



ANNEX 1: TOWN OF BOLTON



Established: 1763



Land Area: 42.26 sq. mi.



2020 Population: 1,301



Government Address: 3045 Theodore Roosevelt Highway, Bolton, Vermont 05676



Households: 514



Mitigation Focus: Flooding

This section presents community-specific information about the Town of Bolton, a participating jurisdiction in the development of the 2022 update to the *Chittenden County, Vermont Multi-Jurisdictional All-Hazards Mitigation Plan (MJAHMP)*. Included are, among other elements:

- Local Point of Contact
- Jurisdiction Profile
- Jurisdiction Planning Process
- Hazard Event History
- Hazard Risk Ranking
- Vulnerability Analysis
- Capabilities Assessment
- Mitigation Actions and Action Plan for Implementation

1.1 HAZARD MITIGATION PLAN – POINTS OF CONTACT

Type	Primary	Secondary
Name	Amy Grover	Janet Metz
Title	Town Clerk & Treasurer	Selectboard Chair
Agency	Town of Bolton	Town of Bolton
Address	3045 Theodore Roosevelt Highway	3045 Theodore Roosevelt Highway
City, State, Zip	Bolton, Vermont 05676	Bolton, Vermont 05676
Phone	802-434-5075	802-434-5075
Email	clerkbolton@gmavt.net	janetmetzbsb@gmail.com

1.2 JURISDICTION PROFILE

- Established: 1763
- Total Land Area: 42.26 sq. mi.
- Persons per Household: 2.39
- Persons per Square Mile: 67.9
- Median Age: 37

- Elevations: 1,614 ft.

Location

Bolton is in eastern Chittenden County and is bordered on the north by Underhill and Jericho, on the west by Richmond, on the south by Huntington, and on the east by Duxbury and Waterbury in Washington County, and Stowe in Lamoille County. The primary crest of the Green Mountains runs north to south through the eastern sector of the town.

The town is predominantly rural, with four principal settlements:

- Bolton is in the Winooski River valley, on the north and south sides of the river.
- The section geographically known as “West Bolton” is in the northwest corner of the town, accessed primarily from the adjacent town of Jericho.
- A strip of land, including a portion of Camel’s Hump State Park is known as “the back side of the river”, located south of the Winooski River, and is accessed through the neighboring towns of Richmond and Duxbury. Development in this area is limited.
- Bolton Valley ski area is in the northeast, where a number of year-round residents live.

The Winooski River flows through the center of town, with tillable land along its banks, but Bolton is otherwise rocky and mountainous. The town has more than twenty mountains of over 2,000 feet, and nearly as many more just under that height.

History

The area incorporated as the Town of Bolton was first settled around the Winooski River, which flows from east to west. Historically, the river has provided the corridor for transportation (river, road, and rail), settlement, and technology (telephone and utility lines).

The first Town Charter, based on the Bolton Grant issued by England’s King George, III, appeared on June 7, 1763. The Town was named for Charles Paulet, the fifth Duke of Bolton.

Early settlers made their living off the land, through fish and game, and edible plants. The natural environment continues as a means of support for many residents today, with rich soil supporting small farms and agricultural products.

Demographics, Economy, and Governance

The Town of Bolton is one of the smaller, by population, and most rural towns in Chittenden County. The population increased significantly from 1960 to 1990¹, and has since slowed slightly.

Table 1.1: Demographics, Economy, and Governance in Town of Bolton²

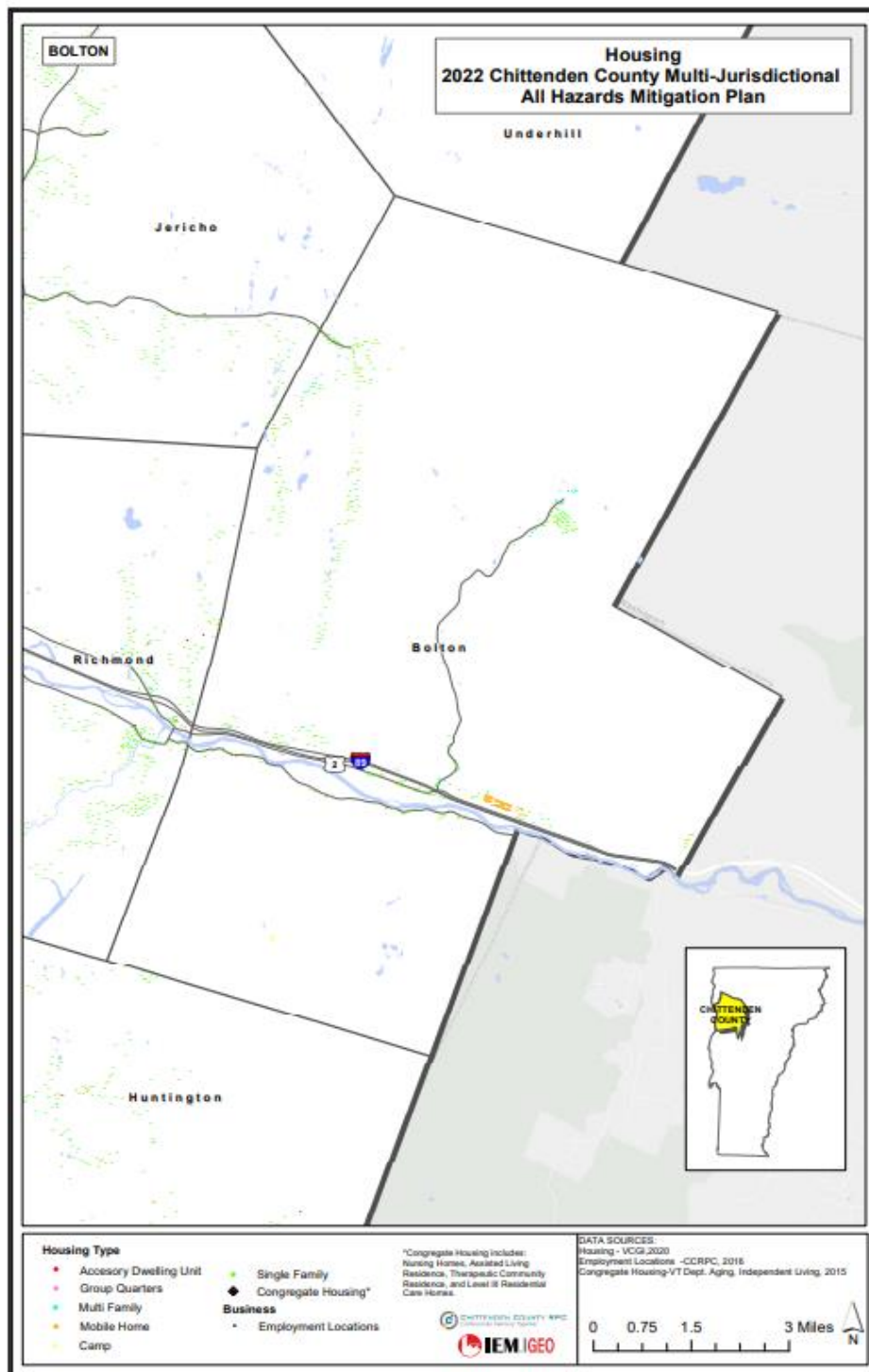
Demographics	Economy	Governance
<p>Population Growth Rate</p> <ul style="list-style-type: none"> 1980: 715 1990: 971 2000: 971 2010: 1,182 2020: 1,301 2020-2030 (Projected): 2.5% <p>Race and Ethnicity Percentage of population identifying as:</p> <ul style="list-style-type: none"> White: 98.15% Two or more races: 0.93% Asian/Pacific Islander: 0.21% Hispanic/Latino: 0.31% Other: 0.21% American Indian: 0.41% 	<ul style="list-style-type: none"> Median household income (2019): \$79,924 Per capita income (2019): \$40,254 Median home value (2021): \$223,333 Number of Single Unit Residences: Population below poverty level (2019) 3.2% 	<ul style="list-style-type: none"> Select Board- 5 members Town Clerk Town Treasurer Justices of the Peace

The Town of Bolton's housing market is very closely associated with the economic vitality of the county and region because most employed residents work outside of the town. Most housing is clustered around the Winooski River, its tributaries, or within valleys.

¹ Town of Bolton, 2017 Community Data Profile. Retrieved at: <https://boltonvt.com/wp-content/uploads/2015/07/Bolton-Data-Profile-2017.pdf>

² Vermont Gazetteer, Home Town Locator, July 1, 2021. Retrieved at: <https://vermont.hometownlocator.com/counties/subdivisions/data,n,town%20of%20bolton,id,5000706550,cfips,007.cfm#demographic>; Town of Bolton, 2017 Community Data Profile. Retrieved at: <https://boltonvt.com/wp-content/uploads/2015/07/Bolton-Data-Profile-2017.pdf>

Figure 1.1: Town of Bolton, Housing and Employment³



³ Chittenden County Regional Planning Commission, GIS Database, October 14, 2021.

Built Environment and Community Lifelines

The Town of Bolton identified 38 critical facilities or sites that serve as Community Lifelines or assets.

Table 1.2: Summary - Number of Community Lifelines and Community Assets, Town of Bolton

SECTOR	Safety and Security	Food, Water, Shelter	Health and Medical	Energy	Communications	Transportation	Hazardous Materials	Education	Cultural/Historical	High Hazard Dams
Assets	4	2	0	0	2	1	6	1	22	0

Safety and Security

As of October 2021, the Town of Bolton has one fire station, one Emergency Operations Center, and two government or military assets. In addition to the Bolton Fire Station, there is the Town Garage which houses Highway Department equipment.

Food, Water, Shelter

Food commodities are available throughout the Town of Bolton from public retail providers, wholesalers, and contracted services for specific institutions and facilities. There are also two shelter locations that are listed for the town.

The Town of Bolton has no municipal water or wastewater facilities.

Health and Medical

According to Hazus there are no medical facilities in the Town of Bolton. Residents within the town have access to medical facilities in Waterbury or other neighboring jurisdictions.

Energy

The Town of Bolton is served by the following entities for electric:

- Green Mountain Power
- Vermont Electric Cooperative

Communications

Based on the Hazus database, there are two communications assets within the town. Most communications and information systems and infrastructure in the United States are privately-owned.

Transportation

The town garage provides fleet services for maintenance and repair.

Hazardous Materials

There are six Tier 2 hazardous materials facilities/storage facilities inside the Town of Bolton.

Education

Currently there is one educational facility serving the community. The Smilie Memorial School provides preschool through fourth grade elementary education.

Recreational, Cultural and Historic Sites and Assets

The Town planning committee identifies five recreational sites, including the Bolton Valley Resort, the Green Mountain Club's Long Trail and pedestrian bridge over the Winooski River, Climbing Resource Access Group's properties, Town Forests, Vermont River Conservancy properties as key community assets.

The Vermont State Historic Register lists 15 historic assets in the Town of Bolton – 14 structures or sites and one district. The National Register of Historic Places lists two sites of historic significance - the Preston Lafrenière Farm and Honey Hollow Camp.

Natural Environment

The majority land coverage in the Town of Bolton is tree canopy, with grass and shrub in limited areas, primarily along the Winooski River, and other waterways (Figure 1.2). The river has designated Special Flood Hazard Areas (SFHA), or 100-year floodplains, on both banks and it and other waterways have River Corridors identified by the Vermont Agency of Natural Resources (ANR).

Figure 1.2: Town of Bolton, Geography and Land Cover⁴

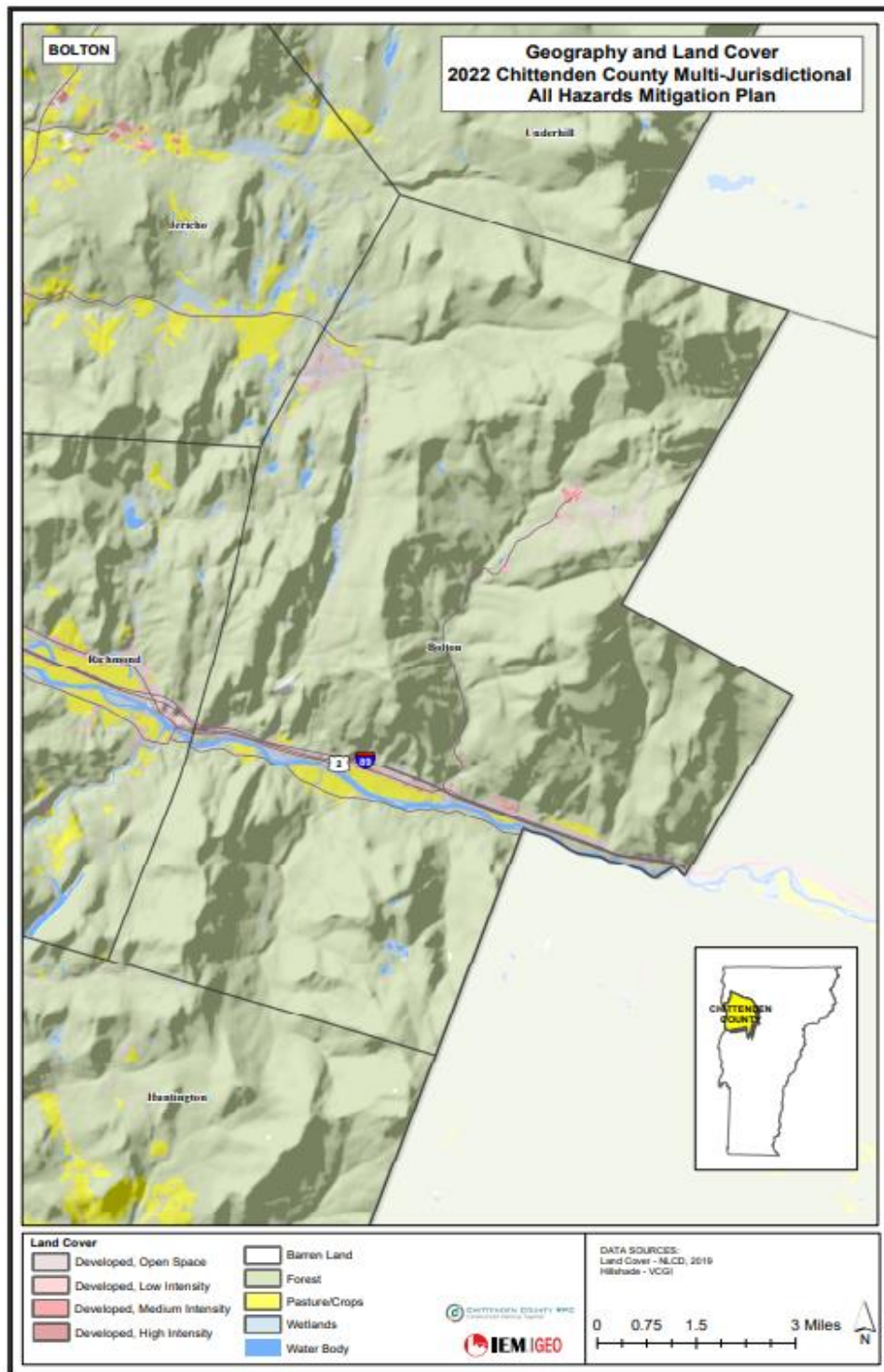


Figure 1.3: Town of Bolton, River Corridors and Floodplains⁵

⁴ Chittenden County Regional Planning Commission, GIS Database, October 14, 2021.

⁵ Chittenden County Regional Planning Commission, GIS Database, October 14, 2021.

