Mount Holly, Vermont Local Hazard Mitigation Plan



Fluvial Erosion on Beaver Meadow Road along Meadow Brook - 2019

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Prepared by the Mount Holly Hazard Mitigation Planning Team:

Jeff Chase, Selectboard Member / Emergency Management Director Russ Garrow, Emergency Management Coordinator Jon McCann, Mount Holly Planning Commission Clinton Woolley, Road Commissioner

Other Key Partners:

Rutland Regional Planning Commission Rutland Natural Resources Conservation District Western Vermont Floodplain Manager



RUTLAND REGIONAL PLANNING COMMISSION



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1 Introduction

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

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

2 Purpose

The purpose of this Plan is to assist the Town in identifying all natural hazards facing the community, ranking them according to local vulnerabilities, and developing strategies to reduce risks from those hazards. Once adopted, this Plan is not legally binding; instead, it outlines goals and actions to reduce the degree of injury and inconvenience to the townspeople and their private and municipal 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 2018 State Hazard Mitigation Plan.

3 Community Profile

Land Use and Development Patterns

Mount Holly is largely rural with scattered residential development, active agricultural uses, and some areas of concentrated commercial development primarily in the village of Belmont and to a lesser degree in Healdville.

This includes the Crowley Cheese Factory, which is still in operation and is also on the National Register of Historic Places. A portion of the Okemo ski area is also located within Mount Holly's borders.



Land Features

Mount Holly is located on a hilly plateau on the central ridge of the Green Mountains. The Town of Mount Holly is composed of a series of hills and low mountains which are separated by mountain streams and brooks. Its elevation ranges from about 1,200 feet above sea level to 3,343 feet at the summit of Okemo Mountain.

In total land area, Mount Holly is one of the larger towns in Rutland County with 29,338 acres. About one-fifth of the town consists of publicly owned land within Okemo State Forest on the Town's eastern border, Green Mountain National Forest on the southwestern border, and about 92 acres on the northeast side of Star Lake that is owned by the State of Vermont. The Town's woodlands are an important resource for aquifer recharge, plant and wildlife habitat, and recreation, as well as timber production, maple sugaring operations, and carbon sequestration.

Demographics and Growth Potential

The 2018 American Community Survey Five-Year Estimates prepared by the U.S. Census Bureau shows an estimated population of 1,168, and 988 housing units. Between 2010 and 2018, the population has held relatively steady. The median age of Mount Holly residents is 52.2 years old, which is 22% higher than the Vermont median age of 42.8. The portion of the population over 60 is 34%, compared to 25% in Vermont and 20.9% in the country.

Due to the influence of the Okemo ski area, a large percentage (41.7%) of the housing units in Mount Holly are seasonal. Therefore, the total population may be close to double during certain times of year.

Currently, the Town has limited regulations in place to control development and growth. A rise in population may cause development that is not aligned with the stated goals of the Mount Holly Town Plan – to "preserve the town's rural lifestyle and appearance" and maintain a "compact village center within a rural setting, surrounded by undeveloped areas".

Precipitation and Water Features

Average annual precipitation is 48 inches of rain; with October being the wettest month. Average annual snowfall is 96 inches making Mount Holly snowier than most places in Vermont, with January being the snowiest month.

There are three lakes in the Town: Star Lake in Belmont; Lake Ninevah in the north near the Town's boundary with Plymouth; and Tiny Pond, which the Town shares with Ludlow in the northeastern corner. There are several rivers and streams that flow through Mount Holly, Mill River being the largest, and three important watershed sub-basins: Otter Creek, Black-Ottauquechee, and West.

Another important water feature is the Winslows' Flats Wetlands. This extensive area of wetlands, marsh and alder swamp extends along the south side of Vermont Route 103. Vermont Department of Fish and Wildlife has identified this as a significant natural community.

Drinking Water and Sanitary Sewer

Aside from a spring fed water system that supplies some buildings in Belmont, the rest of the Town depends on drilled wells or natural springs.

