Rutland Town, Vermont
Local Hazard Mitigation Plan

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Other Key Partners:
Rutland Regional Planning Commission
Rutland Natural Resources Conservation District
Western Vermont Floodplain Manager

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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 Rutland Town (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:

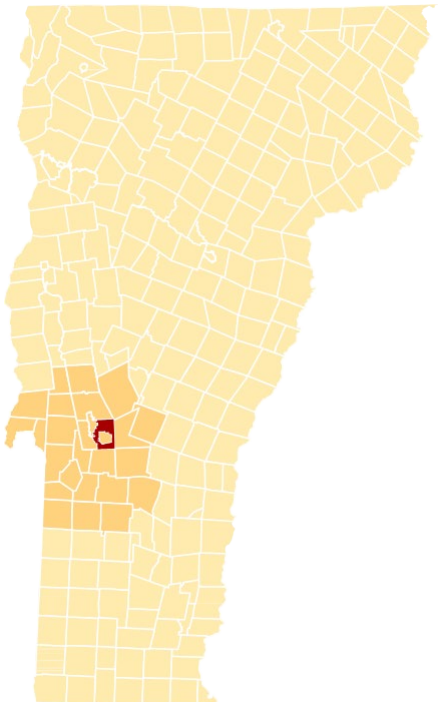
- Identifying actions for risk reduction that are agreed upon by stakeholders and the public;
- Focusing resources on the greatest risks and vulnerabilities;
- Increasing education and awareness of threats and hazards, as well as their risks;
- Communicating priorities to State and Federal officials;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

Rutland Town has a unique shape, rectangular with a donut hole in the middle that is Rutland City. Chartered in 1761, the Town was later divided to create the towns of Proctor and West Rutland and Rutland City. While the boundaries of Rutland Town and Rutland City are largely imperceptible to the average person, Rutland Town's development pattern is much more diverse than Rutland City proper. In comparison to most other towns in the Rutland Region, Rutland Town has a moderately flat terrain with some steeper slopes located in the northwest section of town.



Development here varies widely from active farm and grazing land to compact and more rural residential development to large industrial and commercial uses. The Town is home to one of the most successful locally-based dairies in Vermont. Thomas Dairy, located on US Route 7 North, has been in operation over several generations and provides an important function as a local employer and distributor of milk and other products throughout the region. Residential development is densest in the eastern and northern sides of Town. Large industrial uses are clustered along Business Route 4 as well as in the vicinity of Quality Lane. These are major manufacturing and employment centers of regional

importance. Both areas are near major rail freight lines. The Town is one of the few towns in Rutland County to have major commercial development in the form of large chain stores. These uses are primarily located along US Route 4 East and US Route 7 South.

A hydroelectric dam, operated by Green Mountain Power, is in Center Rutland and another is at the Mill Village site.

The Town has several recreational facilities within its borders which include outdoor sports fields, basketball courts, a playground at the elementary school, and a pool serving a variety of groups.

Demographics and Growth Potential

The 2016 American Community Survey Five-Year Estimates prepared by the U.S. Census Bureau shows an estimated population of 4,058 for Rutland Town, and 1,918 housing units. Of the population included in the survey, 20% were 19 or under, and 26% were 65 or over, with a median age of 50.6 years, substantially older than Vermont's already high median age of 42. The population of Rutland Town doubled between 1960 and 1980. Since 1980, the rate of population growth has slowed in recent decades.

Significant population growth is not predicted for the future – although parts of Town will likely continue to feel the pressure for additional residential development as some population shifts from Rutland City and surrounding towns.

Precipitation and Water Features

Average precipitation is 40.45 inches of rain. The most rain falls during the 31 days centered around July 23. Average snowfall is 74 inches. The most snow falls during the 31 days centered around February 1.

Several waterways flow through Rutland Town, including Otter Creek – one of Vermont's most major rivers stretching approximately 90 miles in length before draining into Lake Champlain. Otter Creek flows north with Rutland Town located in the first 1/3 of the total length. While Otter Creek has a history of flooding and ice jams, problems are less extensive here than downstream.

Two major tributaries, the Clarendon River and East Creek, join Otter Creek within Town boundaries.

In addition, 562 acres within Rutland Town have been designated on the National Wetlands Inventory. These play an important function in water absorption and holding capacity that thereby reduces the hazards of flooding and replenishes the groundwater supplies.

Water and Sewer Supply

The Town does not have a single traditional water system or service area that is provided water service by the municipality. Instead several smaller Fire Districts/Water Corporations provide water service to discrete areas in the Town. Most of these rely on a groundwater well; some are connected to the Rutland City distribution system and purchase water as a consecutive system. Town water service along US Route 7 South is the result of an inter-municipal agreement with Rutland City. Town water service along US Route 4 is the result of an inter-municipal agreement with West Rutland. Those in the Town not served by a Fire District or public system, obtain water on-site using wells or springs.

The Town provides wastewater collection (pumped and conventional gravity) to areas in the north, south, and west. Treatment of collected wastewater takes place at the Rutland City sewage treatment plant. Most residents use soil based systems.