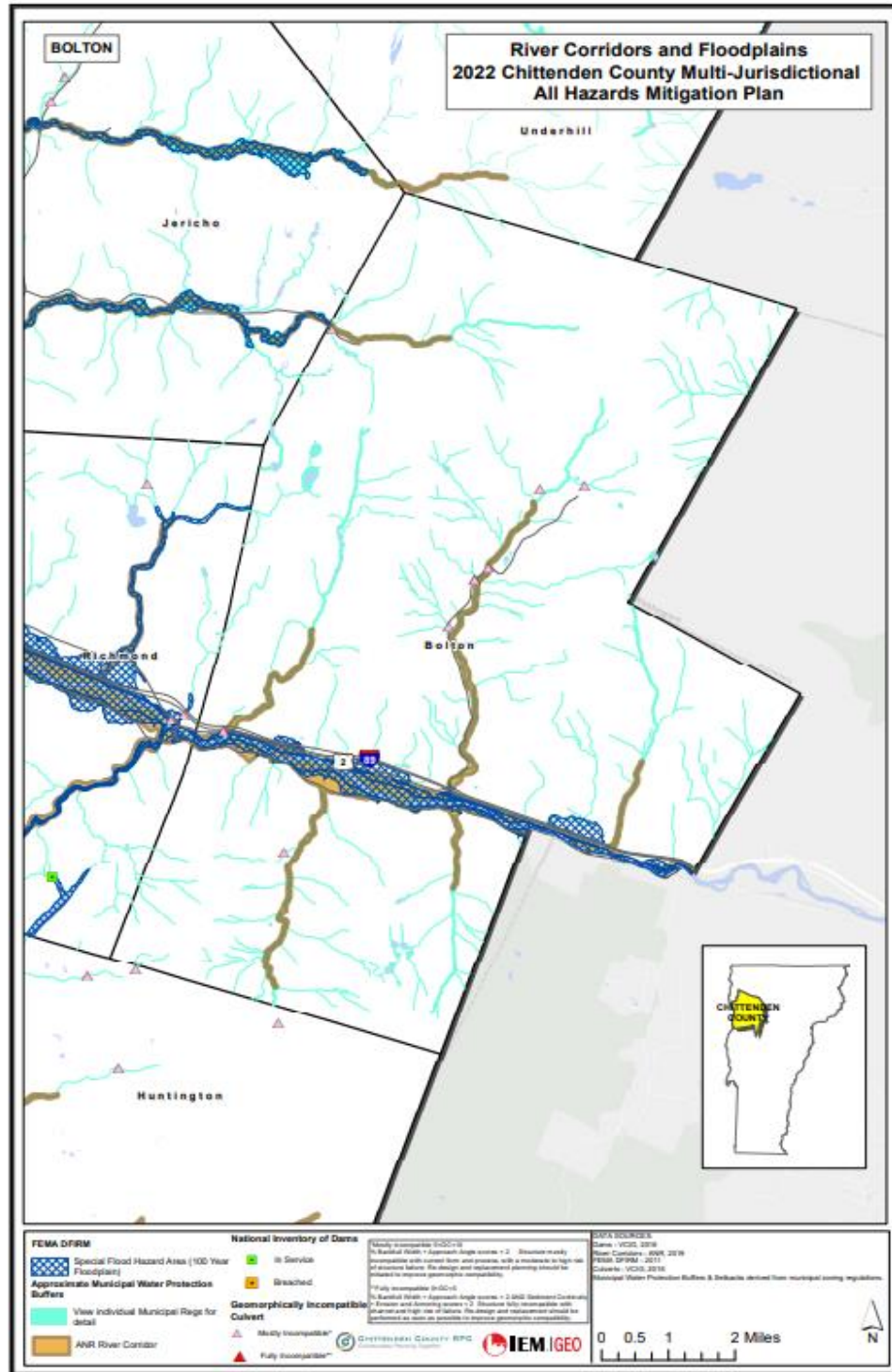
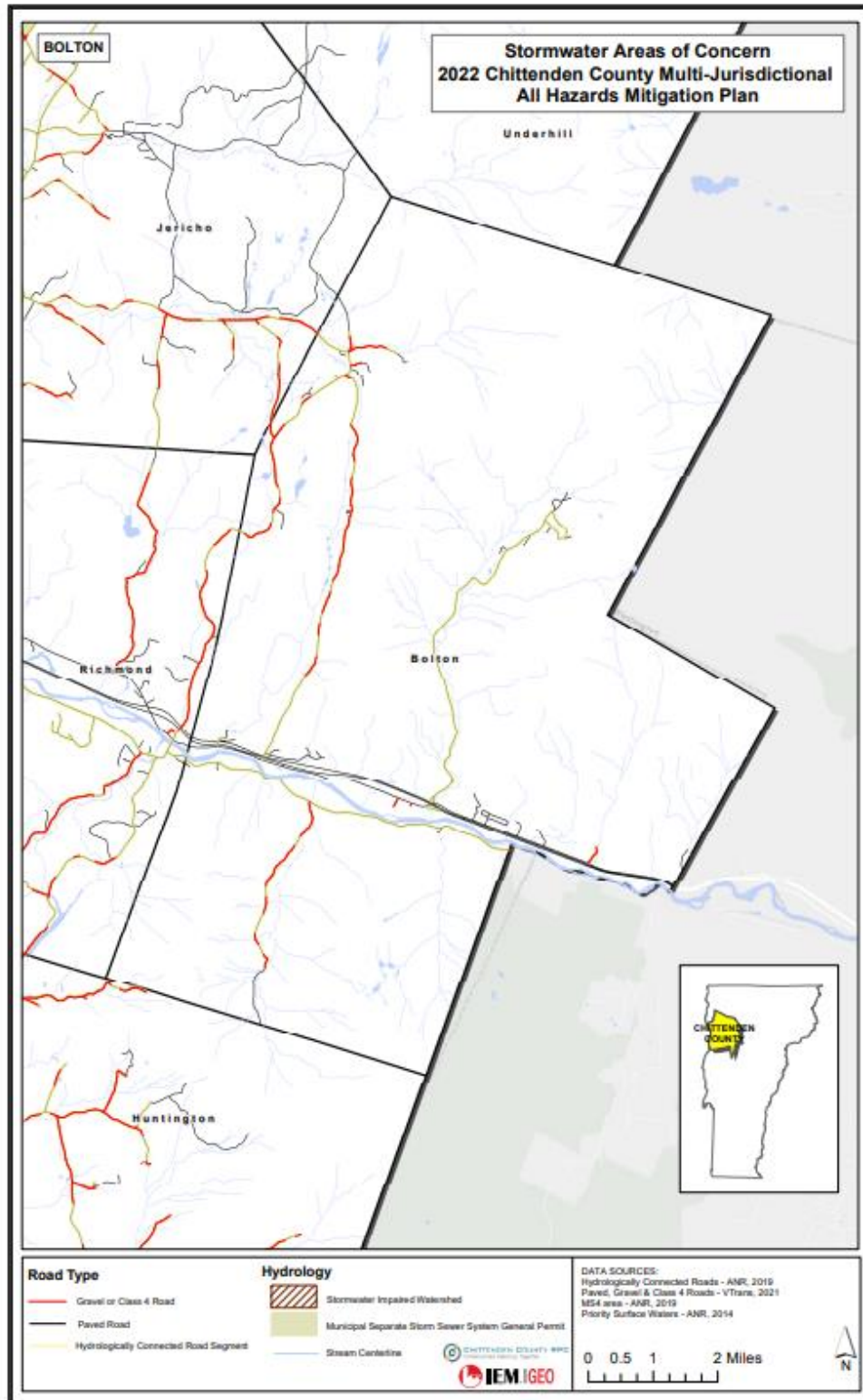


Figure 1.4: Town of Bolton, Hydrology and Stormwater Management Lines⁶

⁶ Chittenden County Regional Planning Commission, GIS Database, October 14, 2021.



Growth and Development Trends

Because of its mountainous terrain, much of Bolton remains undeveloped. Small concentrations of population, housing, and other development occur largely north of the Winooski River, along the US Route 2 corridor, in West Bolton, and at Bolton Valley, including the Bolton Valley Ski Resort. The majority of Bolton's land is conserved in public ownership or unable to be developed due to steep slopes and floodplains. Scattered, low density residential development, consisting largely of single-family homes, occurs along town-maintained highways.

Table 1.3: Population Growth, 2010 – 2020

2010	2020	2030	Net Change 2010 -2020	Percent Change 2010-2020
1,182	1,301	1,385	+330	+0.34%

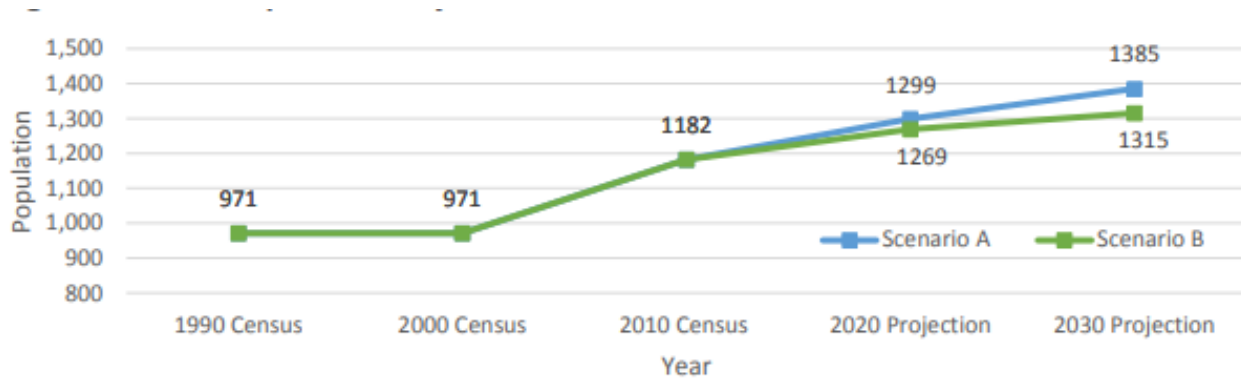
The town's population, based on a growth rate of about 1.1 percent annually, is projected to increase to 1,385 residents by 2030, based on two scenarios that consider natural increase and the rate of in-migration to the town. Most residents commute to jobs elsewhere in Chittenden County, so population growth is closely tied to economic stability and growth in the county. Designated planning areas have been identified for center, enterprise, metro, rural, suburban, and village designations. Specific land use ordinances are linked to these areas.

Table 1.4: Population Growth Projection, 2020-2030

2020	2030	Net Change 2020- 2030	Percent Change 2020-2030
1,301	1,385	4,273	2.5%

Figure 1.5: Bolton Population Projections to 2030⁷

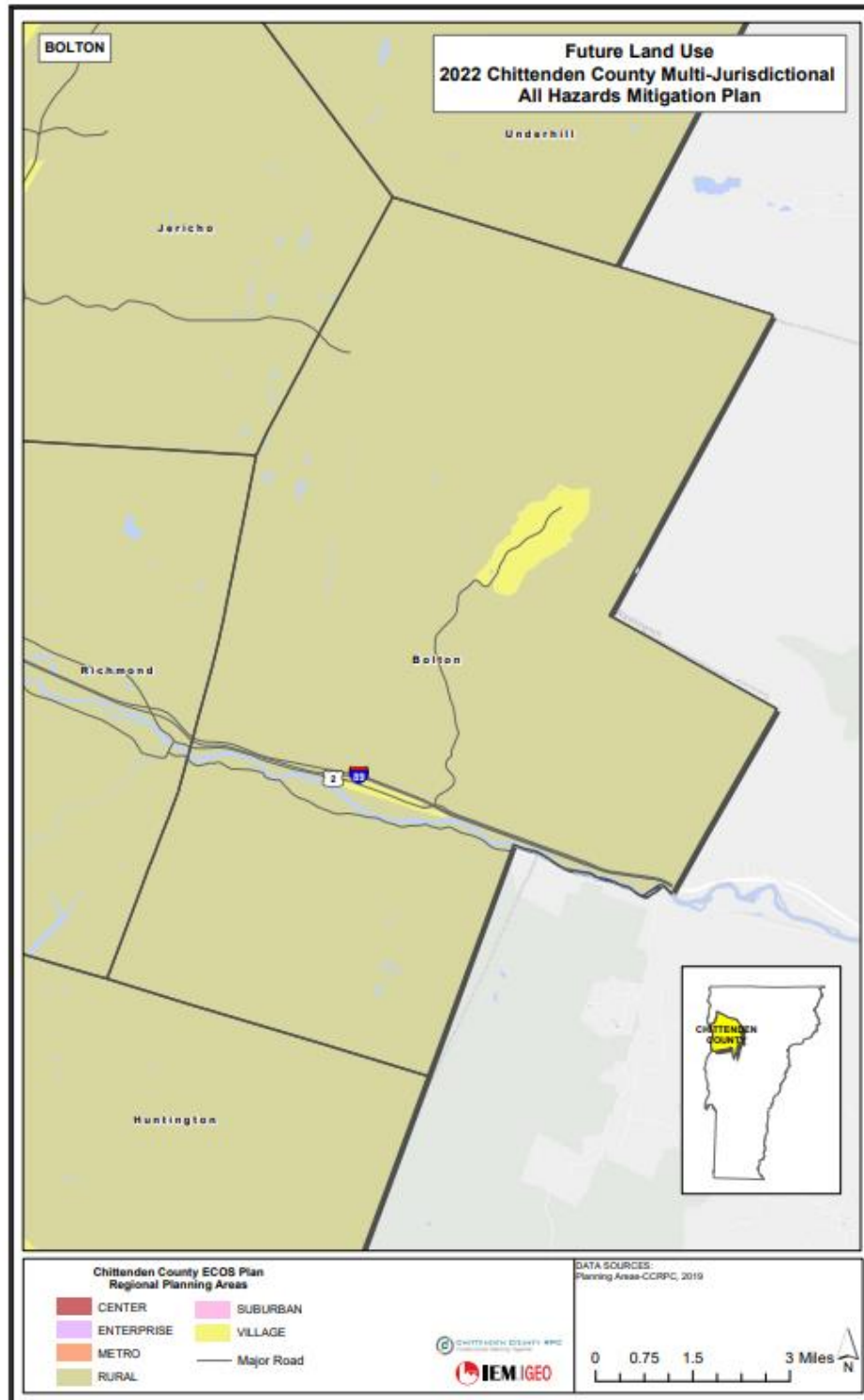
⁷ Vermont Agency of Commerce and Community Development; as reported in the Town of Bolton Community Data Profile, 2017. Retrieved at: <https://boltonvt.com/wp-content/uploads/2015/07/Bolton-Data-Profile-2017.pdf>



General housing trends are shown in the Base plan. Specific jurisdiction information can be located by contacting the Town Office.

Figure 1.6: Future Land Use, Town of Bolton⁸

⁸ Chittenden County Regional Planning Commission, GIS Database, October 14, 2021.



1.3 JURISDICTION PLANNING PROCESS

Table 1.5: Participants in Hazard Mitigation Planning, Town of Bolton

Name	Position/Title	Department/Agency
Amy Grover	Town Clerk & Treasurer	Town of Bolton
Mica Cassara	EMD	Town of Bolton
Dan Albrecht	Senior Planner	Chittenden County Regional Planning Commission

The jurisdiction identified its chief hazard mitigation planning responsibility as providing oversight in the planning process through the Town Clerk, and representation in the Chittenden County All Hazards Mitigation Plan Review and Update Committee (AHMPUC). The Town identified the following tasks as part of its mitigation planning responsibilities:

- Jurisdictional Planning Committee
- Planning Committee resource/subject matter expert
- Hazard risk and vulnerability assessment
- Provide technical data and information
- Capabilities Assessment
- Mitigation strategy development
- Sponsor mitigation actions
- Review Plan drafts and provide input
- Public outreach activities
- Implementation of the Plan
- Plan Maintenance

Public Participation

Several opportunities for public involvement were provided during the planning process, including a Public Hazard Survey and access to the draft plan for review and input.

The Public Hazard Survey was released through a web link posted on the Chittenden County Regional Planning Commission's (CCRPC) "Front Porch" e-newsletter.

In addition to the survey, the public was offered the opportunity to review and provide input to the Draft 2022 *MJAHMP* update. Notification of the Draft Plan release was made through the same CCRPC web link. Documentation of the public survey and draft plan review is included in **Attachment 3** of this annex.

1.4 JURISDICTION-SPECIFIC HAZARD HISTORY

The Town of Bolton has been included in fourteen Federal Disaster or Emergency Declarations since 1990, all but four as a result of severe storms or flooding.

Table 1.6: Federal Disaster and Emergency Declarations (1990- 2021), Town of Bolton

Declaration	Date	Hazard	Assistance Type
EM 3567	August 2021	Tropical Storm Henri	P(B)

Declaration	Date	Hazard	Assistance Type
EM-3437	March 2020	Vermont Covid-19	PA(B)
DR-4474	January 2020	Severe Storm and Flooding	-PA (A-G)
DR-4380	May 2018	Severe Storm and Flooding	PA (A-G)
DR 4232	June 2015	Severe Storm and Flooding	PA (A-G)
DR 4163	January 2014	Severe Winter Storm	PA (A-G)
DR 4140	August 2013	Severe Storms and Flooding	PA (A-G)
DR 4022	September 2011	Tropical Storm Irene	IA, PA(A-G)
DR 1995	June 2011	Severe Storms and Flooding	IA, PA(A-G)
EM 3167	April 2001	Snowstorm	PA(B)
DR 1228	July 1998	Severe Storms and Flooding	IA, PA(A-G)
DR 1101	January 1996	Ice Jams and Flooding	PA(A-G)
DR 875	June 1990	Flooding	PA(A-G)

Table 1.7: Summary of Storm Events in the Town of Bolton 1950-2021⁹

Event Type	Number of Incidents	Direct Deaths	Indirect Deaths	Direct Injuries	Indirect Injuries	Property Damage (in Dollars)	Crop Damage (In Dollars)
Cold/Wind Chill	10	0	0	0	0	0	0
Extreme Cold/Wind Chill	5	0	0	0	0	0	0
Flash Flood	3	0	0	0	0	35,000	0
Flood	9	0	0	0	0	78,000	0
Frost/Freeze	2	0	0	0	0	0	25,000
Hail	3	0	0	0	0	0	0
Heavy Snow	5	0	0	0	0	107,000	0
Heat	2	0	0	0	0	0	500,000
Heavy Rain	6	0	0	0	0	50,000	0
High Wind	25	0	0	1	0	102,160,000	0
Ice Storm	1	0	0	0	0	200,000	0
Lighting	1	0	0	0	0	0	0
Strong Wind	35	0	0	0	0	412,000	0
Thunderstorm	9	0	0	0	0	85,000	0
Winter Storm	90	0	2	0	0	5,001,563,000	15,000
Winter Weather	98	1	0	0	0	500,678,500	0
TOTAL	304	1	2	1	0	\$5,605,368,500	\$540,000

Table 1.8: Significant Hazard Events Identified by Town of Bolton, 2017-2021

Date	Hazard	Event and Description
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⁹ National Oceanic and Atmospheric Agency, National Centers for Environmental Information, Storm Events Database. Retrieved October 15, 2021.

7/8/2020	Thunderstorm Wind	Several fallen trees, limbs, and utility lines across Bolton.
5/4/2018	Thunderstorm Wind	Trees down along Interstate 89 and adjacent Route 2.

High Hazards of Concern to the Jurisdiction

Severe Winter Storm

Severe winter storms are not formally analyzed or mapped for the Town due to the random nature of where such damage occurs; however, these events do occur with some frequency and are addressed in **Section 4.8, Base Plan**.

Flood/Flash Flood

Bolton has a significant history of flooding related to severe storms, tropical storms, and ice jams. One of the most significant events in terms of lives and properties lost occurred almost 100 years ago in November 1927. The event washed away many homes and took lives when a railroad trestle that had previously protected the area gave out with the build-up of water and debris.

Historical accounts of this event point out the vulnerabilities of flood-prone areas in valleys and along waterways. Since that time, stormwater systems and infrastructure projects have addressed many areas susceptible to flood. However, with the growing impacts of climate change and the projected increase in frequency of extreme rainfall events, flooding and flash floods could occur more often.