A significant aquifer recharge area exists on the summit of Hedgehog Hill. A seasonal pond and permanent wetland mark the location covering approximately one acre. This area provides water to numerous springs on the flanks of the hill in addition to providing the water to spring systems feeding the village of Belmont.

Sewer service in Mount Holly is provided entirely by individual, on-site septic systems.

Transportation

The present network of ± 69 miles of roads in Mount Holly serves the needs of current residents. Vermont State Routes 103, 140, and 155 provide primary access into and out of Mount Holly. In addition to these State Routes, there are several other roads that have been identified as locally important for use as through-ways, detours, short-cuts, and access to critical facilities such as the fire stations, town garage, town office, and school. These routes are shown in orange on the map in **Figure 1**.

According to the Town's Road Erosion Inventory Report, nearly 65% of the Town's roads are hydrologically connected - meaning they are within 100-feet of a water resource (i.e., perennial/intermittent stream, wetland, lake, or pond). Proximity to water resources can make these roads more vulnerable to flooding and fluvial erosion.

Mount Holly has a total of 9 town-owned bridges and \pm 460 culverts. Seven of the bridges have a span of over 20 feet. The local transportation network is maintained by the Town Highway Maintenance crew, whose garage is located on School Street.

A rail line runs through Mount Holly, crossing several roads including Healdville Road and Belmont Road. In addition, there is a rail siding off Summit Road with freight storage and a significant rock cut at the height of land.



Figure 1: Locally Important Routes for Through-Ways, Detours, Short-Cuts, and Access to Critical Facilities

Electric Utility Distribution System

Electric service to approximately 1,170 customers is provided by Green Mountain Power via one circuit. Average annual outage statistics between 2015 and 2019 are summarized in **Table 1**.

Table 1: Power Outage Summary

5-Year Average (2015-2019)					
Avg # of times a customer was	2 77				
without power	5.77				
Avg length of an outage in					
hours	5.47				
# of hours the typical customer					
was without power	20.05				
2019 only					
Avg # of times a customer was	2 / 2				
without power	2.45				
Avg length of an outage in	Γ.00				
hours	5.09				
# of hours the typical customer	12.34				
was without power					

The longest power outage affecting the greatest number of customers between 2015 and 2019 was 84.61 hours long and impacted 14 customers.

Public Safety

Mount Holly has a volunteer fire department, with two stations – the main station on School Street and a substation in Belmont Village. Both stations are operated by a 21-member, volunteer department.

Law Enforcement in Mount Holly is provided by the one part-time Town Constable, who is certified as a full-time Vermont law enforcement officer, with assistance from the Rutland County Sheriff's Department and Vermont State Police as needed.

Mount Holly has a Volunteer Rescue Squad which provides treatment to residents and visitors on an emergency call basis. The nearest hospital is the Rutland Regional Medical Center but Springfield Hospital is also within a reasonable distance and there is a medical clinic in Ludlow that is staffed and operated by Springfield Hospital. Ambulance service is provided by the Rescue Squad.

Emergency Management

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 Planning Team members who assisted with the update include the EMD / Selectboard member, EMC, Planning Commission member, and Road Commissioner.

Plan Development Process

The 2020 Mount Holly 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 Mount Holly 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**.

Table 2: Plan Development Process

June 23, 2020: Hazard Mitigation Planning Team kick-off meeting. Planning Team members were confirmed. Discussed what a LHMP is; the benefits of hazard mitigation planning; current plan status; the planning process; outreach strategy; and plan sections.

June 25 – June 29, 2020: Public notice posted on RRPC and Town social media (website, Facebook page, and email newsletter) that the Town is engaged in hazard mitigation planning and updating their LHMP. Notice also posted at the Town Post Office and submitted for inclusion in the August edition of the monthly town newsletter, the *Mount Holly Chit Chat* – see Appendix D. Emailed notice to officials in neighboring towns of Shrewsbury, Wallingford, and Mount Tabor. Name and contact information provided in notices for more information.