Transportation

US Route 7, US Route 4 (including portions of Business 4, the Route 4 bypass, and Route 4 East) and VT Route 3 form the major roadways through Rutland Town. The other 43+ miles of town roads serve the needs of current residents. The local road network is maintained by the Town Highway Department.

The Town is responsible for a total of two bridges – #5 on East Pittsford Road and #9 on McKinley Avenue. Ten bridges in Rutland Town are in the state system. Ten of the bridges have a span of over 20 feet. Under current Federal regulations, any bridge 20 feet or over is eligible for Federal funding assistance.

Due to the Town's proximity to Rutland City, Town residents can benefit from the presence of public transportation provided by Marble Valley Regional Transit District.

Electric Utility Distribution System

Electric service to approximately 2,259 customers is provided by Green Mountain Power via several circuits. 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	1.52
Avg length of an outage in hours	3.82
# of hours the typical customer was without power	5.80
2018 only	
Avg # of times a customer was without power	0.99
Avg length of an outage in hours	1.70
# of hours the typical customer was without power	1.68

The longest power outage affecting the greatest number of customers between 2015 and 2018 was 58.57 hours long and impacted 25 customers. During this same time period, there was an 85.53 hour long outage, but it only impacted two customers.

Emergency Management

Rutland Town has two fire stations – both of which are operated by a 50-member on-call department. When the resources within the Town are maximized, additional assistance is available through a mutual aid system with surrounding communities.

Rutland Town continues to develop its own Police Department. It is currently staffed with five officers - four full- and one part-time. In addition, a Constable provides law enforcement in Rutland Town. Vermont State Police are called upon as needed.

The nearest hospital is the Rutland Regional Medical Center. Ambulance service is provided by Rutland Regional Ambulance.

Emergency Management Planning

The Town has an appointed Emergency Management Director (EMD) who 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.

Table 2: Plan Development Process

November 8, 2018: Hazard Mitigation Committee kick-off meeting. Discussed the status of the current plan, the plan development process, potential hazards, and next steps.

November 2018: Committee reviewed and provided updates to the community profile and storm history.

December 18, 2018: Hazard Mitigation Committee meeting. Discussed storm history and began discussing local vulnerabilities and community capabilities.

January 31, 2019: Hazard Mitigation Committee meeting. Re-visited some aspects of the planning process. Continued work on hazard identification, risk assessment, and community capabilities.

February 1 and 5, 2019: Public notice posted on RRPC and Town 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 Rutland City, Mendon, Shrewsbury, Clarendon, West Rutland, Proctor, Pittsford, and Chittenden. Mailed notice to Fire District Prudential Committees. Name and contact information provided in notices for more information.

February 27, 2019: Public comment received from Rutland Town Fire District 4 regarding vulnerable asset – booster pump station without permanent standby power. Information incorporated into draft Plan.

March 7 & 19, 2019: Working draft of Plan shared with Town Selectboard and Planning Commission at public meetings for input on hazard identification and mitigation action development. No comments from Selectboard or Planning Commission.

March 27, 2019: Hazard Mitigation Committee meeting. Completed work on hazard identification, risk assessment, mitigation goals, community capabilities, and changes since the 2009 plan. This meeting was publicly warned by posting in the town office – no public comment.

May 8, 2019: Hazard Mitigation Committee meeting. Completed work on mitigation actions and changes to the Plan since 2009. Committee approved final Plan draft. This meeting was publicly warned by posting in the town office – no public comment.

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, Road Commissioner, and Selectboard Administrative Assistant. The EMD and Administrative Assistant are also members of the Rutland Town Volunteer Fire Department.

Plan Development Process

The 2019 Rutland Town 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 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.**

May 28, 2019: Draft Plan shared with Selectboard for review and approval to post for public comment. Comments from Selectboard incorporated into draft Plan.

June 5, 2019: Draft Plan emailed to local Planning Commission and Selectboard/Planning Commission chairs and Town Clerks in the neighboring towns of Rutland City, Mendon, Shrewsbury, Clarendon, West Rutland, Proctor, Pittsford, and Chittenden. Draft Plan posted on the RRPC and Town websites and at the town office for public comment. Name and contact information provided in notices for submitting public comments.

June 24, 2019: No public comments received during the public comment period.

June 26, 2019: Draft Plan submitted to VEM for review.

July 8, 2019: Incorporated VEM comments into Draft Plan.

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 2-3 new residential houses built – and they have always been built outside of the floodplain. Rutland Town rarely sees commercial development – in the past 10 years, one apartment complex with four units was built. Also, new subdivisions are rare – the last one was built over 10 years ago. This development has not made the Town more vulnerable, since development has not occurred in flood zones or other hazardous areas.

There has been some change in the Town's mitigation action priorities between this plan update and the 2009 plan. In 2009, flooding was the Town's highest risk natural hazard.

Although flooding remains a high risk natural hazard, vulnerabilities to severe thunder and/or winter storms have increased since 2009.

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 Stormwater Management Plan

2019 FEMA NFIP Insurance Reports

2018 State of Vermont Hazard Mitigation Plan

2018 Highway Dept. Capital Improvement Plan

2018 VTrans Inspection Report – Bridge #5

2018-2014 Green Mountain Power Outage Data

2017 Moon Brook Flow Restoration Plan

2017 VTrans Inspection Report – Bridge #9

2016 Rutland Town Plan

2016 American Community Survey Five-Year Estimate

2012 Stormwater Infrastructure Mapping Study

2008 Flood Hazard Area Regulations

2009 Rutland Region All Hazards Mitigation Plan

1999 Subdivision 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.

5 Hazard Identification and Risk Assessment

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.

