ANNEX 14: TOWN OF ST. GEORGE

Chartered: August 18, 1763

Land Area: 3.6 sq. mi.

2020 Population: 730

Government Address: 21 Barber Road, St. George, Vermont 05495

Households: 303

Mitigation Focus: Severe Rainstorm, Wildfire, Fluvial Erosion

This section presents the jurisdictional annex for Town of St. George, 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

14.1 HAZARD MITIGATION PLAN – POINT OF CONTACT

Type	Primary Point of Contact	Secondary Point of Contact
Name	Jeff Pillsbury	April Pillsbury
Title	Selectboard Chair	Town Clerk
Agency	Town of St. George	Town of St. George
Address	21 Barber Road	21 Barber Road
City, State, Zip	St. George, Vermont 05495	St. George, Vermont 05495
Phone	802-482-5272	802-482-5272
Email	jpillsburysgselectboard@gmail.com	stgeorgevtclerk@comcast.net

14.2 JURISDICTION PROFILE

- Geographic Region: Champlain Valley
- Persons per household: 2.41
- Persons per Square mile: 220.5
- Median Age: NA
- Elevations: Near sea level - 551ft

Location

St. George is located in southern Chittenden County, five miles inland from Lake Champlain and between two large ponds: Shelburne Pond to the east and Lake Iroquois to the west. Tributaries of Sucker Brook cross the Town, which is bordered by the town of Shelburne to the west; the Town of Williston to the northeast; and the Town of Hinesburg to the south. It is also 10 miles (16 km) southeast of Burlington. The town is 3.6 square miles (9.2 km2) in size, all of it land, with a few creeks and stream flowing through the area (no significant waterbodies). The southwest part of St. George comprises the St. George census-designated place that includes a small town center. The town relies on neighboring towns for educational and other services.

History

The Town of St. George was charted in 1763 and named in honor of King George III, then-reigning monarch of England. Comprised of only 2,200 acres, St. George is geographically the smallest town in the State of Vermont. Located in Chittenden County, St. George is on the fringe of the greater Burlington metropolitan area. Today, diverse neighborhoods, agricultural enterprises, a golf course and a small industrial park are located within its small borders. In order to preserve what makes its community unique, Town leaders St. George encourage all residents to participate in community activities and civic improvement efforts.

Demographics, Economy, and Governance

Table 14.1: Demographics, Economy, and Governance in Town of St. George [1, 2, 3, 4]

Demographics	Economy	Governance
Population Growth • 1980: 674 • 1990: 714 • 2000: 731 • 2010: 731 • **2020: 794** • 2020-2030 (Projected): -0.24% **Race and Ethnicity** Percentage of population identifying as: • White: 98.1% • Asian/Pacific Islander: 0% • Hispanic/Latino: 1.15% • Two or more races: 1.15% • American Indian: 0.14% • Black/African American: 0.57%	• Median household income (2019): $70,934 • Per capita income (2019): $40,053 • Median home value (2021): $250,587 • Number of Single Unit Residences: NA • Population below poverty level (2019): 11.9%	• Select Board • Town Clerk • Development Review Board • Cemetery Commission • School Board

[1] U.S Census (1970-2020), www.city-data.com, www.census.gov-QuickFacts
[2] Vermont Demographics, retrieved at https://www.vermont-demographics.com/st-george-demographics
[3] City-Data.com, retrieved at https://www.city-data.com/city/St.-George-Vermont.html
[4] Town of St. George, Town Plan, 2016, accessed https://www.ccrpcvt.org/wp-content/uploads/2016/02/St.-George-Town-Plan.pdf