July 13, 2020: Planning Team meeting – confirmed the plan purpose and completed work on the community profile and hazard risk assessment. Began work on storm history and identifying assets vulnerable to the highest risk natural hazards.

August 12, 2020: Planning Team meeting – completed work on the hazard identification and risk assessment; finalized working draft to share at public meetings on Sept 8 and 21.

September 2020: Article in the *Mount Holly Chit Chat* regarding LHMP update on plan development process and September 8 public meeting – see Appendix D.

September 8, 2020: Working draft LHMP shared with Vermont Hazard Mitigation Officer and Rutland Natural Resource Conservation District for review and comment.

September 8 and 21, 2020: Working draft LHMP presented at public meeting of the Mount Holly Selectboard and Planning Commission to encourage input from local government and the public that could affect the plan's conclusions and better integrate with Town initiatives. Plan posted on RRPC and Town websites. Comments on the draft plan were accepted until Sept 22. [placeholder for comments]

September 23, 2020: Planning Team meeting -[incorporated comments received on the working draft]; completed work on hazard identification and risk assessment. Began work on hazard mitigation strategy – confirmed mitigation goals; identified community capabilities; and began developing mitigation actions. Table 3: Existing Plans, Studies, Reports & TechnicalInformation

2020 Local Emergency Management Plan

2020 FEMA NFIP Insurance Reports

2019 Transportation Resiliency Planning Tool

2019 *Falling Dominoes:* A Planner's Guide to Drought and Cascading Impacts

2019-2015 Green Mountain Power Outage Data

2018 Mount Holly Town Plan

2018 Road Erosion Inventory and Report

2018 State of Vermont Hazard Mitigation Plan

2018 American Community Survey Five-Year Estimate

2017 Stormwater Infrastructure Mapping Project

2009 Mill River Corridor Management Plan

2008 Flood Hazard Area Regulations

RRPC Local Liaison Reports of Storm Damage

National Oceanic and Atmospheric (NOAA) National Climatic Data Center's Storm Events Database

FEMA Disaster Declarations for Vermont

OpenFEMA Dataset: Public Assistance Funded Project Summaries for Vermont

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

FEMA Flood Insurance Rate Maps

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

Changes Since the 2009 Plan

[placeholder for a description in land use development changes since the 2009 plan]

[placeholder for description of changes in mitigation priorities since 2009 plan]

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

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 Planning Team conducted an initial analysis of known natural hazard events¹ to determine their probability of occurring in the future.

The Planning Team then ranked the hazard impacts associated with the known natural hazard events based on the probability of occurrence and potential impact to life, the economy, infrastructure, and the environment. The ranking results are presented in **Table 4**. After engaging in discussions, the Town identified the following "highest risk hazards" that they believe their community is most vulnerable to:

- Thunder and Tropical Storms with associated flash flooding, fluvial erosion, and high winds and to a lesser extent inundation flooding and hail.
- Winter Storms with associated extreme cold, snow, ice, and high winds.
- Drought with associated water shortage, high winds

 and to a lesser extent extreme heat.

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

Hazard Event	Hazard Impacts	Probability	Potential Impact					Coore
Hazard Event			Life	Economy	Infrastructure	Environment	Average	Score
Thunderstorm Tropical Storm/Hurricane	Flash Flooding/ Fluvial Erosion	4	2	2	4	4	3.00	12.00
	Inundation Flooding	3	2	1	1	1	1.50	4.50
Landslide	High Winds	4	2	2	2	1	2.00	8.00
Tornado	Hail	4	1	1	2	1	1.25	5.00
Winter Storm	Cold/Snow/Ice/Wind	4	3	3	3	3	3.00	12.00
Drought	Heat	3	2	1	1	3	1.75	5.25
Drought	Drought	3	1	2	2	3	2.00	6.00
Wildfire	Wildfire	2	2	1	2	1	1.5	3.00
Earthquake	Earthquake	2	1	1	1	1	1.00	2.00
*Score = Probability x Average Potential Impact								

