ANNEX 12: TOWN OF SHELBURNE

Chartered: 1763

Land Area: 45.1 sq. mi.

2020 Population: 7,717

Government Address: P.O. Box 88/5420 Shelburne Road, Vermont 05482

Households:

Mitigation Focus: Severe Rainstorm, Severe Winter Storm, Fluvial Erosion

This section presents the jurisdictional annex for Town of Shelburne, which provided the following information for the 2022 update to the *Chittenden County, Vermont Multi-Jurisdictional All Hazards Mitigation Plan:*

- Jurisdiction Information (Contact Information and Hazard Mitigation Planning Role)
- Jurisdiction Planning Process
- Hazard Event History
- Hazard Risk Ranking
- Community Assets

- Capabilities Assessment
- Resiliency to Hazards
- Mitigation Actions and Action Plan for Implementation

12.1 HAZARD MITIGATION PLAN – POINT OF CONTACT

Type	Primary Point of Contact	Secondary Point of Contact
Name	Lee Krohn	Robert Lake
Title	Town Manager	Police/EMD/ Health Officer
Agency	Town of Shelburne	Town of Shelburne
Address	P.O. Box 88/5420 Shelburne Rd.	P.O. Box 88/5420 Shelburne Rd.
City, State, Zip	Vermont, 05482	Vermont 05482
Phone	802-985-5116	802-985-8051
Email	lkrohn@shelburnevt.org	Bob.lake@shelburnepdvt.org

12.2 JURISDICTION PROFILE

- Geographic Region: Champlain Valley
- Persons per household: 2.30
- Persons per Square mile:
- Median Age: 46.6
- Elevations: Near sea level - 203ft

Location

The Town of Shelburne is located in southwestern Chittenden County. Located along the shores of Lake Champlain on the west, Shelburne is bounded on the south by Charlotte and Hinesburg, on the east by St. George and on the north by South Burlington and Williston.

The main settlement of Shelburne in the center of town is a census-designated place (CDP). The town is the wealthiest municipality in both Chittenden County and the Burlington, Vermont metropolitan area.

According to the United States Census Bureau, the town has a total area of 45.1 square miles of which 24.3 square miles is land and 20.8 square miles, or 46.06 percent, is water (primarily Lake Champlain, but also including Shelburne Pond in the eastern part of town).

History

Shelburne was chartered in 1763, with the name "Shelburne" or "Shelburn" chosen to honor William Petty, second Earl of Shelburne, a nobleman of the British Parliament and Prime Minister.

Shelburne's early economy was based on farming, potash, and a carding mill, gristmill and sawmill. In the early 1800's, sheep raising was introduced and later, orchards and fruit growing became a major source of income for farmers, with some 17,740 trees in by 1880. Following the War of 1812, commerce on the lake expanded rapidly.

Shipping along Lake Champlain has also contributed to the economy with passenger and commercial traffic.

Demographics, Economy, and Governance

The town has experienced steady population growth since 1980

Table 12.1: Demographics, Economy, and Governance in Town of Shelburne[1]

Demographics	Economy	Governance
Population Growth • 1980: 5,000 • 1990: 5,871 • 2000: 6,944 • 2010: 7,144 • **2020: 7,717** • 2020-2030 (Projected): **Race and Ethnicity** Percentage of population identifying as: • White: 95.9% • Asian/Pacific Islander: 1.1% • Hispanic/Latino: 3.0% • Two or more races: 1.5% • Black/African American: 0.9% • Native American: 0.6%	• Median household income (2019): $96,165 • Per capita income (2019): $55,128 • Median home value (2021): NA • Number of Single Unit Residences: NA • Population below poverty level (2019): NA	• Selectboard (5) • Town Manager • Town Clerk and Treasurer

[1]U.S Census (1970-2020), www.city-data.com, www.census.gov-QuickFacts.

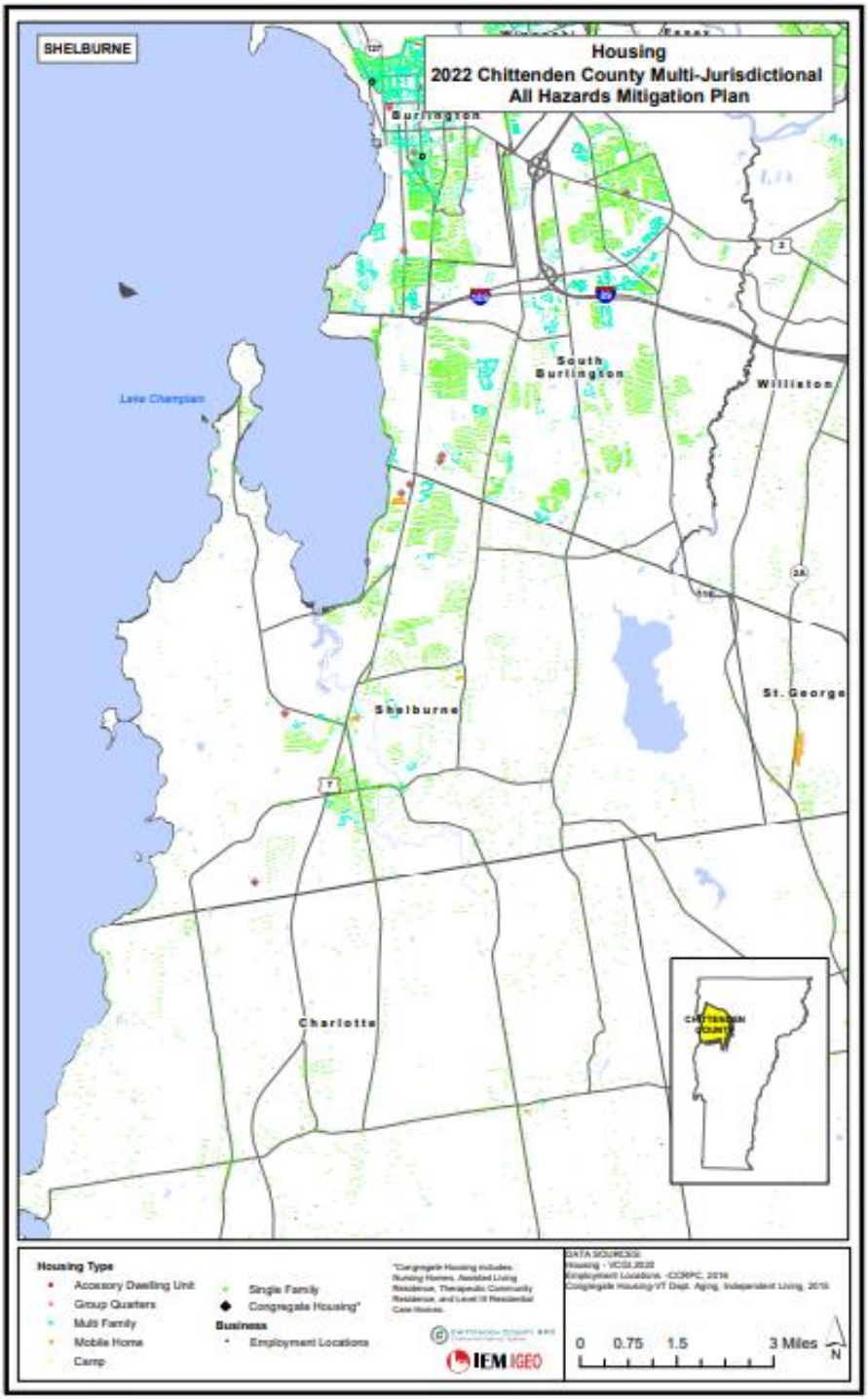

Figure 12.1: Housing and Employment, Town of Shelburne[2]

[2] Chittenden County Regional Planning Commission, GIS Database; October 14, 2021.

Built Environment and Community Lifelines

The concentration of residential development in Shelburne is concentrated around three distinct areas: the village center, neighborhoods located immediately around the center, and in the "northern corridor" along Route 7, north of the LaPlatte River. Many residents also live in subdivisions in the northwest portion of the town.

Table 12.2: Number of Community Lifelines and Critical Assets in the Town of Shelburne

SECTOR	Safety and Security	Food, Water, Shelter	Health and Medical	Energy	Communications	Transportation	Hazardous Materials	Education	Cultural/ Historical	High Hazard Dams
No. Assets	7	6	2	1	2	1	12	4	5	0

Safety and Security

There are one Emergency Medical Services (EMS) facility, one fire station, one police station, one Emergency Operations Center, one dispatch call center, and two military installations, located in the Town of Shelburne.

Food, Water, Shelter

There are six shelter, food and water facilities in the Town of Shelburne.

Health and Medical

There are two medical and health facilities located in the Town of Shelburne.

Energy

There is one energy facility located in the Town of Shelburne.

Communications

Most communications and information systems and infrastructure in the United States are privately-owned; however, the Town maintains authority and control over public safety communications for fire, police, and other responding agencies. In recent years, the Federal government has taken a stronger role in protecting information and communications infrastructure, which may also present a challenge in relation to disaster impacts. Increasing reliance on this infrastructure by individuals, businesses, and government could cause vulnerabilities which emergency managers should take into consideration in pre-and post-incident planning and operations.

Transportation

Shelburne Road (U.S. Route 7), Dorset Street, and Spear Street are the main thoroughfares that go through the town.

Hazardous Materials

Currently there are 12 facilities within the town that use, store or transport hazardous materials.

Education

In the Town of Shelburne there are four educational facilities serving K through 12th populations. These are: Lake Champlain Waldorf School (two campuses, private, K-8 and 9-12), Shelburne Community School (K-8), and the Vermont Day School (pre-k – 8).

Recreational, Cultural and Historic Sites and Assets

There are five parks located in the Town of Shelburne, including Davis Park, Hullcrest Park, LaPlatte Nature Park, Shelburne Bay Park and the Village Dog Park.