Figure 1.7: Representative Impact from the 1927 Flood, Vermont¹⁰

¹⁰ Town of Bolton website. Photo courtesy of Vermont Public Broadcasting Station documentary, "And the Water Came Down from the Hills: The 1927 Flood". *While the photo is not specific to the Town of Bolton, it represents the historic impact of the flood event.* Retrieved at: <https://boltonvt.com/about/history/>

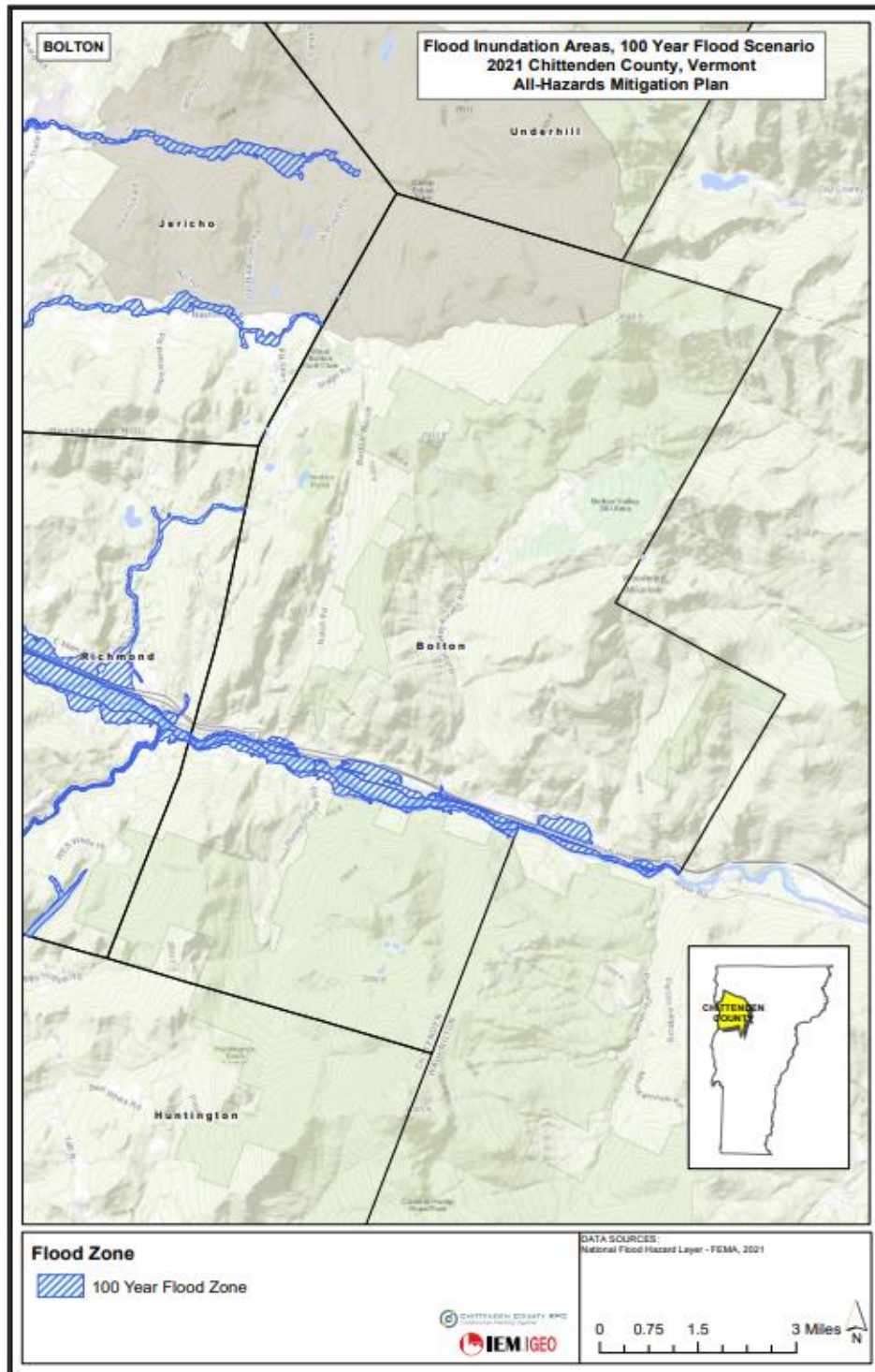


Special Flood Hazard Areas (SFHAs), as mapped by FEMA, exist along the banks of the Winooski River which bisects the town. The Town of Bolton has participated in the National Flood Insurance Program (NFIP) since 1981. Official FEMA Flood Insurance Study and Flood Insurance Rate Maps issued for the town by FEMA were most recently amended in 2014, as incorporated and referenced in the town's current flood hazard area regulations, Bolton's most recent regulations designate two Flood Hazard Area Overlay Districts: one for the Special Flood Hazard Area (SFHA) corresponding to the Village Zoning District and one covering the SFHA outside of the Village District.

Replacement homes, small accessory structures and functionally dependent facilities (e.g., bridges) are the only allowed structures within the Flood Hazard Overlay outside of the Village and are subject to flood hazard area review under the regulations. Where the overlay district intersects with the Village District, most development types are allowed as conditional uses, provided they comply with minimum NFIP standards and are located outside of the FEMA floodway.

Figure 1.8: Town of Bolton 100-Year Flood Scenario¹¹

¹¹ Hazus, 100-Year Flood Scenario Run, October 14, 2021.



A simple GIS intersection analysis reveals that portions of town roads and state highways are located within the 100-year floodplain, as are culverts, bridges and utility poles. Additionally, the railroad tracks through town are in the 100-year floodplain, which changes water flow during flood events. Unfortunately, this level of analysis does not consider fluvial geomorphology (volume, velocity, direction, etc.) and does not factor in the elevation of the infrastructure relative

to flood elevation. Analysis also reveals farmland located within the floodplain; however, without detailed studies it is not currently possible to predict how many cubic yards of productive soils might be lost during a flood event.

The town regulates all subdivisions and development within Special Flood Hazard Areas, as required for participation in the NFIP. The town Zoning Administrator and the town's Development Review Board (DRB) monitor program compliance. The DRB reviews and adjudicates applications for development within the floodplain in consultation with the Vermont Department of Environmental Conservation (DEC), including any proposed new construction. The town also works with DEC to respond to any local requests for Floodplain identification including questions about mapping.

The only systematic data on river flow in the municipality historically has been collected on the Winooski River at a gauge downstream of Bolton at a location straddling South Burlington and Essex Junction. While the data has been collected since the massive 1927 flood, once dams were constructed by the mid-1930s, water flows became more tightly regulated for flood control and electricity generation and therefore recorded peak flows may not accurately measure total rainfall or total discharge.

A new river gauge, installed by the USGS in 2016 upstream of Bolton on the Main Street Bridge in Waterbury Village in response to flooding during Tropical Storm Irene, provides more relevant river flow and flood level data for use in local emergency response planning and future hazard mitigation planning.

Water depths in the Winooski River that reach 417.0 feet trigger the Action Stage. Depths of 419.0 feet are considered as Minor Flood Stage. Water depth projections for the depicted time period indicate a forecast height of 415.2 feet within two days, which is below the Action Stage.

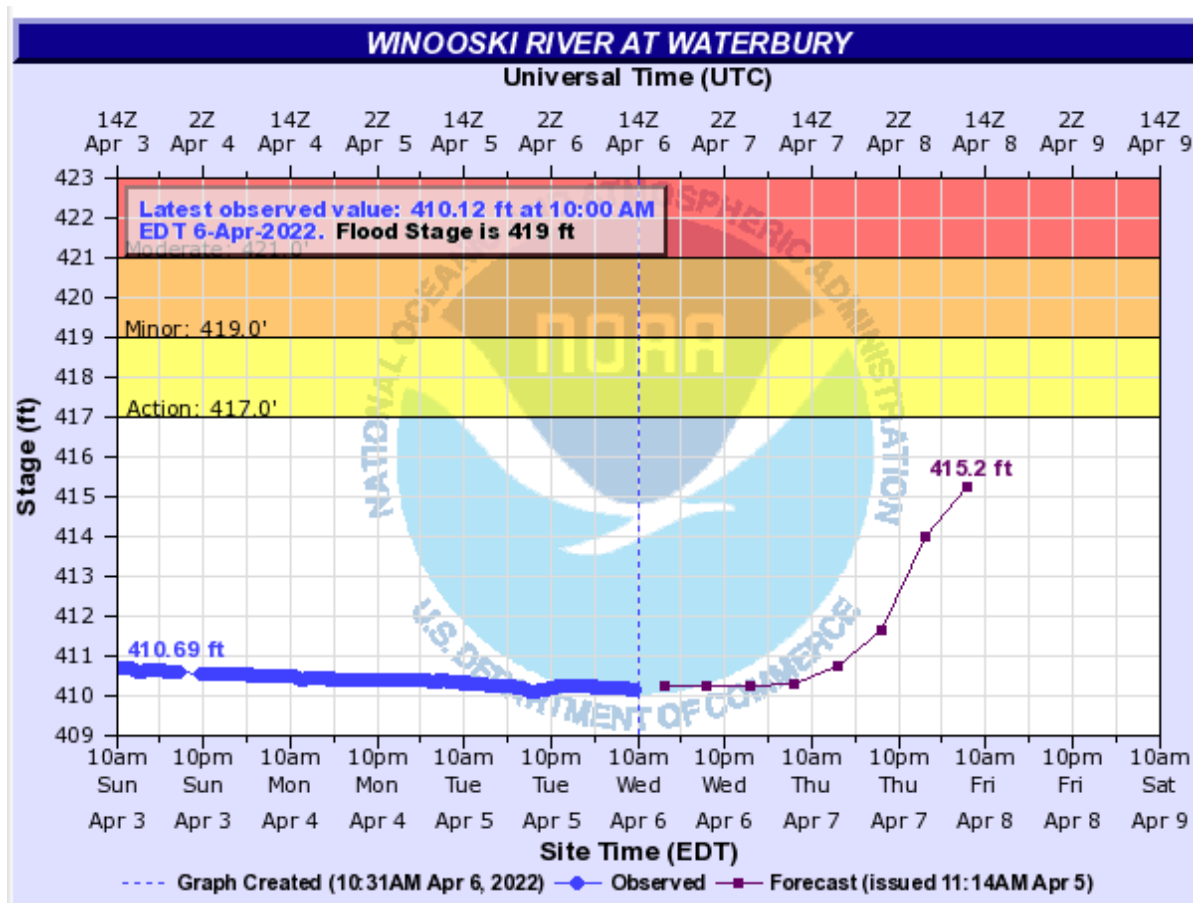


Figure 1.9: River Gauge Data, Winooski River at Waterbury¹²

Fluvial Erosion

Phase I Stream Geomorphic Assessments (SGAs) were completed for Duck Brook, Gleason Brook, Preston Brook and the Winooski River, and Phase II SGAs were completed for Joiner Brook and Mill Brook prior to the 2011 *MJAHMP*. A Phase 2 SGA based River Corridor Protection Area (formerly Fluvial Erosion Hazard Area) and River Corridor Management Plan was developed for the portion of Joiner Brook where the SGA was completed. Sections of Joiner Brook, and its major tributaries, have high fluvial erosion potential, and also a high landslide potential, as separately mapped by the Vermont State Geologist. Figure 1.3 indicates all portions of streams in Bolton that are included in mapped River Corridors or River Corridor Protection Areas. A portion of the Smilie School property lies within the ANR-mapped River Corridor for Joiner Brook.

¹² NOAA, National Weather Service, Advance Hydrologic Prediction Service, data as of April 6, 2022. Retrieved at: <http://water.weather.gov/ahps2/hydrograph.php?gage=watv1&wfo=btv>

Landslides

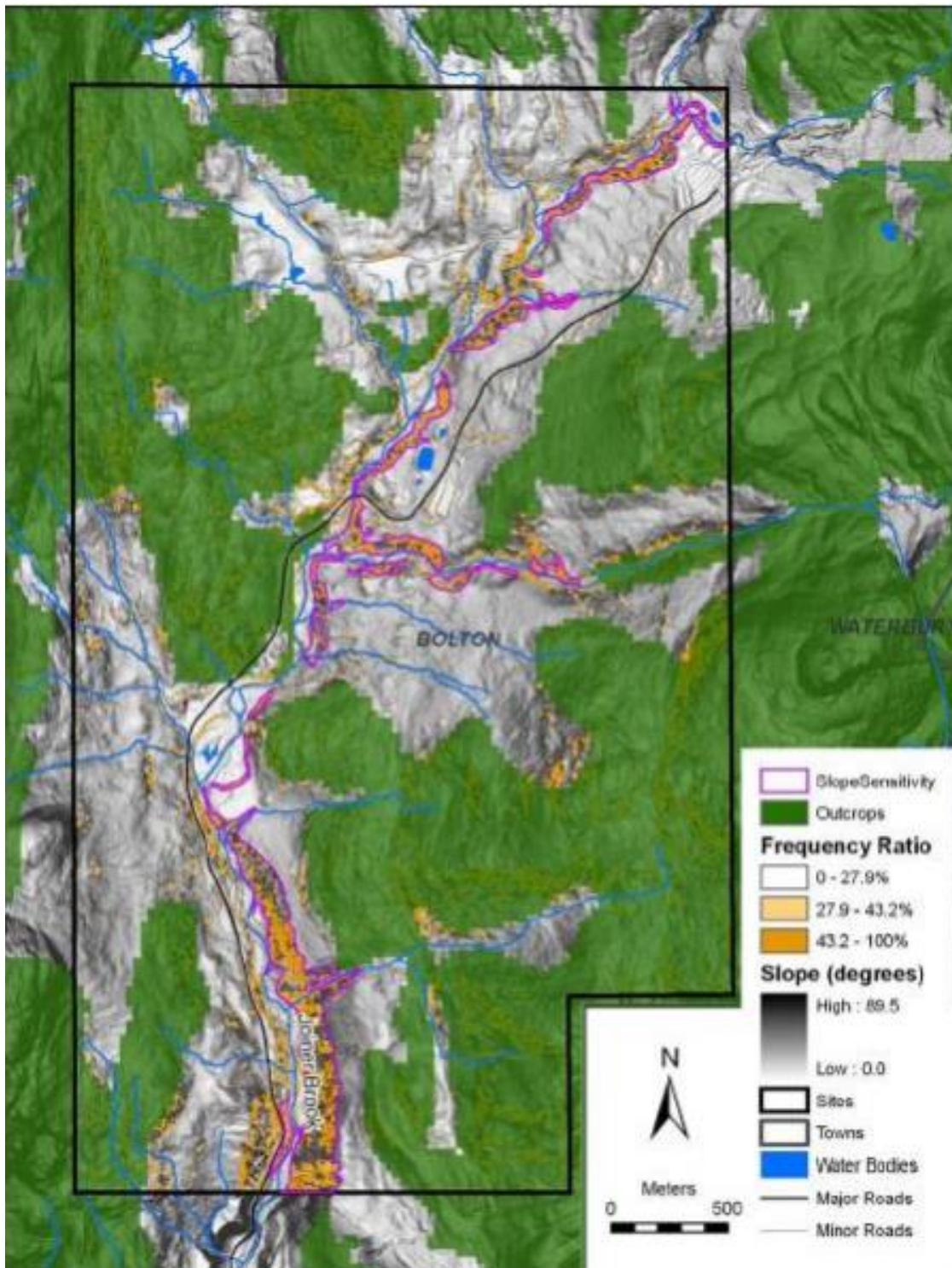
One of the study sites in the Vermont Geological Survey's 2012 report "*Protocol for Identification of Areas Sensitive to Landslide Hazards in Vermont*" was the Joiner Brook watershed as well as major tributaries (e.g., Goose Pond Brook on east side of valley) in Bolton.

The report first notes: The Joiner Brook watershed is on the west side of the Green Mountains in central Bolton. Joiner Brook flows into the Winooski River. The Bolton Valley Resort lies in the upper part of the drainage and affects the drainage in terms of runoff, sedimentation, and erosion. The Bolton Valley Access Road roughly parallels Joiner Brook on its way up to the resort. Joiner Brook flows south across the site area in a dendritic/rectangular pattern. One major tributary flows east into Joiner Brook from the east central part of the site area. Bedrock outcrops dominate the uplands in the site area. The remaining surface is covered with glacial till. Eleven mass failures were identified in the site area by the Rivers Management Program. Thirteen translational slides were investigated as part of the initial field reconnaissance for this project. All of the slides occur on the valley walls of Joiner Brook, primarily on the east side of the valley. The reason for this is not clear.

After applying the protocol at this study site, the report concluded:

...aspect, slope, and roughness are the most influential parameters in Joiner Brook. Because Joiner Brook flows south across the site area and most of the landslides are on the eastern side of the valley, aspect was a dominant parameter and was able to explain many of the landslides. However, areas in valleys not trending north-south, such as the tributary flowing into Joiner Brook from the east were not adequately modeled using this parameter. Therefore, the best map found to identify most landslides at this site area was a combination of slope and roughness. Excerpted below is the map referenced in the report.

Figure 1.10: Joiner Brook Landside Site Area¹³



¹³ Protocol for Identification of Areas Sensitive to Landslide Hazards in Vermont, Vermont Geological Survey, 2012; as presented in the 2017 Chittenden County Multi-Jurisdictional All Hazards Mitigation Plan. The map illustrates the results of frequency ratio analysis in percent and areas of slope sensitivity.

Severe Rainstorms

In prior versions of this Annex and the County Plan, damage to roads, culverts and bridges from thunderstorm events was discussed as either the result of flooding or fluvial erosion. It was assumed that overflowing nearby streams, rivers or lakes were the cause of the damage. Analysis has shown that this damage is caused by intense, localized thunderstorms which cause excessive and rapid water flows and flash flooding on and over paved and gravel roads, roadside ditches, driveway culverts, stormwater systems, etc.

In many cases, damaged infrastructure is located nowhere near a formally mapped Floodplain or Fluvial Erosion Hazard Area or River Corridor Protection Area. This was the case in more recent FEMA-declared disasters in the summer of 2013 and 2015. While past damage locations can sometimes be mapped (depending upon the degree and accuracy of data collection efforts) this may or may not provide any degree of predictability of the potential locations for future events.

The Town of Bolton's road infrastructure as well as many private driveways have very steep grades (>10%) and are therefore susceptible to damage from intense rainstorms—including, for example, portions of Notch Road and the Bolton Valley Access Road. Damage occurring in DR 4120, DR 4022, DR 4232 and DR 1995 included significant damage from severe rainstorms.

High winds and lightning are subsumed within the category of Severe Rainstorms. Ridgeline and hilltop infrastructure, utility lines, and homes located in the midst of mature forests are the most vulnerable to damage from falling trees and tree limbs. Twenty-five high wind events, costing more than \$102 million have been specifically identified as affecting Bolton between 1950 and 2021 by the National Centers for Environmental Information, Storm Events Database. No lightning strikes resulting in damage have been recorded in Bolton in the past 20 years; but a 2016 wildfire atop Robbins Mountain that took several weeks to extinguish, was attributed to a lightning strike one of 68 such strikes recorded in 2016 in Bolton. High winds are also common through the "Bolton Flats" along Route 2. High winds have caused issues with the Town Garage roof in the past.

1.5 HAZARD RISK RANKING

After developing hazard profiles, the Town of Bolton Planning Commission conducted a two-step quantitative risk assessment for each hazard that considered population vulnerability, geographic extent/location, probability of future occurrences, and potential impacts and consequences. The numerical scores for each category were totaled to obtain an **Overall Risk Score**, which is summarized as one of these risk and vulnerability classifications:

- **Low:** Minimal potential probability and impact. Minimal or no property damage or loss of life expected.
- **Medium:** Moderate probability and potential impact; moderate threat level to the general population and/or the built environment. The potential damage is more isolated and less costly than a widespread disaster.

- **High:** Significant probability and widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past, causing significant impact.

The two-step hazard risk ranking methodology is detailed in [Section 4, Base Plan](#). The Hazard Risk Ranking scores for Town of Bolton are provided in [Attachment 2](#) of this annex.