Table 4: Community Hazard Risk Assessment

	Frequency of Occurrence:	Potential Impact:				
	Probability of a plausibly significant event	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	Minor: isolated occurrences of moderate to severe property and environmental damage,				
2	per year, or at least one chance in next 100 years	potential for injuries, minor economic disruption				
2	Likely: >10% but <75% probability per year, at	Moderate: severe property and environmental damage on a community scale, injuries or				
5	least 1 chance in next 10 years	fatalities, short-term economic impact				
Λ	Highly Likely: >75% probability in a year	Major: severe property and environmental damage on a community or regional scale, -				
-		multiple injuries or fatalities, significant economic impact				

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

Invasive Species

The Planning Team did not formally assess the risk associated with invasive species; however, they did discuss the potential hazards and risks associated with the Emerald Ash Borer (EAB) specifically. Vermont's EAB infestation was first detected in 2018 in northern Orange County. It is now known to occur in multiple locations surrounding Rutland County. The Town has not yet completed an inventory of Ash trees within the road right-of-way to determine potential risk. However, the Wilderness Community members around Lake Ninevah have begun to treat hundreds of their Ash trees.

High Risk Hazard Profiles

Inundation/Flash Flooding/Fluvial Erosion

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.

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

Inundation 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. 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, 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 probability of ice jams.

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

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

In Mount Holly, flooding is a risk. Damages from Tropical Storm Irene were significant, resulting in approximately \$500,000 in impacts (\$46,834 in Individual Assistance; \$443,275 in Public Assistance; \$9,917 in National Flood Insurance). In Mount Holly, damage due to flooding usually consists of impacts to roads, culverts, and bridges.

As shown on the Local Hazards and Vulnerabilities Map in **Appendix B**, Mount Holly is not particularly vulnerable to inundation flooding, except for the following locations:

- Perry Road (in the vicinity of bridges B54 and B50 historic flooding has not overtopped the road) along a tributary to Cold Brook.
- Belmont Road (near the VT Route 103 intersection at bridge B14) along Mill Brook.
- Fowler Brook Road (near the VT Route 155 intersection at bridge B60) along Mill River.
- VT Route 155 (near the intersection with Beaver Meadow Road) along Mill River.

Currently there are 26 structures in Town located in the Special Flood Hazard Area. These include residential, commercial, and governmental properties. According to FEMA, there are 8 flood insurance policies issued in Mount Holly In total, these policies cover \$2,068,600 in value. There are no repetitive loss properties.

Flash flooding can impact areas in Town that are located outside of designated floodplains, including along streams confined by narrow valleys. Gravel roads with steep slopes, such as Packer, Roger Hill, Sawyer Hill, are especially vulnerable to wash outs due to flash flooding.

In 2018, the Town completed an inventory of hydrologically-connected roads for the Municipal Roads General Permit. This inventory identified areas vulnerable to flash flooding and recommended corrective actions to make these areas more resilient.

In 2009, a river corridor plan was prepared for the Mill River watershed. Of the approximate 45,610 acre watershed that drains through Mount Holly, 19,167 acres (42%) is in Mount Holly. That plan summarized information about the physical condition of the Mill River watershed; identified factors that are influencing the stability of the system; and synthesized the information to identify restoration and management priorities.

The Mill River corridor plan includes six locations in Mount Holly with projects to protect the river corridor, restore incised reaches, and restore riparian buffers. Additional locations vulnerable to fluvial erosion include: Freeman Brook Road, including bridge B65; Old Turnpike Road; and Beaver Meadow Road.



Effects of Fluvial Erosion on Lushas Acres Lane and Bridge B65 along Freeman Brook



High Wind

Severe thunderstorms can produce high winds, lightning, flooding, rains, large hail, and even tornadoes. Thunderstorm winds are generally short in duration, involving straight-line winds and/or gusts more than 50 mph. Thunderstorm winds can cause power 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 2019, thunderstorms resulted in just under \$2.2 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, damage to automobiles and crops.