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**.

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

- 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 Natural Hazards and Vulnerabilities Map in **Appendix B**.

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 Tropical Storm/Hurricane Landslide Ice Jam Dam Failure Tornado	Fluvial Erosion	3	2	3	1	2	2.00	6.00
	Inundation Flooding	3	1	2	2	2	1.75	5.25
	Wind/Hail	3	1	2	2	2	1.75	5.25
Winter Storm	Cold/Snow/ Ice/Wind	3	2	2	1	2	1.75	5.25
Drought	Heat	2	2	2	1	1	1.50	3.00
	Drought	2	2	2	1	1	1.50	3.00
Wildfire	Wildfire	1	1	1	1	1	1.00	1.00
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

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 damage and $2.5 million in crop damage 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 damage; with $1.9 million due to flash flood event in July 2017.

Flooding is a high risk to the Town. The most severe flood in Rutland Town occurred in 1947 when the Chittenden Dam flashboards failed causing much of the northeast section of Town and much of Rutland City to become inundated. Since that disaster, measures have been taken to prevent such an occurrence from repeating.

The worst recurring flood problems tend to cover the roads and disrupt traffic flow, but these are slow rising waters and damage is typically minimal. Frequent problem areas include:

- Route 7 / Post Road intersection.
- Business Route 4 in the vicinity of Fire Station #2 (near the intersection of West Proctor Road).
- Near Fire Station #1 on McKinley Avenue. This Station is above the floodplain. A State Police barracks, DMV and VTRANS garage are located nearby and are raised above the base flood elevation – though technically surrounded by floodplain. Fire Station #1 is designated as a place to relocate State Police operations in the event flooding becomes a problem.

As shown on the Local Natural Hazards and Vulnerabilities Map in Appendix B, several rivers in Rutland Town have FEMA designated floodplain including Otter Creek. There are many (+/-40) structures located in the Special Flood Hazard Area including two municipal wastewater pump stations and a Green Mountain Power substation. Seven of these structures are covered by flood insurance. According to FEMA, none of these are repetitive loss properties.

The most significant floodplain area is in the southern section of Town with very little development around it beyond agricultural lands. So, damage of structures is minimal, and crops are not severely impacted because flooding events typically take place outside of the growing season.

Flash flooding events periodically impact McKinley Avenue and the East Pittsford Road near Tamarack Lane – this area is downstream of a wetland (locally known as McNaley Swamp) with a sizeable beaver dam. Flash flooding on East Pittsford Road would be exacerbated should the beaver dam breach.

Numerous rivers and streams in Rutland Town have undergone Stream Geomorphic Assessment (SGA), and in some cases River Corridor Management Plans have been developed. These studies and plans are vital in determining river and stream alterations, which affect water flows and could potentially lead to future flood damage. The SGAs and River Corridor Plans 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.

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; Rutland Town is susceptible to high directional winds. Many storms with high winds result in downed trees, damaged phone and power lines. Rutland Town has made significant improvements to minimize its vulnerability to power outage caused by a severe thunderstorm. Generators or generator hook-ups have been installed at most public buildings/critical facilities, including: both fire stations, the school, municipal office, town garage, and wastewater pump station on Post Road.

Many of the small Fire Districts/Water Corporations have a back-up source of power or redundant source - Grandview Acres Water Corporation, Rutland Town Fire District 5, Rutland Town Fire District 6, and Rutland Town Fire District 1. As of 2019, Rutland Town Fire District 4 has installed a power switch gear and quick connection at their booster pump station but does not have a permanent standby generator with supplemental fuel supply. The Rutland Town Mendon Fire District 2 and Rutland Town Fire District 4 do not currently have a back-up power source. The status of others is currently unknown – Colonial Estates Water Corporation, Rutland Town Fire District 11, and Rutland Town Fire District 8.

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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).

Rutland Town is about as vulnerable to snow and ice storms as it is to flooding. Typically, towns' vulnerability to snow and ice storms are power outages and loss of road accessibility. As described previously, the Town has already taken several measures to reduce its vulnerability to power outages. Snow accumulation typically has not made the Town vulnerable to loss of road accessibility. The Town's contracted fleet of snow plows has ensured that roads are accessible, even in major snow accumulation events.

