

Benson, Vermont Local Hazard Mitigation Plan



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1 Introduction

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

Hazard Mitigation is any sustained 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 that can be taken 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 identifying strategies to reduce risks from vulnerabilities of highest concern. 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:

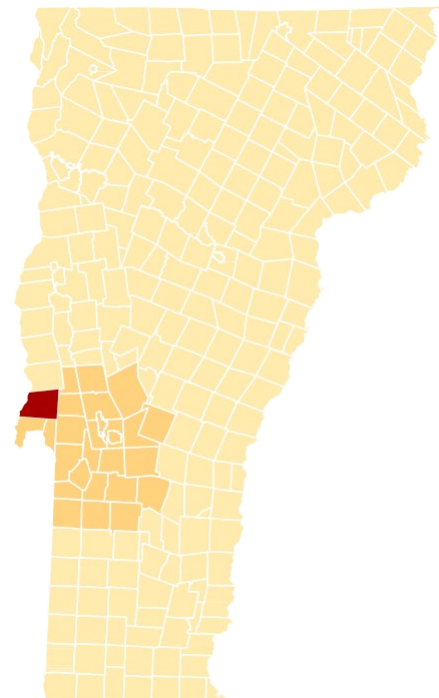
- Identifying actions for risk reduction that are agreed upon by stakeholders and the public;
- Focusing resources on the greatest risks and vulnerabilities;
- Increasing education and awareness of threats and hazards, as well as their risks;
- Communicating priorities to State and Federal officials; and
- 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

Benson is in the northwestern corner of Rutland County. It is a rural community located in the Champlain Valley. A dominant landscape feature in Benson is Shaw Mountain, a limestone uplift that rises over 500 feet from the surrounding land. Shaw Mountain, preserved by the Nature Conservancy, encompasses outstanding examples of natural communities including a shrub swamp, a vernal pool, an oak-hickory forest and a calcareous outcrop community. The Land Trust also holds conserved lands in Town, and their holdings are growing.



Traditionally a farming community, Benson was historically a community of many hamlets. With the improvement of roads and modes of transportation, settlement became more concentrated. Presently, the largest concentration of residences, as well as Town office buildings and the elementary school, occur in the village center, west of VT Route 22A. The remainder of the population is scattered throughout Benson’s countryside.

The predominant land use in Benson is single-family residences. Approximately 75% of these are year round homes, while the other 25% comprise seasonal residences. Farming is still a predominant land use, although a trend from many, smaller farms toward

fewer, larger farms is apparent. Home businesses and a few commercial enterprises are also part of the Benson community.

Demographics and Growth Potential

The 2017 American Community Survey Five-Year Estimates prepared by the U.S. Census Bureau shows an estimated population of 1,043 for Benson, and 571 housing units. Of the population included in the survey, 27% were 19 or under, and 16% were 65 or over, with a median age of 43.4 years, comparable to Vermont’s median age of 42. Benson’s population has been steady since 2000. The presence of seasonal homes associated with the lakes causes the population to fluctuate by season. Significant growth is not anticipated within the foreseeable future.

Precipitation and Water Features

Precipitation in Benson is typical of the rest of the region. 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 western side of town is bounded by Lake Champlain. Three major lakes—Lake Champlain, Lake Sunset and Lake Sunrise, as well as wetlands, rivers and streams constitute the surface waters found in Benson. The Hubbardton River flows through Benson before joining the Poultney River, which flows into Lake Champlain.

Water and Sewer Supply

Most of the homes in Benson draw their water from springs and drilled wells. There is a community water system in Town serving Benson Heights, a senior housing complex. There is also a public water system serving the Benson Village School.

Benson has sewer service in the village area. All other sewer services are individual on- site septic systems.

Transportation

Benson is served by two types of transportation routes— state and town highways. Primary access to Benson is afforded via VT Route 22A which is a secondary arterial highway connecting Vergennes to the north, with Fair Haven to the south. The local road network is maintained by the Town highway maintenance crew whose garage is located on Hulett Hill Road.

Benson has a total of 14 bridges. Four have a span of 20 feet or more; ten are less than 20 feet. None of the bridges in Benson are part of the state system. Under current Federal regulations, any bridge 20 feet or over is eligible for Federal funding assistance.

Electric Utility Distribution System

Electric service to approximately 669 customers is provided by Green Mountain Power via one circuit. Average annual outage statistics between 2015 and 2018 are summarized in **Table 1**.

Table 1: Power Outage Summary

Average Annual (2015-2018)	
Avg # of times a customer was without power	2.44
Avg length of an outage in hours	4.08
# of hours the typical customer was without power	9.94
2018 only	
Avg # of times a customer was without power	3.98
Avg length of an outage in hours	2.92
# of hours the typical customer was without power	11.61

The longest power outage affecting the greatest number of customers between 2015 and 2018 was 6.85 hours long and impacted 549 customers. During this same time period, there was a 10.12 hour long outage, but it only impacted six customers.

Emergency Management

Benson has its own Fire Station in the village with a second building used for storing some of the firefighting equipment such as a truck.

Emergency service providers are quite active in Benson. The Town has a municipal fire department staffed by volunteers, which is assisted by mutual aid agreements with surrounding towns, as well as a volunteer First Response Rescue Squad. Fair Haven Volunteer Rescue Squad serves as Benson’s ambulance service.

Law Enforcement in Benson is provided by an elected constable. Police services are provided through the Vermont State Police, County Sheriff, and a law enforcement contract with Fair Haven Police.

The nearest hospitals are the Rutland Regional Medical Center and Porter Hospital in Middlebury, which are both within 45 minutes travel time from Benson.

Emergency Management Planning

The Town has an appointed Emergency Management Director (EMD) and Emergency Management Coordinator (EMC) who work 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. Hazard Mitigation Grant Program funds from FEMA supported this process.

The Hazard Mitigation Committee members who assisted with the update include the EMD, EMC, representatives from the Selectboard and Planning Commission, the Fire Chief, and Road Foreman.