Violent windstorms are possible here; Mount Holly is susceptible to high directional winds, particularly north of VT Route 103. Many storms with high winds result in downed trees, damaged phone and power lines, buildings, and other property. Mount Holly is vulnerable to power outages and they present a potentially significant risk to many residents.

Much of the Town is served by a land line phone service that has converted from copper wire to fiber service. When the power goes out, an in-home battery provides the electricity necessary to make a call. The battery life is about eight hours, whether the phone is used or not. Due to the natural terrain in Mount Holly, there are many areas that cannot receive cell phone service. In the event of an emergency during a power outage many cannot contact the fire department, police, or ambulance service. This is of concern given Mount Holly's aging demographics and many remote and isolated homes To mitigate the impacts of power outages, the following public buildings/critical facilities have been equipped with backup power: the Church Street Fire Station (which also serves as the alternate local shelter), the School Street Fire Station, and Town Garage. The Elementary School (which serves as the primary local shelter) and Town Office do not have backup power.

If a power outage coincided with a large scale sheltering event, the Town could be faced with a serious situation.

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 2019, Rutland County experienced \$1.5 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).

Typically, towns' vulnerability to snow and ice storms are power outages and loss of road accessibility. As previously described, the Town is somewhat prepared for a power outage caused by ice/wet snow accumulation on power lines or trees falling on powerlines due to weight of ice accumulation in a storm. However, if the outage coincided with a large scale sheltering event, the Town could be faced with a serious situation. 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. Areas prone to drifting (Lake Ninevah Rd, Sawyer Hill Rd, Healdville Rd) are maintained accordingly.

Drought

Drought, in the most general sense, is a period of lower-than-average precipitation that results in a water shortage.

It is typically a slow-onset natural hazard that can last for months or years. Drought is a natural part of the climate cycle. Higher temperatures, water demands that exceed availability, low winter snowpack and lack of rainfall are all causes that can lead to a significant drought.

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

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

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

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

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

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

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

In the Rutland region, there have been several instances of moderate drought (D1) and one instance in the last 20 years of severe drought (D2). The region is in a moderate drought at the time of this writing.

Drought impacts of concern in Mount Holly include the following:

- Loss of snow cover with moderate to severe impacts on ski and snowmobile recreation, tourism, and the local economy.
- Reduced fall foliage with moderate impacts on the local tourism economy.
- Increased occurrences of wildland fires with minor to moderate impacts on human life, built infrastructure, and the natural environment (particularly for spruce/fir forests and deer wintering areas).
- Interruption of water supply with minor to moderate impacts on drinking water supplies and surface waters for fire suppression.
- Crop and agricultural losses with minor to moderate impacts on maple syrup production and minor impacts on hay production, perennial fruit and orchards, and livestock.
- Low water level and poor water quality in local water bodies – Lake Ninevah, Star Lake, and Buttermilk Falls – with minor impacts on water recreation.
- Increases in human/wildlife conflict with minor impacts due to shift from natural food systems (mast crops, etc.) to human food sources and habituation.

High Risk Hazard History

Note: These are the most up to date significant events impacting Mount Holly. Federal declarations are depicted in **bold**.

Inundation/Flash Flooding/Fluvial Erosion

6.20.2019: ±6" rain: no reported damage 4.15.2019: DR4445 1-2" rain with significant snow melt: \$59,800 local damage 7.1.2017: DR4330 3-4" rain the previous 3-4 days with flash flooding on 7/1/17: \$39,110 local damage 6.25-7.11.2013: DR4140 with heavy rain over multiple days: \$20,300 local damage 8.28.2011: DR4022 Tropical Storm Irene with +/-5" rain: \$500,026 local damage (\$46,834 Individual / \$443,275 Public / \$9,917 NFIP) 7.16.2000: DR1336 with heavy rainfall: \$8,875 local damage