The **Overall Risk Score** for each hazard served as the basis for determining whether a vulnerability assessment should be conducted. Natural hazard profiles are presented within the hazard sub-sections in [Section 4, Base Plan](#), and local detail is provided in the Jurisdiction Annexes.

Table 1.9: Hazard Risk Ranking Summary - Natural Hazards, Town of Bolton

Hazard	Sum - Impact/ Consequence Score	Probability	Total Risk Rating (Impact/ Consequences x Probability)	Hazard Ranking
Fluvial Erosion	11	5	55	High
Severe Rainstorm	10	5	50	High
Flood	11	4	44	High
Severe Winter Storm	8	5	40	High
Wildfire	8	4	32	Medium
Human Infectious Disease	7	3	21	Medium
Invasive Species	5	4	20	Medium
Extreme Temperatures	3	4	12	Low
Dam/Levee Failure	[Not Ranked]			

Table 1.10: Hazard Risk Ranking Summary - Technological Hazards, Town of Bolton

Hazard	Sum - Impact/ Consequence Score	Probability	Total Risk Rating (Impact/ Consequences x Probability)	Hazard Ranking
Power Loss	8	5	40	Medium
Telecommunications Failure	7	4	28	Medium
Major Transportation Incident	10	3	30	Medium
Multi-structure Fire	4	3	12	Low
Water Pollution (algal bloom, etc.)	6	2	12	Low
Hazardous Materials Incident	6	2	12	Low
Water Supply Loss	3	2	6	Low
Other Fuel Service Loss	4	1	4	Low
Sewer Service Loss	3	1	3	Low
Natural Gas Service Loss	0	1	0	Low

Table 1.11: Hazard Risk Ranking Societal Hazards

Hazard	Sum - Impact/ Consequence Score	Probability	Total Risk Rating (<i>Impact/ Consequences x Probability</i>)	Hazard Ranking
Key Employer Loss	6	4	24	Medium
Economic Recession	4	4	16	Low
Crime	4	4	16	Low
Civil Disturbance	4	1	4	Low
Terrorism	5	1	5	Low

1.6 VULNERABILITY ASSESSMENT

The methodology for calculating loss estimates presented in this annex is the same as that described in [Section 4, Base Plan](#). Quantitative loss estimates are provided when available. Qualitative measurement considers hazard data and characteristics, including the potential impact and consequences based on past occurrences. Accompanying the data is a discussion of community assets potentially vulnerable during a hazard event.

Typical vulnerabilities from common hazards consist primarily of:

- Damage to public infrastructure especially roads and culverts
- Temporary closures of roads and bridges including from debris
- Temporary loss of power and/or telecommunications
- Temporary isolation of vulnerable individuals such as the elderly or those in poverty

More specifically, these vulnerabilities typically occur in association with the hazards profiled in [Section 4, Base Plan](#).

Table 1.12: Typical Vulnerabilities of Natural Hazards of Highest Concern, Town of Bolton

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Dam Failure	<ul style="list-style-type: none"> • Injuries, deaths • Major property and infrastructure damage 	<ul style="list-style-type: none"> • Short- to long-term environmental losses

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Extreme Temperatures	<ul style="list-style-type: none"> • Damage to public infrastructure • Loss of water service 	<ul style="list-style-type: none"> • Budget impacts due to needed repairs
Flood/Flash Flood	<ul style="list-style-type: none"> • Temporary closures of roads and bridges from inundation, washouts, and debris • Temporary loss of power and/or telecommunications, and • Temporary isolation of vulnerable individuals • Damage to public infrastructure 	<ul style="list-style-type: none"> • Budget impacts from cleanup
Fluvial Erosion	<ul style="list-style-type: none"> • Temporary closures of roads and bridges from slides, debris • Temporary loss of power and/or telecommunications • Temporary isolation of vulnerable individuals • Damage to public infrastructure 	<ul style="list-style-type: none"> • Budget impacts from road/bridge closures and repairs to public infrastructure • Damages to individuals' properties and businesses
Human Infectious Disease	<ul style="list-style-type: none"> • Temporary closures of schools, businesses, places of assembly • Increased demand on medical services • Deaths 	<ul style="list-style-type: none"> • Increased demand on mortuary services • Economic impacts • If an epidemic is widespread and long-lasting, impact could be severe
Invasive Species	<ul style="list-style-type: none"> • Unknown at this point 	<ul style="list-style-type: none"> • Unknown at this point.
Severe Rainstorm	<ul style="list-style-type: none"> • Temporary closures of roads and bridges from flash flooding, washouts, and debris • Temporary loss of power and/or telecommunications • Temporary isolation of vulnerable individuals • Damage to public infrastructure 	<ul style="list-style-type: none"> • Budget impacts from road/bridge closures and repairs to public infrastructure • Damages to individuals' properties and businesses
Severe Winter Storm	<ul style="list-style-type: none"> • Temporary closures of roads and bridges from snow, ice, and debris • Temporary loss of power and/or telecommunications • Temporary isolation of vulnerable individuals 	<ul style="list-style-type: none"> • Budget impacts from cleanup

Relative to the county as a whole, the Town of Bolton has a higher vulnerability to the following natural hazards:

- Severe Rainstorms
- Fluvial Erosion due to mountainous terrain, including steep slopes, steep road grades, and roads located along mountain streams, amount of gravel roads
- Major flooding along the Winooski River
- Wildfires, including upland forest fires, due to the amount of forest cover, high elevation exposure to lightning strikes.

Vulnerabilities with regards to **Technological Hazards** are harder to project as these incidents occur with less frequency and less predictability.

Table 1.13: Typical Vulnerabilities of Technological Hazards of Highest Concern, Town of Bolton

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Gas Service Loss	<ul style="list-style-type: none"> • No natural gas service in Town. 	N/A
Flood/Flash Flood	<ul style="list-style-type: none"> • Temporary closures of roads and bridges from inundation, washouts, and debris • Temporary loss of power and/or telecommunications, and • Temporary isolation of vulnerable individuals • Damage to public infrastructure 	<ul style="list-style-type: none"> • Budget impacts from cleanup
Hazardous Materials Incident	<ul style="list-style-type: none"> • Temporary closures of roads and bridges during cleanup 	<ul style="list-style-type: none"> • If large event, potential high cleanup costs • Injuries to persons
Major Transportation Incident	<ul style="list-style-type: none"> • Temporary closures of transportation infrastructure • Injuries, deaths 	<ul style="list-style-type: none"> • If major event, potential long-term closure of infrastructure
Other Fuel Service Loss	<ul style="list-style-type: none"> • Temporary loss of service • Temporary impacts to vulnerable individuals 	<ul style="list-style-type: none"> • If extensive loss, potential budget impacts to service providers.
Power Loss	<ul style="list-style-type: none"> • Temporary loss of electrical service • Temporary impacts to vulnerable individuals • Damage to public infrastructure 	<ul style="list-style-type: none"> • If extended event, damage to perishable goods or business income • If extensive loss, potential budget impacts to service providers.
Sewer Service Loss	<p>Primarily applicable to Bolton Valley Resort, Fernwood Manor Mobile Home Park.</p> <ul style="list-style-type: none"> • Temporary loss of service • Temporary impacts to vulnerable individuals 	<ul style="list-style-type: none"> • If extensive loss, potential budget impacts to service providers.

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Telecommunications Failure	<ul style="list-style-type: none"> • Temporary loss of service • Temporary impacts to vulnerable individuals 	<ul style="list-style-type: none"> • If extensive loss, potential budget impacts to service providers
Water Pollution	<ul style="list-style-type: none"> • Anticipate Budgetary impacts due to Municipal Roads General Permit requirements. 	<ul style="list-style-type: none"> • If extensive loss, potential budget impacts to service providers.
Water Service Loss	Primarily applicable to Bolton Valley Resort, Fernwood Manor Mobile Home Park: <ul style="list-style-type: none"> • Temporary loss of service • Temporary impacts to vulnerable individuals 	<ul style="list-style-type: none"> • If repeat events, impacts to tourism-based businesses.
Wildfire	<ul style="list-style-type: none"> • Damage to public and private property, including state parks and forestland 	<ul style="list-style-type: none"> • Deforestation, and related environmental and economic losses

Relative to the County as a whole, the Town of Bolton has a slightly higher vulnerability to the following technological hazards:

- Major Transportation Incident due to the transit of a railroad line, US 2, and Interstate 89 through the Town.
- Power Loss and Telecommunications Failure due to mountainous terrain, high elevation tower facilities (Robbins Mountain)

With regards to **Societal Hazards**, vulnerabilities are typically more dispersed among individuals and societal sectors compared to the natural environment and to technology which is fixed.

Table 1.14: Typical Vulnerabilities of Societal Hazards of Highest Concern, Town of Bolton

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Civil Disturbance	<ul style="list-style-type: none"> • Injuries to persons • Damage to public and private property 	<ul style="list-style-type: none"> • Budget impacts to police services, depending upon severity of event • Damage to public and private property • Deaths
Crime	<ul style="list-style-type: none"> • Increased demands on police services and social services 	<ul style="list-style-type: none"> • Injuries • Deaths
Economic Recession	<ul style="list-style-type: none"> • Loss of economic activity • Increased demands on social services • Some loss of tax revenue 	<ul style="list-style-type: none"> • Effects increased if event is of extended duration

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Terrorism	<ul style="list-style-type: none"> • Injuries to persons • Damage to public and private property 	<ul style="list-style-type: none"> • Injuries • Deaths

Relative to the County as a whole, there is insufficient data to conclude whether the Town is more vulnerable to one of the Societal Hazards noted above. However, as the Bolton Valley Resort is the Town's only major employer, any closure of this resort would have a significant impact.

Population

The Centers for Disease Control and Prevention's (CDC) **Social Vulnerability Index (SVI)** is a tool that can be used to identify specific vulnerable populations. The CDC SVI depicts the vulnerability of communities at census tract level, by county, into fifteen census-derived factors grouped into four themes—socioeconomic status, household composition/disability, race/ethnicity/language, and housing type/transportation. Social vulnerability refers to a community's capacity to prepare for and respond to the stress of hazardous events ranging from natural disasters, such as tornadoes or disease outbreaks, to human-caused threats, such as toxic chemical spills.

Based on the Overall SVI for Chittenden County the Town of Bolton is in an area of lowest vulnerability.

Additional data and information related to vulnerable populations is addressed in **Section 3, Base Plan**.

Table 1.15 Vulnerable Population, Town of Bolton¹⁴

Population Category	Percentage
Children Under 18	[[Not available]]
Population, age 65+	4.6%
Disabled Population	[Not available]
Population Below Poverty Level	5.3%

Built Environment

Although a vulnerability analysis was conducted utilizing the Hazus modeling scenarios, it was conducted at the county level and no additional Hazus data is available for specific jurisdictions.

¹⁴ United States Census Bureau, October 2021.

Based on information provided by the jurisdiction the following Community Lifeline sites or facilities potentially at risk:

- The Town Garage is in a mapped Special Flood Hazard Area (SFHA).
- Smilie School (the primary shelter) is in the mapped River Corridor.
- The Town Office/Emergency Operations Center and the Fire Department are not located in any mapped hazard areas; however, access to them may be blocked by flood waters during a flood or flash flood event.

The statistical overview of roads in the Town of Bolton, shows the range of road types within the town, from highways to unpaved roads. The different road types have different hazard vulnerabilities. Unpaved roads are more vulnerable to being washed out in a flood or heavy storm, while traffic incidents are more likely to occur on large, arterial roads. Municipal highways, bridges and dams are well mapped in Chittenden County. The state divides municipal (town) highways into three classes (described in [Section 4, Base Plan](#)) for purpose of highway maintenance and state aid.

Table 1.16: High Crash Road Sections, 2010-2014, Town of Bolton

Road	Road Type	Section (miles)	Severity Index \$/Crash
Interstate 89	Rural Interstate	72.000-72.300	\$8,900

Table 1.17: Highway Mileage by Class, Town of Bolton¹⁵

Class 1	Class 2	Class 3	Class 4	State Hwy	Fed Hwy	Interstate	Total 1,2,3, State Hwy
-	8.580	12.01	0.30	11.306	-	-	31.896

Table 1.18: Highway Mileage by Surface Type, Town of Bolton¹⁶

Paved	Gravel	Soil or Graded	Unimproved	Impassable	Unknown	Total
21.466	7.598	3.032	0.1	0	0.3	32.496%
Total Known	Total Unknown	% Paved	% Unpaved			
32.196	10.73	66.6%	33.3%			

Table 1.19: Bridges located in the SFHA and/or River Corridor, Town of Bolton¹⁷

¹⁵ Chittenden County Regional Planning Commission, October 2021.

¹⁶ Ibid.

¹⁷ Ibid.

Bridge Type/ Number	Location	Route Name	Year Built	SFHA ?	RCPA ?	Stream
Rolled BM W TMBR DK (Town Long Structure)	o.1 MI to Jct W CL2 TH3	Cemetery Road	1919	No	Yes	Mill Brook RMPSFEH 091210
Concrete T-Beam (Town Long Structure)	0.08 MI to Jct W US2	Joiner Brook Lane	1919	Yes	Yes	Joiner Brook RMPSFEH 011409
Concrete (Town Long Structure)	Just east of Jct Honey Hollow Rd.	Duxbury Road	1939	No	Yes	Preston Brook
Rolled Beam (State Long Structure)	6.4 MI W Jct VT. 100N	US 2	1961	Yes	Yes	Joiner Brook RMPSFEH 011409
4 SPN Cont WGIR/RB (State Long Structure)	6.8 Mi N Exit 10	189	1961	No	Yes	Joiner Brook RMPSFEH 011409
5 SP Cont Welded PI (State Long Structure)	6.5 Mi W Jct VT. 100N	US 2	1961	No	Yes	Joiner Brook RMPSFEH 011409
5 SPN Cont WGIR/B36B- (State Long Structure)	6.8 Miles N Exit 10 on I-89	I-89N	1961	Yes (Part)	Yes	Joiner Brook RMPSFEH 011409
Railroad Bridge	Crosses Joiner Brook	Railroad		Yes	Yes	Joiner Brook
6 SPN Cont WGIR/RB Bridge No. 0051S	6.8 Miles N Exit 10 on I-89	I-89S	1961	Yes (Part)	Yes (Part)	Joiner Brook
Pedestrian suspension bridge (Green Mountain Club)	1.2 Miles east of Jct Cochran & Duxbury roads	Long Trail	2015	Yes	Yes	Winooski River

Table 1.20: Culverts with Geomorphic Compatibility Rating of “Mostly Incompatible” or “Incompatible” from Phase II Stream Geomorphic Assessments (Joiner and Mill Brooks), Town of Bolton

Bankfull Width	Compatibility Score	Location	Road Name	Owner	Stream Name
36.84	7	Directly above Bolton Valley Access Road culvert	Catamount Ski Trail	Private	Trib. to Joiner Brook
50.00	8	-	US Route 2	State	Duck Brook
36.84	8	At Intersection for Catamount Ski Trail	Bolton Valley Access RD	Town	Trib. to Joiner Brook
44.12	8	Just down the road from sugar shack building on left	Bolton Valley Access RD	Town	Trib. to Joiner Brook

Bankfull Width	Compatibility Score	Location	Road Name	Owner	Stream Name
26.32	8	Second culvert on the Catamount Ski Trail	Catamount Ski Trail	Private	Trib. to Joiner Brook
43.36	8	Bolton Valley Cross Country Ski parking lot	Parking Lot	Private	Joiner Brook
58.82	10	Just above turn to West Bolton Golf Club & down from West Bolton four corners	Nashville Rd	Tow	Trib. to Mill Brook
66.13	10	Sharp bend 1/2 way up steep hill	Bolton Valley Access RD	Town	Joiner Brook
62.01	13	Near Boulder Wood Lane	Duxbury Rd	Town	Gleason Brook

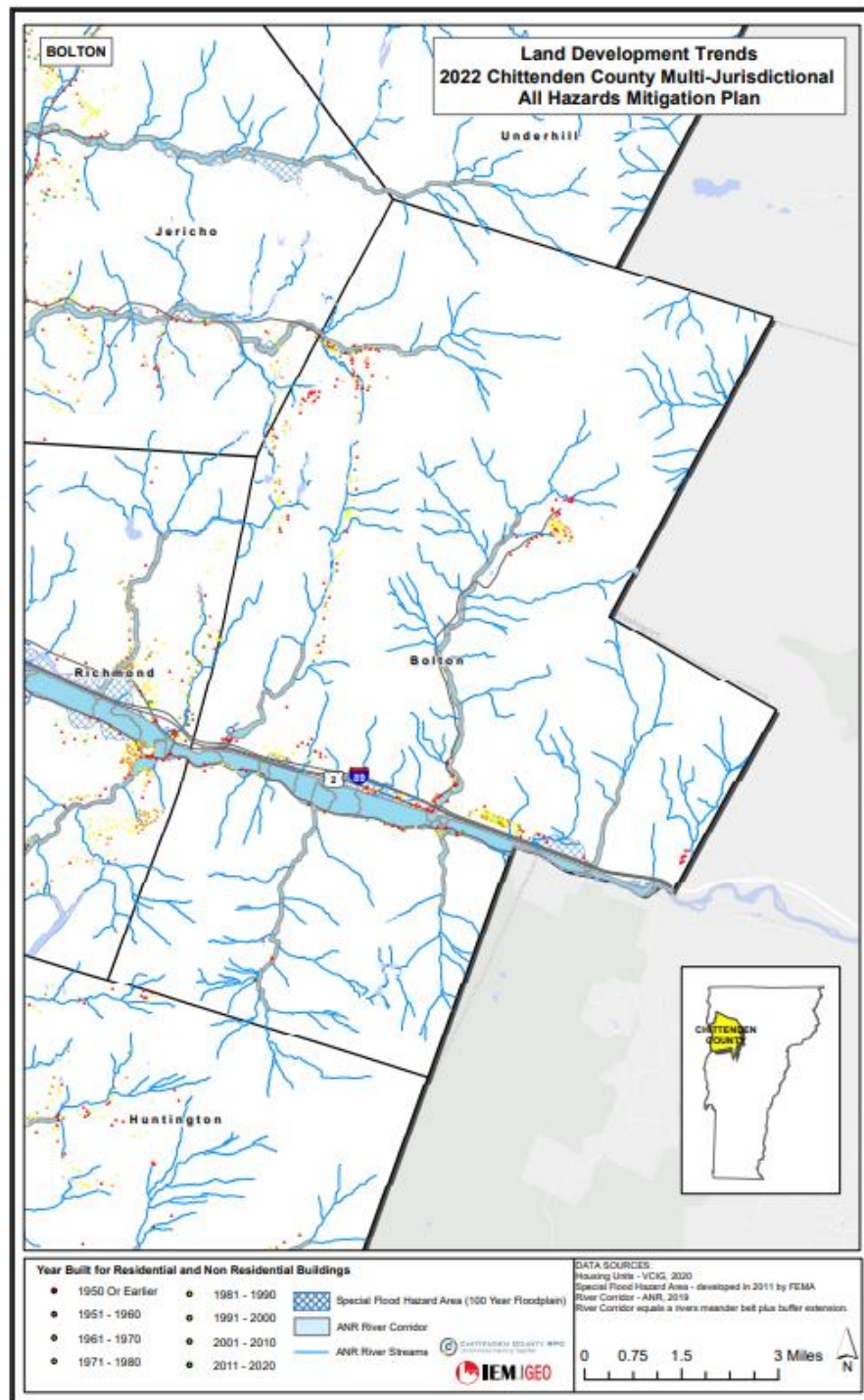
Table 1.21: Fuel and Hazardous Materials Storage Site in Excess of 10,000 lbs., Town of Bolton¹⁸

Owner/Facility	Type of Storage
Bolton Valero (US 2)	Gasoline
Fernwood Manor Mobile Home Park (West St.)	Various Chemical Related to Drinking Water Treatment
Green Mountain Power (Bolton Substation #1, Green Mt. Dr.)	Lead-Acid Batteries
Bolton Valley Resort (Bolton Valley Access Rd.)	Various Fuels
RCC Robbins (Tower Facility, Robbins Mt.)	Lead Acid Batteries and Sulfuric Acid
Verizon Wireless (Tower Facility, Robbins Mt.)	Sulfuric Acid

Analysis of the land development pattern indicates that most residential and non-residential development is clustered in valleys or low-lying areas; however, other than the Winooski River area, they are not typically located in SFHAs or River Corridors. Critical facilities in relation to power providers within the Town of Bolton, which is Green Mountain Power, indicate there is a fire station and emergency shelter in close proximity to the Winooski River and Interstate 89.