Natural Environment

The natural environment in the town of Shelburne is primarily grass and shrubs, with most paved areas located in and around the residential and commercial centers.

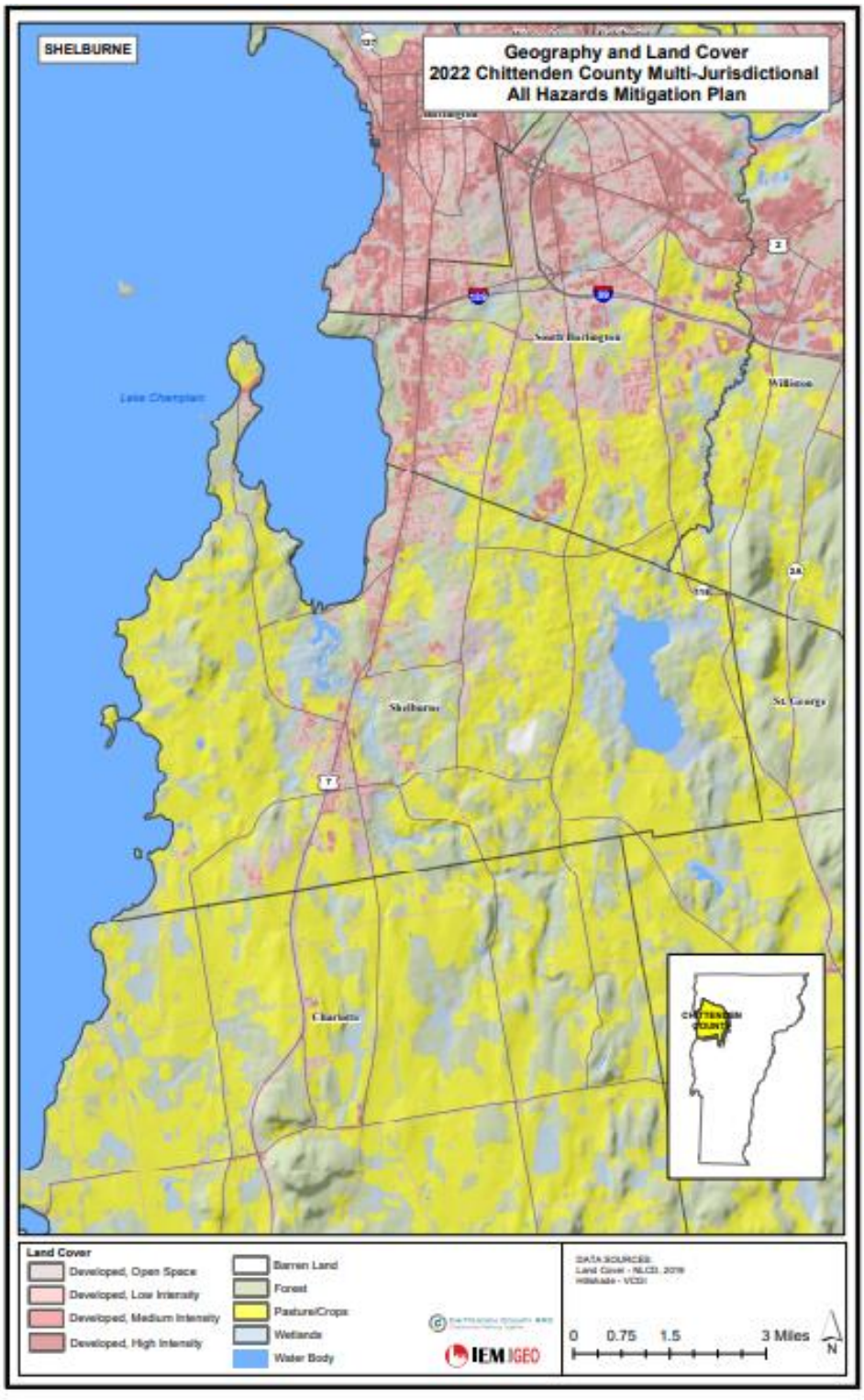

Figure 12.2: Geography and Land Cover, Town of Shelburne[3]

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

Figure 12.3: River Corridors and Floodplains, Town of Shelburne[4]

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

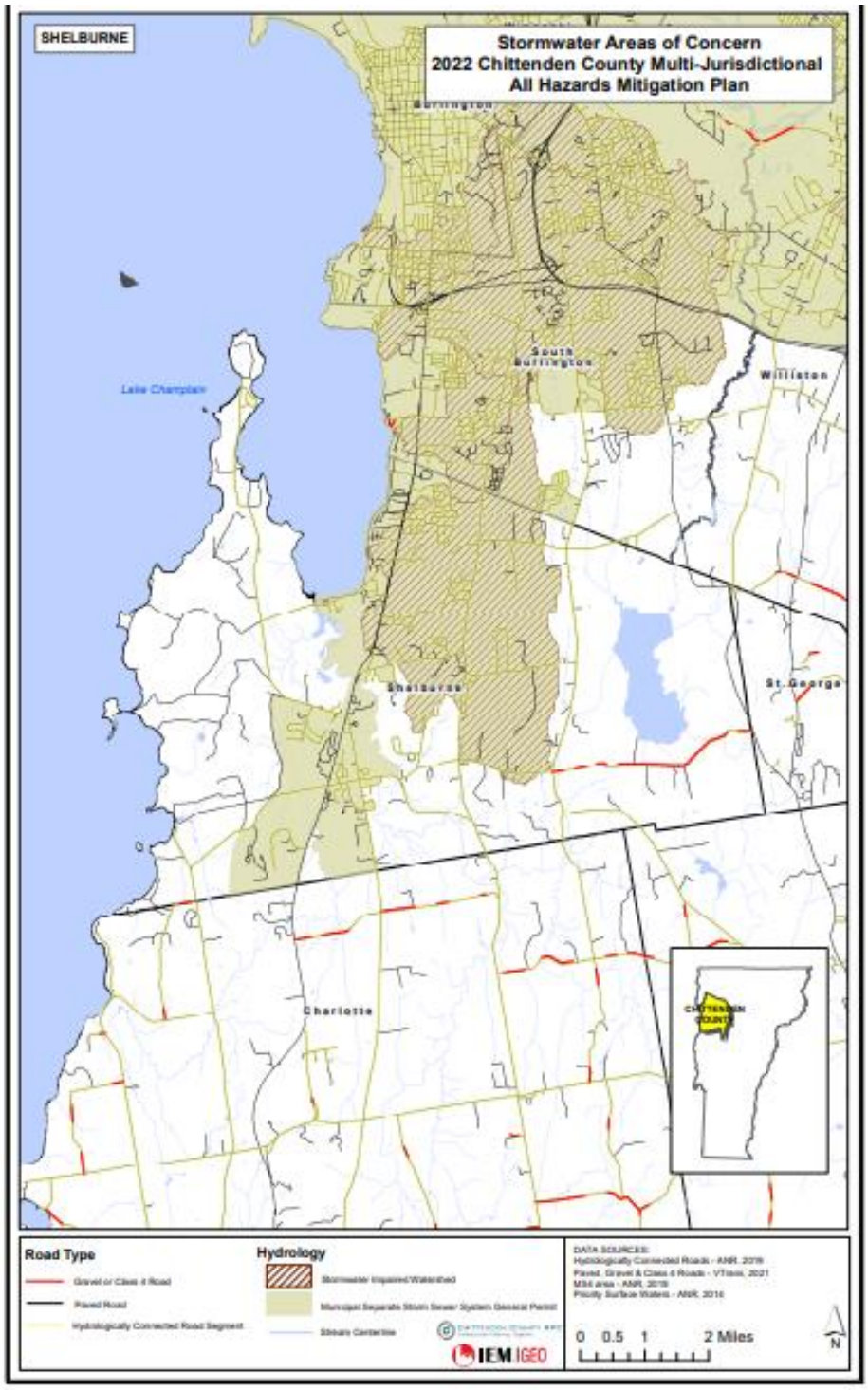

Figure 12.4: Stormwater Management System, Town of Shelburne[5]

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

Growth and Development Trends

Over the last decade the population of Shelburne has been steadily increasing. The next ten-year projection shows the town population increasing slightly, but at a slower rate.

Table 12.3: Population Trends, 2010-2020, Town of Shelburne

2010	2020	Net Change 2010-2020	% Change 2010-2020
7,144	7,717	573	0.074%

Table 12.4: Population Projection, 2020 - 2030, Town of Shelburne

2020	2030	Net Change 2020 -2030	Percent Change 2020-2020
7,717	7,725	8	0.001%

Future population growth within the town is primarily dependent on the economic stability and planned development for the county and region which shows no significant change in the near future.