High Risk Hazard History

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

Inundation Flooding and Fluvial Erosion

6.25-7.11.2013: DR4140 with heavy rain over multiple days: $420,000 regional damage
8.28.2011: DR4022 Tropical Storm Irene with 10" rain: $21,025 local damage
10.1.2010: 3-4" rain: $40,000 regional damage
12.17.2000: 2" rain and flashboard breach on Glen Brook Dam: bridge abutment erosion at Bridge 5 on East Creek: $17,000 local damage
12.16.2000: 2-4" rain: $17,234 local damage
9.16.1999: DR1307 Tropical Storm Floyd with 5+" rain, 44 mph winds: no reported impact
4.1.1998: spring flooding: $2,500 local damage

Severe Wind/Hail

4.1.2018: 60 mph winds: downed trees/power lines: $50,000 regional damage
5.5.2017: 64 mph winds: downed trees/power lines: $500,000 regional damage
10.30.2017: 40 mph winds: downed trees/power lines: $100,000 regional damage
6.8.2015: 50 mph winds: downed trees: $3,000 local damage
5.27.2014: 1 ¾" hail: $75,000 regional damage
6.23.2013: 60 mph winds: downed trees/power lines: $30,000 regional damage
10.29.2012: 50 mph winds: downed trees/power lines: $25,000 regional damage
6.9.2011: 50 mph winds: downed trees/power lines: $10,000 regional damage
7.21.2010: ¾" hail and 55 mph wind: downed trees/power lines: $50,000 regional damage

Extreme Cold/Snow/Ice/Wind

2.1.2015: Record cold month with 15 to 20+ days below zero: no reported impact
1.7-1.8.2015: 0-10 above with winds of 15-30 mph creating wind chills colder than 20-30 below zero: no reported impact
12.9.2014: DR4207 with 11" wet snow: $100,000 regional damage
3.12-13.2014: 8-24" snow and wind gusts to 35-40 mph: $5,560 local damage
12.26.2012: 13" snow: $20,000 regional damage
2.23.2010: 6-30" snow: $300,000 regional damage
12.11.2008: 5-9" snow with sleet and freezing rain resulting in up to 0.5" ice: no reported impact
4.15-16.2007: DR1698 "Nor'icane" with 3" snow and rain, winds of 60 to 80 mph: 3-day power outage at Town Office and 7-day power outage on Killington Avenue: $35,492 local damage

Vulnerability Summary

Inundation Flooding and Fluvial Erosion

Location[1]: Town-wide

Vulnerable Assets[1]: Houses, roads, bridges, culverts, wastewater pump stations (Town and Fire District #1)

Extent: 10" of rain; extent data for fluvial erosion is unavailable

Impact: $21,025 (local) / $420,000 (regional)

Probability: Likely

Severe Wind/Hail

Location[1]: Town-wide; east and northeast sections of the Town are most vulnerable due to topography

Vulnerable Assets[1]: Houses, commercial buildings, trees, power lines

Extent: 1 ¾" hail and 60 mph winds

Impact: $3,000 (local) / $500,000 (regional)

Probability: Likely

Extreme Cold/Snow/Ice/Wind

Location[1]: Town-wide

Vulnerable Assets[1]: 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: $35,492 (local) / $300,000 (regional)

Probability: Likely

[1] See **Appendix B:** Local Natural 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. Rutland Town'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 Selectboard Administrative Assistant; a part-time Floodplain Administrator; a full-time Town Clerk/Treasurer; a full-time Assistant Town Clerk/Treasurer; a full-time Road Commissioner with 2 full-time Highway Department employees.

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 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.

Areas for Improvement: Maintenance programs to reduce risk could be more robust, particularly that for cleaning out the stormwater collection system.

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 adequately administered and enforced; codes and standards are adequately administered and enforced; elements of hazard mitigation are included in other local plans; capital planning.

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

Subdivision Regulations: Adopted September 15, 1980

Description: The Subdivision Regulations for Rutland Town provide for orderly community growth.
Relationship to Natural Hazard Mitigation Planning: The Subdivision Regulations establish requirements so that subdivided land can be used safely for building purposes without danger to health or peril from fire, flood, or other menace.

Flood Hazard Area Regulations: Adopted July 6, 1987

Description: The Flood Hazard Area Regulations apply to all areas in the Town identified as areas of special flood hazard.
Relationship to Natural Hazard Mitigation Planning: These regulations 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 December 3, 2013

Description: The Road and Bridge Standards provide the minimum codes and standards which apply to 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 on November 24, 2014

Description: The Rutland Town Fire Department's ISO rating is 05/5Y. 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 June 28, 2016

Description: The Town of Rutland Municipal Plan provides 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 Plan include specific goals and policies related to natural hazards.

Local Emergency Management Plan: Last adopted on April 30, 2019

Description: The Local Emergency Management Plan (LEMP) establishes lines of responsibility during a disaster as well as high risk populations, hazard sites, procedures, and resources. The purpose of this plan is to guide municipal emergency management operations.
Relationship to Natural Hazard Mitigation Planning: The LEMP 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.

Highway Department Capital Improvement Plan: June 2018

Description: Comprehensive plan for equipment replacement and infrastructure projects necessary to improve transportation network resiliency and water quality.
Relationship to Natural Hazard Mitigation Planning: Equipment replacement planning strengthens Town's ability to maintain adequate road and debris clearing capabilities and infrastructure improvements are designed to minimize or eliminate flood impacts on hydrologically-connected road segments.

Stormwater Management Plan: January 2019

Description: Plan with several strategies for controlling stormwater runoff pollution within the Moon Brook watershed.
Relationship to Natural Hazard Mitigation Planning: Strategies are designed to control sediment, increase stormwater drainage system capacity, increase vegetated buffers in riparian areas, and regulate development through a stormwater ordinance.