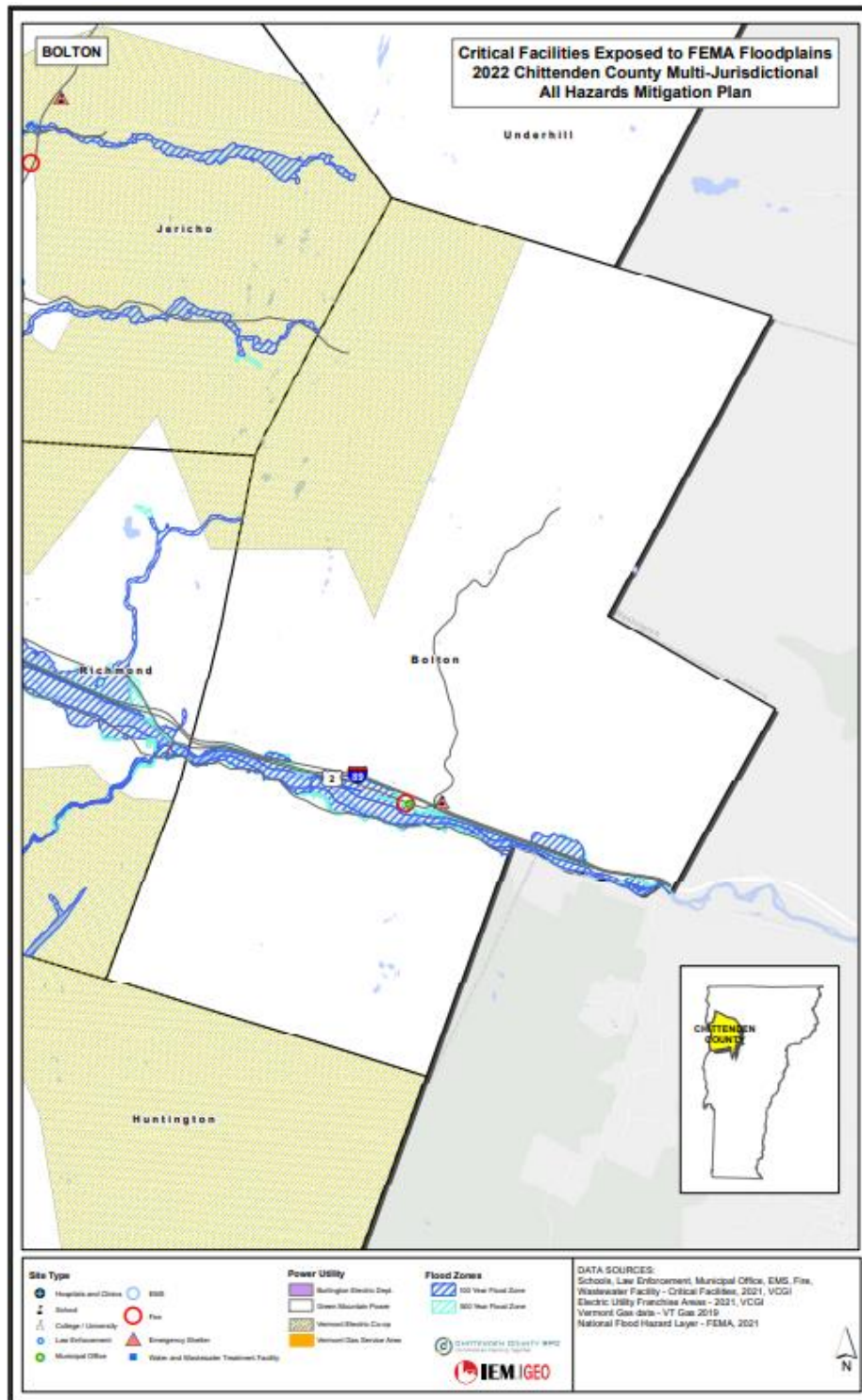
¹⁸ Chittenden County Regional Planning Commission, October 2021; Town of Bolton, March 2022.

Figure 1.11: Land Development Trends, Town of Bolton – 1950 - 2020¹⁹



¹⁹ Chittenden County Regional Planning Commission, GIS Database, October 14, 2021.

Figure 1.12: Critical Facilities, Town of Bolton²⁰



²⁰ Chittenden County Regional Planning Commission, GIS Database; October 14, 2021.

The Town *MJAHMP* Planning Committee noted the following buildings or sites as its top assets:

- Smilie Memorial School – Bolton’s preschool – fourth grade elementary school.
- Bolton Fire Station and Town Garage, which houses all Highway Department equipment, Town Office
- Recreational assets, including Bolton Valley Resort, the Green Mountain Club’s Long Trail and pedestrian bridge over the Winooski River, Climbing Resource Access Group’s properties, Town Forests, Vermont River Conservancy properties, portions of Camel’s Hump State Park and Mt. Mansfield State Forest.

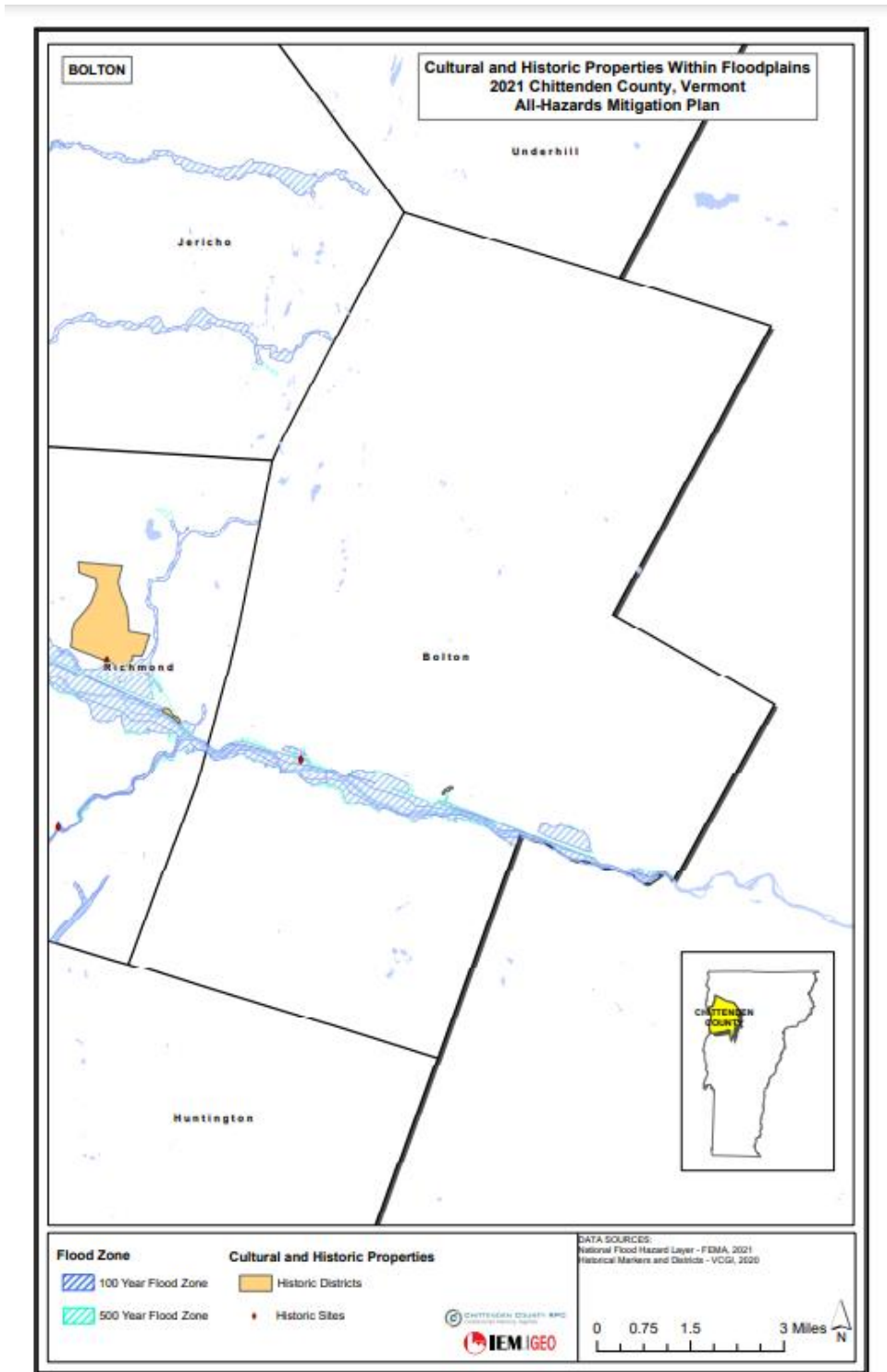
Table 1.22: Critical Facilities Exposed to FEMA Floodplains, Town of Bolton

Total Facilities	In 100-year Floodplain	In 500-year Floodplain
4	2 Fire Municipal Office	2 School Emergency Shelter

Historical/Cultural Assets

Overlaying the FEMA FIRM hazard layer with the historic and cultural sites layer on GIS indicates there is a historic site located within the 100-year floodplain in the Town of Bolton.

Figure 1.13: Cultural and Historic Properties Exposed to FEMA Floodplains, Town of Bolton²¹



²¹ National Flood Hazard Layer, FEMA 2021; Vermont Center for Geographic Information, 2022.

1.7 CAPABILITY ASSESSMENT

Capabilities Assessment Summary Ranking and Gap Analysis

Planning and Regulatory Capabilities

The Town highlighted specific capabilities and their benefits in addressing hazard mitigation, including:

- Transportation planning is addressed in the Town Plan, with goals to improve resiliency and maintain quality of the road networks.
- The town has acquired land for open space and public recreation but does not have an ordinance regulating such. Open space has been acquired through FEMA buyouts; recreation space has been acquired by purchase, donation and conserved.
- Flood Hazard Area Regulations are contained within the Zoning Regulations and prohibit development.
- Steep slope provisions are contained within the Bolton Land Use and Development Regulations (Zoning Regulations). Conditional use and prohibition of development regulates development on slopes 15 percent to 25 percent.

Table 1.23: Summary of Planning Regulatory Capabilities, Town of Bolton

Comprehensive Plans	X
Capital Improvement Plans	X
Economic Development Plan	X
Local Emergency Operations Plan	X
Continuity of Operations Plan	-
Transportation Plan (Town Plan, MRGP, Bridge)	X
Stormwater Management Plan	-
Community Wildfire Ordinance/Protection Plan	-
Land Use Regulations (Zoning, subdivisions)	X
Floodplain Management Ordinance/Plan	X
TOTAL	7

The Town of Bolton has significant planning and regulatory capabilities and has identified the following areas for improvement:

- Without the resources (increase in positions, position hours, increased municipal budget to fund that) for enforcement especially, it would be a challenge to expand any of the above. Bolton's regulations meet and/or exceed state regulations.

Administrative and Technical Capabilities

The Town of Bolton has identified administrative and technical capabilities that support hazard mitigation.

Table 1.24: Summary of Administrative and Technical Capabilities, Town of Bolton

Planner(s) or engineers with knowledge of land development	-
Engineer/ professionals trained in construction practices related to buildings and/or infrastructure	-
Planners /Engineer(s) with an understanding of natural and/or manmade hazards	-
Floodplain manager (Mutual Aid Compact)	-
Surveyor(s)/Building Inspector(s)	-
Staff with education or expertise to assess the community's vulnerability to hazards	X
Emergency Manager	X
Personnel skilled in GIS and/or HAZUS	-
Scientist familiar with hazards of the community	
Civil Engineer	X
Grant writer(s)	
Warning systems or services (automated callout, sirens, etc.)	
TOTAL	3

The Town of Bolton has minimal administrative and technical capabilities and has identified the following areas for improvement:

- Professional staff trained in construction practices that reduce hazard impacts related to buildings and infrastructure.
- Planners/engineers with an understanding of natural and/or manmade hazards.
- Full-time personnel for emergency management, floodplain administration, GIS; and grant writing/management.
- Notification and warning system to inform residents and visitors.
- Continue to work with the CCRPC to expand municipal capabilities.

Fiscal Capability

The Town of Bolton has identified fiscal capabilities that support hazard mitigation.

Table 1.25: Summary of Fiscal Capabilities, Town of Bolton

Capital improvements project funding	-
Authority to levy taxes for specific purposes	-
Fees for water, sewer, gas, or electric services	-
Impact fees for new development	-
Storm water utility fee	-

Incur debt through general obligation bonds and/or special tax bonds	X
Incur debt through private activities	-
Community Development Block Grant	-
Other federal funding programs	X
Historic Preservation	
State funding programs	X
Public/Private partnership funding sources	
TOTAL	3

The Town of Bolton has moderate fiscal capabilities and has identified the following areas for improvement:

- Developing usage or impact fees for utilities or new development
- Develop public/private partnerships to support selective mitigation actions

Program/Organization Capabilities

The Town of Bolton does not identify any program or organizational capabilities that currently support hazard mitigation.

Table 1.26: Summary of Program/Organization Capabilities, Town of Bolton

Civic groups serving special community needs *	-
Ongoing public education or information program	-
Natural disaster or safety related school programs	-
StormReady certification	-
Firewise Communities certification	-
Public-private partnership initiatives addressing disaster-related issues	-
Other	-
TOTAL	0

The Town of Bolton has identified the following areas for program and organization capabilities improvement:

- Identify and involve civic groups serving specific community needs in hazard mitigation.
- Develop and present ongoing public education or information about the benefits of hazard mitigation.
- Partner with schools to present hazard-related safety and preparedness programs.
- Meet criteria to be designated as a StormReady community by the National Weather Service, Burlington.

- Develop relationships with private sector and organizations to address hazard-related needs.

NATIONAL FLOOD INSURANCE PROGRAM CONTINUED COMPLIANCE

Bolton has participated in NFIP regular program since 1980 and has a designated Floodplain Manager. The last Community Assistance Contract (CAC) was conducted on October 7, 2019, with no outstanding deficiencies. There are (13) NFIP policies with total insurance coverage of \$2,787,700; and there are **no repetitive loss properties** reported. The Town does not participate in the voluntary Community Rating System (CRS).

Although program participation is not a hazard mitigation action to be included in the mitigation strategy per se, the Town will continue to participate in NFIP and enforce the Town's Floodplain Management regulations. This includes:

- Identifying the purpose of the floodplain regulation(s), as well as current and proposed ways to reduce flood losses.
- Serving as a mechanism for identifying flood hazard areas and related flood mapping issues.
- Oversees permit requirements for current and projected development projects.
- Inspect all development for continued compliance with city code.
- Applies development standards for flood-prone areas that minimize personal injury and property damage; and maintains documentation and risk analyses required for projects developed in these areas.
- Assist residents in obtaining information on flood hazards, flood maps, flood insurance and proper mitigation measures.

In an effort to meet NFIP requirements, Bolton will make updates and revisions to Floodplain Management regulations as it deems necessary. These updates and revisions may be prompted by changes in local demographics; shifts in land use; trends such as the frequency and intensity of flood events; and other factors that may warrant municipal action. The Town will also continue to incorporate into future planning documents, including HMP updates, changes to the locations and designations of mapped floodplains.

Table 1.27: National Flood Insurance Program Status, Town of Bolton²²

Current Eff. Map Date	Number of Policies	Total Premiums (in dollars)	Total Coverage (in dollars)	Total Number of Claims Since 1978	Value of Claims Paid Since 1978 (in dollars)	Number of Repetitive Loss Properties
8/4/2014	13	\$14,630	\$2,787,700	6	\$126,117	0

²² FEMA, National Flood Insurance Program, Community Status Report September 2021. Retrieved at: <https://www.fema.gov/cis/VT.html>

Support for Municipal Capabilities

It should be noted that the Town has capabilities across all areas regardless of having extremely limited resources, including part-time Zoning Administration and volunteer boards. Chittenden County Regional Planning Commission (CCRPC) provides multiple support services to the municipalities that assist in filling planning and regulatory, administrative, and technical, and education and outreach capabilities. In addition, the CCRPC assists municipalities with identifying and managing funding opportunities through grants and other sources.

Table 1.28: Capability Assessment Summary Ranking for Town of Bolton

Planning and Regulatory	Administrative and Technical	Fiscal	Programs/Organizations
Moderate	Low	Moderate	Low

New Hazard Risk Challenges or Obstacles to be Monitored in the Next Planning Cycle

- Administrative and technical capabilities:
 - Reliance on volunteers to fill critical representative seats to outside organizations (i.e., Chittenden Solid Waste District, Chittenden County Regional Planning), and to fill all Town Board, Commissions, and Committee positions, as Animal Control and Health Officer, and Emergency Management Director positions.
 - Lack of bandwidth of town staff due to limited resources (i.e., no Town Manager or Administrator, part-time Zoning Administrator) to apply for and/or manage all grants and FEMA-related projects.
- Fiscal capabilities:
 - Lack of funding for improving and maintaining infrastructure, especially with respect to resurfacing town highways.
- Hazard-related capabilities:
 - The increasing number of excessive rainfall events may lead to new areas of flooding within the town.