Plan Development Process

The 2019 Benson Local Hazard Mitigation Plan is the first single jurisdiction mitigation plan drafted for the Town. Previously, the Town had a town-specific Annex in the 2009 Rutland County, VT Hazard Mitigation Plan.

This Plan has been reconstructed as a single jurisdiction, stand-alone Benson Local Hazard Mitigation Plan that will be submitted for individual approval to FEMA. As such, several sections have been added or updated to include all necessary information. A summary of the process taken to develop this Plan is provided in **Table 2**.

In addition to the local knowledge of Committee 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 2: Plan Development Process

February 21, 2019: Hazard Mitigation Committee kick-off meeting. Discussed the status of the current plan, the plan development process, potential hazards, and next steps. This meeting was publicly warned by posting at the town office – no public comment.

February 25, 2019: Public notice posted on RRPC social media that the Town is engaging in hazard mitigation planning and updating their LHMP. Emailed notice to Selectboard/Planning Commission chairs and Town Clerks in the neighboring towns of Orwell, Sudbury, Hubbardton, Castleton, Fair Haven, and West Haven. Name and contact information provided in notices for more information.

March 13, 2019: Benson Planning Commission meeting. Reviewed the Community Hazard Risk Assessment and provided recommendations to Committee regarding rankings.

March 21, 2019: Hazard Mitigation Committee meeting. Completed community hazard risk assessment to identify high risk hazards (consistent with recommendations from Planning Commission), reviewed high risk hazard profiles, weather event history, and vulnerable assets. This meeting was publicly warned by posting at the town office – no public comment.

April 25, 2019: Hazard Mitigation Committee meeting. Finalized hazard profiles and vulnerable assets. Began work on mitigation strategy – goals and capabilities. This meeting was publicly warned by posting at town office – no public comment.

May 16, 2019: Hazard Mitigation Committee meeting. Continued work on mitigation strategy – capabilities and changes since 2009 plan. This meeting was publicly warned by posting at town office – no public comment.

June 10, 2019: Hazard Mitigation Committee meeting. Continued work on mitigation strategy – mitigation action evaluation, prioritization, and implementation. This meeting was publicly warned by posting at town office – no public comment.

August 6, 2019: Mitigation action input received from Road Commissioner and Road Foreman.

August 23, 2019: Draft Plan approved by Committee.

Table 2 (cont.): Plan Development Process

August 26, 2019: Draft Plan shared with local and neighboring Selectboards / Planning Commissions / Town Clerks for input and posted on the RRPC website and at the town office for a 14-day public comment period.

September 12, 2019: Minor public comment incorporated into draft Plan.

September 12, 2019: Draft Plan submitted to VEM for review.

Changes Since the 2009 Plan

Recent development in Town over the past decade has included the construction of single family homes. In a typical year, the Town will see two to three new residential houses built – and they have always been built outside of the floodplain. Benson rarely sees commercial development. This development has not made the Town more vulnerable, since development has not occurred in flood zones or other hazardous areas.

There has been little change in the Town’s mitigation priorities between this Plan update and the 2009 plan. In 2009, floods and fluvial erosion, winter storms, and high winds were the Town’s highest risk hazards.

Although traffic safety along Route 22A remains a concern, it is not a natural hazard and therefore, no longer addressed in this plan.

As described below in Section 5, power outages associated with thunder and/or winter storms remain a concern. Especially if an outage coincided with a large scale sheltering event.

Hazard mitigation actions from 2009 are presented in **Appendix C**. The Hazard Mitigation Committee reviewed these actions and reported on the status of each.

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

2019 Local Emergency Management Plan

2019 FEMA NFIP Insurance Reports

2018 State of Vermont Hazard Mitigation Plan

2018 Zoning & Subdivision Bylaw

2018-2014 Green Mountain Power Outage Data

2017 Benson Town Plan

2017 American Community Survey Five-Year Estimate

2013 Stormwater Infrastructure Mapping Study

2009 Rutland Region All Hazards Mitigation Plan

2008 Flood Hazard Area Regulations

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

U.S. Geological Survey National Water Information System- Stream Gage Data

“Climate Variability and Socioeconomic Consequences of Vermont’s Natural Hazards: A Historical Perspective” by Lesley-Ann Dupigny-Giroux, 2002, Vermont History 70: 19-39.

Rutland Herald Archives

FEMA Flood Insurance Rate Maps

Relevant Stream Geomorphic Assessments and/or River Corridor Plans

5 Hazard Identification and Risk Assessment

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

Local Vulnerabilities and Risk Assessment

One of the most significant changes from the 2009 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 Committee conducted an initial analysis of known natural hazards to determine their probability of occurring in the future.

- Rain/Thunder Storms with associated fluvial erosion, inundation flooding, high winds, and/or hail.
- Winter Storms with associated extreme cold, snow, ice, and high winds.

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

The Committee then ranked the hazard impacts associated with the known natural hazards 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.

The “low 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					Score
			Life	Economy	Infrastructure	Environment	Average	
Thunderstorm	Fluvial Erosion	3	2	2	2	2	2.00	6.00
Tropical Storm/Hurricane	Inundation Flooding	3	2	2	2	2	2.00	6.00
Landslide	Wind/Hail	4	2	2	2	2	2.00	8.00
Ice Jam	Cold/Snow/Ice/Wind	4	3	2	3	2	2.50	10.00
Tornado	Heat	2	1	2	1	1	1.25	2.50
Winter Storm	Drought	3	1	2	2	1	1.50	4.50
Drought	Wildfire	1	1	1	1	1	1.00	1.00
Wildfire	Earthquake	1	1	1	1	1	1.00	1.00
Earthquake	*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

High Risk Hazard Profiles

Inundation Flooding/Fluvial Erosion

Flooding is the overflowing of rivers, streams, drains and lakes due to excessive rain, rapid snow melt or ice as well as overflow of banks caused by sudden high water flow due to breaching of dams (both human-made and natural dams caused by beavers or debris build-up). Flooding of land adjoining the normal course of a stream or river is a natural occurrence. If these floodplain areas were left in their natural state, floods likely would not cause significant damage.