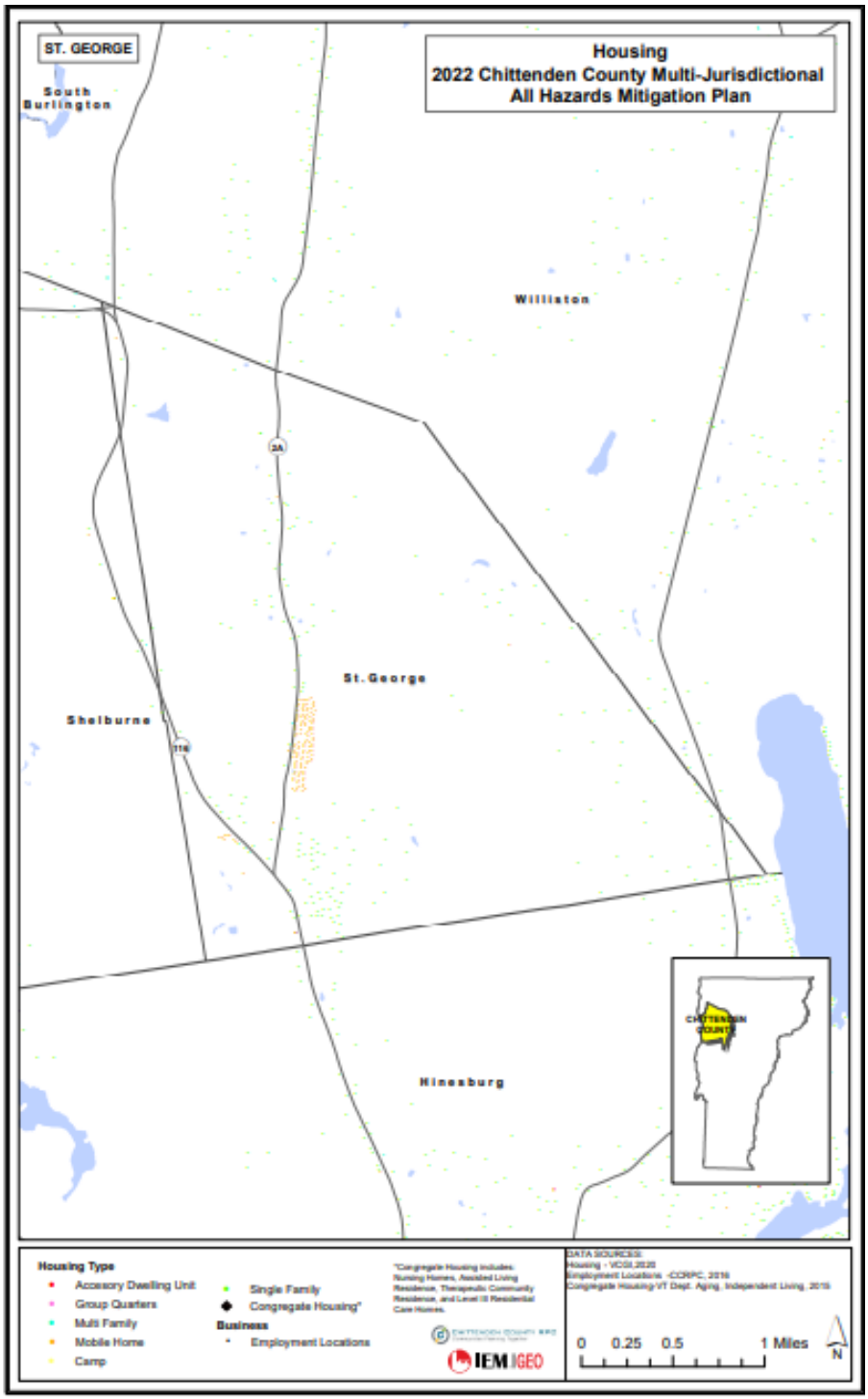

Figure 14.1: Town of St. George, Housing and Employment[5]

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

Built Environment and Community Lifelines

Table 14.2: Number of Community Lifelines and Critical Assets in Town of St. George

SECTOR	Safety and Security	Food, Water, Shelter	Health and Medical	Energy	Communications	Transportation	Hazardous Materials	Education	Cultural/ Historical	High Hazard Dams
No. Assets	1	?	0	0	0	0	1	0	0	0

Safety and Security

There is one military installation located in the Town of St. George. The community is served by the St. George-Hinesburg Volunteer Fire Department; the Vermont State Police, located in nearby Williston; and Hinesburg Fire Department First Response.

Food, Water, Shelter

There is one gas station convenience store located on Barber Road across the street from the Town Office. Individual homes and businesses are on their own wells and septic systems except for the St. George Estates mobile home park which has a centralized water and sewer system. There is no formally designated shelter in the Town although the Town office does have a generator installed in the event of a power outage. The nearest and designated American Red Cross shelter is Champlain Valley Union High School in Hinesburg.

Health and Medical

There are no health and medical services located in the Town of St. George, but residents seeking care are served by practices such as the Hinesburg-based University of Vermont Medical Center Family practice, and the array of medical assets located in the cities of Burlington and South Burlington, a few miles to the northeast of the town.

Energy

The Vermont Electric Company and Vermont Gas Company (VELCO / VGS) provide utility services for the community. The Town of St. George discourages large-scale utility, energy or telecommunications infrastructure that affects the view of identified special areas, and considered to be out of character with the surroundings, or to pose an undue adverse impact on the aesthetic qualities of these areas. Utility or telecommunications infrastructure that is taller than surrounding vegetation and is visible from public vantage points is considered as incompatible with St. George's scenic character.[6]

The right-of-way for utility lines that service the community divides the town-owned village center property, which was acquired for development of a compact, mixed-use village center.

[6] Town of St. George, Town Plan,2016. accessed https://www.ccrpcvt.org/wp-content/uploads/2016/02/St.-George-Town-Plan.pdf

The town worked with VGS to map four future road crossings of their pipeline within the village center. Any development in the village center that requires access across the VELCO / VGS right-of-way must adhere to the negotiated road crossing locations.[7]

Communications

Most communications and information systems and infrastructure in the United States are privately-owned; although the Town and neighboring communities providing service to St. George maintain 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.

One concern related to communications is the lack of broadband service to some areas of the community.

Transportation

Highway 2A runs the length of the town and connects in the south to Highway 116, which partly runs through the town and continues north through South Burlington to Winooski, and to the south as far as Middlebury. Pond Road leads from Highway 16 six miles west to Lake Champlain. The town boarder is less than five miles from two major roadways: Interstate 89 in the north and Highway 7 to the east, the latter running parallel to Lake Champlain.

Hazardous Materials

There is one site in the town that houses flammable materials. Simon's St. George, a convenience store, houses diesel, gasoline, and petrol. The site is carefully maintained and there have been no spills or other incidents at the location.

Education

Champlain Valley School District (CVSD), with offices in the Town of Shelburne, serves students from the towns of Charlotte, Hinesburg, St. George, Shelburne and Williston. The Town of St. George does not have a school and sends its students to Williston schools for grades Pre-Kindergarten through eighth grade. Students in grades 9-12 attend the Champlain Valley Union High School (CVU), located in Hinesburg.

Recreational, Cultural and Historic Sites and Assets

The Little Red Schoolhouse #9 is a Town of St. George asset that serves as a recreational, cultural, and historic site. Originally built in 1852, and was previously owned by the Chittenden South Supervisory Union and located elsewhere. The structure was given to the town and in

[7] Ibid

2012 and located in the Town Center.[8] The St. George Historical and Conservation Trust now oversees the property, which reopened in 2015 after extensive renovations.[9]

Natural Environment

The Town of St. George is surrounded by tree canopy and grass shrubs.

[8] Margery Sharp, The Citizen, June 12, 2015, accessed at https://www.vtcng.com/thecitizenvt/news/historic-st-george-little-red-schoolhouse-plans-grand-opening/article_6b103f9e-fcf7-5370-802f-eca51cd3a2a7.html
[9] Ibid.