High Wind

2.24.2019: 48 mph winds: \$25,000 regional damage 4.1.2018: 55 mph winds: \$50,000 regional damage 10.30.2017: 40 mph wind: \$100,000 regional damage 5.5.2017: 40 mph winds: \$25,000 regional damage 6.2.2013: 50 mph winds: \$5,000 local damage 12.9.2009: 55 mph winds: \$25,000 regional damage 3.5.2008: 43 mph winds: \$25,000 regional damage 12.16.2007: 50 mph wind: \$25,000 regional damage 2.17.2006: 37 mph winds: \$50,000 regional damage 9.29.2005: 35 mph winds: \$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

1.7.2015: 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 24-36" snow: \$27,150 local damage

11.26.2014: 8-12" snow: \$25,000 regional damage 2.13.2014: 30" snow: \$10,000 regional damage 12.29.2012: 12" snow: \$10,000 regional damage 2.23.2010: 6-30" snow: \$200,000 regional damage 4.15-16.2007: **DR1698** "Nor'icane" with 3" snow and rain with winds of 60 to 80 mph: **\$25,885 local damage** 2.14.2007: 20-35" snow with wind chills of 10 below zero or colder: \$75,000 regional damage 3.5.2001: **EM3167** 26" snow: **\$2,895 local damage**

Drought

Jun – Aug 2020: D1 drought in 50-100% of county Jun – Sept 2018: D1 drought in 50-100% of county Sept 2016 – Feb 17: D1 drought in 50-100% of county Oct – Nov 2016: D2 drought in 60% of county Sept 2001 – Mar 02: D1 drought in 50-100% of county

Vulnerability Summary

Inundation/Flash Flooding/Fluvial Erosion

Location¹: Inundation Flooding – Perry Rd along tributary to Cold Brook; Belmont Rd along Mill Brook; Fowler Brook Rd and VT Route 155 along Mill River Flash Flooding – gravel roads with steep slopes including Packer, Roger Hill, Sawyer Hill, Tarbelville Rd, Barlow Rd, Tiffany Rd, Healdville Rd, Greendale Rd Fluvial Erosion – Freeman Brook Rd and Lushas Acres Ln, including bridge B65; Old Turnpike Rd; Beaver Meadow Rd

Vulnerable Assets¹: Roads, culverts, bridges

Extent: 5-6" rain; extent data for fluvial erosion is unavailable

Impact: \$500,026 local damage

<u>Probability</u>: Flash flooding/fluvial erosion – Highly Likely Inundation flooding - Likely

High Wind

Location¹: Town-wide, especially north of VT Route 103

<u>Vulnerable Assets</u>¹: Phone and power lines; buildings; other property; trees

Extent: 55 mph winds

Impact: \$100,000 regional / \$5,000 local damage

Probability: Highly Likely

Extreme Cold/Snow/Ice/Wind

<u>Location¹</u>: Town-wide; Drifting on Lake Ninevah Rd, Sawyer Hill Rd, Healdvill Rd

<u>Vulnerable Assets</u>¹: Roads, culverts, bridges, trees, power and phone lines

Extent: Up to 36" of snow; 80 mph winds; 15-20+ days below zero

Impact: \$200,000 regional / \$27,150 local damage

Probability: Highly Likely

Drought

Location¹: Town-wide

<u>Vulnerable Assets</u>¹: Water supplies, natural ecosystems, agriculture

Extent: D2 drought in 60% of county for 2 months

Impact: Data on financial impacts is unavailable

Probability: Likely

¹ See Appendix B: Local Hazards and Vulnerabilities Map

CERTIFICATE OF ADOPTION TOWN OF Mount Holly, Vermont Selectboard A RESOLUTION ADOPTING THE Mount Holly, Vermont 2020 Local Hazard Mitigation Plan

WHEREAS, the Town of Mount Holly has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the **2020 Mount Holly, 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 Mount Holly has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its **2020 Mount Holly, 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 Mount Holly; and

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

RESOLVED by Town of Mount Holly Selectboard:

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

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 Mount Holly this _____ day of _____ 2020.