Floods can damage or destroy public and private property, disable utilities, make roads and bridges impassable, 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 or heat 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.

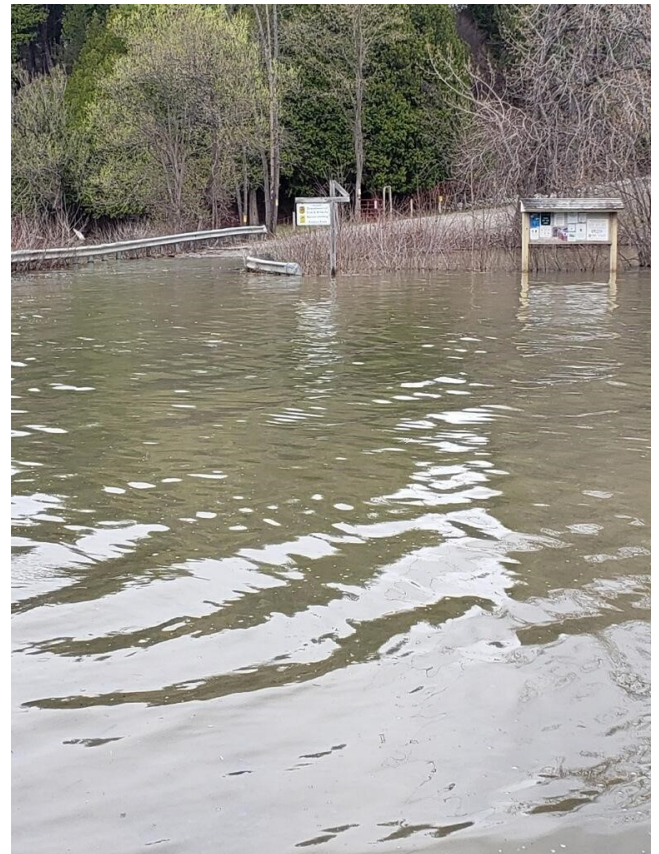
While inundation-related flood loss is a significant component of flood disasters, the more common mode of damage in Vermont is associated with fluvial erosion, streambed and streambank erosion, often associated with physical adjustment of stream channel dimensions and location during flood events. These dynamic and oftentimes catastrophic adjustments are due to bed and bank erosion, 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 Town does not have a high incidence or high probability of ice jams.

As noted in the State Hazard Mitigation Plan, “Flooding is the most common recurring hazard event in Vermont” (2018: 55). 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 \$1.4 million in property damages due to flood events.

The worst flooding event in recent years came in August of 2011 from Tropical Storm Irene, 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 severe fluvial erosion.

From 2012 to 2018, Rutland County experienced approximately \$2.5 million in property damages; with \$1.9 million due to flash flood event in July 2017.

In Benson, flooding is a risk. Flooding, especially flash flooding, can impact areas in Town that are located outside of designated floodplains, including along streams confined by narrow valleys. Spring thaws and ice breakups may cause some lowland flooding along the lakeshore; however, summer or fall storms are more likely to be responsible for major flooding.



Inundation Flooding at Benson Landing along Lake Champlain.

Although damages from Tropical Storm Irene were minor compared to neighboring towns, it still resulted in just over \$150,000 in impacts. In Benson, damage due to flooding and fluvial erosion usually consists of impacts to roads and culverts. As shown on the Local Hazards and Vulnerabilities Map in **Appendix B**, areas prone to inundation flooding include Morris Lane, North Lake Road, Brown's Bay Road, Root Pond Road, and Stage Road. However, damage to these roads typically is not significant and usually repairs can be handled within the Town's budget.

Currently there are 17 structures (single family dwellings and camps) in Town located in the Special Flood Hazard Area. According to FEMA, no structures are covered by flood insurance and there are no repetitive loss properties.

Flash flooding events periodically wash out sections of several roads - Pleasant Valley Road, Stony Point Road, Perch Pond Road, N. Cross Road, Stage Road, East Road, N. Lake Road, and Goodrich Cross Road.



The Poultney River watershed has undergone Stream Geomorphic Assessment (SGA), and a River Corridor Management Plan has been developed. This plan is vital in determining river and stream alterations, which affect water flows and could potentially lead to future flood damage. The SGA and River Corridor Plan suggest potential remediation actions that can be taken to reduce the risk of future flood damage including, planting stream buffers, stabilizing stream banks, removing berms, removing structures and restoring incision areas.

Studies commissioned by the Nature Conservancy to investigate stream remediation within their West Haven properties recommend restoring incision areas through the addition of large woody debris to promote healthy sediment loads could be useful for remediating areas of the Hubbardton River within Benson as well.

Severe 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 in excess of 50 mph. Thunderstorm winds can cause power 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 2018, thunderstorms resulted in \$2.1 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. Known as hailstones, these ice balls typically range from 5–50 mm in diameter on average, with much larger hailstones forming in severe thunderstorms. The size of hailstones is a direct function of the severity and size of the thunderstorm that produces it. Much of the hail activity in Rutland County is scattered and varies in intensity, and the resulting damage usually takes form in uprooted trees, downed power lines, and crop damage.

Violent windstorms are possible here; Benson is susceptible to high directional winds. Many storms with high winds result in downed trees, damaged phone and power lines. Benson is vulnerable to power outages. The following public buildings/critical facilities could be affected by a prolonged power outage due to lack of back-up power: Town Office (which also serves as the local emergency operations center); upper fire station (which serves as the alternate EOC); Community Hall (which serves as the emergency shelter); town garage; and the Benson Village School.

The Town Office and Community Hall are adjacent to each other and share the same drinking water well.

Both have wiring in place for a generator hook-up. However, the only portable generator is located on the Fire Department crash vehicle, so if needed during an incident would not be available to provide back-up power. If a power outage coincided with a large scale sheltering event, the Town could be faced with a serious situation.

Although the municipal wastewater treatment facility is not equipped with backup power, it is not typically vulnerable to power outages. The predominately gravity collection system discharges to an aerated lagoon facility with two lagoons. The facility has enough excess capacity to withstand a prolonged power outage. The facility has an electric power failure plan in accordance with its State-issued discharge permit.