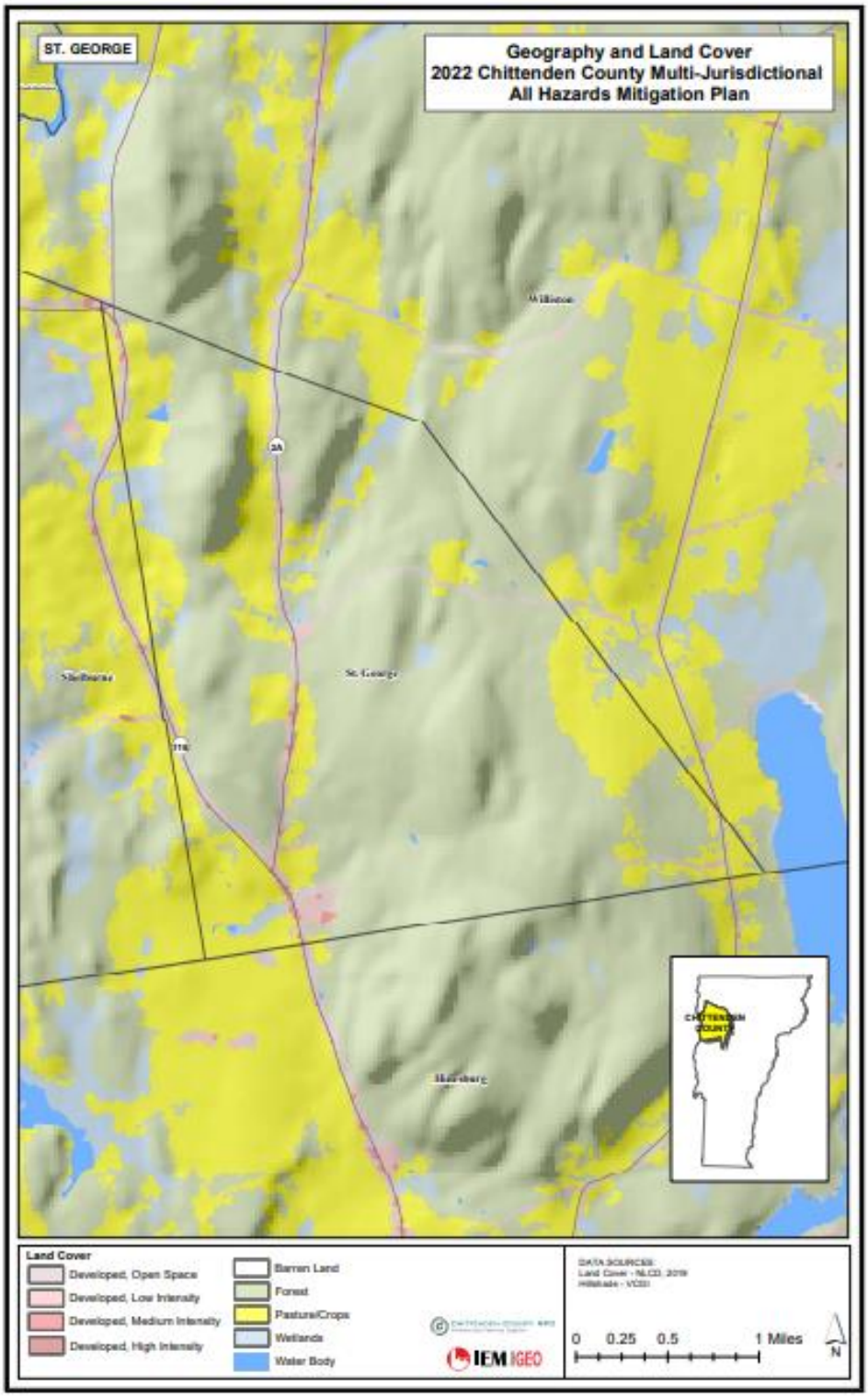

Figure 14.2: Town of St. George, Geography and Land Cover[10]

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

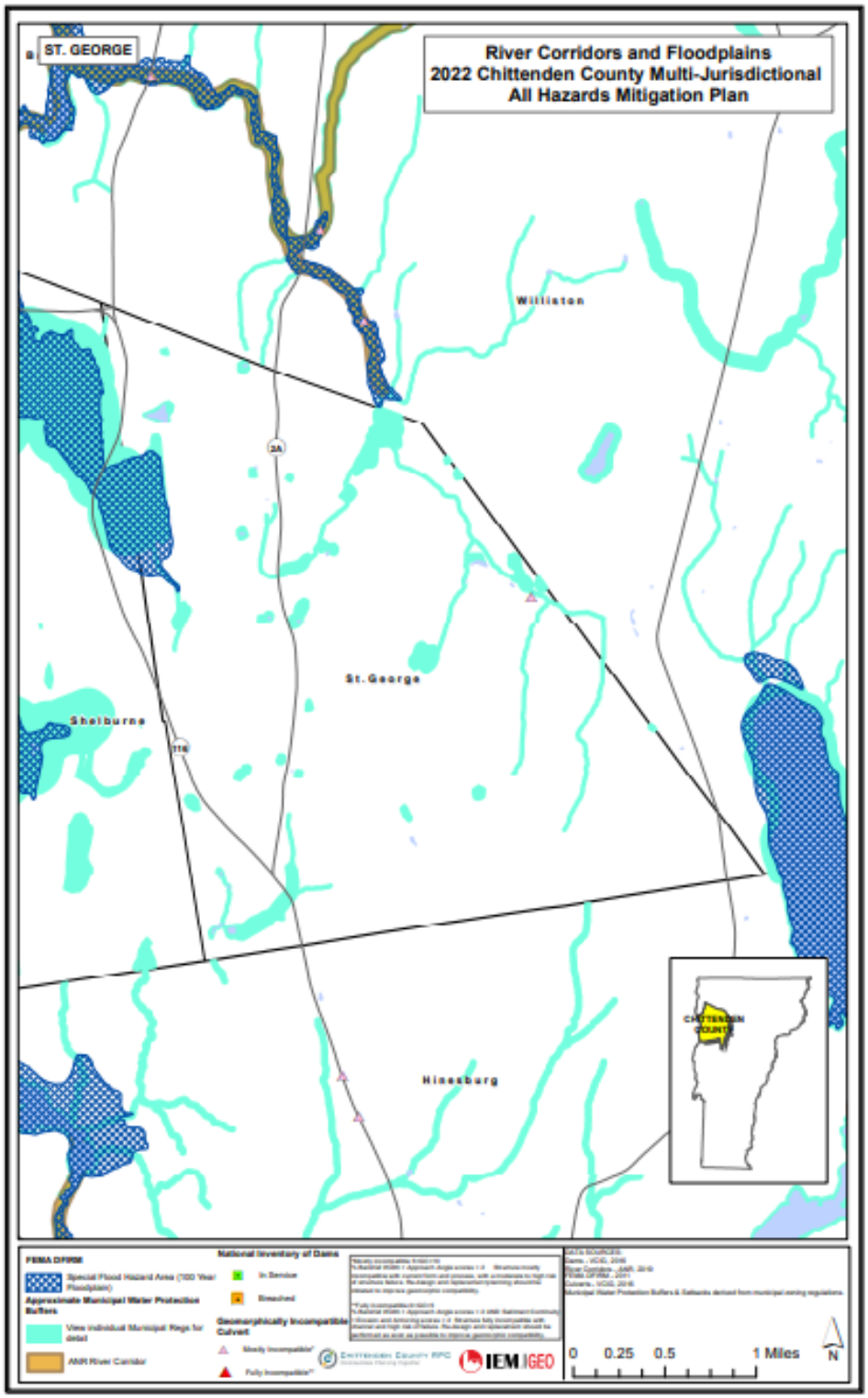

Figure 14.3: Town of St. George, River Corridors and Floodplains[11]

