emergency Management Plan
Floods, Fluvial Erosion	Install fireproof safe/vault for town records.	Selectboard	Town Budget	July 2015	June 2017	Complete
Floods, Fluvial Erosion, Ice Jams	Provide informational materials related to flooding/NFIP (e.g., FEMA brochures) at town hall, including promotion of flood insurance, public safety information, and development regulations.	Selectboard, Zoning Administrator, Fire Department	Town Budget	July 2015	June 2017	Ongoing – remains a priority (see page 25 bullet 9)
Snow and Ice Storms	Provide winter emergency information at the town hall for residents.	Selectboard	Town Budget	July 2015	June 2017	Ongoing – remains a priority (see page 24 Education & Awareness Project)
Floods, Fluvial Erosion, Ice Jams	Participate in regular NFIP related trainings offered by FEMA, Vermont League of Cities and Towns, Vermont Department of Environmental Conservation, etc.	Zoning Administrator, Planning Commission, Selectboard	Town Budget	July 2015	June 2017	Ongoing – remains a priority (see page 25 bullet 10)
Multiple Hazards	Ensure there is a reserve of bottled water and other emergency items, including flashlights and first aid kits, at the town hall shelter.	Selectboard	Town Budget, American Red Cross	July 2015	June 2017	Ongoing – addressed in the Local Emergency Management Plan
Snow and Ice Storms, Multiple Hazards	Install generator at town hall building for emergency shelter use.	Selectboard	HMGP, PDM, Town Budget	July 2015	June 2018	Incomplete - remains a priority (see page 23 Infrastructure Project)

2021 BENSON FISH & GAME ICE FISHING DERBY CANCELLED

The 2021 January Benson Fish & Game Club “Down Home Ice Fishing Derby” has been cancelled.

Benson Lighted the way... on December 6th when we held our 3rd Annual Tractor Parade

Our Third Annual Lighted Tractor Parade was a huge success!!! Despite the cold evening, we had a fabulous turnout with 36 amazing entries. The town was bustling with spectators to enjoy the twinkling lights. We are growing every year and this year we had the help of the Fire Department to do traffic control. I want to thank the Fire Department members for stepping up and helping me out. Their assistance was much needed and a huge help! While we had some issues with parade participants trying to get back up to the garage with all the spectator cars leaving at the same time, we are thinking ahead for next year on ways to reduce or eliminate the post parade clutter.

A special “Thanks To All” to our participants, traffic control and spectators that made this year’s event such a success!

Hope to see you all back for next year.

Gina Cull

WEST HAVEN HAZARD MITIGATION PLAN

As a neighboring community of Benson, the Town of West Haven is providing public notice that they are currently engaged in hazard mitigation planning with the intent of updating West Haven’s *Local Hazard Mitigation Plan*. For more information on the planning process or opportunities for public input, please contact Steffanie Bourque at the Rutland Regional Planning Commission – sbourque@rutlandrpc.org or 802-775-0871 x206.

BONE BUILDERS CLASSES STILL ON HIATUS!

In compliance with rules from the Vermont Department of Health, we are unable to conduct Bonebuilders strength training and balance classes at this time. We hope to have better news during the first part of 2021. If anyone has any questions, please contact Anne Munger at 537-3021.



Fair Haven Concerned

Fair Haven Concerned office remains curbside service for all programs.

Please contact our office at 265-3666

and schedule an appointment with the director. If you would like to access our front food room by curbside please do so during our distribution hours of Tuesday, Wednesday and Thursday from 9A.M.- 12P.M.

Please note that our staff is dedicated to meeting the needs of our neighbors during these tough times.

Newsletter Submissions and Deadlines

Please submit your articles, newsworthy notes, and new/revised advertisements for the February 2021 newsletter by January 25th to bensonnews@shoreham.net.

Submissions can be in almost any electronic format, i.e. MS Word, WordPerfect, PDF, Rich text, body of an e-mail, etc. Microsoft Publisher (*.pub) and non-electronic submissions are discouraged.

If you have any questions or to make minor changes to an existing ad, please call Jon Dodd at 537-3173.

LAKES REGION FreePress

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Advertising deadline: Thursday at 5 p.m. the week before publication

TOWN OF PAWLET

PAWLET DEVELOPMENT REVIEW BOARD

Meeting / Hearing
Monday, November 1, 2021
7:00 PM
Town of Pawlet
Agenda

1. Call meeting to order
2. Approve the Agenda
3. Approval of minutes -
October 18, 2021
4. Appeal of Zoning
Administrators decision
from letter dated
September 15, 2021 regarding
alleged Zoning violations by
Mike Wesko dated
August 24, 2021
5. New Business
6. Old Business
7. Deliberative Session
following appeal hearing
8. Adjourn meeting

**Note: Official Legal Notice
Published in
Rutland Herald
S/Jonas Rosenthal
Interim Zoning
Administrator**

Got news?

Let us know!

Send it to
news@nyvtmedia.com.

TOWN OF WEST HAVEN PUBLIC NOTICE

LOCAL HAZARD MITIGATION PLAN

At 9:00 a.m. on November 9th,
the West Haven Selectboard
will hold a public comment
session on the revised
West Haven Local Hazard
Mitigation Plan.

Details are available on the
West Haven Face book page:
[www.facebook.com/Town-of-West-
Haven-VT-108655628099416/](https://www.facebook.com/Town-of-West-Haven-VT-108655628099416/).



Vocalist Aubrey Johnson will

Steve Kirby Quinn

On Saturday, Oct. 23, at 7:30
Brandon Music will welcome
return of the Steven Kirby Quinn
with guest vocalist Aubrey Johnson
a special performance of con-
rary and mainstream jazz.

Guitarist, composer and
Steven Kirby Quinn has built a reputa-
tion performing exciting, melodic
and expressive mainstream and
temporary jazz music. He will

WHAT NEWS DELIVERED