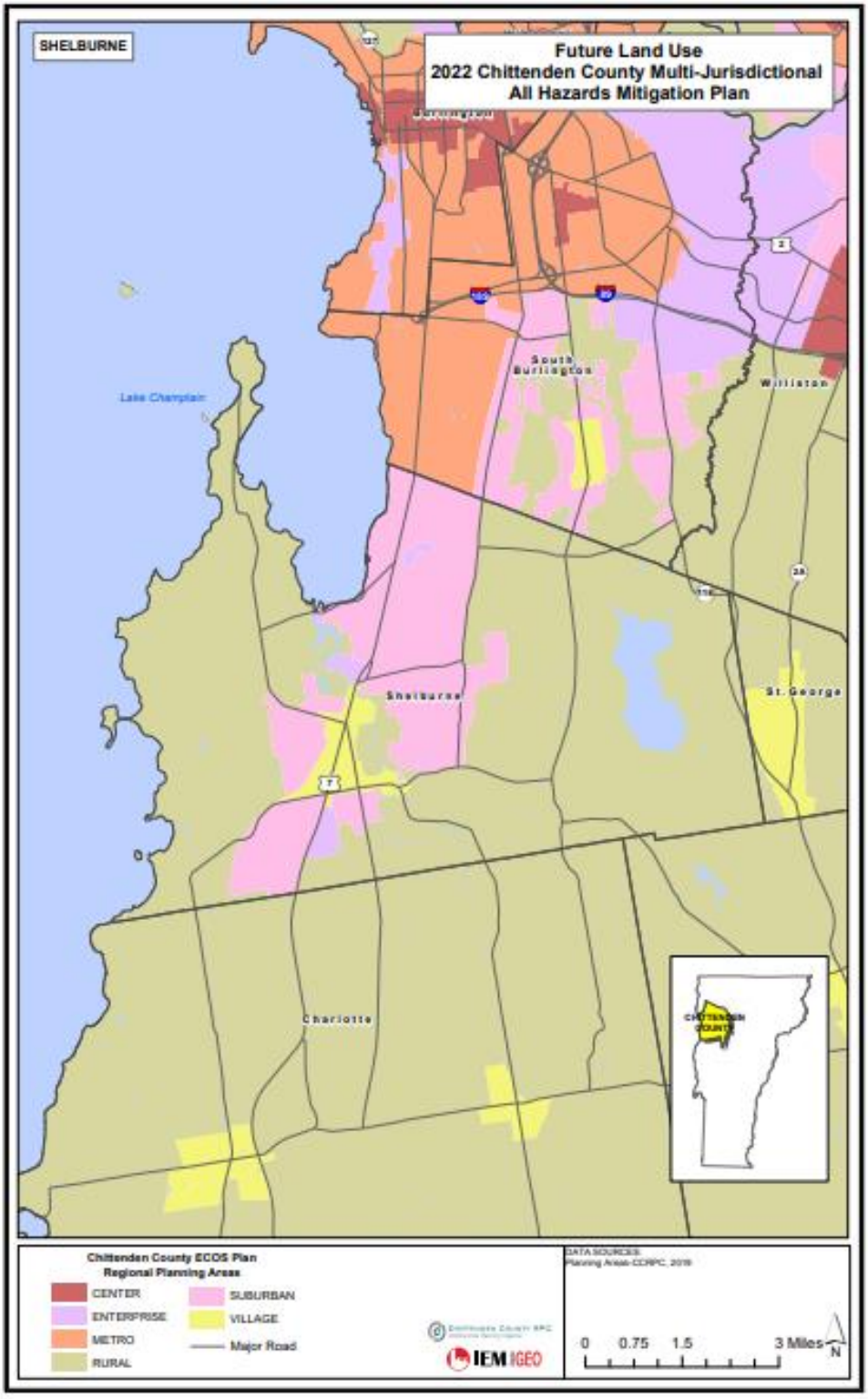

Figure 12.5: Future Land Use, Town of Shelburne[6]

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

12.3 JURISDICTION PLANNING PROCESS

Table 12.5: Points of Contact for Hazard Mitigation Planning, Town of Shelburne

Name	Position/Title	Department/Agency
Lee Krohn	Town Manager	Town of Shelburne
Robert Lake	Police/EMD/ Health Officer	Town of Shelburne
Joe Colangelo	Town Manager	Town of Shelburne
Jerry Ouimet	Fire Chief	Town of Shelburne
Dave DiBiase	Water Superintendent	Town of Shelburne
Chris Robinson	Water Quality Superintendent	Town of Shelburne
Aaron Noble	Police Chief	Town of Shelburne
Dan Albrecht	Senior Planner	Chittenden County RPC

The jurisdiction identified its chief hazard mitigation planning responsibility as participating in the planning process and providing data and information through the Chittenden County All Hazards Mitigation Plan Update Committee. The county also identified the following tasks as part of its mitigation planning responsibilities:

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

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 Plan update. Notification of the Draft Plan release was made through the same county web link. Documentation of the public survey and draft plan review is included in **Attachment 3** of this annex.

12.4 JURISDICTION-SPECIFIC HAZARD EVENT HISTORY

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

Table 12.6: Federal Disaster and Emergency Declarations (2017-2021), Town of Shelburne

Declaration	Date	Hazard	Assistance Type
EM 3567	August 2021	Tropical Storm Henri	P(B)
DR-4532	April 2020	Vermont Covid-19 Pandemic	IA, PA(B)
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 12.7: Summary of Storm Events in the Town of Shelburne 1950-2021

Event Type	Number of incidents	Direct Deaths	Indirect Deaths	Direct Injuries	Indirect Injuries	Property Damage ($)	Crop Damage ($)
Cold/Wind Chill	10	0	0	0	0	100,000	0
Extreme Cold/Wind Chill	5	0	0	0	0	0	0
Flash Flood	2	0	0	0	0	15,000	0
Flood	12	0	0	0	0	193,000	0
Frost/Freeze	3	0	0	0	0	0	275,000
Hail	5	0	0	0	0	0	0
Heat	7	1	0	0	0	0	250,000
Heavy Rain	6	0	0	0	0	50,000	0
Heavy Snow	5	0	0	0	0	247,000	0
High Wind	14	0	0	1	0	1,440,000	0
Ice Storm	1	0	0	0	0	750,000	0
Lakeshore Flood	5	0	0	0	0	5,520,000	0
Lightning	3	0	0	0	0	110,000	0
Strong Wind	30	1	0	0	0	369,000	0
Thunderstorm Wind	17	0	0	10,000	0	491,000	0
Winter Storm	68	0	0	2	0	1,758,000	10,000
Winter Weather	97	1	3	0	0	951,000	0
Total	**290**	**3**	**3**	**10,003**	**0**	**$11,994,000**	**$535,000**

Table 12.8: Significant Hazard Events Identified by Town of Shelburne, 2017-2021

Date	Hazard	Event and Description
May 4, 2018	**Thunderstorm Wind and Hail**	Several reports of large trees and utility lines down across Shelburne. Estimated dollar size hail or larger reported. Another round of thunderstorms produced additional damage in the form of trees, utility lines down and some structural damage from fallen trees, including roof damage.

High Hazards of Concern to the Jurisdiction

The Town of Shelburne indicated that Severe Rainstorm, Severe Winter Storms, and Fluvial Erosion were the highest natural hazards of concern for the jurisdiction. These hazards are fully profiled in **Section 4, Base Plan**; however, further information was provided by the town in relation to the following hazards.

Severe Rainstorm

Damage to roads, culverts, and bridges from thunderstorm events has been assumed in the past to be caused by overflowing of nearby streams, rivers, or lakes. More recent analysis has shown that this damage is caused by intense, localized thunderstorms which cause excessive and rapid water flows on and over paved and gravel roads, roadside ditches, driveway culverts, stormwater systems, etc. In many cases, damaged infrastructure is located outside of formally mapped floodplains, Fluvial Erosion hazard Areas (FEHA) or River Corridors (RC). Some of the most vulnerable infrastructure is road culverts.

Impacts from previous hazard events include general road repairs, debris removal and cleanup, and increased contractual costs for snow removal.

Dam/Levee Failure

The Town of Shelburne has two dams in the town, listed on the Vermont Dam Inventory. Neither dam is included in the National Inventory of Dams maintained by the U.S. Army Corps of Engineers. Both dams are privately owned and classified as low hazard dams.

Table 12.9: High Hazard Dams in Town of Shelburne, as of May 2021[7]

Name	Owner	Hazard Category
Bostwick Pond	[Private]	Low
Lee	[Private]	Low

[7] Vermont Dam Inventory, Vermont Agency of Natural Resources, Natural Resources Atlas. Retrieved at: https://anrmaps.vermont.gov/websites/anra5/

Flood Hazard Areas

According to the Shelburne Town Plan, certain areas have been designated flood hazard areas, based upon 100-year floodplain data. Primary areas within the floodplain include land along the banks of LaPlatte River, the lowlands surrounding Shelburne Pond, and some portions of Munroe Brook. The Town participates in the National Flood Insurance Program (NFIP), and therefore regulates and limits development within designated flood hazard zones.

A simple GIS intersection analysis reveals that portions of town roads are also located within the 100-year floodplain as well as culverts, bridges and utility poles. Unfortunately, this level of analysis does not take into account the fluvial geomorphology (volume, velocity, direction, etc.) nor most critically does not factor in the elevation of the road relative to flood elevation. Analysis also reveals farmland located within the floodplain, however, without an accurate fluvial geomorphology assessment at each location it is not currently possible to predict how many cubic yards of productive soils would be a net loss during a flood event.

A good portion of this area consists of the shoreland of Lake Champlain. The Base Flood Elevation of Lake Champlain established by FEMA is 102.0 feet while flood stage established by the National Weather Service is 100 ft. These stages are defined as follows:

- 100 ft. - Water begins to enter some lake front properties. Water also begins to threaten low lying roads, piers, and docks. Wave action can compound flooding on windward facing shorelines.
- 101 ft. - Flooding becomes serious, and wave erosion on windward shores becomes a problem. If lake ice is present, structural damage can occur.
- 102 ft. - Severe flooding occurs, with widespread inundation of lake side properties, and closure of low-lying roads.