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

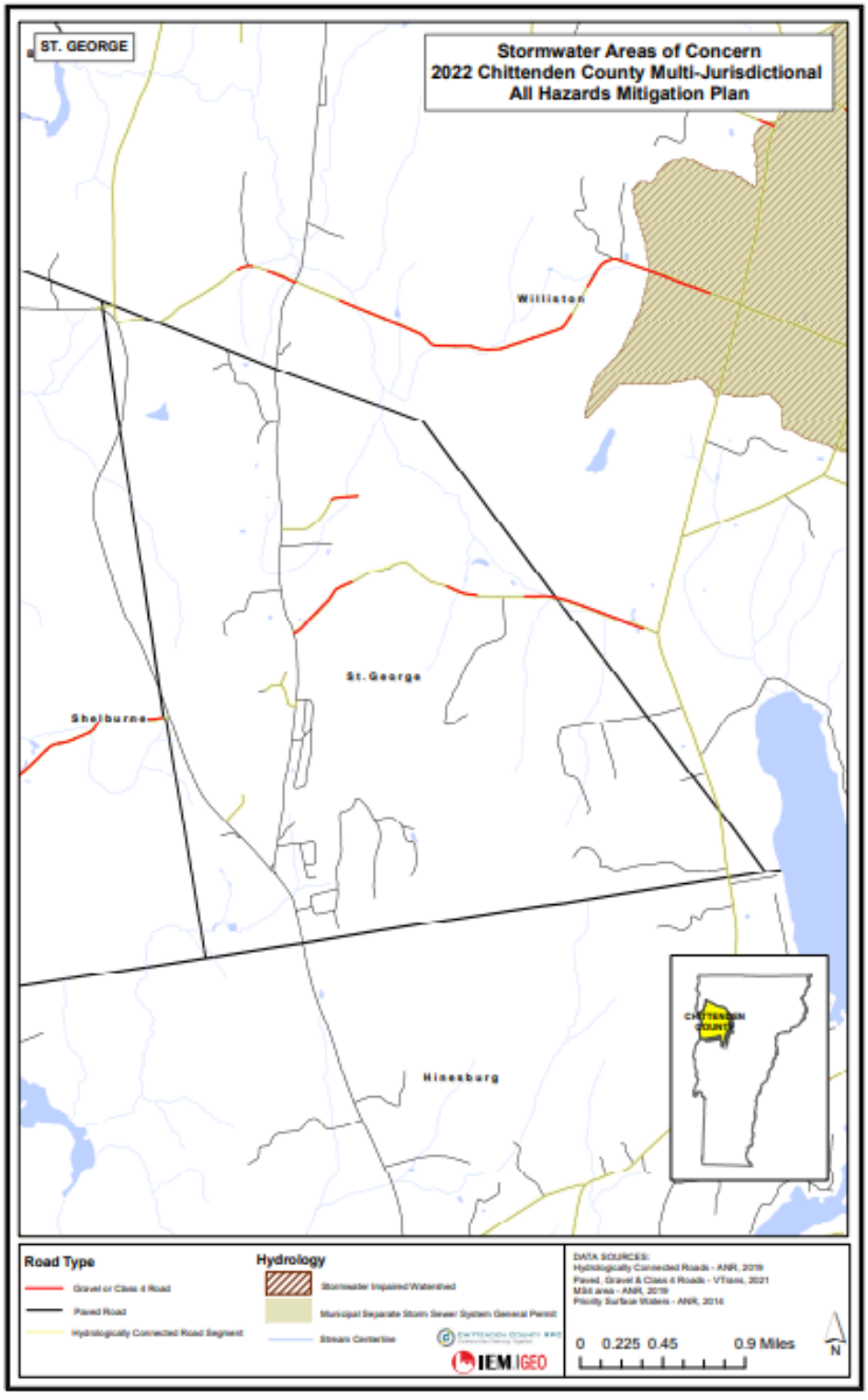

Figure 14.4: Stormwater Management System, Town of St. George[12]

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

Growth and Development Trends

The majority of the developed area lays near the center of the town and extends north and south along Route 2A and related side roads. The population in St. George primarily resides in mobile homes and single-family homes clustered along Route 2A. Other residents live in single family homes scattered to the east.

The population of St. George has increased slightly over the last ten-year period at a slow and steady pace. The projected population growth for the upcoming ten-year period shows a small decline in numbers.