Financial

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

Rutland Town's current annual budget is approximately $2.7 million, with $964,250 to fund the Highway Department. In addition to property tax revenues, the Town collects fees for water and sewer services. 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: Every municipal department has a depreciation fund with a replacement schedule; successful at securing grants for municipal projects.

Areas for Improvement: None identified at this time.

Education and Outreach

Rutland Town 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 schools.
- There is a safety committee working on safety related school plans/programs.
- The Rutland Natural Resource 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 place in the community. Particularly strong social media presence.

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

National Flood Insurance Program Compliance

Rutland Town joined the NFIP in 1978. The Administrative Officer enforces NFIP compliance through permit review requirements in FHA regulations. Rutland Town'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 it 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:

1. Participate in FEMA's Community Rating System (CRS); OR
2. Adopt 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 in New Development and Redevelopment: A community-wide stormwater ordinance can address post-construction stormwater runoff to prevent future community development from increasing flood hazards to existing development.

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 (as was done to the wastewater pump station off Post Road).

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
Plan for and Maintain Adequate Road and Debris Clearing Capabilities	1	1	1	1	1	1	6	2	Yes
Improve Stormwater Management by Adopting a Stormwater Ordinance	0	1	1	1	1	1	5	1	Yes
Manage Development in Erosion Hazard Areas by Adopting River Corridor Bylaws	1	1	1	0	1	0	4	1	Yes
Structure and Infrastructure Projects									
Routinely Clean and Repair Stormwater Infrastructure	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
Review VTrans Bridge Inspection Reports[1] and Complete Identified Repairs to Prevent Scour	1	1	1	1	1	1	6	2	Yes
Increase Drainage/Absorption Capacities with Low Impact Development Practices	0	1	1	1	1	1	5	1	Yes
Routinely Clear Debris from Support Bracing Underneath Low-Lying Bridge on McKinley Avenue	1	1	1	1	0	1	5	1	Yes
Protect Power Lines by Inspecting and Maintaining Hazardous Trees in Road ROW	1	1	1	1	0	1	5	1	Yes
Floodproof Critical Facilities	0	1	1	1	1	1	5	2	Yes
Stabilize Outfalls	0	1	1	1	0	1	4	1	Yes
Re-establish Roadside Ditches	0	1	1	1	0	1	4	1	Yes
Increase Dimension of Drainage Culverts in Flood-Prone Areas	0	1	1	1	0	1	4	2	Yes
Elevate Roads Above Base Flood Elevation to Maintain Dry Access	1	1	1	-1	1	1	4	2	Yes
Retrofit Critical Facilities to Strengthen Structural Frames to Withstand Wind and Snow Loads	1	1	1	-1	0	0	2	2	No
Anchor Roof-Mounted Mechanical Equipment on Critical Facilities	0	0	0	0	0	0	0	1	No
Remove Existing Structures from Flood-Prone Areas	0	0	0	0	0	0	0	2	No
Bury Power Lines	0	0	0	-1	0	0	-1	3	No
Natural Systems Protection									
Establish Vegetative Buffers in Riparian Areas	0	1	1	0	1	1	4	1	Yes
Stabilize Stream Banks	0	1	1	0	1	1	4	1	Yes
Remove Berms	0	1	1	0	1	1	4	1	Yes
Restore Incision Areas	0	1	1	0	1	1	4	1	Yes
Education and Awareness Programs									
Educate Property Owners about Freezing Pipes	1	1	1	1	1	0	5	1	Yes
Assist Vulnerable Populations	1	1	1	1	1	0	5	1	Yes

[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	Department Heads	Not Applicable	Annually, during budget preparation
Improve Stormwater Management by Adopting a Stormwater Ordinance	Selectboard	Municipal Budget	Work has already started, adopt by 12/31/2019
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 2024
Examine Flood Hazard Area regulations and ensure identified hazard areas are addressed	Planning Commission	Town General Fund; Municipal Planning Grant	2020 - 2021
Plan for and Maintain Adequate Road and Debris Clearing Capabilities	The Town is already doing this on an annual basis through their budgeting process and established Highway Department depreciation fund.		
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			
Routinely Clean and Repair Stormwater Infrastructure	Highway Department	Municipal Budget	Annually
Install Back-up Generators or Quick Connect Wiring at Critical Facilities[2]	Fire Districts Water Corps	User Fees; Drinking Water State Loan Fund; HMGP	2020 - 2025
Increase Drainage/Absorption Capacities with Low Impact Development Practices: (1) See Moon Brook Flow Restoration Plan	Selectboard	Municipal Budget; Clean Water State Loan Fund; HMGP/PDM; Municipal Bond Bank	See 2016 Moon Brook Flow Restoration Plan
Routinely Clear Debris from Support Bracing Underneath Low-Lying Bridge on Bridge #9	Highway Department	Municipal Budget	Annually or as needed
Protect Power Lines by Inspecting and Maintaining Hazardous Trees in Road ROW	Highway Department	Municipal Budget	Annually or as needed
Floodproof Critical Facilities: (1) Wastewater pump station on McKinley Avenue remains vulnerable to flooding (2) Wastewater pump station near Route 3	(1) Selectboard (2) Fire District	User Fees; Clean Water State Loan Fund; HMGP/PDM	2020 - 2025
Stabilize Outfalls: (1) North Grove Street (2) Lester Lane (3) Old Falls Road (4) Cold River Road (5) Post Road (6) Timberlane	Highway Department	Municipal Budget; VTrans Grant; HMGP/PDM	(1-4) See 2018 CIP (5-6) 2020 – 2025 Work on these culverts will have to be approved by Vermont ANR River Management
Re-establish Roadside Ditches: (1) See 2018 Capital Improvement Plan	Highway Department	Municipal Budget; VTrans Grant; HMGP/PDM	See 2018 CIP
Increase Dimension of Drainage Culverts in Flood-Prone Areas: (1) E Proctor Road (2) Town Line Road	Highway Department	Municipal Budget; VTrans Grant; HMGP/PDM	(1) Work will be coordinated with road paving, between 2020 - 2025 (2) One culvert will be engineered in 2019 with planned replacement in 2020; other cross drainage culverts will be coordinated with road paving to be done between 2021 - 2025