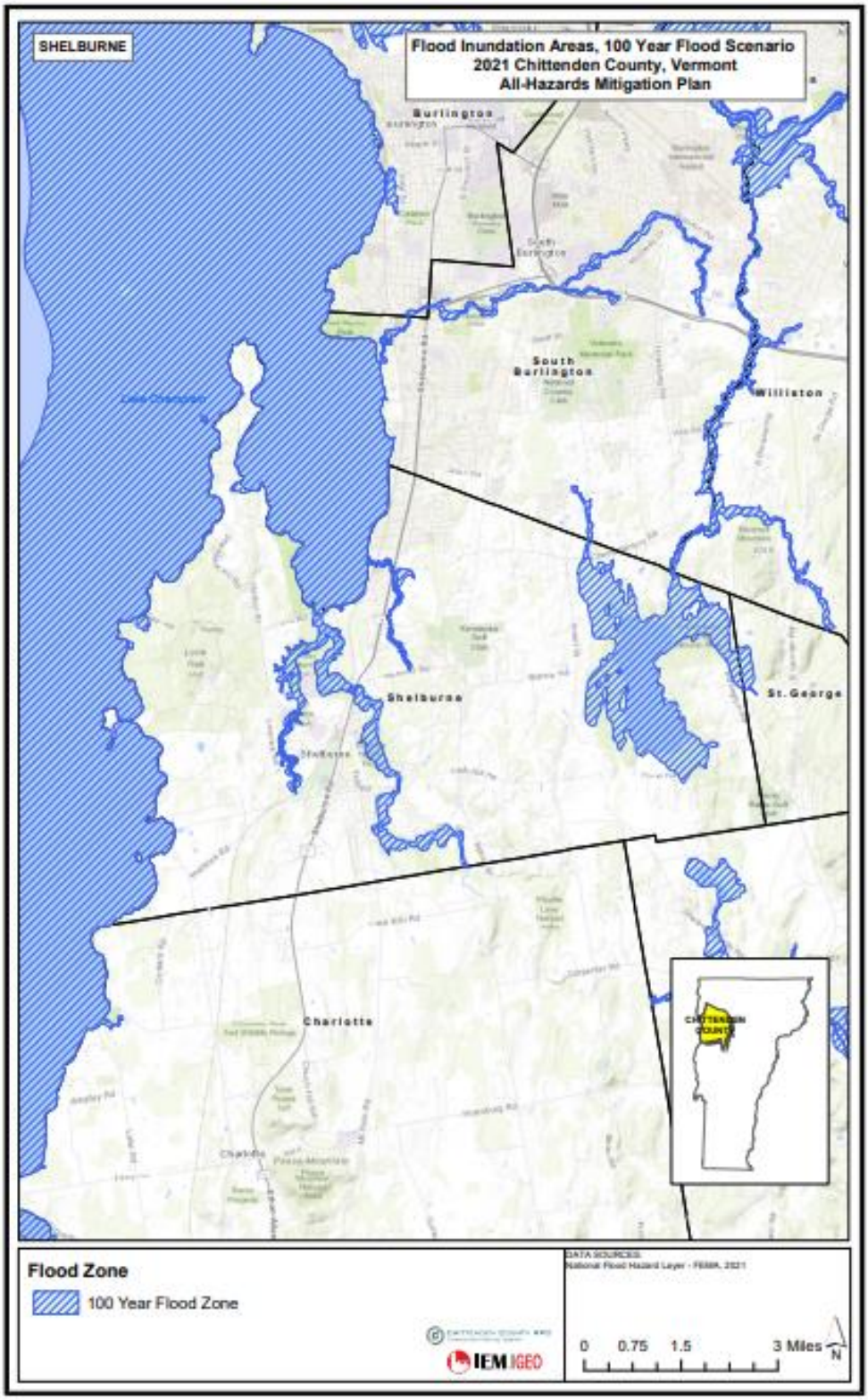

Figure 12.6: 100-Year Flood Scenario, Town of Shelburne[8]

[8]. Hazus, 100-Year Flood Scenario Run, October 14, 2021.

Fluvial Erosion Hazard and River Corridor Areas

Some level of geomorphic assessment has been completed for most of the streams that run through Shelburne. River Corridors have been identified for some of these waterways; notably, sections along the banks of the LaPlatte River (and tributaries) have been identified as areas susceptible to fluvial erosion.

Landslide

The 2017 MJAHMP included a short description of the landslide hazard in relation to the La Platte River from a study conducted in 2012.[9] The report noted that eight previous mass failures along the La Platte River and seven along McCabe's Brook were identified and eight translational slides and three rotational slides were studied during the initial phase of the project. The study report concluded that although there were two known low-agnel rotational slides that showed an unusual signature, they did not show as high landslide potential and additional work was needed to fully understand the influential parameters for these types of slides. No additional information in relation to landslides has been provided for this Plan update.

Non-Natural Hazards

The Town of Shelburne identified the following information related to technological and societal hazards.

Table 12.10: Technological and Societal Hazards of Concern to the Town of Shelburne

Hazard	Risk/Vulnerability Issue
Crime	Shelburne has some vulnerability to property crime due to the variety of businesses located in the area.
Economic Crisis	A key employer loss could have a significant impact on the town's employment and economy.
Hazardous Materials Incident	Transportation infrastructure and dense commercial/industrial development in some parts of the town raise the risk of a hazardous materials incident.
Power Loss	Shelburne has more extensive water, sewer, gas, and telecommunications services coverage than most of the county, so the impact of significant outages is higher than in other municipalities.
Telecommunications Failure	While much of the infrastructure is privately owned, loss of services could have a critical impact on the town if Dispatch/E911 services are disrupted.

Additional concerns expressed by the Town include:

[9] "Protocol for Identification of Areas Sensitive to Landslide Hazards in Vermont", Vermont Geological Survey.

- A cyber incident is one of the greatest and most challenging hazards we now face. Not sure "telecommunications failure" covers the full range of concerns there. The town has taken steps to lessen these risks – stronger antivirus/firewall, more robust multiple backup processes, public Wi-Fi separated from the private network…but one external deliberate or internal inadvertent keystroke could create a very bad day for any municipality.

12.5 HAZARD RISK RANKING

After developing hazard profiles, the Town of Shelburne Planning Committee 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 Shelburne 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 5, Base Plan**, and local detail is provided in the Jurisdiction Annexes.

Table 12.11: Hazard Risk Ranking Summary Natural Hazards, Town of Shelburne

Hazard	Sum-Impact/ Consequence Score	Probability	Total Risk Rating (Impact/Consequences x Probability)	Hazard Ranking
Severe Rainstorm	9	5	45	High
Fluvial Erosion	6	4	24	Medium

Severe Winter Storm	6	4	24	Medium
Human Infectious Disease	7	3	21	Medium
Extreme Temperatures	5	4	20	Medium
Flood	5	4	20	Medium
Wildfire	4	5	20	Medium
Invasive Species	2	3	6	Low
Dam/Levee Failure	[Not Ranked]			

Table 12.12: Hazard Risk Ranking Summary Technological Hazards, Town of Shelburne

Hazard	Sum-Impact/ Consequence Score	Probability	Total Risk Rating (Impact/Consequences x Probability)	Hazard Ranking
Power Loss	7	5	35	Medium
Water pollution (algal bloom, etc.)	5	5	25	Medium
Multi-Structure Fire	6	4	24	Medium
Telecommunications Failure	6	4	24	Medium
Water Supply Loss	6	4	24	Medium
Hazardous Materials Incident	8	3	24	Medium
Natural Gas Service Loss	7	3	21	Medium
Major Transportation Incident	5	4	20	Medium
Other Fuel Service Loss	6	3	18	Low
Sewer Service Loss	6	3	18	Low

Table 12.13: Hazard Risk Ranking Societal Hazards, Town of Shelburne

Hazard	Sum-Impact/ Consequence Score	Probability	Total Risk Rating (Impact/Consequences x Probability)	Hazard Ranking
Economic Recession	7	3	21	Medium
Terrorism	6	1	21	Medium
Crime	4	4	16	Low
Key Employer Loss	4	4	16	Low
Civil Disturbance	3	2	6	Low

12.6 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 at risk 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 Pl**an.

Table 12.14: Typical Vulnerabilities of Natural Hazards of Highest Concern, Town of Shelburne

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Severe Winter Storm	• Temporary closure of roads and bridges including from debris • Temporary loss or power and/or telecommunications • Temporary isolation of vulnerable individuals	• Budget impacts from debris cleanup
Flooding	• Temporary closures of roads and bridges including from debris • Temporary loss of power and/or telecommunications • Temporary isolation of vulnerable individuals • Damage to public infrastructure	• Budget impacts from road/bridge closures and repairs to public infrastructure • Damages to individuals' properties and businesses
Fluvial Erosion	• Temporary closures of roads and bridges from debris • Temporary loss of power and/or telecommunications • Temporary isolation of vulnerable individuals • Damage to public infrastructure	• Budget impacts from road/bridge closures and repairs to public infrastructure • Damages to individuals' properties and businesses
Severe Rainstorm	• Temporary closures of roads and bridges including from debris • Temporary loss of power and/or telecommunications	• Budget impacts from road/bridge closures and repairs to public infrastructure

	• Temporary isolation of vulnerable individuals • Damage to public infrastructure	• Damages to individuals' properties and businesses
Extreme Temperatures	• Damage to public infrastructure • Loss of water service	• Budget impacts due to needed repairs
Wildfire	• Damage to private property	•
Human Infectious Disease	• Temporary closures of schools, businesses, places of assembly • Increased demand on medical services	• If an epidemic is widespread and long-lasting, impact could be severe
Invasive Species	• Small but ongoing cost to monitoring level of occurrence	• Unknown at this point

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

- Fluvial Erosion due to LaPlatte River and low-lying Pond Road.
- Flooding due to the significant shoreline along Lake Champlain.

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

Table 12.15: Typical Vulnerabilities of Technological Hazards of Highest Concern, Town of Shelburne

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Major Transportation Incident	• Temporary closures of transportation infrastructure • Injuries, deaths	• If major event, potential long-term closure of infrastructure
Power Loss	• Temporary loss of electrical service • Temporary impacts to vulnerable individuals • Damage to public infrastructure	• If extended event, damage to perishable goods or business income • If extensive loss, potential budget impacts to service providers
Hazardous Materials Incident	• Temporary closures of roads and bridges during cleanup	• If large event, potential high cleanup costs • Injuries to persons
Water Service Loss	• Temporary loss of service • Temporary impacts to vulnerable individuals	• If extensive loss, potential budget impacts to service providers
Gas Service Loss	• Temporary loss of service • Temporary impacts to vulnerable individuals	• If extensive loss, potential budget impacts to service providers

Telecommunications Failure	• Temporary loss of service • Temporary impacts to vulnerable individuals	• If extensive loss, potential budget impacts to service providers
Other Fuel Service Loss	• Temporary loss of service • Temporary impacts to vulnerable individuals	• If extensive loss, potential budget impacts to service providers
Sewer Service Loss	• Temporary loss of service • Temporary impacts to vulnerable individuals	• If extensive loss, potential budget impacts to service providers
Water Pollution	• Ongoing budgetary impacts due to permit requirements	• If repeat events, impacts to tourism-based businesses

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

- Major Transportation Incident due to the transit of a railroad line and U.S Route 7 through the Town.
- Hazardous Materials Incident due to high traffic volumes on RT 7, and hazardous materials sometimes transported by road or rail.