Table 14.3: Population Trends, 2010-2020

2010	2020	Net Change 2010-2020	% Change 2010-2020
731	794	63	8.62%

Table 14.4: St. George Population Projections 2020-2030

2020	2030	Net Change 2020 -2030	Percent Change 2020-2030
794	754	-40	-5.0%

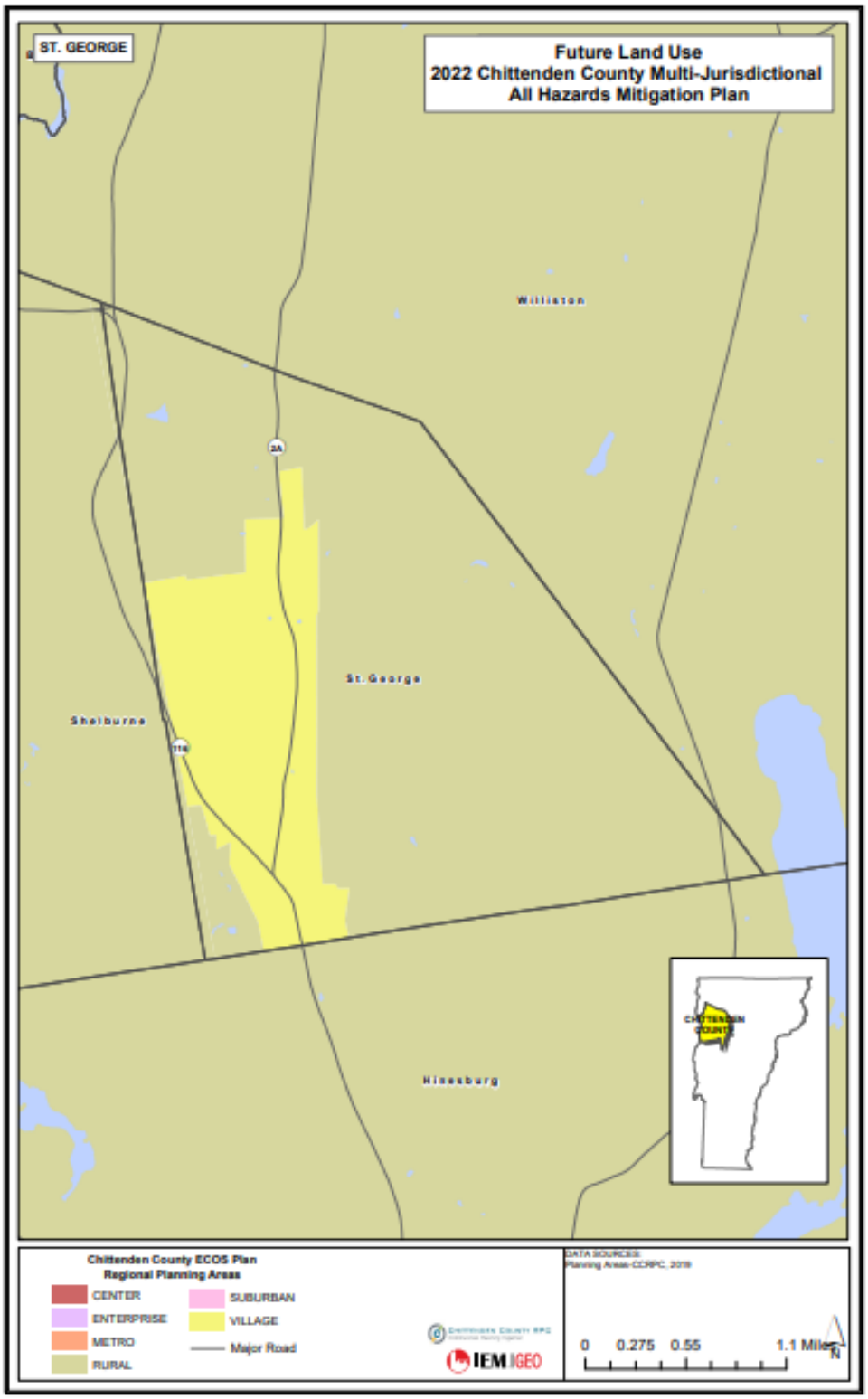

Figure 14.5: Future Land Use, Town of St. George[13]

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

14.3 JURISDICTION PLANNING PROCESS

Table 14.5: Points of Contact for Hazard Mitigation Planning, Town of St. George

Name	Position/Title	Department/Agency
Neil Boyden	Road Commissioner (now retired)	Town of St. George
April Pillsbury	Town Clerk	Town of St. George
Dan Albrecht	Senior Planner	Chittenden County RPC

:

- 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.

14.4 JURISDICTION-SPECIFIC HAZARD EVENT HISTORY

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

Table 14.6: Federal Disaster and Emergency Declarations (1990-2021), Including the Town of St. George

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 14.7: Summary of Storm Events for the Town of St. George 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	11	0	0	0	0	168,000	0
Frost/Freeze	3	0	0	0	0	0	275,000
Hail	1	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	1	0	0	0	0	0	0

Strong Wind	30	1	0	0	0	369,000	0
Winter Storm	68	0	0	2	0	1,758,000	10,000
Winter Weather	97	1	3	0	0	951,000	0
Total	**169**	**3**	**3**	**3**	**0**	**$11,368,000**	**$ 535,000**

High Hazards of Concern to the Jurisdiction

Severe Winter Storms

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**.

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.

Flood/Flash Flood

There are few flood hazard areas in the Town of St. George. A tributary stream to the LaPlatte River passes briefly through the town, along the western boundary with the Town of Shelburne. The 100-year floodplain for this stream has been mapped in St. George. The nearest home or structure is located about one-quarter mile from this stream area and the 100-year floodplain. In October of 2021, St. George officially joined the National Flood Insurance Program (NFIP).

Fluvial Erosion

During development and adoption of both the 2005 and 2011 Multi-Jurisdictional Plan and the municipal annexes, threats from stream erosion were identified as Flvial Erosion Hazard (FEH) Areas through the analytical lens of Stream Geomorphic Assessment (SGA). The SGA approach is still used by the Vermont Agency of Natural Resources but the fluvial erosion hazards are now identified within River Corridors.

Some level of geomorphic assessment has been completed for several streams in St. George. Fluvial erosion hazard areas have been identified for one of these waterways—a tributary of the

LaPlatte River. However, local officials indicate that fluvial erosion has not historically been a problem in the identified stream segment, which contains a fairly low volume of water.

Figure 14.6: Town of St. George 100-Year Flood Scenario[14]

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

Non-Natural Hazards

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

Table 14.8: Technological and Societal Hazards of Concern to the Town of St. George

Hazard	Risk/Vulnerability Issue
Power Loss	Both electrical and telecommunications failures often happen over a wide area and can occur as the result of several different kinds of natural hazards, including winter storms and high winds.
Multi-Structure Fire	There are two large mobile home parks in the town which are potentially vulnerable to a multi-structure fire.
Water Service Loss	St. George is served by privately-owned but legally 'public' wells and water supplies; a long-term power outage could affect water supply for a large portion of the town.
Economic Recession	Economic recession can be caused by many things, crime and the threat of a pandemic are just a few factors.
Crime	Crimes such as domestic disturbance and drug use in public places do occur.

14.5 HAZARD RISK RANKING

After developing hazard profiles, the Town of St. George 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.X, Base Plan**. The Hazard Risk Ranking scores for Town of St. George 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 14.9: Hazard Risk Ranking Summary

Hazard	Total Probability Score	Overall Risk Score	Total Consequence Score	Hazard Ranking
Severe Rainstorm	11	4	44	High
Severe Winter Storm	9	5	45	High
Wildfire	10	3	30	Medium
Human Infectious Disease	7	3	21	Medium
Fluvial Erosion	3	4	12	Low
Flood	2	4	8	Low
Extreme Temperatures	1	4	4	Low
Invasive Species	1	4	4	Low
Dam/Levee Failure	[Not Ranked]			