[2] All critical municipal facilities are equipped with back-up power. Some fire districts and water corporations without back-up power are vulnerable to long-term power outages.

Mitigation Action	Lead Party	Potential Funding	Timeframe
Review VTrans Bridge Inspection Reports and Complete Identified Repairs to Prevent Scour	This action was not selected for implementation because there are no identified repairs for scour. Per the 2018 inspection, Bridge #5 is in good condition and stable for scour. Per the 2017 inspection, Bridge #9 is in good to satisfactory condition and is stable for scour. The Highway Department will monitor future reports and address repairs as needed.		
Elevate Roads Above Base Flood Elevation to Maintain Dry Access	This action was not selected for implementation because the costs are not reasonable compared to the probable benefits.		
Retrofit Critical Facilities to Strengthen Structural Frames to Withstand Wind and Snow Loads	This action was not selected for implementation because there are no municipal critical facilities that require retrofitting.		
Anchor Roof-Mounted Mechanical Equipment on Critical Facilities	This action was not selected for implementation because there are no municipal critical facilities with roof-mounted mechanicals.		
Remove Existing Structures from Flood-Prone Areas	This action was not selected for implementation because it lacks political support.		
Bury Power Lines	This action was not selected for implementation because it lacks political support for anything beyond what is already required by the municipal subdivision regulations – the subdivider is required to bury all utility lines.		
Natural Systems Protection			
Because the Town is unaware of any potential projects, they will collaborate with the Rutland Natural Resource Conservation District and Rutland Regional Planning Commission on the Otter Creek Tactical Basin Plan Update to identify potential projects	Planning Commission	Not Applicable	Work has already started, complete Basin Plan update by 12/31/19
Education and Awareness Programs			
Educate Property Owners about Freezing Pipes	Selectboard	Municipal Budget	Annually
Assist Vulnerable Populations	The Town is already working with identified vulnerable facilities and regional social service agencies to meet the needs to vulnerable populations. The Town has designated warming/cooling centers in their Local Emergency Plan.		

Process for Incorporating Plan Requirements into Other Planning Mechanisms

For Rutland Town 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:

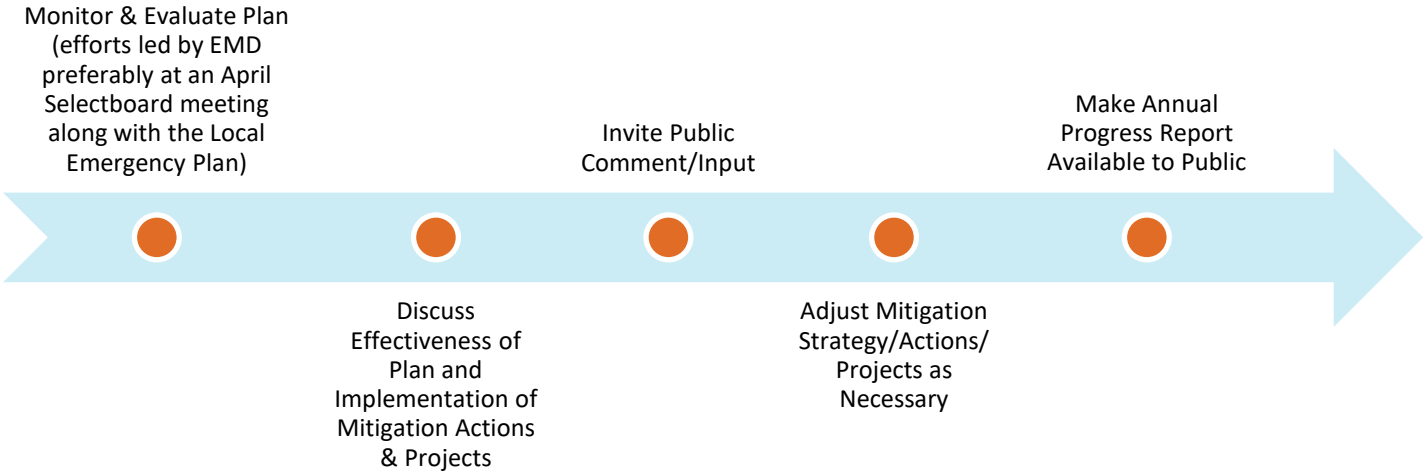
- Department heads will work with the Selectboard to incorporate risk assessment and hazard mitigation goals into the capital planning efforts.
- The Planning Commission will integrate the hazard mitigation goals for disaster resiliency into the goals and objectives of the next Town Plan update in 2024.
- The Planning Commission will consider the data, analysis, and maps from the risk assessment in the next review of the local flood hazard area regulations in 2021.
- The Highway Department will implement several mitigation infrastructure projects (e.g., increase dimension of drainage culverts in flood-prone areas, stabilize outfalls, re-establish/stabilize roadside ditches, increase drainage/absorption capacities with LID practices) through existing plans (2016 Moon Brook Flow Restoration Plan, 2018 Capital Improvement Plan), which already have community support.