Extreme Cold/Snow/Ice/Wind

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 2002 to 2010, Rutland County experienced \$1.1 million in property and crop damages from winter storms. From 2011 to 2018, Rutland County experienced \$1.3 million in property damage, with \$300,000 due to a 10" to 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). Historically, the winter storm of December 1969 brought record snowfall amounts and snowdrifts to Vermont, and later freezing rain caused prolonged power outages (Dipugny-Giroux 2002:26).

Benson is more vulnerable to snow and ice storms than it is to flooding. Typically, towns' vulnerability to snow and ice storms are power outages and loss of road accessibility. As previously described, the Town could be vulnerable to 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 large scale sheltering event.

In general, snow accumulation has not made the Town vulnerable to loss of road accessibility. The Town's fleet of snowplows has ensured that roads are accessible, even in major snow accumulation events. However, there are approximately 65 miles of municipal roadway with a tree canopy that overhangs the road. Ice/wet snow accumulations can bring down considerable branches, which does complicate the snow removal process and delay the Town's ability to clear the roads during winter storms.

It is worth noting that Benson narrowly escaped the New England ice storm in January 1998. This was a crippling event with historic impacts and long duration power outages.

High Risk Hazard History

Note: These are the most up to date significant events impacting Benson.

Inundation Flooding and Fluvial Erosion

7.1.2017: 3-4" rain the previous 3-4 days with flash flooding on 7/1/17: \$18,000 regional damage to roads

6.25-7.11.2013: DR4140 with heavy rain over multiple days: \$104,211 local damage

8.28.2011: DR4022 Tropical Storm Irene with +/-5" rain: \$156,575 local damage (\$3,080 Individual / \$153,495 Public)

5.1.2011: record lake flood levels: \$250,000 regional damage

8.8.2008: 3" rain: \$28,000 local damage

10.7.2005: 3-4" rain: no reported impact

4.23.2001: lakeshore flooding: \$2,100 local damage

12.16.2000: 2-4" rain: no reported impact

9.16.1999: DR1307 Tropical Storm Floyd with 4-5" rain: no reported impact

1.19.1996: DR1101 snow melt/rain: \$8,324 local damage

Severe Wind/Hail

6.13.2018: 50 mph wind: downed trees/power lines: \$5,000 local damage

10.30.2017: 40 mph wind: \$100,000 regional damage

5.29.2012: 1 ¼" hail: no reported impact

8.16.2007: 60-80 mph winds: downed trees/power lines: \$25,000 local damage

6.19.2007: 50 mph winds: \$5,000 local damage

6.25.1998: DR1228 with lightning and high wind: downed trees/power lines, major power outages: \$171,600 local damage

Extreme Cold/Snow/Ice/Wind

2.1.2015: Record cold month with 15 to 20+ days below zero: no reported impact

1.7.2015: 0 to 10 degrees with winds of 15-30 mph Creating wind chills colder than -20 to -30 below zero: no reported impact

12.9.2014: DR4207 with 10-20" snow: \$100,000 regional damage

3.12-13.2014: 8-24" snow and wind gusts to 35-40 mph: \$35,000 regional damage

12.26.2012: Snowfall rate of 1-2" per hour with accumulations of 6-8": no reported impact

2.23.2010: 6-30" snow: \$100,000 regional damage

12.11.2008: 5" snow with sleet and freezing rain resulting in glaze coating of ice: no reported impact

4.15-16.2007: DR1698 "Nor'icane" with 3" snow and rain with winds of 60 to 80 mph: \$1,000,000 regional damage

2.14.2007: 18-30" snow: \$200,000 regional damage

12.6.2003: 12-18" snow: \$20,000 regional damage

Vulnerability Summary

Inundation Flooding and Fluvial Erosion

Location¹: Town-wide

Vulnerable Assets¹: Houses, roads, bridges, culverts

Extent: 5" of rain; extent data for fluvial erosion is unavailable

Impact: \$156,575 (local) / \$250,000 (regional)

Probability: Likely

Severe Wind/Hail

Location¹: Town-wide

Vulnerable Assets¹: Houses, trees, power lines

Extent: 1 ¼" hail and 80 mph winds

Impact: \$171,600 (local) / \$100,000 (regional)

Probability: Highly Likely

Extreme Cold/Snow/Ice/Wind

Location¹: Town-wide

Vulnerable Assets¹: Houses, roads, trees, power lines, bridges, culverts

Extent: Up to 30" of snow; up to 0.5" of ice; 80 mph winds; 15 to 20+ days below zero

Impact: \$1,000,000 (regional)

Probability: Highly Likely

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

6 Hazard Mitigation Strategy

The high risk 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 Committee 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, 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; 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. Benson'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: a full-time Town Clerk/Treasurer; a part-time Zoning/Floodplain Administrator; a part-time Road Commissioner and two full-time Highway Department employees; and a part-time Wastewater Department employee.

In addition to paid staff, there is a 5-member Selectboard and Planning Commission.

To augment local resources, the Town has formal mutual aid agreements for emergency response – fire, EMS, and police and informal (verbal) agreements for 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 available through the State for floodplain administration.

Strengths: Staff are trained on hazards and mitigation. Coordination between departments is effective. Past success in securing grants for public infrastructure improvements.

Areas for Improvement: Maintenance programs to reduce risk could be more robust, particularly that for tree trimming within the municipal road right-of-way.

There is poor radio reception in many areas of town. Emergency dispatch services are problematic – do not always send the right resources; not recording responding and arrival times; delays between requests for assistance and resources being paged.

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 comprehensive land use plans, capital improvement programs, transportation plans, small area development 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: Existing land use ordinances are effective at reducing hazard impacts and they are adequately administered and enforced; codes and standards are adequately administered and enforced; elements of hazard mitigation are included in other local plans.

Areas for Improvement: Protect river corridors from new encroachment (River Corridor Bylaws); capital planning; and continuity of operations planning.

Land Use Bylaws: Adopted March 7, 2006, last Amended April 16, 2018

Description: Provide for orderly community growth.