Table 14.10: Hazard Risk Ranking Summary Technological Hazards

Hazard	Total Probability Score	Overall Risk Score	Total Consequence Score	Hazard Ranking
Power Loss	8	5	40	High
Water Supply Loss	7	4	28	Medium
Multi-structure Fire	9	3	27	Medium
Hazardous Materials Incident	7	2	14	Low
Major Transportation Incident	6	2	12	Low
Telecommunications Failure	3	4	12	Low
Other Fuel Service Loss	3	3	9	Low
Sewer Service Loss	2	1	2	Low
Natural Gas Service Loss	0	1	0	Low
Pollution (algal bloom, etc.)		1	0	Low
Water Pollution	[Not Ranked]			

Table 14.11: Hazard Risk Ranking Societal Hazards

Hazard	Total Probability Score	Overall Risk Score	Total Consequence Score	Hazard Ranking
Crime	4	4	16	Low
Economic Recession	4	4	16	Low
Key Employer Loss	3	3	9	Low
Terrorism	5	1	5	Low

Hazard	Total Probability Score	Overall Risk Score	Total Consequence Score	Hazard Ranking
Civil Disturbance	3	1	3	Low

14.6 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 include:

- 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 14.12: Typical Vulnerabilities of Natural Hazards of Highest Concern, Town of St. George

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Severe Winter Storm	• Temporary closures of roads and bridges including from debris • Temporary loss of 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 including from debris • Temporary loss or power and/or telecommunications	• Budget impacts from road/bridge closures and repairs to public infrastructure

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
	• Temporary isolation of vulnerable individuals • Damage 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 • 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
Extreme Temperatures	• Damages to public infrastructure • Loss of water service	• Budget impacts due to needed repairs
Wildfire	• Damage to private property	•
Human Infectious Disease	• Temporary closure 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

Compared to the county as a whole, the Town of St. George has a higher vulnerability to the following natural hazards:

- Severe Rainstorm due to the potential for damages to municipal roads that overwhelm the town's limited budget
- Wildfire, due to its somewhat remote location and limited capacity to respond.

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

Table 14.13: Town of St. George – Typical Vulnerabilities of Technological Hazards of Highest Concern

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
Major Transportation Incident	• Temporary closures or 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

Hazard	Typical Vulnerabilities	Potential Cascading Vulnerabilities
		• 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
Telecommunication 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 St. George has a slightly higher vulnerability to:

- Water Service Loss, as the only 'public' water systems are private systems serving relatively high-density mobile home parks.

It should be noted that although petroleum product and hazardous materials locations are limited in the town, a buried Vermont Gas high-pressure natural gas transmission pipeline runs north-south through the town. Although an accident involving such lines are rare, it is a possibility and could cause catastrophic impacts depending upon the exact location.

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

Table 14.14: Town of St. George – Typical Vulnerabilities of Societal Hazards of Highest Concern

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	• Loss of economic activity • Increased demands on social services • Some loss of tax revenue	• Effects increased if event is of extended duration
Civil Disturbance	• 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 • Deaths

Compared 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.

Information from the SVI is included in the Base Plam, Section 4, Hazard Identification and Risk Assessm,

Table 14.15: Vulnerable Population in the Town of St. George, by Age Group

Population Category	Percentage
Children Under 5	-
Population age 65+	6.7%
Disabled Population	-
Population Below Poverty Level	8.9%

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:

The statistical overview of roads in the Town of St. George, 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 14.16: Highway Mileage by Class, Town of St. George[15]

Class 1	Class 2	Class 3	Class 4	State Hwy	Fed Hwy	Interstate	Total 1, 2, 3, State Hwy
-	3.70	1.02	0.72	3.693	-	-	5.083

There are no High Crash Locations identified by the Vermont Agency of Transportation in the Town of St. George.

Table 14.17: Highway Mileage by Surface Type, Town of St. George[16]

Paved	Gravel	Soil or Graded	Unimproved	Impassable	Unknown	Total
4.43	1.81	0	0	0.9	0	6.24
Total Known	**Total Unpaved**	**% Paved**	**% Unpaved**			
6.24	1.81	70.99	29.01			

Due to a low population and limited numbers of roads relative to other municipalities in the county there are only a few bridges, culverts and dams in St. George. Culvert data is entered into an online database. Current records show 20 culverts located and zero bridges on the following municipal roads: Ayer, Barber, Oak Hill, South Brownell and Willow Brook Lane. There are also culverts in the town located on private roads or located along VT Routes 116 or 2A, which are the responsibility of the State of Vermont Agency of Transportation. A large portion of the county's streams have had detailed Phase II Stream Geomorphic Assessments conducted.

[15] Chittenden County Regional Planning Commission, October 2021.
[16] Ibid.

With regards to St. George, studies identify specific stream reaches where fluvial erosion is a concern as well as where infrastructure, primarily culverts, is at risk.

Table 14.18: Town of St. George, Culverts with a Geomorphic Rating of "Mostly Incompatible" or "Incompatible"[17]

Bankfull Width	Compatibility Score	Town	GIS Road Name	Stream Name
33.33	10	St. George	Willow Brook Ln	Sucker Brook

As illustrated in Figure 14.7, development has historically been clustered along roadways and rivers, but is not typically located in SFHA's or River Corridors within the Town of St. George.

[17] Ibid.