1.8 MITIGATION STRATEGY

Changes in Priorities

Bolton priorities have not changed since the last plan update and continue to make progress on mitigation actions. However, the town continues to look for opportunities to address impacts on the existing road system from the increase in excessive rainfall.

Goals and Objectives

The Town of Bolton adopted the five regional goals defined in Section 6, Mitigation Strategy, but did not develop objectives specific to the town.

Status of Previous Actions

The Town of Bolton reviewed its Mitigation Actions described in the 2017 *MHAHMP* and noted the status for this Plan update.

Table 1.29: Status of Previous Mitigation Actions

Action Date	Action #	Title of project	Hazard(s)	2022 Status Update
2017	2017-1	Develop and Implement a Road Stormwater Management Plan	F, FE, SR, SWS, WP	Progress made – 2020; continue and move forward as 2022 Mitigation Action.
	2017-2	Secure funds and complete projects to protect vulnerable highway infrastructure and municipal buildings	F, FE, SR, SWS	This action was revised and moved forward as new 2022 action. Retrofit new and existing critical facilities.
	2017-3	Based on completed fluvial geomorphology assessments and River Corridor & River Corridor Protection Area maps from VANR, develop strategies in response to identified risks	F, FE, SR, SWS	Progress made – 2020; continue and move forward as 2022 Mitigation Action.
	2017-4	Complete mapping of landslide hazards	F, FE, SR, SWS	Some progress made; continue for 2022 Mitigation Action
Acronym Key:	Dam Failure: DF			
	Extreme Temperatures: ET			
	Flood: F			
	Fluvial Erosion: FE			
	Human Infectious Disease: HID			
	Invasive Species: IS			
	Severe Rainstorm: SR			
	Severe Winter Storm: SWS			
	Wildfire: WF			

Analysis of previous FEMA Public Assistance Projects in the Town of Bolton demonstrate recovery and mitigation activities, including debris removal, protective measures, and damage to water control facilities, roads and bridges, and recreational or other site impacts.

Additionally, as part of previous planning period (2017-2022) activities with the assistance of the CCRPC each of the participating municipalities integrated were appropriate the mitigation actions outlined in the previous plan into their current Town's plan. A similar process will be implemented as part of plan integration activities during the 2022-2027 planning period.

New Mitigation Actions and Priorities

The Town of Bolton identified six mitigation actions for the 2022 update and prioritized based on the Mitigation Action Ranking System described in [Section 6, Base Plan](#).

Table 1.30: 2022 Mitigation Actions, Town of Bolton

Action #	Proposed Action	Agency/ Departments	Risk Reduction Benefit	Hazard(s) Addressed	Est. Cost	Funding Source	2021 Status	Ranking
2022-1	Retrofit of new and existing critical facilities.	Town Highway Forman	Adds damage to new/existing public infrastructure and buildings; Mitigates temporary road and bridge closure and budgetary impacts	Wildfire, Severe Rainstorm, Severe Winter Storm, Flooding, Fluvial Erosion	High: \$100,000 or greater	State VANR Grants, HMA, Municipal funds	2022-2027 NEW	Medium
Action #	Proposed Action	Agency/ Departments	Risk Reduction Benefit	Hazard(s) Addressed	Est. Cost	Funding Source	2021 Status	Ranking
2022-2	Engineering for and Stabilization of Gleason Brook	Town of Highway Forman	Adds damage to new/existing public infrastructure and buildings; Mitigates temporary road and bridge closure and budgetary impacts	Wildfire, Severe Rainstorm, Severe Winter Storm, Flooding, Fluvial Erosion	High: \$100,000 or greater	State VANR Grants, HMA, Municipal funds	2022-2027 Cont'd	Medium
Action #	Proposed Action	Agency/ Departments	Risk Reduction Benefit	Hazard(s) Addressed	Est. Cost	Funding Source	2021 Status	Ranking
2022-3	Road Inventory and Assessment	Town Highway Forman	Adds damage to new/existing public infrastructure and buildings; Mitigates temporary road and bridge closure and budgetary impacts	Wildfire, Severe Rainstorm, Severe Winter Storm, Flooding, Fluvial Erosion	Medium: \$10,000 to \$100,00	State VANR Grants, HMA, Municipal funds	2022-2017 Cont'd	Medium

Action #	Proposed Action	Agency/ Departments	Risk Reduction Benefit	Hazard(s) Addressed	Est. Cost	Funding Source	2021 Status	Ranking
2022-4	Retrofit of hazard-prone structures.	Town Highway Forman	Addresses damage to new/existing public infrastructure and buildings; Mitigates temporary road and bridge closure and budgetary impacts	Wildfire, Severe Rainstorm, Severe Winter Storm, Flooding, Fluvial Erosion	High: \$100,000 or greater	State VANR Grants, HMA, Municipal funds	2022-2027 NEW	Medium
Action #	Proposed Action	Agency/ Departments	Risk Reduction Benefit	Hazard(s) Addressed	Est. Cost	Funding Source	2021 Status	Ranking
2022-5	Develop public-private partnerships to address hazard reduction related needs	Select Board	Education and Awareness Programs. Safety/life property protection. Prevention for multiple potential environmental emergencies. Informs citizens about how to avoid becoming casualties in various emergencies.	Wildfire, Severe Rainstorm, Severe Winter Storm, Flooding, Fluvial Erosion	Low: Less than \$10,000	Town general funds	2022-2027 NEW	Medium

Action Plan for Implementation and Integration

The Town of Bolton identified several existing plans or planning processes that can serve to integrate hazard mitigation during the 2022-2027 planning cycle. The town will incorporate the mitigation actions outlined in this plan into the town plan during the next plan update process in 2025. The town plan update will be led by the Planning Commission, who will review this plan and determine those mitigation actions/strategies/goals that should be included in the town plan.

Table 1.31: Action Plan for Implementation and Integration, Town of Bolton

Existing Plan or Procedure	Description of How Mitigation will be Incorporated or Integrated
Integrate goals into local Comprehensive Plan	Continue to coordinate with Planning and Zoning and other applicable departments to incorporate current and emerging risks and actions into planning efforts.
Review/update land development regulations for consistency with mitigation goals	Continue coordination with Planning and Zoning regarding future land use projects.

Existing Plan or Procedure	Description of How Mitigation will be Incorporated or Integrated
Review/update building/zoning codes for consistency with mitigation goal	Work with Planning and Zoning regarding county zoning ordinances and consistency with mitigation goals.
Maintain regulatory requirements of floodplain management program (NFIP)	Support floodplain management activities.
Enhance floodplain management through Community Rating System (CRS)	Work with Floodplain Manager and Public Works on reviews of floodplain management and mapping.
Review/Update economic development plan and policies for consistency with mitigation goals	Work with local Economic Development Authority to ensure consistency in plans.
Continue public engagement in mitigation planning	Continue to promote awareness of hazards and incorporate public feedback into planning processes.
Identify opportunities for mitigation education and outreach	Identify opportunities to conduct community outreach to promote the importance of mitigation projects.
Review/update stormwater plans and procedures for consistency with mitigation goals	Work with Highway Department to discuss plans and procedures on a more frequent basis.
Maintain ongoing enforcement of existing policies	Support municipal Departments with any applicable enforcement policies.
Monitor funding opportunities	Coordinate with the CCRPC to identify and apply for appropriate funding sources and coordinate with Departments on projects that support mitigation actions.
Incorporate goals and objectives into day-to-day government functions	Municipal Departments will incorporate the concept of mitigation into day-to-day government functions, including continual monitoring of the action items identified in the 2022 update.
Incorporate goals into day-to-day development policies, reviews & priorities	Continue work with Planning and Zoning to incorporate mitigation into day-to-day activities.

1.9 ANNEX MAINTENANCE PROCEDURES

The method and schedule for maintaining, evaluating, and updating the MJAHMP is described in [Section 7, Base Plan](#). The Town of Bolton will maintain its participation in the Hazard Mitigation Plan Review and Update Committee throughout the planning cycle, consistent with its role and responsibilities. The Town of Bolton has designated the Town Clerk & Treasurer as lead responsible for all Plan Maintenance related activities.

Table 1.32: Town of Bolton Plan Maintenance Role and Responsibilities for the Chittenden County Multi-Jurisdictional All-Hazards Mitigation Plan, Base Plan

Role	Responsibilities
Monitoring the Plan	<ul style="list-style-type: none"> • Participate in the monitoring process as requested by the CCRPC staff • Assist in collecting and analyzing data • Assist in disseminating reports to stakeholders and the public • Maintain records and documentation of all jurisdictional monitoring activities • Promote the mitigation planning process with the public and solicit public input.
Evaluating the Plan	<ul style="list-style-type: none"> • Participate in the evaluation process as requested by the CCRPC staff • Assist in collecting and analyzing data • Assist in disseminating reports to stakeholders and the public • Maintain records and documentation of all jurisdictional monitoring activities • Promote the mitigation planning process with the public and solicit public input
Updating the Plan	<ul style="list-style-type: none"> • Represent the jurisdiction and participate in the planning cycle, including plan review, revision, and update process • Collect and report data to the Update Coordinator • Maintain records and documentation of all jurisdictional plan review and revision activities • Promote the mitigation planning process with stakeholders and the public and solicit public input

Revisions to Jurisdiction Annexes

The municipalities of Chittenden County will coordinate with the CCRPC for changes or updates to its jurisdictional annexes. Local participating jurisdictions have the authority to approve/adopt changes to their own Action Plans for Implementation without approval from the CCRPC or the Committee; however, the Committee and CCRPC should be advised of all changes as a courtesy and in consideration of potential changes or modifications to the regional *MJAHMP* that may conflict with the proposed annex changes. The CCRPC will be responsible for verifying that the proposed change will not affect the jurisdiction's compliance with current State and Federal mitigation planning requirements.

Municipalities may make administrative changes or updates to their mitigation actions and Action Plans for Implementation in their jurisdiction annexes at any time in coordination with the CCRPC staff.

A municipality may choose not to re-adopt the updated *MJAHMP* and its respective jurisdiction annex; however, it should be stated that the jurisdiction will no longer be eligible for FEMA hazard mitigation grants. A municipality may choose to develop, adopt, and submit its own Local All-Hazards Mitigation Plan to FEMA Region I, consistent with the requirements of the Disaster

Mitigation Act of 2000 and regulations contained in 44 CFR Part 201.6 in order to maintain eligibility.

The relative strength and depth of this method and schedule for monitoring and evaluating the plan is contingent upon funding from Emergency Management Planning grants, Hazard Mitigation Assistance grants, or similar sources. Adherence to the monitoring, evaluation and update process schedule will ensure that the Plan is kept current throughout its five-year cycle.

Table 1.33: Town of Bolton Jurisdiction Annex Maintenance Procedure

Activity	Procedure and Schedule	Outcome
Monitoring the Annex	<ol style="list-style-type: none"> 1. Schedule the annual plan review with jurisdiction planning team. 2. Review the status of all mitigation actions, using the <i>Mitigation Action Implementation Worksheet</i> (Section 7, Attachment B, Base Plan). 	Produce an annual report that includes the following: <ul style="list-style-type: none"> • Status update of all mitigation actions • Summary of any changes in hazard risk or vulnerabilities and capabilities • Summary of activities conducted for the Action Plan for Implementation and Integration
Evaluating the Annex	<ol style="list-style-type: none"> 3. Schedule the annual plan evaluation with jurisdiction planning team. 4. Evaluate the current hazard risks and vulnerabilities, and hazard mitigation capabilities using the <i>Planning Considerations Worksheet</i>, (Section 7, Attachment C, Base Plan). 	Submit the annual report to the <i>MJAHMP</i> HMPRUC Point of Contact
Updating the Annex	<ol style="list-style-type: none"> 1. Coordinate with the HMPRUC to identify the method and schedule for the five-year update of the <i>MJAHMP</i>. 2. Participate in the planning process. 3. Provide input related to the plan components. 4. Following FEMA designation of Approvable Pending Adoption (APA), adopt the updated plan. 	Adoption of the FEMA-approved plan every five years will maintain the jurisdiction's eligibility for federal post-disaster funding.

1.10 ANNEX ADOPTION

The Town of Bolton Jurisdiction Annex will be adopted by the municipality's governing body at the same time as the *2022 Chittenden County Multi-Jurisdictional All-Hazards Mitigation Plan*.

Following adoption, a copy of the Adoption Resolution will be maintained in this annex as [Attachment A](#), and a copy will be forwarded to Vermont Emergency Management (VEM) to

submit to FEMA for final approval of the plan. The plan will expire five years (minus one day) from the date of FEMA's final approval letter.

1.11 ATTACHMENTS

ATTACHMENT A: Adoption Resolution

ATTACHMENT B: Planning Worksheets and Documentation

ATTACHMENT 3: Documentation of Public Participation

ATTACHMENT 4: Mitigation Strategy

ATTACHMENT 1: Adoption Resolution

CERTIFICATE OF ADOPTION

OCTOBER 3, 2022

TOWN OF BOLTON, Vermont Select Board

A RESOLUTION ADOPTING THE 2022 Chittenden County, Vermont Multi-Jurisdictional Hazard Mitigation Plan

WHEREAS, the Town of Bolton has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the 2022 Chittenden County, Vermont Multi-Jurisdictional 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 Bolton has developed and received conditional approval from Vermont Emergency Management (VEM) for its 2022 Chittenden County, Vermont Multi-Jurisdictional 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 Bolton; and

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

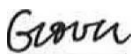
WHEREAS, adoption of this Plan will make the Town of Bolton eligible for funding to alleviate the impacts of future hazards; now therefore be it

RESOLVED by Town of Bolton Select Board:

- 1 . The 2022 Bolton, Vermont Local Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Bolton,
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 Bolton this 3rd day of October 2022.

ATTEST





Select Board Chair

Select Board Vice Chair

Select Board Member

Select Board Member

Town Clerk

Select Board Member

ATTACHMENT 2: Planning Worksheets and Documentation

Town of Bolton, Hazard Risk Ranking Worksheet

Natural Hazards Risk Estimation Matrix									
Bolton		Dam/Levee Failure	Extreme Temperatures	Flooding	Fluvial Erosion	Invasive Species	Severe Rainstorm	Severe Winter Storm	Wildfire
Area Impacted									
Key:	0= No developed area impacted								
	1= Less than 25% of developed area impacted		1			1	1		
	2= Less than 50% of developed area impacted								2
	3= Less than 75% of developed area impacted			3	3				
	4= Over 75% of developed area impacted							4	
Consequences									
Health & Safety Consequences									
Key:	0= No health and safety impact		0			0			0
	1= Few injuries or illnesses			1	1		1	1	
	2= Few fatalities or illnesses								
	3= Numerous fatalities								
Property Damage									
Key:	0= No property damage		0						
	1= Few properties destroyed or damaged					1		1	
	2= Few destroyed but many damaged								2
	3= Few damaged and many destroyed								
	4= Many properties destroyed and damaged			4	4		4		
Environmental Damage									
Key:	0= Little or no environmental damage		1		1			1	
	1= Resources damaged with short-term recovery			2		2	2		2
	2= Resources damaged with long-term recovery								
	3= Resources destroyed beyond recovery								
Economic Disruption									

Key:	0= No economic impact								
	1= Low direct and/or indirect costs		1			1		1	
	2= High direct and low indirect costs			2					2
	3= Low direct and high indirect costs								
	4= High direct and high indirect costs				4		4		
Sum of Area & Consequences Scores			3	11	11	5	10	8	8
Probability of Occurrence									
Key:	1= Unknown but rare occurrence								
	2= Unknown but anticipate an occurrence								
	3= 100 years or less occurrence								
	4= 25 years or less occurrence		4	4		4			4
	5= Once a year or more occurrence				5		5	5	
Total Risk Rating									
	Total Risk Rating=		12	44	55	20	50	40	32
	Sum of Area & Consequences Scores								
	x Probability of Occurrence								
Low =	Hazard Risk Level 0-18								
Medium =	Hazard Risk Level 19-37								
High =	Hazard Risk Level 38-60								

Technical Hazards											
		Hazardous Materials Incident	Major Transportation Incident	Multi-Structure Fire	Natural Gas Service Loss	Other Fuel Service Loss	Power Loss	Sewer Service Loss	Telecommunications Failure	Water Pollution (algal bloom, etc.)	Water Supply Loss
Bolton											
Area Impacted											
Key:	0= No developed area impacted				0						
	1= Less than 25% of developed area impacted	1		1		1		1		1	1
	2= Less than 50% of developed area impacted										
	3= Less than 75% of developed area impacted		3								

	4= Over 75% of developed area impacted						4		4		
Consequences											
Health & Safety Consequences											
Key:	0= No health and safety impact				0	0		0			0
	1= Few injuries or illnesses	1	1	1			1		1	1	
	2= Few fatalities or illnesses										
	3= Numerous fatalities										
Property Damage											
Key:	0= No property damage				0				0		
	1= Few properties destroyed or damaged	1		1		1	1	1		1	1
	2= Few destroyed but many damaged		2								
	3= Few damaged and many destroyed										
	4= Many properties destroyed and damaged										
Environmental Damage											
Key:	0= Little or no environmental damage		1							1	
	1= Resources damaged with short-term recovery	2									
	2= Resources damaged with long-term recovery										
	3= Resources destroyed beyond recovery										
Economic Disruption											
Key:	0= No economic impact				0						
	1= Low direct and/or indirect costs	1		1		1		1			1
	2= High direct and low indirect costs						2		2	2	
	3= Low direct and high indirect costs		3								
	4= High direct and high indirect costs										
Sum of Area & Consequences Scores		6	10	4	0	4	8	3	7	6	3
Probability of Occurrence											
Key:	1= Unknown but rare occurrence				1	1		1			1
	2= Unknown but anticipate an occurrence	2								2	
	3= 100 years or less occurrence		3	3							
	4= 25 years or less occurrence								4		
	5= Once a year or more occurrence						5				

Total Risk Rating											
Total Risk Rating=		12	30	12	0	4	40	3	28	12	3
Sum of Area & Consequences Scores											
x Probability of Occurrence											
Low =	Hazard Risk Level 0-18										
Medium =	Hazard Risk Level 19-37										
High =	Hazard Risk Level 38-60										