Relationship to Natural Hazard Mitigation Planning: Establish a Flood Hazard Area District to maintain the flood water carrying capacity of all flood-prone areas in the Town and to ensure that any structures or uses permitted within these areas are properly protected from flood hazards.

Flood Hazard Area Regulations: Adopted June 30, 2008

Description: Apply to all areas in the Town identified as areas of special flood hazard.

Relationship to Natural Hazard Mitigation Planning: Ensures 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 February 18, 2013

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 2019

Description: The Benson Fire Department's ISO rating is 9/10. 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 December 4, 2017

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: The Emergency Management and Flood Resilience sections of the Town Plan include specific goals and policies related to natural hazards.

Local Emergency Management Plan: Last adopted on April 25, 2019

Description: Establishes lines of responsibility during a disaster as well as high risk populations, hazard sites, procedures, and resources.

Relationship to Natural Hazard Mitigation Planning: The LEOP 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.

Stormwater Infrastructure Mapping Study: April 2013

Description: Developed up to date municipal drainage system maps and established locations for BMP stormwater retrofit sites.

Relationship to Natural Hazard Mitigation Planning: Assist with emergency preparedness for large rainfall and spring snowmelt runoff events and identified several structural projects to improve the stormwater drainage system capacity.

Financial

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

Benson's current annual budget is approximately \$950,000, with \$570,920 to fund the Highway Department. In addition to property tax revenues, the Town collects fees for sewer service. 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: Maximizing grant opportunities, especially through VTrans for transportation infrastructure projects.

Areas for Improvement: Capital improvement planning and the establishment of reserve funds.

Education and Outreach

Benson has several education and outreach opportunities that could be used to implement mitigation activities and communicate hazard-related information:

- The municipal fire department is actively involved in presenting fire safety programs in the school.
- There are active supervisory union and local school safety committees.
- The United Church of Benson hosts a senior meals program. In addition, there are several well-established community groups – CATS ATV Club, EAST Snowmobile Club, Benson Fish & Game Club, and Benson Busy Buddies – 4-H Group.
- The Poultney Mettowee Conservation District provides educational outreach, technical assistance, and financial support to communities and landowners to protect healthy soil and clean water and preserve the ecological integrity and economic vitality of communities. One of their current project areas is stormwater mitigation.

Strengths: Multiple programs/organizations are already in plan in the community and the Town has a strong following on Front Porch Forum and a monthly community newsletter – Benson Bulletin.

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 1985. The Zoning Administrator enforces NFIP compliance through permit review requirements in its zoning and FHA regulations. Benson's regulations:

1. Require any new residential construction within the 100 year floodplain to have the lowest floor, including the basement, elevated above the 100 year flood elevation. The community must maintain a record of all lowest floor elevations or the elevations to which buildings in flood hazard areas have been flood proofed;
2. Allow non-residential structures to be elevated or dry flood proofed; and
3. Require anchoring of manufactured homes in flood prone areas.

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

1. Provide information to residents on safe building initiatives and the availability of flood insurance;
2. Adopt river corridor protection language in the flood hazard regulations bylaw; and
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.

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; AND
4. Local Hazard Mitigation Plan.

17.5% funding for eligible communities that also have:

1. FEMA's Community Rating System (CRS) participation; OR
2. Fluvial Erosion Hazard (FEH) or other river corridor/floodplain protection bylaw that meets or exceeds the Vermont Agency of Natural Resources FEH model regulations and scoping guidelines.

Mitigation Action Identification

The Hazard Mitigation Committee discussed the mitigation strategy, reviewed projects from the 2009 Plan, and identified possible new actions from the following categories for each of the high 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 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 1) allow for wise use of property within river corridors that minimizes potential damage to existing structures and development from flood-related erosion, 2) discourage encroachments in undeveloped river corridors and 3) reasonably promote and encourage infill and redevelopment of designated centers that are within river corridors.

Improve Stormwater Management Planning: Rainwater 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 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.

Structure and Infrastructure Projects

Remove Existing Structures from Flood Hazard Areas: Communities may remove 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 low impact development practices; 2) increasing dimensions of 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 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 and 2) floodproofing critical facilities.

Protect Power Lines: Power lines can be protected from the impacts of natural hazards by: 1) incorporating inspection and maintenance of hazardous trees within the road right-of-way into the drainage system maintenance process and 2) burying power lines.

Retrofit Critical Facilities: Critical facilities can be protected from the impacts of high winds and winter storms. Techniques include: 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.

Natural Systems Protection

Protect and Restore Natural Flood Mitigation Features:

Natural resources provide floodplain protection, riparian buffers, 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; and 4) 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. Education and Awareness Programs for property owners may include: 1) educating building owners on how to protect their pipes, including locating water pipes on the inside of building insulation or keeping them out of attics, crawl spaces, and vulnerable outside walls and 2) informing homeowners that letting a faucet drip during extreme cold weather can prevent the buildup of excessive pressure in the pipeline and avoid 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.