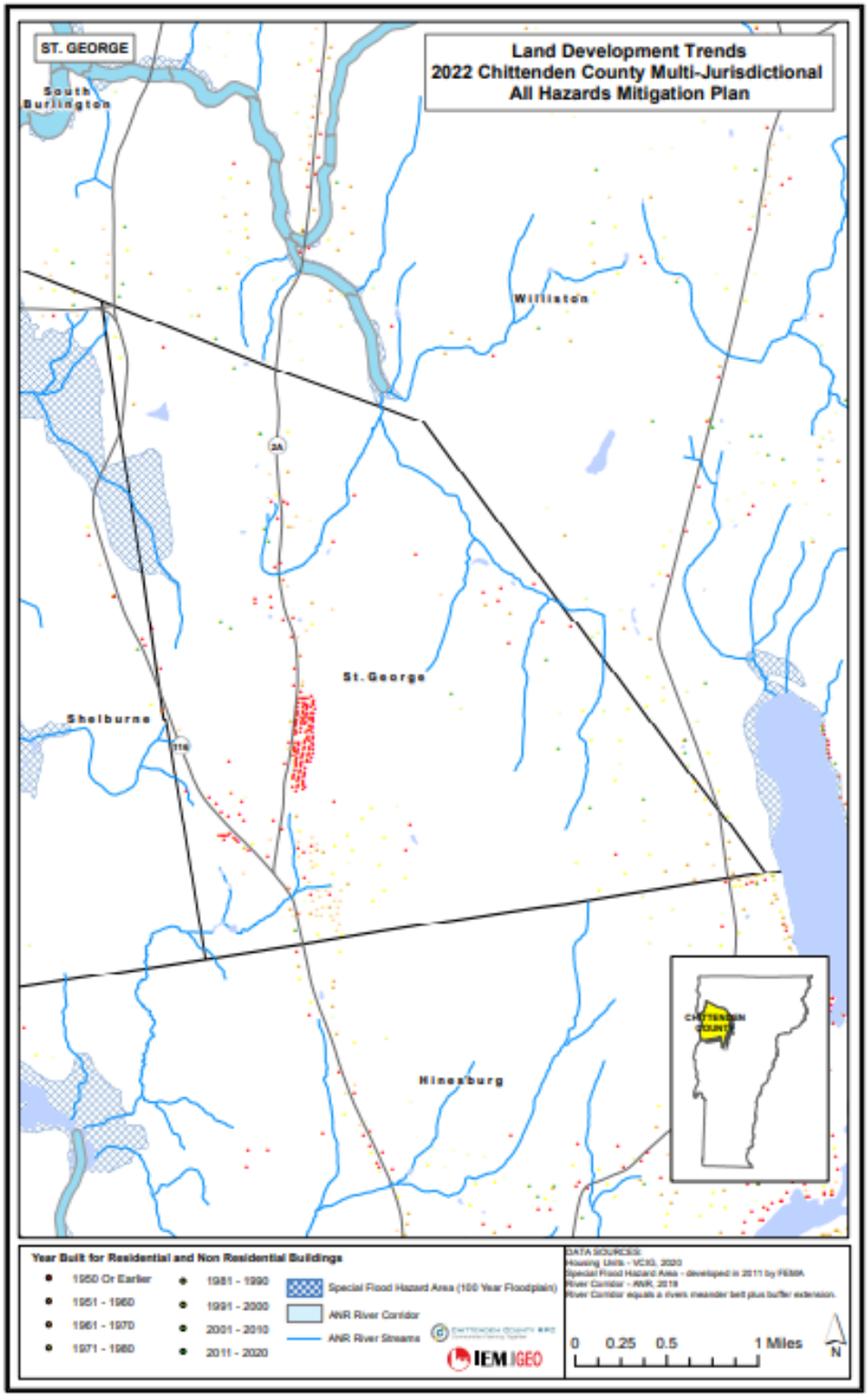

Figure 14.7: Land Development Trends, Town of St. George- 1950-2020[18]

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

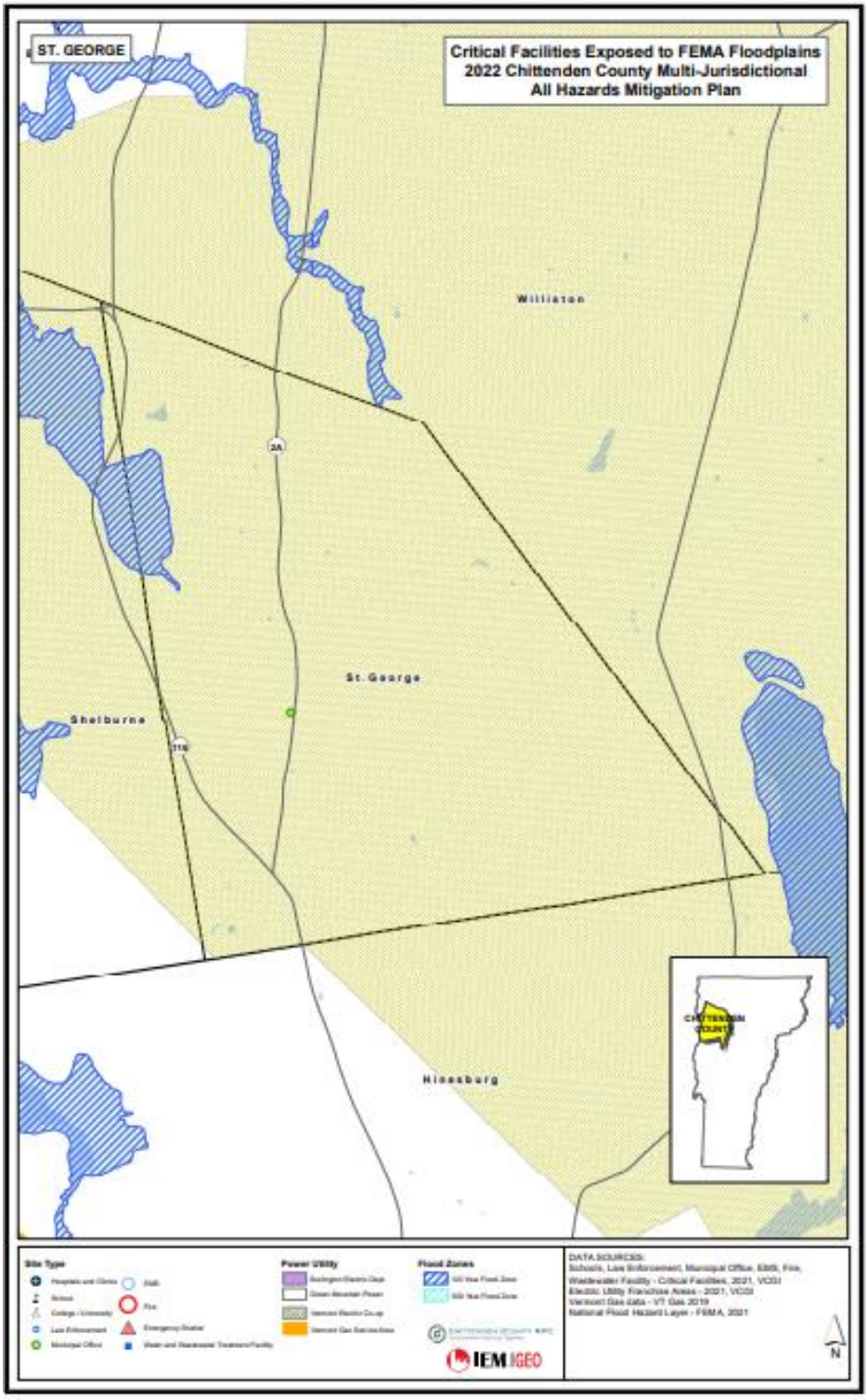

Figure 14.8: Critical Facilities, Town of St. George[19]

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

Table 14.19: Critical Facilities Exposed to FEMA Floodplains, Town of St. George

Total Facilities	In 100-year Floodplain	In 500-year Floodplain
0	0	0

Historical/Cultural Assets

The Town's Hazard Mitigation Planning Committee noted that the Little Red Schoolhouse #9 is a valuable historic and cultural asset. The community Town Center region is an important economic center and visited by local residents and tourists alike. Town Hall is also located next to the Schoolhouse. None of these facilities are located in floodplains or River Corridors.