Societal Hazards							
Bolton		Civil Disturbance	Crime	Economic Recession	Epidemic	Key Employer Loss	Terrorism
Area Impacted							
Key:	0= No developed area impacted						
	1= Less than 25% of developed area impacted	1	1				1
	2= Less than 50% of developed area impacted			2	2	2	
	3= Less than 75% of developed area impacted						
	4= Over 75% of developed area impacted						
Consequences							
Health & Safety Consequences							
Key:	0= No health and safety impact			0		0	
	1= Few injuries or illnesses	1	1				1
	2= Few fatalities or illnesses				2		
	3= Numerous fatalities						
Property Damage							
Key:	0= No property damage			0	0	0	
	1= Few properties destroyed or damaged	1	1				1
	2= Few destroyed but many damaged						
	3= Few damaged and many destroyed						
	4= Many properties destroyed and damaged						
Environmental Damage							
Key:	0= Little or no environmental damage	0	0	0	0	0	0

	1= Resources damaged with short-term recovery						
	2= Resources damaged with long-term recovery						
	3= Resources destroyed beyond recovery						
Economic Disruption							
Key:	0= No economic impact						
	1= Low direct and/or indirect costs	1	1				
	2= High direct and low indirect costs			2			2
	3= Low direct and high indirect costs				3		
	4= High direct and high indirect costs					4	
Sum of Area & Consequences Scores							
		4	4	4	7	6	5
Probability of Occurrence							
Key:	1= Unknown but rare occurrence	1					1
	2= Unknown but anticipate an occurrence						
	3= 100 years or less occurrence				3		
	4= 25 years or less occurrence		4	4		4	
	5= Once a year or more occurrence						
Total Risk Rating							
	Total Risk Rating=	4	16	16	21	24	5
	Sum of Area & Consequences Scores						
	x Probability of Occurrence						
Low =	Hazard Risk Level 0-18						
Medium =	Hazard Risk Level 19-37						
High =	Hazard Risk Level 38-60						

WORKSHEET #4A: CAPABILITY ASSESSMENTJurisdiction: Town of BoltonDate: 10/28/2021

Name	Position/Title	Department/Agency
Amy Grover	Town Clerk	N/A

Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	<ul style="list-style-type: none"> • Yes or No? • Year 	<ul style="list-style-type: none"> • Does the plan address natural and/or non-natural hazards? • Does the plan identify projects to include in the mitigation strategy? • Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan –	No	
Capital Improvement Plan –	No	<ul style="list-style-type: none"> • No • No • No
Economic Development Plan –	No	
Impact fees for new development – <i>Regulatory authority:</i>	No	
Local Emergency Operations Plan –	Yes	<ul style="list-style-type: none"> • Yes • No • No
Continuity of Operations Plan	No	
Transportation Plan –	No	<ul style="list-style-type: none"> • Bolton does not have a transportation plan. Bolton has transportation addressed in our Town Plan, with goals to improve resiliency and maintain quality of our road networks.
Stormwater Management Plan –	No	
Community Wildfire Protection Plan	No	
Other special plans (e.g., brownfields redevelopment, disaster recovery, Local Waterfront Redevelopment Plan, climate change adaptation, etc.) –	No	

Building Code, Permitting, and Inspection	Yes or No?	Are codes adequately enforced?
Building Code -	No	
Building Code Effectiveness Grading Schedule (BCEGS) Score –	No	
Fire Department ISO rating –	9 town excluding Bolton Valley Area	
Site Plan review requirements –	Yes	<ul style="list-style-type: none"> Please recognize the following which impacts the town across all areas: To the best of the ability of town with our extremely limited resources; part time Zoning Administration, volunteer boards.
Land Use Planning and Ordinances	Yes or No?	<ul style="list-style-type: none"> Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?
Zoning ordinance –	Yes	<ul style="list-style-type: none"> Yes Yes, and then to the best of the ability of the town with our extremely limited resources; part time Zoning Administration, volunteer boards.
Subdivision ordinance –	Yes	<ul style="list-style-type: none"> Yes- must meet subdivision standards and criteria Yes, and then to the best of the ability of the town with our extremely limited resources; part time Zoning Administration, volunteer boards.
Floodplain ordinance –	Yes	<ul style="list-style-type: none"> Flood Hazard Area Regulations are contained within the Zoning Regulations. Yes, prohibition of development To the best of the ability of the town with our extremely limited resources; part time Zoning Administration, volunteer boards.
Natural hazard specific ordinance (stormwater, steep slope, wildfire) –	Yes	<ul style="list-style-type: none"> Steep slope provisions are contained within the Zoning Regulations. Yes- conditional use and prohibition of developing regulating development on slopes 15%-25%
Flood insurance rate maps –	Yes	<ul style="list-style-type: none"> The maps information the Flood Hazard Area regulations. See above.
Acquisition of land for open space and public recreation uses –	No	<ul style="list-style-type: none"> The town has acquired land for open space and public recreation but does not have an ordinance regulating such. Open space has been acquired through FEMA buyouts, recreation space has been acquired by purchase, donation, and conserved.
Other		

How can these capabilities be expanded and improved to reduce risk?

Without the resources (increase in positions, position hours, increased municipal budget to fund that) for enforcement especially, it would be a challenge to expand any of them above. Bolton's regulations meet and/or exceed state regulations.

Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. If your jurisdiction does not have local staff resources, please indicate if these are available through agreement with other entities, or at the county level to provide the services or technical assistance.

Staff/Personnel Resources	Have Capability Y/N	Department/ Agency and Position	Effective Coordination ?	Adequate Staffing ?	Integrated into Mitigation Planning?
A. Planner(s) or engineer(s) with knowledge of land development and land management practices	No				
B. Engineer/professionals trained in construction practices related to buildings and/or infrastructure	No				
C. Planners/Engineer(s) with an understanding of natural and/or manmade hazards	No				
D. Floodplain manager	No				
E. Surveyor(s)	No				
F. Staff with education or expertise to assess the community's vulnerability to hazards	Yes	Zoning Administrator	Yes	Part time	
G. Personnel skilled in GIS and/or HAZUS					
H. Scientist familiar with hazards of the community	No				
I. Emergency manager	Yes	EMD	Yes	Volunteer	
J. Grant writer(s)	No				

k. Warning systems or services (automated callout, sirens, etc.)	No				
How can these capabilities be expanded and improved to reduce risk?					

Safe Growth

This worksheet identifies potential gaps in your community’s growth guidance instruments and improvements that could be made to reduce vulnerability to future development.

Comprehensive Plan ****	Yes	No
Land Use		
1. Does the future land-use map clearly identify natural hazard areas?	Yes	
2. Do the land-use policies discourage development or redevelopment within natural hazard areas?	Yes	
3. Does the plan provide adequate space for expected future growth in areas located outside natural hazard areas?	Yes	
Transportation		
1. Does the transportation plan limit access to hazard areas?		
2. Is transportation policy used to guide growth to safe locations?		
3. Are movement systems designed to function under disaster conditions (e.g., evacuation)?		
Environmental Management		

1. Are environmental systems that protect development from hazards identified and mapped?		No
2. Do environmental policies maintain and restore protective ecosystems?	Yes	
3. Do environmental policies provide incentives to development that is located outside protective ecosystems?		No
Public Safety		
1. Are the goals and policies of the comprehensive plan related to those of the FEMA-approved Local Hazard Mitigation Plan?		
2. Is safety explicitly included in the plan's growth and development policies?		
3. Does the monitoring and implementation section of the plan cover safe growth objectives?		
Zoning Ordinance		
	Yes	No
1. Does the zoning ordinance conform to the comprehensive plan in terms of discouraging development or redevelopment within natural hazard areas?	Yes	
2. Does the ordinance contain natural hazard overlay zones that set conditions for land use within such zones?	Yes	
3. Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?	Yes	
4. Does the ordinance prohibit development within, or fining of, wetlands, floodways, and floodplains?	Yes	
Subdivision Regulations		
	Yes	No

1. Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?	Yes	
2. Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?	Yes	
3. Do the regulations allow density transfer where hazard areas exist?	Yes, in theory	
Capital Improvement Program and Infrastructure Policies	Yes	No
1. Does the capital improvement program limit expenditures on projects that would encourage development in areas vulnerable to natural hazards?		
2. Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards?		
3. Does the capital improvement program provide funding for hazard mitigation projects identified in the FEMA-approved Local Hazard Mitigation Plan?		
Other	Yes	No
1. Do small area or corridor plans recognize the need to avoid or mitigate natural hazards?	N/A	
2. Does the building code contain provision to strengthen or elevate construction to withstand hazard forces?	N/A	
3. Do economic development or redevelopment strategies include provisions for mitigation of natural hazards?	N/A	
4. Is there an adopted evacuation and shelter plan to deal with emergencies from natural hazards?	Yes	

	The LEMP	

Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Y/N)	Has the funding resource been used in the past and for what type of activities/	Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Yes	<ul style="list-style-type: none"> • Yes • Equipment purchases 	No
Authority to levy taxes for specific purposes	Yes	No	Yes, but would require inclusion on the municipal budget and voter approval.
Fees for water, sewer, gas, or electric services	No		
Impact fees for new development	No		
Storm water utility fee	No		
Incur debt through general obligation bonds and/or special tax bonds	Yes	Yes Equipment purchases, major road reconstruction projects.	Yes, but would require inclusion in the municipal budget and voter approval.
Incur debt through private activities	No		
Community Development Block Grant	Yes	Yes All CDBG (three to date) have been used for the benefit of Bolton Valley Resort.	No, this would not meet the CDBG criteria, especially with the respect to the connection to jobs being created.
Other federal funding programs	Yes	Yes FEMA- buyout, home elevation, road repairs	Yes, if approved by FEMA.

State funding programs	Yes	Yes SOV Grant in Aid, Better Roads, and Class 2 Highway Grants funding paving and road improvements especially with respect to meeting criteria of the MRGP.	Yes, if approved by the SOV
Public/Private partnership funding sources	No		
How can these capabilities be expanded and improved to reduce risk?			
Increasing the municipal budget would need to be approved by voters. Accessing increased federal and state funding is dependent on the strength of the town’s application and the amount of funding available, the town cannot control the latter.			

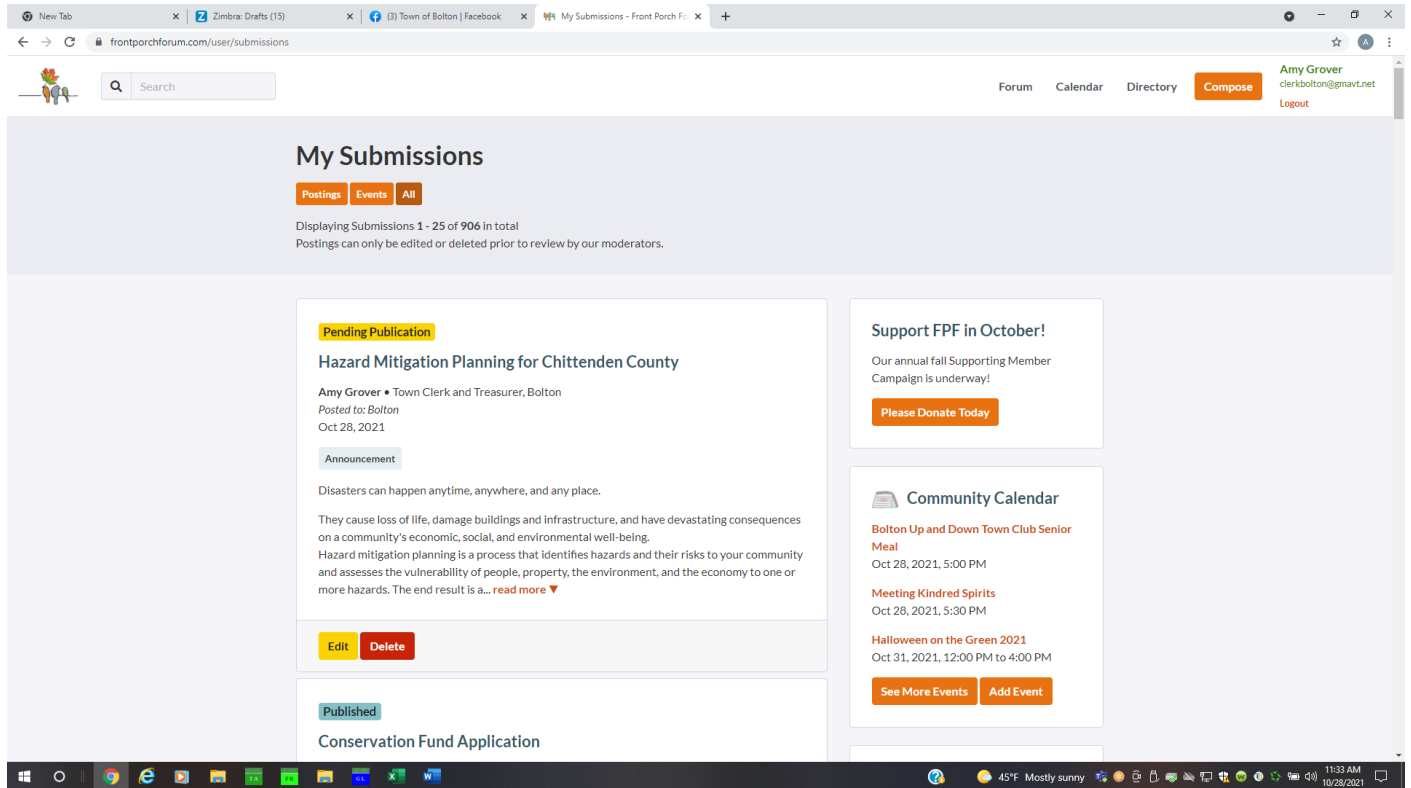
Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information

Program/Organization	Yes/No	Describe program/organization and how it relates to disaster resilience and mitigation. Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	No	
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education, household recycling, etc.)	No	

Natural disaster or safety related school programs	No	
StormReady certification	No	
Firewise Communities certification	No	
Public-private partnership initiatives addressing disaster-related issues	No	
Other –		•
How can these capabilities be expanded and improved to reduce risk?		
As a small rural community, Bolton struggles with the volunteer model upon which we are dependent. There is little evidence of appetite from our community for expansion of volunteerism into these areas.		

ATTACHMENT 3: Documentation of Public Participation



Hazard Mitigation Planning for Chittenden County

Amy Grover • Town Clerk and Treasurer, Bolton
Posted to: Bolton
Oct 28, 2021

Announcement

Disasters can happen anytime, anywhere, and any place.

They cause loss of life, damage buildings and infrastructure, and have devastating consequences on a community's economic, social, and environmental well-being. Hazard mitigation planning is a process that identifies hazards and their risks to your community and assesses the vulnerability of people, property, the environment, and the economy to one or more hazards. The end result is a comprehensive mitigation strategy that presents recommended sustained actions to reduce disaster-related damages and minimizes long-term community risk to the hazards.

In June 2021, Chittenden County municipalities initiated a collaborative planning effort to develop the 2022 update of the Chittenden County Multi-Jurisdictional Hazard Mitigation Plan. The benefits derived from the planning process, and the recommended mitigation actions that will ultimately be implemented, will significantly improve community resilience and sustainability.

Over the next several months staff of IEM, an international disaster and crisis management firm will be working with emergency management, planning and public works staff of your local municipality to update your municipality's local Hazard Mitigation Plan.

Your knowledge on local hazards is critical to good planning: participate in our online survey!

- Take the survey: <https://www.surveymonkey.com/r/CLB6RMX> to provide your opinion on local hazard events and their impact on you, your family, and the community. The survey will be open from October 1 through November 10, 2021.
- Contact your local city or town officials to learn how to provide comment on the draft municipal Local Hazard Mitigation Plan to ensure it reflects your experience and concerns.

If you have questions, contact Dan Albrecht, CCRPC Senior Planner at dalbrecht@ccrvcvt.org or 802-861-0133 or Leroy Thompson, IEM Senior Planner at leroy.thompson@leminc.com or 850-570-9867

To view the current mitigation plan for your community please visit:
<https://www.ccrvcvt.org/our-work/emergency-management/hazard-mitigation-plan/>

This planning project is funded by a FEMA grant provided through the Vermont Department of

Our annual fall Supporting Member Campaign is underway!
[Please Donate Today](#)

Community Calendar

- Bolton Up and Down Town Club Senior Meal**
Oct 28, 2021, 5:00 PM
- Meeting Kindred Spirits**
Oct 28, 2021, 5:30 PM
- Halloween on the Green 2021**
Oct 31, 2021, 12:00 PM to 4:00 PM

[See More Events](#) [Add Event](#)

Bolton FPF

- Launched Aug 9, 2006
- 707 Members
- 9,125 Postings
- 35 Local Officials

The Bolton FPF encompasses an area containing 490 households.

This Front Porch Forum is open to residents of the town of Bolton, Vermont.

Williston Stowe

45°F Mostly sunny 11:34 AM 10/28/2021

Manage Page
Town of Bolton

Business Suite

- Inbox (15 new messages & 21 new comments)
- Planner
- Publishing Tools

Home

- Business Apps
- Events
- Resources & Tools
- Manage Jobs
- Notifications (25 new)
- Insights
- Ad Center
- Page Quality
- Edit Page Info

Reach More People With This Post
People are boosting posts like "Conservation Fund Ap..." to reach more people. Try boosting this post.

Access all your business tools in one place
Create and schedule posts, manage your inbox, view insights and more in Facebook Business Suite.

Create Ad
How would you like to grow your business?

- Create New Ad (Make an ad using text, photos or videos to promote your business)
- Boost a Post

Create Post

- Photo/Video
- Get Messages
- Feeling/Activity

Town of Bolton
Just now

Hazard Mitigation Planning for Chittenden County
Disasters can happen anytime, anywhere, and any place. They cause loss of life, damage buildings and infrastructure, and have devastating consequences on a community's economic, social, and environmental well-being.

Hazard mitigation planning is a process that identifies hazards and their risks to your community and assesses the vulnerability of people, property, the environment, and the economy to one or more hazards. The end result is a comprehensive mitigation strategy that presents recommended

Insights
See All

Last 28 days : Sep 30 - Oct 27

People reached	211	+57%
Post Engagements	4	+94%
Page Likes	3	+50%

Set Your Page up for Success
Finish setting up your Page so people on Facebook know you're a credible business.

10 of 13 steps completed

- Completed
- Establish Your Page's Identity (2 steps left)
- Provide Info and Preferences (1 step left)

Town of Bolton
Just now

Hazard Mitigation Planning for Chittenden County
Disasters can happen anytime, anywhere, and any place. They cause loss of life, damage buildings and infrastructure, and have devastating consequences on a community's economic, social, and environmental well-being.