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 12.16: Typical Vulnerabilities of Societal Hazards of Highest Concern, Town of Shelburne

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Crime	• Increased demands on police services and social services	• Injuries • Deaths
Key Employer Loss	• Loss of economic activity • Loss of portion of tax base • Increased demands on social services	• Effects increased if employer is of significant size
Economic Recession	• Injuries to persons • Damage to public and private property	• Budget impacts to police services depending upon severity of event • Deaths
Terrorism	• Injuries to persons • Damage to public and private property	• Budget impacts to police services depending upon severity of event

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.

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 Shelburne is in an area of lowest vulnerability.

Table 12.17: Vulnerable Population by Age Group, Town of Shelburne

Population Category	Percentage
Children Under 5	1.3%
Population age 65+	27.6%
Disabled Population	4.2%
Population Below Poverty Level	0%

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

- Town officials are concerned about hazardous materials being transported through the town by road or rail. US Route 7 and a rail line run directly through the village and other highly populated areas. The Town Office, Fire Department, elementary school, public library, Waldorf Schools, Rescue Squad, and emergency shelters are located within a half mile of both the highway and the rail line, which could complicate an evacuation if a hazardous materials incident were to occur.

The statistical overview of roads in the Town of Shelburne, 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 12.18: High Accident Road Sections Based on 2010-2014 Data, Town of Shelburne

Road	Road Type	Section (miles)	Severity Index ($/crash)
US-7	Principal Arterial (u)	0.966-1.266	$31,465
US-7	Principal Arterial (u)	1.566-1.866	$21,358
US-7	Principal Arterial (u)	0.966-1.266	$31,465

Table 12.19: Town of Shelburne, Highway mileage by class

Class 1	Class 2	Class 3	Class 4	State Hwy	Fed Hwy	Interstate	Total 1, 2, 3, State Hwy
	25.220	27.52	0.10	1.691			59.395

Table 12.20: Highway Mileage by Surface Type, Town of Shelburne

Paved	Gravel	Soil or Graded	Unimproved	Impassable	Unknown	Total
56.727	2.38	0	0	0.1	0	59.207

Total Known	Total Unknown	% Paved	% Unpaved
59.207	0.239	94%	4%

Table 12.21: Fuel Storage Sites in Excess of 10,000 lbs., Town of Shelburne

Owner/Facility	Type of Substance
The Automaster	Fuels, Gasoline
Bluelinx Corporation	Diesel Fuel
Harbour Industries Inc	Isoparaffinic Hydrocarbon
Jiffy Mart-Shelburne #27	Gasoline, Diesel Fuel, Kerosene
Mos Dubois Excavating Inc	Gasoline, Diesel Fuel
Shelburne Limestone Corp.-Shelburne	Gasoline, Diesel Fuel
Shelburne Village Mobile	Fuels, Gasoline, Diesel Fuel

Table 12.22: Extremely Hazardous Substances Storage Sites, Town of Shelburne

Owner/Facility	Type of Substance
The Automaster	Battery Acid, Methanol, Lead
Comcast	Sulfuric Acid, Lead Acid Batteries
Fairpoint	Lead Acid Batteries
RCC	Lead Acid Batteries, Sulfuric Acid
Velco Substation	Battery Acid
Verizon Wireless	Sulfuric Acid

Table 12.23: Culverts with a Geomorphic Compatibility Rating of "Mostly Incompatible" or "Incompatible", Town of Shelburne,

Bankfull Width	Compatibility Score	Town	Location	GIS Road Name	Stream Name
48.78	5	Shelburne	Structure Number 400413000804 131	Spear St	Munroe Brook
98.57	6	Shelburne		Spear St	Munroe Brook
44.44	8	Shelburne	Structure Num 400413001704 131	Longmeadow Dr	Munroe Brook Northern
45.00	9	Shelburne	-	Private Road (Near Executive Drive)	Tributary Munroe Brook
62.58	10	Shelburne	-	Beaver Creek Rd	Munroe Brook
36.80	10	Shelburne	-	Railroad	Munroe Brook Northern

Figures 12.7 illustrates the historical development pattern of the town, including the proximity to the 100-year floodplain, River Corridors and River Streams. Analysis of this 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 Special Flood Hazard Areas (SFHA) or River Corridors.

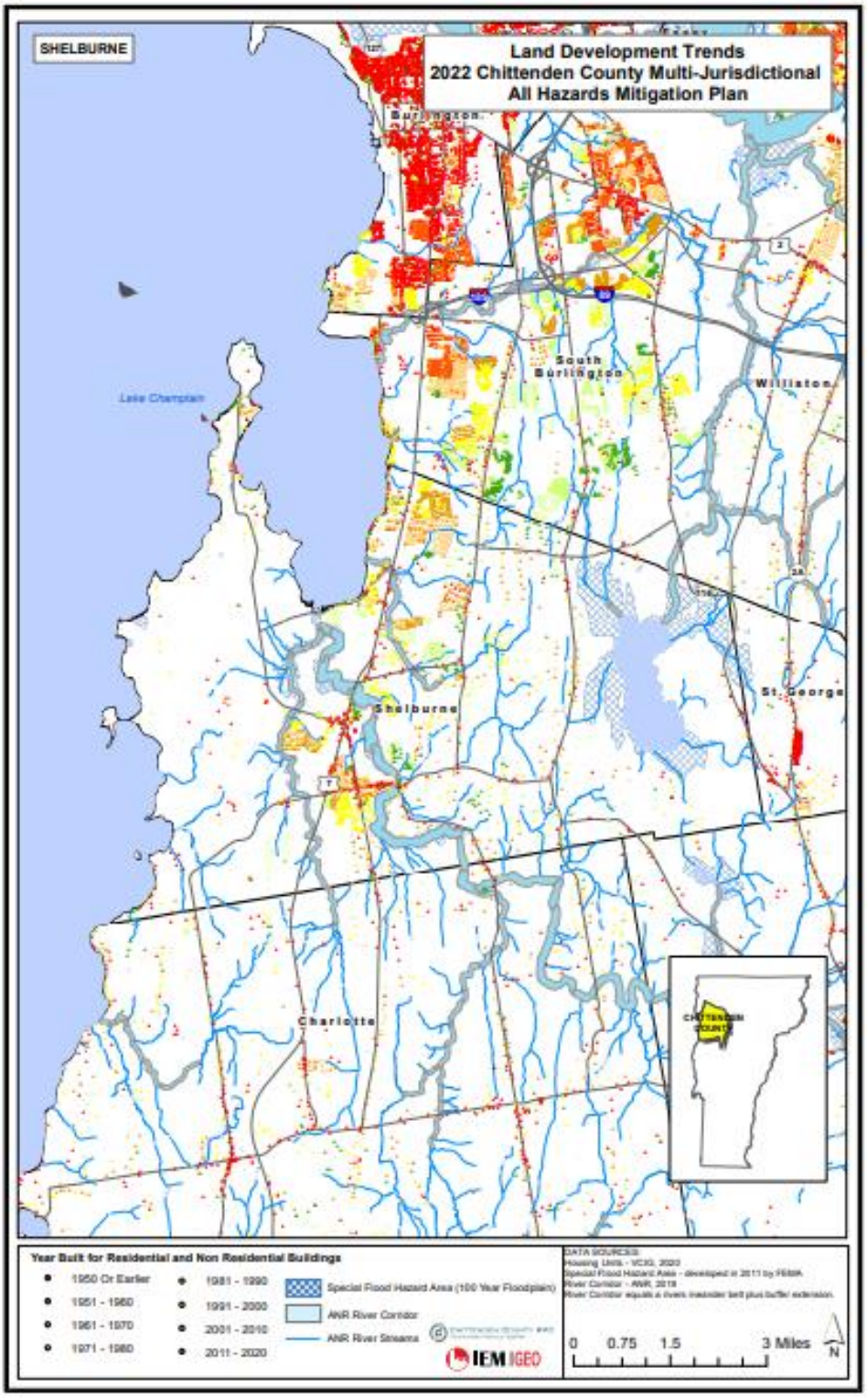

Figure 12.7: Land Development Trends, Town of Shelburne- 1950-2020[10]

[10] Chittenden County Regional Planning Commission, GIS Database; October 14, 2021.