Mitigation Action Evaluation and Prioritization

For each mitigation action identified, the Hazard Mitigation Committee 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 Committee 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 Committee 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
Complete Road Erosion and Culvert Inventories and Develop Road Stormwater Management Plan	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	2	Yes
Improve Stormwater Management Planning by Completing a Stormwater Management Plan	0	1	1	1	1	1	5	1	Yes
Manage Development in Erosion Hazard Areas by Adopting River Corridor Bylaws	1	1	1	-1	1	1	4	1	Yes
Structure and Infrastructure Projects									
Stabilize Outfalls	1	1	1	1	1	1	6	1	Yes
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
Routinely Clear Debris from Support Bracing Underneath Low-Lying Bridges	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
Protect Power Lines by Inspecting and Removing Hazardous Trees in Road ROW	1	1	1	1	1	1	6	1	Yes
Increase Drainage/Absorption Capacities with Low Impact Development Practices	0	1	1	1	1	1	5	1	Yes
Increase Dimension of Drainage Culverts in Flood-Prone Areas	1	1	1	1	1	1	6	2	Yes
Elevate Roads Above Base Flood Elevation to Maintain Dry Access	1	1	1	1	1	1	6	2	Yes
Install Back-up Generators or Quick Connect Wiring at Critical Facilities	1	1	1	1	1	1	6	2	Yes
Bury Power Lines	1	1	1	-1	1	1	4	3	No
Remove Existing Structures from Flood-Prone Areas	No existing structures in flood-prone areas, so the Committee did not evaluate this action.								
Floodproof Critical Facilities	No critical facilities that require floodproofing, so the Committee did not evaluate this action.								
Retrofit Critical Facilities to Strengthen Structural Frames to Withstand Wind and Snow Loads	No existing critical facilities that require retrofits, so the Committee did not evaluate this action. The Town Garage needs to be replaced, not retrofitted.								
Anchor Roof-Mounted Mechanical Equipment on Critical Facilities	No critical facilities with roof-mounted mechanical equipment, so the Committee did not evaluate this action.								
Natural Systems Protection									
Stabilize Stream Banks	1	1	1	1	1	1	6	2	Yes
Establish Vegetative Buffers in Riparian Areas	0	0	1	1	1	1	4	1	Yes
Remove Berms	No known berms, so the Committee did not evaluate this action.								
Restore Incision Areas	No known incision areas, so the Committee did not evaluate this action.								
Education and Awareness Programs									
Educate Property Owners about Freezing Pipes	1	1	1	1	1	1	6	1	Yes
Assist Vulnerable Populations	The Town already has a system in place to assist vulnerable populations – see 2019 Local Emergency Management Plan.								
Keep the Ditches Clean Campaign	In 2019, the Town began an educational campaign to prevent property owners from disposing of yard waste in the roadside ditches.								

¹ VTrans inspects all bridges in the state every two years. Bridge inspection reports are available on the VTrans website.

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 \$75,000; 2 = \$75,000 to \$500,000; 3 = more than \$500,000

C/B – Are the costs reasonable compared to the probable benefits?

Table 6: Mitigation Action Implementation

Mitigation Action	Lead Party	Potential Funding	Timeframe
Local Plans and Regulations			
Integrate Mitigation into Capital Improvement Programs	Selectboard	Not Applicable	Annually, during budget preparation
Complete Road Erosion and Culvert Inventories and Develop Road Stormwater Management Plan	Road Foreman	Municipal Budget; VTrans Grant	7/1/19 – 12/31/19
Plan for and Maintain Adequate Road and Debris Clearing Capabilities	Selectboard & Road Foreman	Municipal Budget; Reserve Funds	Ongoing
Evaluate the need for a Stormwater Management Plan	Selectboard & Poultney Mettowee Conservation District	Municipal Budget; Ecosystem Restoration Grant	1/1/20 – 12/31/20
Examine Town Plan and ensure identified hazard areas and needed strategies are addressed	Planning Commission	Town General Fund; Municipal Planning Grant	At next Town Plan update in 2025
Examine zoning regulations and ensure identified hazard areas are addressed	Planning Commission	Town General Fund; Municipal Planning Grant	1/1/20 – 12/31/21
Manage Development in Erosion Hazard Areas by Adopting River Corridor Bylaws	This action was not selected for implementation because it lacks political support.		
Structure and Infrastructure Projects			
Stabilize Outfalls: 1) Cold Springs Road 2) Young Road 3) Lake Road 4) East Road 5) Stony Point	Road Foreman	Municipal Budget; VTrans Grant; FEMA HMGP/PDM	1) 2019 2) 2019 3) 2020 4) 2022 5) 2022
Re-establish Roadside Ditches: 1) See Road Stormwater Management Plan (to be developed in 2019)	Road Foreman	Municipal Budget; VTrans Grant; FEMA HMGP/PDM	In accordance with Municipal Roads General Permit
Routinely Clean and Repair Stormwater Infrastructure	Road Foreman	Municipal Budget; VTrans Grant	Annually or as needed
Routinely Clear Debris from Support Bracing Underneath Low-Lying Bridges: 1) Small amount of debris noted at Bridge #21 2) Gravel on abutment noted at Bridge #20	Road Foreman	Municipal Budget	7/1/19 – 10/31/19 then annually or as needed
Review VTrans Bridge Inspection Reports and Plan for Identified Repairs to Prevent Scour: 1) Bridge #17 2) Bridge #19 3) Bridge #20 4) Bridge #21	This action was not selected for implementation because there are no identified repairs for scour. Per the 2017 inspection reports, all town-owned bridges are in good condition. The Road Foreman will monitor future reports (the next are due in 2019) and address repairs as needed.		
Protect Power Lines by Inspecting and Removing Hazardous Trees in Road ROW	Road Foreman	Municipal Budget	Annually or as needed
Increase Dimension of Drainage Culverts in Flood-Prone Areas: 1) Root Pond Road 2) Temple Road 3) Frazier Hill Road 4) Stage Road	Road Foreman	Municipal Budget; VTrans Grant; FEMA HMGP/PDM	1) 2020-2022
Elevate Roads Above Base Flood Elevation to Maintain Dry Access: 1) Section of Route 144	Selectboard	Municipal Budget; VTrans Grant; FEMA HMGP/PDM	1) 2020-2025

Mitigation Action	Lead Party	Potential Funding	Timeframe
Install Back-up Generators or Quick Connect Wiring at Critical Facilities ² : 1) Town Office 2) Community Center 3) Upper Fire Station 4) Town Garage	Selectboard	Municipal Budget; FEMA HMGP/PDM	1/1/20 – 12/31/30
Increase Drainage/Absorption Capacities with Low Impact Development Practices	This action was not selected for implementation because there are no known projects at this time. In 2010, with assistance from the Poultney Mettowee Conservation District, the Town installed two bioretention swales at the intersection of Lake and Stage Roads.		
Bury Power Lines	This action was not selected for implementation because it lacks political support.		
Natural Systems Protection			
Conduct a Study to Evaluate the Need for Vegetative Buffers in Riparian Areas	Selectboard & Poultney Mettowee Conservation District	Municipal Budget; Ecosystem Restoration Grant	1/1/20 – 12/31/20
Study on Eroding Stream Banks	Selectboard & Poultney Mettowee Conservation District	Municipal Budget; Ecosystem Restoration Grant	1/1/20 – 12/31/20
Education and Awareness Programs			
Educate Property Owners about Freezing Pipes and other winterization practices by including mitigation information in Benson Bulletin & Front Porch Forum	Selectboard	Not Applicable	Annually in October

² Although the Benson Village School is a critical facility, the cost of stand-by power for the building has been determined to be significant. Therefore, the school is not included in this mitigation action at this time.