Selectboard Chair

Selectboard Member

ATTEST

Town Clerk



[placeholder for 2009 mitigation actions]

requirements needed for re-opening businesses. Discussion ensued on those requirements: social distancing, number of people allowed per square foot, face coverings, contact tracing logs, disinfecting procedures, and others. Mr. Turco will pull together the health and safety requirements to be followed for the town office to reopen, and he will review these with the town office staff. Mr. Turco made a motion to reopen the town office on Monday, July 20th with adherence to all health and safety guidelines, seconded by Ms. Matthews, unanimously

approved. Brigid Sullivan stated that additional masks were available through Rotary, if needed.

- d. Swap Shed Reopening? No, will revisit the issue in August.
- e. Other There was no additional Old & Ongoing Business.

9. Announcements/Other Business

- a. VT Route 155 Closure for Bridge #7 Replacement: July 21st August 18th
- b. VT Statewide Primary Tuesday, August 11th Polls Open 10:00 am 7:00 pm

(802) 259-3622

- 10. Review & Sign Orders to be signed one Select Board member at a time at the town office.
- 11. Executive Session: Title 1 V.S.A. S 313(a)(3) personnel Not needed this evening.

12. Adjourn - Ms. Matthews made a motion to adjourn the meeting at 8:33 pm, seconded by Mr. Turco, unanimously approved, and the meeting was adjourned. Respectfully submitted: Jennifer Matthews

NORTHEAST CHIMNEY

SERVICE

GARY SKIDMORE

CHIMNEY CLEANING * STAINLESS STEEL

LININGS * CHIMNEY BUILDING * REPAIRING *

FACTORY BUILT INSTALLATIONS

Planning Commission Virtual Meeting Minutes - June 22, 2020

Present: Jon McCann, Nicole Lewis, Clinton Woolley, Jim Seward, Gabrielle Macklin-Bickford, Ed Bove, Mark Turco, Jeff Chase, Jennifer Matthews, David Johnson, Brigid Sullivan, Okerno Valley TV

Jim called the meeting to order at 7:02 PM.

Discussion with Ed Bove, Executive Director of the Rutland Regional Planning Commission. Town Plans carry weight with regard to Act 250, particularly when it comes to identifying specific natural features that a town wishes to protect. Town Plans have the ability to be more regulatory than they were 15 years ago (ie/ views from specific right-of-ways can be protected through the Town Plan). Jennifer Matthews raised the concern about the possible impact by Vail with regard to any potential future development of the Mount Holly side of Okemo Mountain. Other towns restrict this sort of development through zoning regulations, which Mount Holly does not have. Options instead might include

Even though right now we have...

NO GATHERINGS OF MORE THAN ONE PERSON

(and that person has to stand six feet away from himself or herself)

NO PARTIES UNLESS NO ONE IS INVITED

NO APPEARING IN PUBLIC WITHOUT WEARING A MASK

(& CLOTHES)

NO 2020 MOUNT HOLLY CIDER DAYS (Can you believe it!!)

AND NO PUBLIC VOTING FOR CALENDAR PHOTOS. But...

...we do have Mount Holly's 2021 Calendar on sale at the Belmont Store (with curbside delivery) or send

a text to mthollyphotos@gmail.com for info

about mail delivery or at home delivery (in Mt. Holly)

for the purchase of two or more calendars.

Or you can call Craig Tomkinson (802) 259-3947

(but he's cranky in the morning)

changing land use regulations, to safeguard that area. Also, much of the backside of Okemo is currently conserved land. In the Town Plan, providing a more specific definition of "Conserved Land" in the Future Land use section as well as including more specificity within the Rural Residential areas of Mount Holly would add additional protection against future unwanted development. A re-adoption of the Town Plan would "re-start" the 8-year clock of how long a Town Plan is good for. Other helpful resources could include a Viewshed Study and/or Community Value Mapping (ecological concerns) to gather more data, as well as looking at the Town Plans of towns similar in composition to Mount Holly (all Town Plans are linked on the RRPC website). At the next Planning Commission meeting on July 20th, a work plan for amending the Mount Holly Town Plan will be developed.