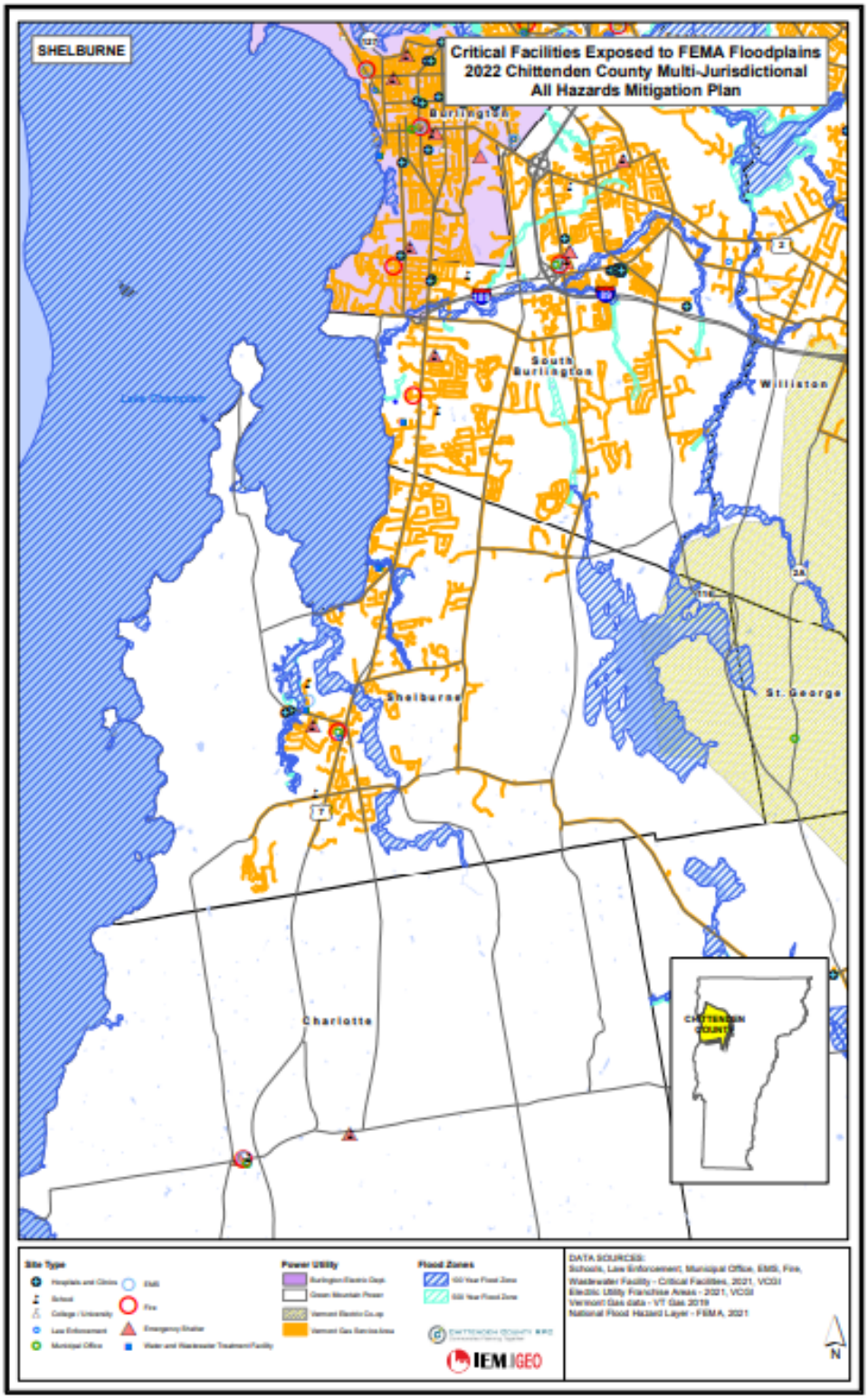

Figure 12.8: Critical Facilities, Town of Shelburne[11]

[11] Chittenden County Regional Planning Commission, GIS Database; October 14, 2021.

Table 12.24: Critical Facilities Exposed to FEMA Floodplains, Town of Shelburne

Total Facilities	In 100-year Floodplain	In 500-year Floodplain
5	5 Fire Water/Wastewater Water/Wastewater	0

Historical/Cultural Assets

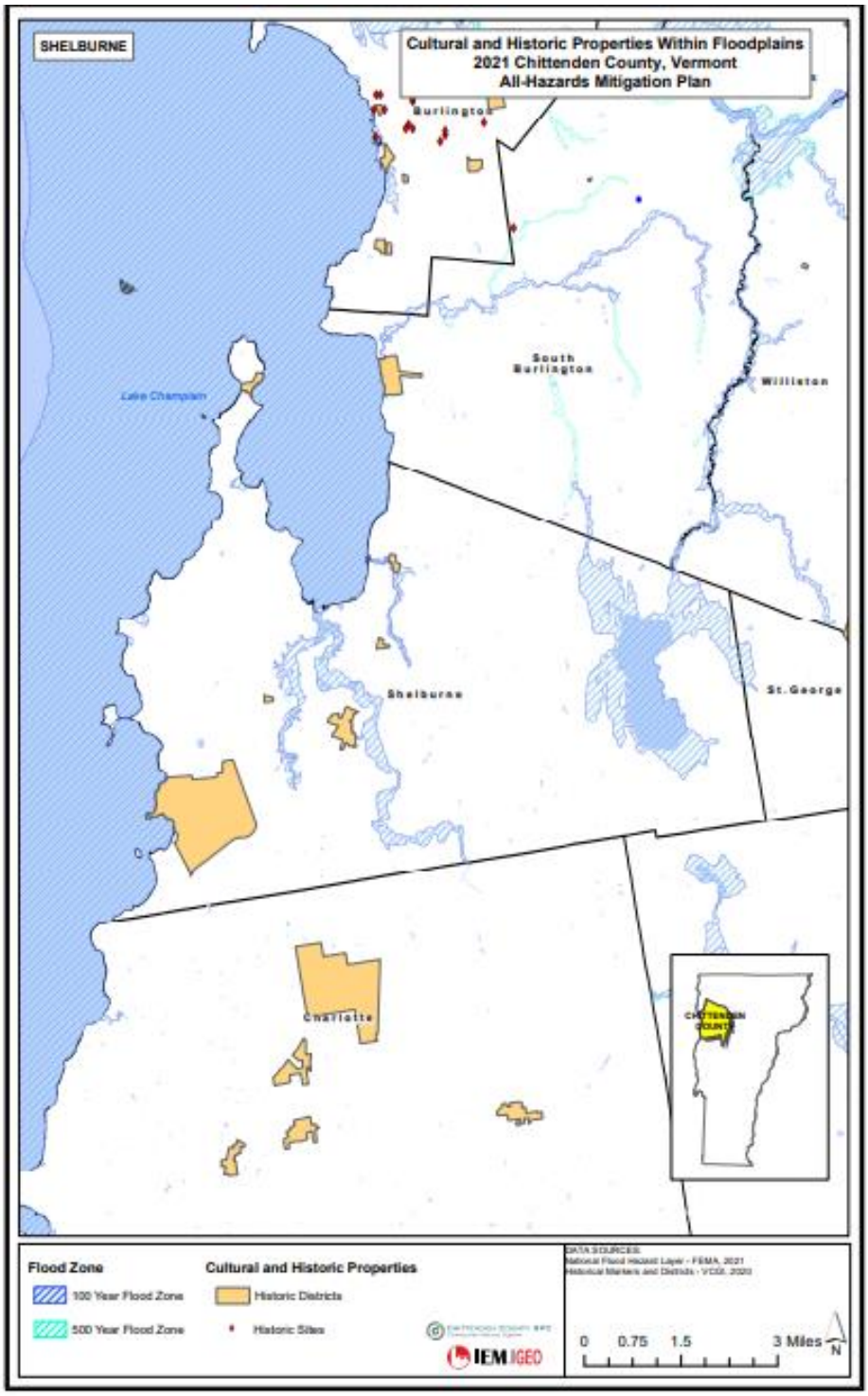

Figure 12.9: Cultural and Historic Properties Exposed to FEMA Floodplains, Town of Shelburne[12]

[12] National Flood Hazard Layer, FEMA 2021; Vermont Center for Geographic Information, 2022.

12.7 CAPABILITY ASSESSMENT

Capabilities Assessment Summary Ranking and Gap Analysis

Planning and Regulatory

The Town of Shelburne has significant plans and regulatory capabilities, including

- The Town of Shelburne has a Town Plan that was last updated in 2019.

Table 12.25: Summary of Planning Regulatory Capabilities, Town of Shelburne

Comprehensive Plans	1
Capital Improvements Plans (Highway Dept.)	1
Economic Development Plan	-
Local Emergency Management Plan	1
Continuity of Operations Plan	-
Transportation Plan (Town Plan, MRGP, Bridge Capital)	1
Stormwater Management Plan	1
Community Wildfire Ordinances	-
Zoning Ordinance	1
Subdivision Ordinance	1
Total	7

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

- Develop a means of funding stormwater management.[13]

Administrative and Technical Capabilities

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

-

Table 12.26: Summary of Administrative and Technical Capabilities, Town of Shelburne

Planner(s) or engineer(s) with knowledge of land development and land management	1
Engineer/professionals trained in construction practices related to buildings and/or infrastructure	-

[13] Shelburne, VT Website, April 20, 2022. Retrieved at: https://www.shelburnevt.org/221/Stormwater-Water-Quality

Planners/ Engineer(s) with an understanding of natural and/or manmade hazards	1
Floodplain manager Mutual Aid Compacts	1
Surveyor(s) Building Inspection	-
Staff with education or expertise to assess the community's vulnerability to hazards	1
Emergency Manager	1
Personnel skilled in GIS and/or HAZUS	-
Scientist familiar with hazards of the community	-
Civil Engineer Emergency Manager	-
Grant Writer(s)	1
Warning systems or services (automated callout, sirens, etc.)	1
Total	7

Fiscal Capability

The Town of Shelburne has significant fiscal capabilities and has identified the following areas for improvement:

Table 12.27: Summary of Fiscal Capabilities, Town of Shelburne

Capital improvements project funding	1
Authority to levy taxes for specific purposes	1
Fees for water, sewer, gas, or electric services	1
Impact fees for new development	1
Stormwater utility fee	1
Incur debt through general obligation bonds and/or special tax bonds	1
Incur debt through private activities	-
Community Development Block Grant (CDBG)	1
Other Federal funding programs, Historical Preservation	1
State funding programs	1
Public/Private partnership funding sources	1
Total	10

Program/Organization Capabilities

The Town of Shelburne has several program or organizational capabilities that currently support hazard mitigation, but has identified the following areas for improvement:

- Increase coordination between Town official and leaders of local schools

- Continue systematic efforts to address stormwater management requirements

Table 12.28: Summary of Program/Organization Capabilities, Town of Shelburne

Civic groups serving special community needs	1
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	1

National Flood Insurance Program and Community Rating System

An additional component of the Capabilities Assessment was a survey of the jurisdiction's National Flood Insurance Program (NFIP) status.