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.

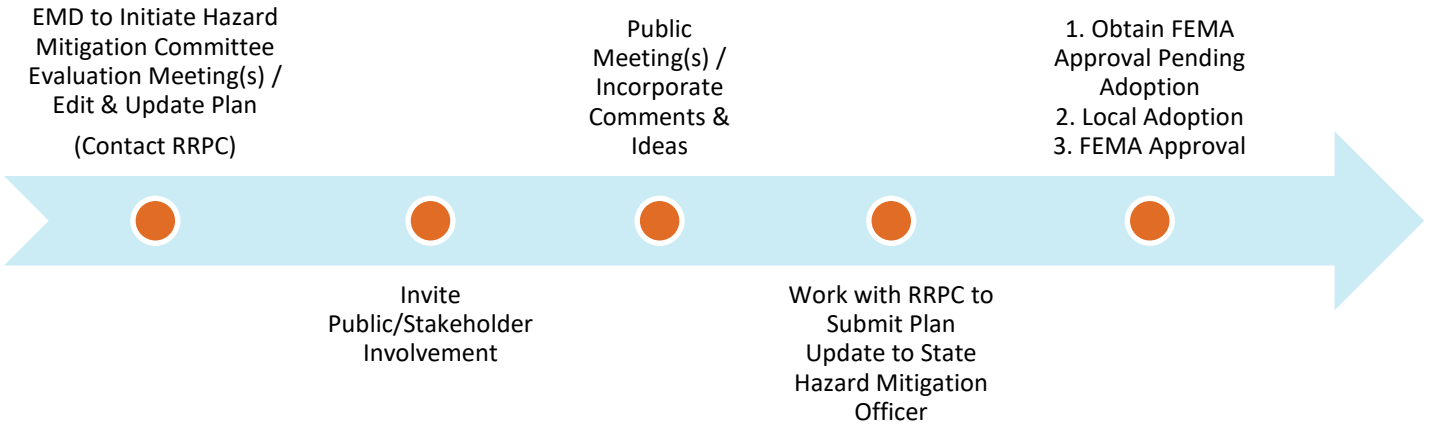
Monitoring and Evaluation

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
September 3rd, 2019
Rutland Town, Vermont Selectboard
A RESOLUTION ADOPTING THE Rutland Town, Vermont 2019 Local Hazard Mitigation Plan

WHEREAS, Rutland Town has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the **2019 Rutland Town, Vermont Local Hazard Mitigation Plan,** which result in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, Rutland Town has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its **2019 Rutland Town, 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 Rutland Town; and

WHEREAS, the **Plan** recommends several hazard mitigation actions (projects) that will provide mitigation for specific natural hazards that impact Rutland Town with the effect of protecting people and property from loss associated with those hazards; and

WHEREAS, adoption of this **Plan** will make Rutland Town eligible for funding to alleviate the impacts of future hazards; now therefore be it

RESOLVED by the Rutland Town Selectboard:

1. The **2019 Rutland Town, Vermont Local Hazard Mitigation Plan** is hereby adopted as an official plan of Rutland Town;

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.