Hazard mitigation planning is a process that identifies hazards and their risks to your community and assesses the vulnerability of people, property, the environment, and the economy to one or more hazards. The end result is a comprehensive mitigation strategy that presents recommended sustained actions to reduce disaster-related damages and minimizes long-term community risk to the hazards.

In June 2021, Chittenden County municipalities initiated a collaborative planning effort to develop the 2022 update of the Chittenden County Multi-Jurisdictional Hazard Mitigation Plan. The benefits derived from the planning process, and the recommended mitigation actions that will ultimately be implemented, will significantly improve community resilience and sustainability. Over the next several months staff of IEM, an international disaster and crisis management firm will be working with emergency management, planning and public works staff of your local municipality to update your municipality's local Hazard Mitigation Plan.

Your knowledge on local hazards is critical to good planning: participate in our online survey!

- Take the survey: <https://www.surveymonkey.com/r/KL86RMX> to provide your opinion on local hazard events and their impact on you, your family, and the community. The survey will be open from October 1 through November 10, 2021.
- Contact your local city or town officials to learn how to provide comment on the draft municipal Local Hazard Mitigation Plan to ensure it reflects your experience and concerns.

If you have questions, contact Dan Albrecht, CCRPC Senior Planner at dalbrecht@ccrpcvt.org or 802-861-0133 or Leroy Thompson, IEM Senior Planner at leroy.thompson@ieminc.com or 850-570-9867

To view the current mitigation plan for your community please visit: https://www.ccrpcvt.org/_/emerg-/hazard-mitigation-plan/

This planning project is funded by a FEMA grant provided through the Vermont Department of Emergency Management (VDEM). The project is a joint effort between IEM and the Chittenden County Regional Planning Commission (CCRPC) to assist Chittenden County municipalities.

Published

County Hazard Mitigation Plan Survey

Five Sisters – No. 6205 • Emma Vaughn • Communications Manager, Chittenden County Regional Planning Commission

Posted to: Centennial, Downtown, ONE Central, ONE East, ONE West, Appletree Point, Crescent Woods, Ethan Allen, Far North End, Lakewood, Village Green, Birchcliff, Five Sisters, Hill Section, King Maple, Lakeside, Oakledge, Redstone Quarry, South Union, The Addition, Charlotte, Hinesburg, Shelburne, Bay Creek, Clay Point, Colchester Village, Colchester West, Malletts Bay, Milton, Butlers Corner, Countryside, Essex Center, Essex West, Fairview Farms, Five Corners North, Five Corners South, Rural Essex, The Fort, Jericho, Underhill, Westford, Bolton, Huntington, Richmond, Chamberlin, East Terrace, Eastwoods, Kennedy, Mayfair Park, Queen City Park, SWSB, Southeast Quadrant, The Orchards, Brennan Woods, Williston, Winooski [show less](#)
Oct 4, 2021

Announcement

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Contact:

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or

Leroy Thompson, IEM Senior Planner
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Chittenden County Multi-Jurisdictional Hazard Mitigation Plan website:

<https://www.ccrpcvt.org/our-work/emergency-management/hazard-mitigation-plan/>

Attachment 4: Mitigation Strategy

WORKSHEET #6: THE MITIGATION STRATEGY – GOALS AND OBJECTIVES

STEP 1: Develop Hazard Mitigation Goals:

- The Planning Teams is being asked to participate in a visioning exercise to consider the community elements linked to hazard vulnerability.
 - These include, but are not limited to, categories such as Government and Government Services; People; the Environment; the Economy; and the Community.
 - Sample answers from another community are just that, examples. **Focus on what is important in your community.**
- A. What is Most Valuable Top Three Assets most vital to your community?**

This list could include assets that fall into categories such as

Planning Team members should brainstorm and identify many assets and then identify the top three.

Our Community's Top Assets	
1.	Smilie Memorial School, Bolton's Preschool- 4 th Grade elementary school
2.	Bolton Fire Station and Town Garage which houses Highway Department equipment, Town Office.
3.	Recreational assets including Bolton Valley Resort, the Green Mountain Club's Long Trail and pedestrian bridge over the Winooski River, Climbing Resource Access Group's properties, Town Forests, VT River Conservancy properties, portions of Camel's Hump State Park and Mt. Mansfield State Forest.

B. What are the Three Biggest Challenges facing your community?

- This list could include assets that fall into categories such as Government and Government Services; People; the Environment; the Economy; and the Community.
- Planning Team members should brainstorm and identify many challenges and then identify the top three.

Our Community's Three Biggest Challenges	
1.	Reliance on volunteers to fill critical representative seats to outside organizations (i.e., Chittenden Solid Waste District, Chittenden County Regional Planning), and to fill all Town Board, Commissions, and Committee positions, as Animal Control and Health Officer, Emergency Management Director positions.
2.	Lack of funding for improving and maintaining infrastructure, especially with respect to resurfacing town highways.

3.	Lack of bandwidth of town staff due to limited resources (i.e., no Town manager nor Administrator, part time Zoning Administrator) to apply for and/or manage all grants and FEMA related projects.
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C. What is your *Vision of your Community* in 10 years?

- This list could include assets that fall into categories such as Government and Government Services; People; the Environment; the Economy; and the Community.
- Planning Team members should brainstorm all facets of their vision of the “Community of the Future.”
- Look at what the community must do to improve resiliency and sustainability. These efforts will translate into potential mitigation actions to be included in the 2022 HMP Update

In ten years, I want my community to:

1. Have addressed lack of broadband and/or cell service throughout the entire community.
2. Formulated a “road plan” to address roads and road infrastructure proactively with a long-term plan that is realistic in general, addresses resiliency, and is realistic for the accompanying tax burden to our community.
3. Attract more volunteers to maintain and increase community involvement across all aspects of town management and leverage more opportunities for funding.
4. Have addressed /strengthened zoning regulations to allow for sustainable growth and success of businesses, while recognizing environmental/topographical challenges to increase/maintain resiliency.

A vision statement developed from a review of this community’s assets, vulnerabilities, and challenges is

Our community fosters a lifestyle of preparedness is a champion of resiliency

D. Develop the Chittenden County Vision Statement

- Review Chittenden County’s community’s assets, vulnerabilities, and challenges to develop a Vision Statement.
- The Chittenden County Vision Statements describe a clear, long-term desired change resulting from the community mitigation planning efforts
- The Mitigation Strategy will naturally flow from it of the community, may assist in defining the community’s strategy, including mitigation goals, objectives, and mitigation actions.
- A sample Vision Statement for Chittenden County might read:

Chittenden County is preparing for the future by protecting current and future assets and amenities.

E. Identify Chittenden County Goals and Objectives

Considering this Vision Statement, the Planning Team is asked to review the proposed Goals and Objectives provided to determine whether they are:

1. Sufficient as stated, or (2) Require revision. If so, please recommend changes.

Chittenden County 2022 Hazard Mitigation Plan Goals and Objectives - DRAFT	
Goal 1:	Protect life and property from natural and manmade hazards
Objective 1.1	Maximize the utilization of the latest technology to provide adequate warning, communication, and mitigation of hazard events
Objective 1.2	Reduce the danger to, and enhance protection of, high risk areas during hazard events
Objective 1.3	Protect and maintain critical facilities and services
Goal 2:	Protect new and existing properties
Objective 2.1	Reduce repetitive losses to the National Flood Insurance Program (NFIP)
Objective 2.2	Maximize insurance coverage, including NFIP, to provide financial protection against hazard events
Objective 2.3	Enact and enforce regulatory measures to ensure that development will not put people in harm's way or increase threats to existing properties
Goal 3:	Promote a Whole Community approach to understanding hazard risks and implementing mitigation initiatives
Objective 3.1	Heighten public awareness of the full range of natural and human-caused hazards faced locally and regionally
Objective 3.2	Educate the public on actions they can take to prevent or reduce the loss of life or property from all hazards.
Objective 3.3	Maximize participation of property owners in protecting their properties
Objective 3.4	Train and empower public officials and other community leaders on ways to build on current mitigation effort
Objective 3.5	Build and expand the cadre of committed volunteers to safeguard the community before, during, and after a disaster
Goal 4:	Foster countywide collaborative mitigation efforts to decrease hazard vulnerability
Objective 4.1	Build and support local partnerships to lessen vulnerability to hazards
Objective 4.2	Build hazard mitigation concerns into the county and town planning and budgeting processes
Goal 5:	Invest appropriately in areas planned for managed growth

Objective 5.1	Identify potential sites for reuse, rehabilitation, redevelopment, infill, and brownfield remediation that avoid hazard-prone areas
Objective 5.2	Support mitigation initiatives and policies that protect cultural, economic, and natural resources
Objective 5.3	Preserve natural systems within areas targeted for development
Objective 5.4	Support hazard mitigation research and development that helps identify additional mitigation opportunities and incorporates climate change considerations
Objective 5.5	Improve and strengthen regional economic systems to increase and promote business opportunities for employers and employees

F. After reviewing the goals and objectives and their alignment with types of mitigation actions, indicate whether you feel information presented validates, or does not validate, the goals provided:

 X The goals and objectives are comprehensive as they are presented and cover the scope of all potential hazard vulnerabilities and mitigation actions that should be included in the plan. In addition, **they are all applicable to my jurisdiction and no additional goals or objectives are needed for my jurisdiction.**

Of course, some goals and objectives are more applicable to Bolton than others. I already noted in the online meeting that Bolton agreed to the above.

Worksheet #7: The Mitigation Strategy – Actions

Review the previously identified mitigation actions and projects from the Chittenden County 2017 HMP to assess progress of each action and suggest new actions/projects based 2022 Goals and Objectives. Briefly describe the actions that would effectively reduce future disaster losses from the identified hazards. This worksheet provides guidance about each category of mitigation actions to be considered and an Action Worksheet for a mitigation project as an example.

Types of Mitigation Actions

Types of Mitigation Measures and Sample Mitigation Actions		
Local Plans and Regulations		
Mitigation Measure	Examples	
<ul style="list-style-type: none"> Government authorities, policies, or codes that influence the way land and buildings are developed and built 	<ul style="list-style-type: none"> Comprehensive plans Land use ordinances Subdivision regulations Development Review Building codes and enforcement NFIP Community Rating System 	<ul style="list-style-type: none"> Capital improvement programs Open space preservation Stormwater management regulations and master plans Community wildfire protection plans, fuels Management & fire breaks
Structure and Infrastructure Projects		
Mitigation Measure	Examples	
<ul style="list-style-type: none"> Modifying existing public and certain private structures and infrastructure to protect or remove them from hazard areas. Create a built environment to reduce the impact of hazards. Many actions FEMA HMA eligible. 	<ul style="list-style-type: none"> Acquisitions and elevations of structures in flood prone areas Utility undergrounding Structural retrofits (e.g., shelters) Floodwalls and retaining walls 	<ul style="list-style-type: none"> Detention and retention structures Culverts Safe rooms
Natural Systems Protection		
Mitigation Measure	Examples	
<ul style="list-style-type: none"> Minimize damage and losses and preserve or restore the functions of natural systems. 	<ul style="list-style-type: none"> Sediment and erosion control Stream corridor restoration Forest management 	<ul style="list-style-type: none"> Conservation easements Wetland restoration and preservation
Education and Awareness Programs		
Mitigation Measure	Examples	

<p>Educate citizens, elected officials, and property owners about hazards how to mitigation them. Participate in national programs: StormReady, Firewise, etc.</p>	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Social media • Real Estate disclosure 	<ul style="list-style-type: none"> • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas • StormReady, Firewise
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In addition to the mitigation action categories thus described, the plan will compile and present a summary of preparedness actions (which will not be used for compliance with DMA 2000) that have been taken or are in place to prepare for or respond to hazard incidents, such as:

<ul style="list-style-type: none"> • Evacuation and sheltering 	
<ul style="list-style-type: none"> • Emergency Planning <ul style="list-style-type: none"> o Activating resources for response o Pre-staging equipment 	<ul style="list-style-type: none"> o Shutting off power to threatened areas o Closing streets or bridges o Monitoring water levels
<ul style="list-style-type: none"> • Communications 	
<p>Emergency Response Equipment (excluding emergency generators)</p>	

WORKSHEET #8: PRIORITIZE MITIGATION ACTIONS

The Chittenden Planning Committee will adopt a single prioritization methodology to be used by all jurisdictions to evaluate and rank each mitigation action. Each jurisdiction will use the same ranking system while evaluating its actions separately from the other jurisdictions, resulting in a jurisdiction-specific list of prioritized actions presented within the jurisdiction’s annex.

All prioritized jurisdiction actions will be rolled-up into a single list of mitigation actions that will be included as an appendix in the Base Plan; however, each action described in the list will be specific to the proposing jurisdiction and will be consistent with the outcome of its hazard vulnerability assessment and ranking process.

The following Ranking System is proposed for use by each jurisdiction to prioritize each proposed mitigation action.

Step 1: Review Ranking System for Prioritizing Mitigation Actions

The Mitigation Ranking System is organized in seven (7) categories that link to the importance and timing for implementation.

(S) Social	
Definition	Considerations
The public must support the overall mitigation implementation strategy and specific mitigation actions. The mitigation action is evaluated in terms of community acceptance and impact on the population.	<ul style="list-style-type: none"> • Community acceptance: will the action disrupt housing or cause the relocation of people? Is the action compatible with present and future community values? • Impact on population: will the proposed action adversely affect one segment of the population?
(T) Technical	
Definition	Considerations
It is important to determine if the proposed action is technically feasible, will help to reduce losses in the long term, and has minimal secondary impacts. This category evaluates whether the action is a whole or partial solution, or not a solution at all.	<ul style="list-style-type: none"> • Technical feasibility: how effective is the action in avoiding or reducing future losses? • Long-term solution: does the action solve the problem or only a symptom? • Secondary impacts: will the action create more problems than it solves?
A. Administrative	
Definition	Considerations
This category examines the anticipated staffing, funding, time, and maintenance requirements for the mitigation action to determine if the jurisdiction has the personnel and administrative capabilities to implement the action or whether outside help will be necessary.	<ul style="list-style-type: none"> • Staffing: does the jurisdiction have the capability (staff, technical experts, and training) to implement the action? • Funding allocated: does the jurisdiction have the funding to implement the action or can it readily be obtained? • Time: can the action be accomplished in a timely manner? • Maintenance/Operations: can the community provide the necessary maintenance? It is important to remember that most federal grants will not provide funding for maintenance.
(P) Political	
Definition	Considerations
This category considers the level of political support for the mitigation action.	<ul style="list-style-type: none"> • Political support: is there political support to implement and maintain this action? Have political leaders participated in the planning process so far? • Local champion or proponent: is there a respected community member willing to help see the action to completion? • Public and stakeholder support: is there enough public support to ensure the success of the action? Have all stakeholders been offered an opportunity to participate in the planning process?
(L) Legal	
Definition	Considerations

<p>Whether the jurisdiction has the legal authority to implement the action or whether the jurisdiction must pass new laws or regulations is important in determining how the mitigation action can be best carried out.</p>	<ul style="list-style-type: none"> • Commonwealth authority: does the Commonwealth have authority to implement the action? • Existing local authority: are proper laws, ordinances, and resolutions in place to implement the action? • Potential legal challenge: is there a technical, scientific, or legal basis for the mitigation action (i.e., does the mitigation actions “fit” the hazard setting)? Are there any potential legal consequences? Is the action likely to be challenged by stakeholders who may be negatively affected?
<p>(E) Economic</p>	
<p>Definition</p>	<p>Considerations</p>
<p>Economic considerations must include evaluation of the present economic base and projected growth. Cost-effective mitigation actions that can be funded in current or upcoming budget cycles are more likely to be implemented than actions requiring general obligation bonds or other instruments that would incur long-term debt to a community.</p>	<ul style="list-style-type: none"> • Benefits of action: what financial benefits will the action provide? • Cost of action: does the cost seem reasonable for the size of the problem and the likely benefits? What burden will be placed on the tax base or local economy to implement this action? • Contribution to economic goals: does the action contribute to community economic goals, such as capital improvements or economic development? • Outside funding required: are there currently sources of funding that can be used to implement the action? Should the action be considered “tabled” for implementation until outside sources of funding are available?
<p>(E) Environmental</p>	
<p>Definition</p>	<p>Considerations</p>
<p>The impact on the environment is an important consideration because of public desire for sustainable and environmentally healthy communities. Also, statutory considerations, such as the National Environmental Policy Act (NEPA), need to be kept in mind when using federal funds.</p>	<ul style="list-style-type: none"> • Impact on land/water bodies: how will this action impact land/water? • Impact on endangered species: how will this action impact endangered species? • Impact on hazardous materials and waste sites: how will this action impact hazardous materials and waste sites? • Consistency with community environmental goals: is this action consistent with community environmental goals? • Consistency with federal laws: is the action consistent with federal laws, such as NEPA?

Step 2: Prioritize Mitigation Actions

The Prioritization Worksheet (below) provides the format to list each action your jurisdiction described on an Action Worksheet. Using the ranking criteria provided in **Step 1**, prioritize the action for implementation.

Instructions:

1. Provide the information requested in Columns (A), (B), and (C).
2. Using the Ranking System provided above, assign a numerical score for each category in Columns (1) through (7). If exact data is unavailable, a “best guess” is acceptable.
3. Add the individual scores in Columns (1) through (7) to determine a *Total Score* (Column 8).
4. The total score represents the action’s priority. Using the Ranking Level guide provided in the last row of the Mitigation Ranking System criteria (above), assign each action a ranking of high, medium, or low.

Action priorities may be re-considered at any time based on the plan maintenance schedule for monitoring and evaluation; availability of new data; or changes in scope, cost, time frame or other characteristics of the action.

***Abbreviations for Project Types:**

LPR - Local Plans and Regulations

SIP - Structure and Infrastructure
Projects

NSP - Natural Systems Protection

EAP - Education and Awareness
Program

Prioritization Worksheet**JURISDICTION: Bolton****Person Completing Form: Amy Grover****Date Submitted: 1/12/22**

Project Description			Project Benefits								
A	B	C	1	2	3	4	5	7	8	9	
Project #	Mitigation Action	Hazard/ Project Type*	Social (S)	Technical (T)	Administrative (A)	Political (P)	Legal (L)	Economic (E)	Environmental (E)	TOTAL SCORE	Priority
1	Engineering for Stabilization of Gleason Brook	SIP	1	0	4	0	2	1	2	10	M
2	Stabilizing Gleason Brook Banks	SIP	1	0	0	0	2	1	1	5	L
3	Road Inventory and Assessment	SIP	0	4	0	0	2	3	3	12	M