The Town of Shelburne is a participant in the National Flood Insurance Program (NFIP), but does not participate in the Community Rating System (CRS) program. During the 2022 plan cycle, the Town of Shelburne will review requirements of the CRS program and assess resources needed and available to participate in the program.

According to the National Flood Insurance Program there are no Repetitive Loss properties located in the Town of Shelburne.

The Town Zoning Administrator and the Town's Development Review Board (DRB) monitor compliance with the National Flood Insurance Program. The DRB reviews and adjudicates applications for development within the floodplain. The Town also works with Vermont Department of Environmental Conservation (DEC) to respond to any local requests for floodplain identification including questions about mapping.

Table 12.29: National Flood Insurance Program Status, Town of Shelburne

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

07/16/2011	14	$8,835	$3,804,200	5	$117,808	0

Shelburne has participated in NFIP regular program since 1988 and has a designated Floodplain Manager. The last Community Assistance Contract (CAC) was conducted on April 6, 2016, with no outstanding deficiencies. There are fourteen NFIP policies with total insurance coverage of $3,804,200; and there are zero 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 town 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, the Town of Shelburne 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.

Support for Municipal Capabilities

It should be noted that the 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 12.30: Capability Assessment Summary Ranking for Town of Shelburne

Planning and Regulatory	Administrative and Technical	Financial	Education and Outreach
Significant	Minimal	Significant	Low

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

- The risk of cyber related incidents on Critical Infrastructure and Key Resource sites
- Climate change
- Increases in the number of excessive rainfall events that impact new areas with flood

12.8 MITIGATION ACTIONS

Changes in Priorities

Shelburne has experienced moderate increase in population growth; however, it continues to be concerned about the availability of affordable housing and increase demand on existing infrastructure (road system). The town's priorities have not changed since the last plan update and continues to make progress on mitigation actions.

Goals and Objectives

The Town of Shelburne adopted the five regional goals defined in **Section 6, Mitigation Strategy**, and did not identify jurisdiction-specific objectives.

Status of Previous Actions

The Town of Shelburne reviewed its Mitigation Actions described in the 2017 *MHAHMP* and noted the status as documented in Table 12.33.

Table 12.31: Status of Previous Mitigation Actions

Action Date	Action #	Title of project	Hazard(s)	2022 Status Update
2011	2011-6	Undertake measures at Depot Rd, Windmill Bay Rd, to mitigate against flooding/erosion hazards	F, FE, SR	Not completed, move forward and integrate as part of 2022 mitigation action 2022-2.
2017	2017-1	Operate an effective stormwater management system	SR, WP	Yes, good progress made. Town is compliant with MS4 permit and beginning implementation of Munroe Brook Flow Restoration Plan and town's Phosphorus Control Plan
2017	2017-2	Upgrade transportation infrastructure	F, FE, SR	Yes, town has strong capital plan and continues to upgrade infrastructure as needed. Move forward and integrate as part of 2022 mitigation action 2022-2.

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**
	Water Pollutions: **WP**
	Wildfire: **WF**

Figure 12.9 depicts the locations of previous FEMA Public Assistance Projects in the Town of Shelburne, demonstrating recovery and mitigation activities including debris removal, protective measures, and recreational or other site impacts.

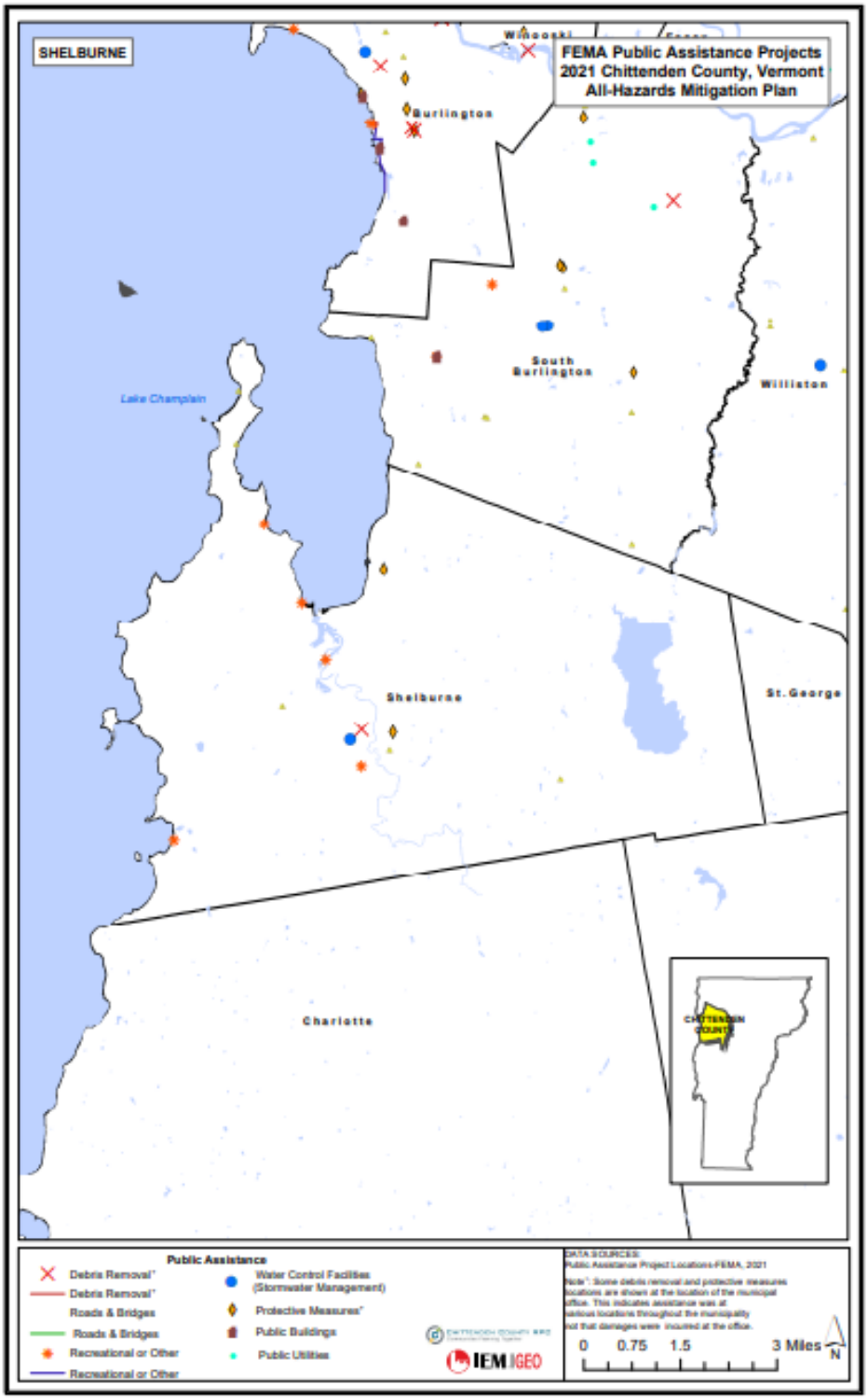

Figure 12.10: Previous FEMA Public Assistance Projects, Town of Shelburne[14]

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

New Mitigation Actions

The Town of Shelburne identified five new actions that were prioritized based on the Mitigation Action Ranking System described in **Section 6, Base Plan**. Table 12.33 presents the new mitigation actions combined with the12.31 previous actions carried forward to this plan and prioritized based on the criteria defined in **Section 6, Base Plan**.

Table 12.32: 2022 Prioritized Mitigation Actions, Town of Shelburne

Action Number	Proposed Action	Lead Agency/ Department(s)	Risk Reduction Benefit	Hazard(s) Addressed	Estimated Cost	Funding Source	Timeframe	Priority Ranking
2022-1	Road inventory and assessment	Town Highway Foreman	Addresses damage to new/existing public infrastructure and buildings. Mitigates temporary road and bridge closure and budgetary impacts	Flood, Fluvial Erosion, Severe Winter Storm Severe Rainstorm	Low: Less than $10,000	State VANR Grants, HMA, Municipal funds	2022-2027 Cont'd	Medium
Action Number	**Proposed Action**	**Lead Agency/ Department(s)**	**Risk Reduction Benefit**	**Hazard(s) Addressed**	**Estimated Cost**	**Funding Source**	**Timeframe**	**Priority Ranking**
2022-2	Upgrade transportation infrastructure to include culverts and ditching along roads to mitigate against repeated damages from stormwater or spring snowmelt	Town Highway Foreman	Addresses damage to new/existing public infrastructure and buildings. Mitigates temporary road and bridge closure and budgetary impacts	Flood, Fluvial Erosion, Severe Winter Storm Severe Rainstorm	Medium: $10,000 to $100,00	State VANR Grants, HMA, Municipal funds	2022-2027 Cont'd	Medium
Action Number	**Proposed Action**	**Lead Agency/ Department(s)**	**Risk Reduction Benefit**	**Hazard(s) Addressed**	**Estimated Cost**	**Funding Source**	**Timeframe**	**Priority Ranking**
2022-3	Retrofit all new and existing critical facilities	Town Highway Foreman	Addresses damage to new/existing public infrastructure and buildings.	Flood, Fluvial Erosion, Severe Winter Storm Severe Rainstorm	High: $100,000 or greater	State VANR Grants, HMA, Municipal funds	2022-2027 New	High

Action Number	Proposed Action	Lead Agency/ Department(s)	Risk Reduction Benefit	Hazard(s) Addressed	Estimated Cost	Funding Source	Timeframe	Priority Ranking
Action Number	Proposed Action	Lead Agency/ Department(s)	Risk Reduction Benefit	Hazard(s) Addressed	Estimated Cost	Funding Source	Timeframe	Priority Ranking
2022-4	Retrofit hazard -prone structures to include repetitive loss structures	, Town Highway Foreman	Addresses damage to new/existing public and private infrastructure and buildings;	Flood, Fluvial Erosion, Severe Winter Storm Severe Rainstorm	High: $100,000 or greater	State VANR Grants, HMA, Municipal funds	2022-2027 New	High
Action Number	Proposed Action	Lead Agency/ Department(s)	Risk Reduction Benefit	Hazard(s) Addressed	Estimated Cost	Funding Source	Timeframe	Priority Ranking
2022-5	Develop public-private partnerships to address hazard reduction related needs	Town Select Board	Education and awareness programs to mitigate effects of storms, situational awareness, and fire safety.	All natural and non-natural hazards	Low: Less than $10,000	Town general funds	2022-2027 New	Medium

Action Plan for Implementation and Integration

The Town of Shelburne 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 2027. 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 village plan.