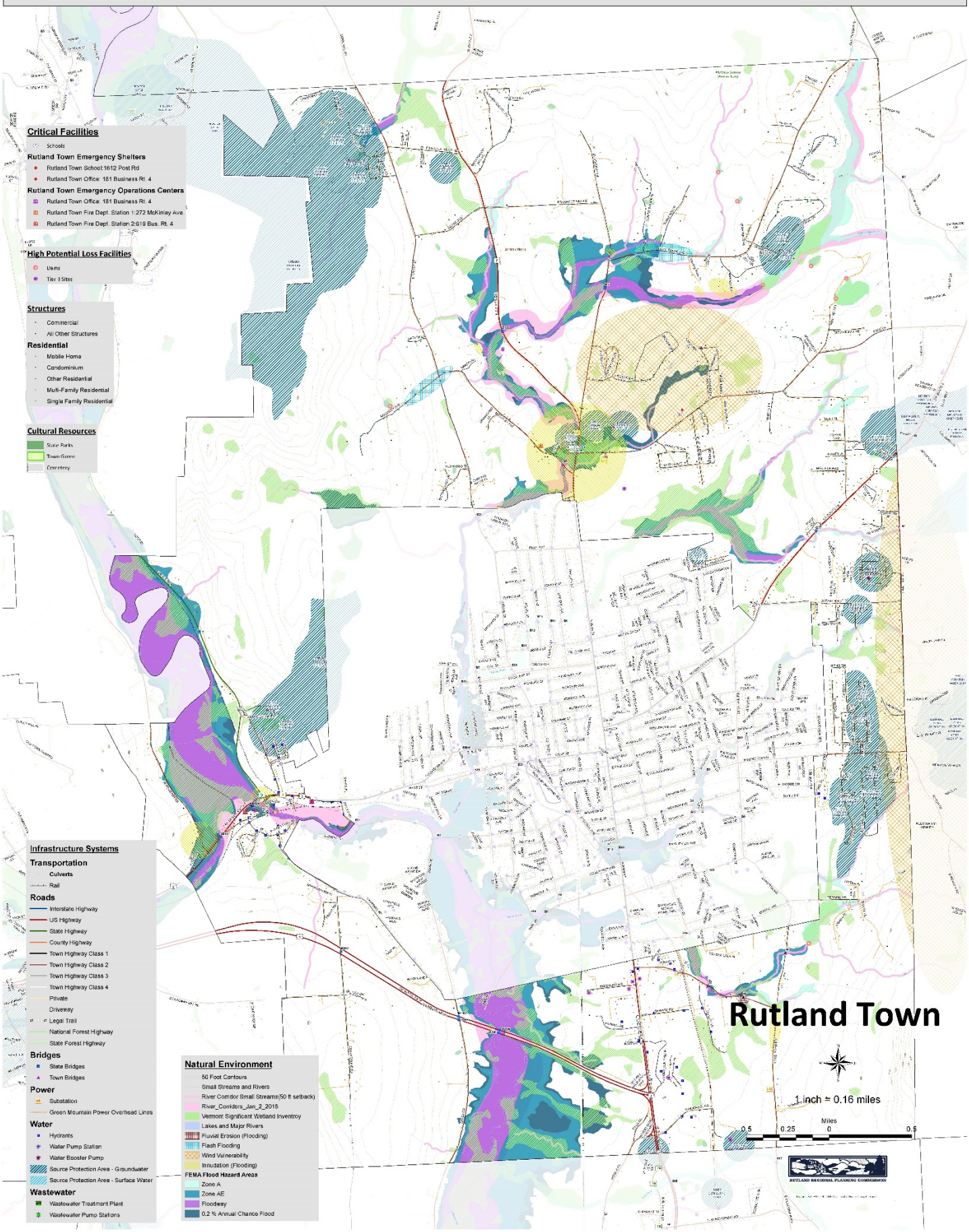
IN WITNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of Rutland Town this 3rd day of September 2019.

John C. Ferrini
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
Complete an Emergency Operations Plan for the town.	Emergency Management Coordinator	• Med Term • Local Resources	This is being done on an annual basis and addresses the Town's emergency preparedness not mitigation; therefore, it is no longer addressed in this plan.
Create emergency preparedness and evacuation plan for the Gables/the Meadows senior housing and assisted living facility.	Fire Department	• Short Term • Local Resources	The Town is in the process of developing an evacuation appendix to the local emergency plan. It will address the Town's emergency preparedness not mitigation; therefore, it is no longer addressed in this plan.
Install generators at Town Hall and Elementary School – the town's shelters.	Emergency Management Coordinator	• Med-term • HSU funds	This mitigation action is complete.
Incorporate proposed strategies into Annual Budget and/or Capital Improvement Plan	Selectboard	• Short-Term • Local Resources	This remains an ongoing priority and is identified as a 2019 mitigation action.
Enforce truck weights to control problems with overloaded truck traveling through town.	Selectboard	• Short Term • Local Resources	This mitigation action is complete - overweight permits are now in place.
Examine Town Plan, bylaws and development regs to ensure identified hazard areas are addressed	Planning Commission/ Selectboard	• Med-term • Municipal Planning Grant	This remains on ongoing priority and is addressed in this plan.
Add turn lanes and paved shoulders along Route 7 to increase maneuverability and decrease accidents.	Selectboard	• Short Term (in progress) • Local Resources	This remains an all-hazards priority, not a natural hazards priority and therefore is no longer addressed in this plan.
Continue enforcing speed limits along Rutland Town roads to decrease driver error leading to accidents.	Selectboard	• Short Term • Local Resources	This remains an all-hazards priority, not a natural hazards priority and therefore is no longer addressed in this plan.
Make improvements to the intersection of Route 4 bypass at Route 7 to decrease accident rates.	Selectboard	• Short Term • Local Resources, DOT Grant # 20.217 (Motor Carrier Safety)	This remains an all-hazards priority, not a natural hazards priority and therefore is no longer addressed in this plan.
Ensure access to woods roads for forest fire suppression.	Fire Department	• Med Term • Local Resources	This is no longer a department priority.
Monitor culverts on Creek, E Proctor and W Proctor Roads for upsizing as necessary	Highway Dept	• Med Term • Local / Federal Resources (HMGP)	Culverts on W Proctor Road and Creek Road have been upsized. Culverts on E Proctor Road will be addressed the next time the road comes up for paving in the next 10 years or less. There is only one cross culvert that will need attention.

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