The meeting adjourned at 8:08 PM by motion, second and vote (5-0). Respectfully Submitted, Nicole Lewis, Planning Commission Secretary

Mount Holly Updating Hazard Mitigation Plan

The Town of Mount Holly is currently engaged in hazard mitigation planning and is updating the Mount Holly, Vermont Local Hazard Mitigation Plan. For more information on the planning process or to find out about upcoming opportunities for public input, contact Steffanie Bourque at the RRPC – sbourque@rutlandrpc.org or 802-775-0871 x206.

Thanks, Jeff Chase

MT. HOLLY, VT

Mount Holly Administrative Officer and Planning Commission Clerk Needed

The Mount Holly Planning Commission is looking for a strong candidate to serve as our Planning Commission Clerk and to nominate for the position of Administrative Officer for the Town of Mount Holly.

This position will serve the community by helping to

administer permits for our land-use bylaws, manage administrative tasks, and work with the Planning Commission to provide customer service to the public. This position will perform work requiring clerical skills, public relations, email and word processing, records management, and should be able to work with minimum supervision.

The position is up to 10 hours per month (hours are flexible and can vary weekly), with the opportunity for the position to be done partially remote (a portion of the work will need to be done on location at the town office). Attendance at regularly scheduled meetings is required, which are held every third Monday of the month at7 pm. Pay is competitive.

Do you have great organizational skills and have a desire to help your community?

Email a letter of interest and your resume to the Planning Commission at planningcomm@mounthollyvt.org

August 2020 Mount Holly Chit Chat Inc

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15 <u>www</u>
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www.mounthollyvt.org chitchat@vermontel.net



Local Hazard Mitigation Plan (LHMP) Update

A team of four Mount Holly Residents are currently working with the Rutland Regional Planning Commission to create a Local Hazard Mitigation Plan (LHMP). This plan is required by the State of Vermont for all communities. Its purpose is to assist the Town to understand the natural hazards facing the community, tank them according to level of risk, and develop strategies to mitigate those hazards.

The first five sections of the plan; the Introduction, Community Profile, Hazard Identification, and Risk Assessment, will be ready for public review and comment on September 2, 2020 for a 14 day period. The draft plan will be posted to the town website at <u>http://www.mounthollyvt.org/announcements-bulletin-board/</u> and at the Town Office.

The remaining sections address analysis of specific hazards and development of mitigation strategies and will be created later in September. A second public review and comment period will be provided once the plan is complete.

Public review and comment are critical to the development of the plan. Your past experiences in Mount Holly and your perspective on natural disasters and hazards will be important to this plan. We request your assistance and input.

A brief overview of the draft plan will be presented at the September 8th regular Select Board meeting. This meeting will be held remotely via Zoom, at 6:30 pm. For the meeting link and/or call-in telephone number please visit <u>http://www.mounthollyvt.org/150047-2/</u>. Time for public comments will be provided after the overview. Comments can also be communicated in writing to Jeff Chase at <u>jeff@chasevermont.com</u> or dropped off at the Town Office or mailed to Jeff Chase, PO Box 248, Mount Holly, VT.



Straight from the horses mouth.... Stay Safe Stay

Spaced

from Reinbow Riding Center

September, where did the summer go? The current situation has definitely curtailed some of our usual summer activities, especially our therapeutic riding program, but also allowed us to work on things we rarely have time for. We are making Activity Bags for riders, recharging our engines, working on program ideas and chomping at the bit to get started again, although it looks like that won't happen until this coming Spring. Meanwhile the horses are fat and sassy and definitely enjoying the summer off.

We are also working on some fundraising ideas to help us replace some of the funding we lost

due to Covid like this year's cancelled annual Summer Palooza event. We will be rolling those out soon. We would like to thank the Mt. Holly community for all the returnable can and bottle donations left in our shed at the dump. Please double-check your donations to make sure they are returnables. Don't forget to check out our website: reinbowridingcenter.org, and follow us on Facebook, Twitter @ReinbowRiding and Instagram @reinbow_riding_center.

Everyone stay well and remember to social distance at least a horse length apart.

September 2020 Mount Holly Chit Chat Inc



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