Table 12.33: Action Plan for Implementation and Integration, Town of Shelburne

Existing Plan or Procedure	Description of How Mitigation will be Incorporated or Integrated
Integrate goals into local Comprehensive Plan	Incorporate current and emerging risks and actions into planning efforts.
Review/update land development regulations for consistency with mitigation goals	Review regulations for consistency with mitigation goals
Maintain regulatory requirements of floodplain management program (NFIP)	Provide support and training for floodplain management.
Enhance floodplain management through Community Rating System (CRS)	Review floodplain management and mapping.
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.
Maintain ongoing enforcement of existing policies	Support applicable enforcement policies.
Monitor funding opportunities	Continue to monitor funding sources and coordinate with Departments on projects that support mitigation actions.
Incorporate goals and objectives into day-to-day government functions	Continue to incorporate 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	I Continue to incorporate mitigation into day-to-day activities.

12.9 ANNEX MAINTENANCE PROCEDURES

The method and schedule for maintaining, evaluating, and updating the MJAHMP is described in **Section 7, Base Plan**. The Town of Shelburne will maintain its participation in the All-Hazards Mitigation Plan Update Committee (AHMPUC) throughout the planning cycle, consistent with its role and responsibilities. The Town of Shelburne has designated the Town Administrator as lead responsible for all Plan Maintenance related activities.

Table 12.34: Plan Maintenance Responsibilities for the *Chittenden County*, Vermont Multi-Jurisdictional All-Hazards Mitigation Plan, Base Plan, Town of Shelburne

Monitoring the Plan	• 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	• 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	• 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 of the Jurisdiction Annex

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 12.35: Jurisdiction Annex Maintenance Procedure, Town of Shelburne

Activity	Procedure and schedule	Outcome
Monitoring the Annex	1. Schedule the annual plan review with jurisdiction planning team. 2. Review the status of all mitigation actions, using the *Mitigation Action Implementation Worksheet* (**Section 7, Attachment B, Base Plan**).	Produce an annual report that includes the following: • 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	1. Schedule the annual plan evaluation with jurisdiction planning team. 2. Evaluate the current hazard risks and vulnerabilities, and hazard mitigation capabilities using the *Planning Considerations Worksheet*, (**Section 7, Attachment C, Base Plan**).	Submit the annual report to the *MJAHMP* AHMPUC Point of Contact
Updating the Annex	1. Coordinate with the AHMPUC to identify the method and schedule for the five-year update of the *MJAHMP*. 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.

12.10 ATTACHMENTS

ATTACHMENT 1: Adoption Resolution

ATTACHMENT 2: Planning Worksheets and Documentation

ATTACHMENT 3: Documentation of Public Participation

ATTACHMENT 4: Mitigation Actions

ATTACHMENT 1: Adoption Resolution

CERTIFICATE OF ADOPTION
September 27, 2022
TOWN OF SHELBURNE, Vermont Selectboard
A RESOLUTION ADOPTING THE 2022 Chittenden County, Vermont Multi-Jurisdictional Hazard Mitigation Plan

WHEREAS, the Town of Shelburne 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-Jurisdictlonal 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 Shelburne 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 Shelburne; and

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

RESOLVED by Town of Shelburne Selectboard:

1. The 2022 Chittenden County, Vermont Multi-Jurisdictional Hazard Mitigation Plan is hereby adopted; also adopted is the Shelbume-specific annex attached to and included therein as an official plan of the Town of Shelburne;

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 th ure and the corporate seal of the

Town of Shelburne this day of

Lee Krohn, AICP, Town Manager
For the Shelburne Selectboard

ATTEST

Town Clerk

ATTACHMENT 2: Planning Worksheets and Documentation

Natural Hazards Estimated Risk Matrix										
Shelburne		Dam/Levee Failure	Extreme Temperatures	Flooding	Fluvial Erosion	Human Infectious Disease	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		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		
Consequences										
Health & Safety Consequences										
Key:	0= No health and safety impact			0			0			0
	1= Few injuries or illnesses		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
	2= Few destroyed but many damaged				2			2		
	3= Few damaged and many destroyed									
	4= Many properties destroyed and damaged									
Environmental Damage										
Key:	0= Little or no environmental damage		0		0					
	1= Resources damaged with short-term recovery			1			1	1	1	1

	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
	2= High direct and low indirect costs				2				2	
	3= Low direct and high indirect costs									
	4= High direct and high indirect costs									
Sum of Area & Consequences Scores			**5**	**5**	**6**		**2**	**9**	**6**	**4**
Probability of Occurrence										
Key:	1= Unknown but rare occurrence									
	2= Unknown but anticipate an occurrence									
	3= 100 years or less occurrence						3			
	4= 25 years or less occurrence		4	4	4				4	
	5= Once a year or more occurrence							5		5
Total Risk Rating										
	Total Risk Rating=		**20**	**20**	**24**		**6**	**45**	**24**	**20**
	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**

Technological Hazards

Shelburne		Hazardous Materials Incident	Major Transportation Incident	Multi-Structure Fire	Natural Gas Service Loss	Other Fuel Service Loss	Pollution (algal bloom, etc.)	Power Loss	Sewer Service Loss	Telecommunications Failure	Water Pollution	Water Supply Loss
Area Impacted												
Key:	0= No developed area impacted											
	1= Less than 25% of developed area impacted	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	4	4		4
Consequences												
Health & Safety Consequences												
Key:	0= No health and safety impact								0		0	
	1= Few injuries or illnesses				1	1		1		1		1
	2= Few fatalities or illnesses	2	2	2								
	3= Numerous fatalities											
Property Damage												
Key:	0= No property damage									0	0	0
	1= Few properties destroyed or damaged		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		0	0	0	0		0	0	0		0
	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											
	1= Low direct and/or indirect costs		1		1	1		1	1	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											
Sum of Area & Consequences Scores		**8**	**5**	**6**	**7**	**6**		**7**	**6**	**6**	**5**	**6**
Probability of Occurrence												
Key:	1= Unknown but rare occurrence											
	2= Unknown but anticipate an occurrence											
	3= 100 years or less occurrence	3			3	3			3			
	4= 25 years or less occurrence		4	4						4		4
	5= Once a year or more occurrence							5			5	
Total Risk Rating												
	Total Risk Rating=	**24**	**20**	**24**	**21**	**18**		**35**	**18**	**24**	**25**	**24**
	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							
Shelburne		**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				
	2= Less than 50% of developed area impacted				2	2	2
	3= Less than 75% of developed area impacted			3			
	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
	1= Resources damaged with short-term recovery			1			
	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						
	3= Low direct and high indirect costs			2		2	2
	4= High direct and high indirect costs				3		
Sum of Area & Consequences Scores		**3**	**4**	**7**	**7**	**4**	**6**
Probability of Occurrence							
Key:	1= Unknown but rare occurrence						1
	2= Unknown but anticipate an occurrence	2					
	3= 100 years or less occurrence			3	3		
	4= 25 years or less occurrence		4			4	
	5= Once a year or more occurrence						
Total Risk Rating							
	Total Risk Rating=	**6**	**16**	**21**	**21**	**16**	**21**
	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**

ATTACHMENT 3: Documentation of Public Participation

Hazard Mitigation Planning for Chittenden County

Hazard mitigation planning is a process that identifies hazards and their risks to you community. Over the next several months, your community's Hazard Mitigation will be updated.

Read below about how to learn more and participate!

This is your community's plan!	Disasters can happen anytime, anywhere, and any place.
To have value, the plan must represent the current needs and values of your community and be useful for officials, stakeholders, and citizens. Consider the critical importance of mitigation to: • Protect public safety and prevent loss of life and injury. • Lessen impact to existing and future development. • Prevent damage to a community's unique cultural, historical, and environmental assets.	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 the 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.
Take the Survey >>	

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 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 October 30.
- 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.

Questions & Contact	More Information

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@iem.com or 850-570-9867	To view the current mitigation plan for your community please visit the CCRPC website. This planning project is funded by a FEMA grant provided through Vermont Emergency Management (VEM). 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

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/KLB6RMX 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 October 30.
- 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.

Contact:
Dan Albrecht, CCRPC Senior Planner
dalbrecht@ccrpcvt.org | (802) 391-6809
or
Leroy Thompson, IEM Senior Planner
leroy.thompson@ieminc.com | 850-570-9867

Chittenden County Multi-Jurisdictional Hazard Mitigation Plan website:
https://www.ccrpcvt.org/our-work/emergency-management/hazard-mitigation-plan/

Attachment 4: Mitigation Actions

(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.	• **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.	• **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.	• **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.	• **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
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.	• **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?
(E) Economic	
Definition	**Considerations**
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.	• **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?
(E) Environmental	
Definition	**Considerations**
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.	• **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?

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