Process for Incorporating Plan Requirements into Other Planning Mechanisms

For Benson 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:

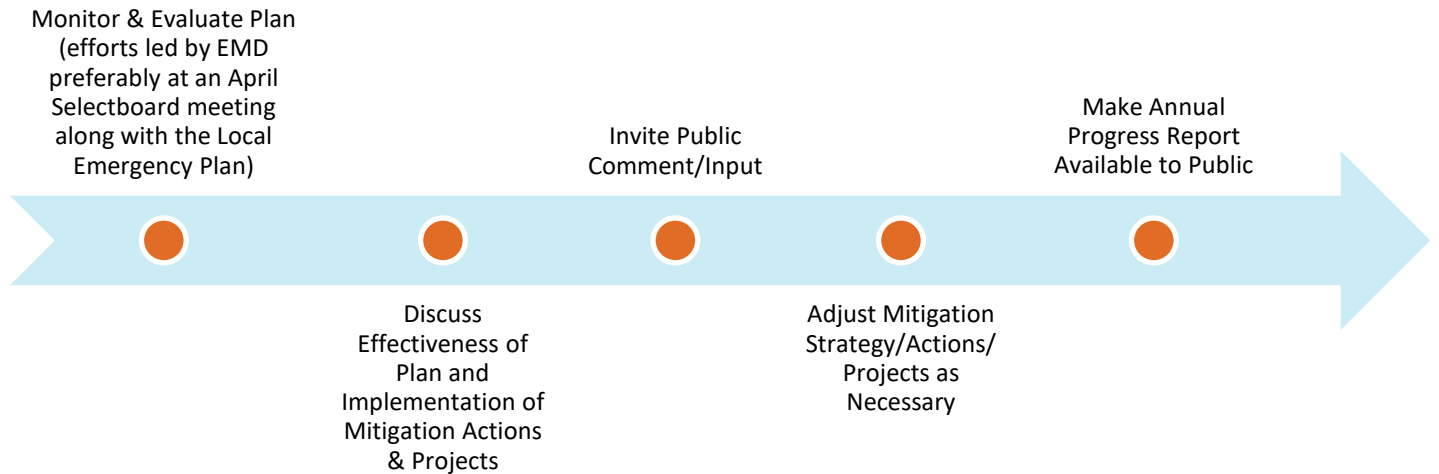
- The Selectboard will work with department heads to incorporate risk assessment and hazard mitigation goals into the capital planning efforts.
- The Road Commissioner will integrate the data, analysis, and maps from the risk assessment into the Road Stormwater Management Plan, which will be completed in 2019.
- The Planning Commission will integrate the hazard mitigation goals for disaster resiliency into the goals and objectives of the next Town Plan update in 2025.
- The Planning Commission will consider the data, analysis, and maps from the risk assessment in the next review of the local zoning and flood hazard area regulations in 2020.
- The Road Foreman will implement several mitigation infrastructure projects (e.g., increase dimension of drainage culverts in flood-prone areas, stabilize outfalls, re-establish/stabilize roadside ditches, road elevations) through existing plans (2019 Road Stormwater Management Plan).

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.

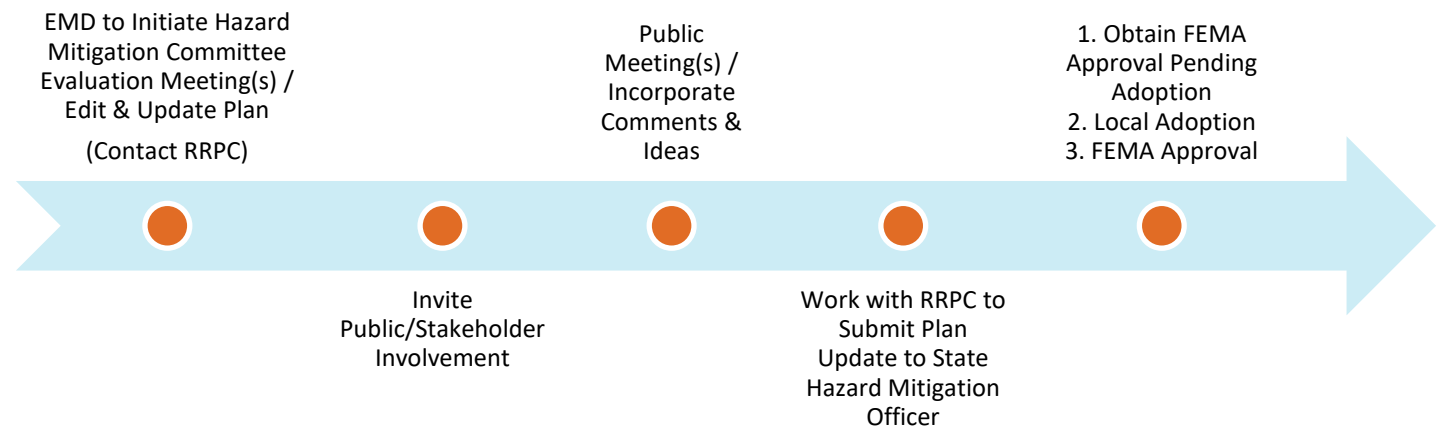
Monitoring and Evaluation

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



Updating

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



CERTIFICATE OF ADOPTION

10/21/2019

TOWN OF Benson, Vermont Selectboard

A RESOLUTION ADOPTING THE Benson, Vermont 2019 Local Hazard Mitigation Plan

WHEREAS, the Town of Benson has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the **2019 Benson, 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 Benson has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its **2019 Benson, 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 Benson; and

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

RESOLVED by Town of Benson Selectboard:

1. The **2019 Benson, Vermont Local Hazard Mitigation Plan** is hereby adopted as an official plan of the Town of Benson;
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 Benson this 21 day of October 2019.

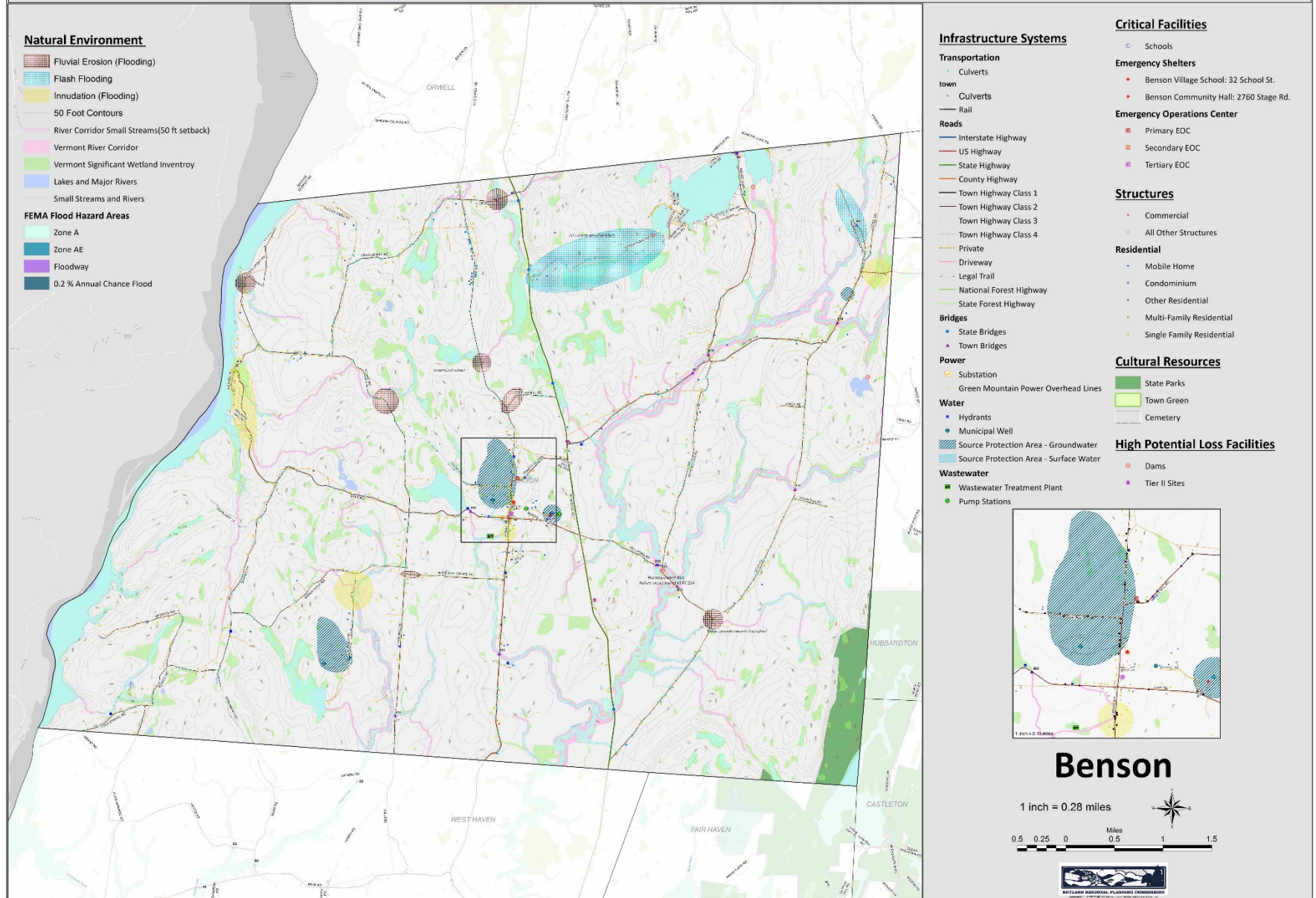

Vice Selectboard Chair


Selectboard Member

ATTEST


Town Clerk

Local Natural Hazards and Vulnerabilities Map



Mitigation Action	Who is Responsible	Approx. Time Frame & Potential Funding Sources	2019 Status Update
Continue to incorporate proposed strategies into Annual Budget and/or CIP	Selectboard	<ul style="list-style-type: none"> • Short Term • Local Resources 	This remains a priority.
Equip designated shelters and EOCs with generators.	Emergency Management Team	<ul style="list-style-type: none"> • Medium term • HSU funds 	This remains a priority.
Implement highway improvement plan for ditching and elevating roads to eliminate flooding problems on North Lake Road, Mill Pond Road, Ledge Road, Root Pond Road, Pleasant Valley Road	Road Crew	<ul style="list-style-type: none"> • Long term • Local Resources • State transportation funds • PDM-c or other mitigation funds 	Much work has been completed. This remains a priority. Ditching needs will be addressed in the Road Stormwater Management Plan to be completed in 2019.
Replace substandard culverts in accordance with State standards	Road Crew	<ul style="list-style-type: none"> • Medium Term • Local Resources • State funds 	Much work has been completed. This remains a priority.
Examine current Town Plan, bylaws and development regulations to ensure that identified hazard areas are addressed	Planning Commission and Selectboard	<ul style="list-style-type: none"> • Medium Term • Municipal Planning Grants 	This remains a priority.
Encourage State to improve Route 22A (add shoulders and other improvements) for general safety and to minimize risk of accidents involving hazardous material transport.	Selectboard	<ul style="list-style-type: none"> • Short Term • State aid 	This remains an all-hazards priority, not a natural hazards priority and therefore is no longer addressed in this plan.

Note: In the table above, time frames are defined as follows: short term equals 6 months to one year. Medium term equals 1-3 years. Long term equals 4+ years