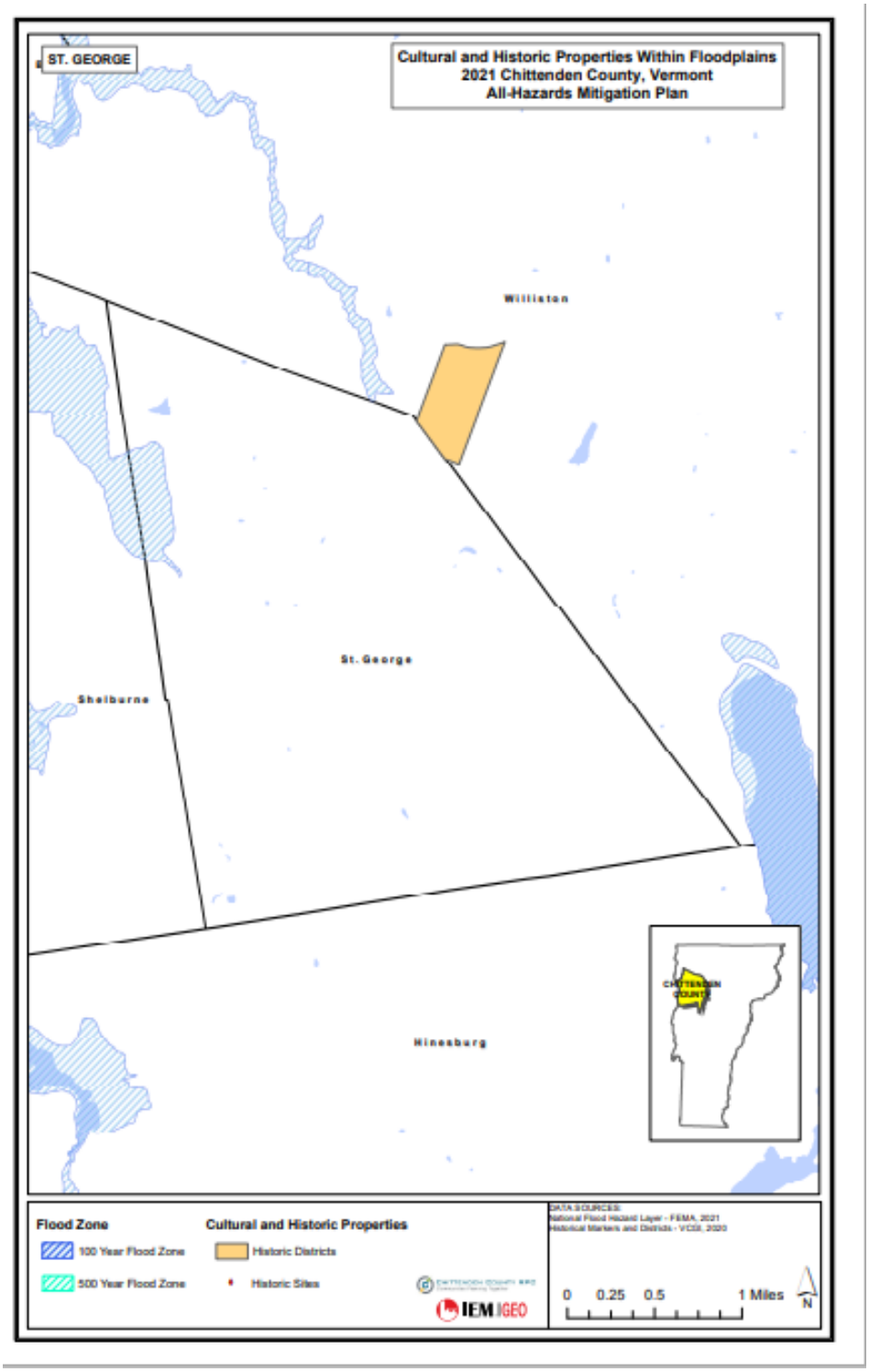

Figure 14.9: Cultural and Historic Properties Exposed to FEMA Floodplains, Town of St. George[20]

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

14.7 CAPABILITY ASSESSMENT

Capabilities Assessment Summary Ranking and Gap Analysis

Planning and Regulatory

The Town of St. George has significant plans and regulatory capabilities, and has identified the following areas for improvement:

Table 14.20: Summary of Planning Regulatory Capabilities, Town of St. George

Comprehensive Plans	1
Capital Improvements Plans (Highway Dept.)	-
Economic Development Plan	-
Local Emergency Management Plan	1
Continuity of Operations Plan	-
Transportation Plan (Town Plan, MRGP, Bridge Capital)	1
Stormwater Management Plan	-
Community Wildfire Ordinances	-
Zoning Ordinance	1
Subdivision Ordinance	1
Total	5

Administrative and Technical Capabilities

The Town of St. George 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.

Table 14.21: Summary of Administrative and Technical Capabilities, Town of St. George

Planner(s) or engineer(s) with knowledge of land development and land management	-
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 Compacts	-
Surveyor(s) Building Inspection	-
Staff with education or expertise to assess the community's vulnerability to hazards	-
Emergency Manager	-
Personnel skilled in GIS and/or HAZUS	-
Scientist familiar with hazards of the community	-
Civil Engineer Emergency Manager	-
Grant Writer(s)	-
Warning systems or services (automated callout, sirens, etc.)	-
Total	0

Fiscal Capability

The Town of St. George has low fiscal capabilities and has identified the following areas for improvement:

- Continue to work with CCRPC who can provide grant or project management services

Table 14.22: Summary of Fiscal Capabilities, Town of St. George

Impact fees for new development	X
Stormwater utility fee	-
Incur debt through general obligation bonds and/or special tax bonds	-
Incur debt through private activities	-
Community Development Block Grant (CDBG)	-
Other Federal funding programs, Historical Preservation	-
State funding programs	X
Public/Private partnership funding sources	-
Total	2

Program/Organization Capabilities

The Town of St. George has no program or organizational capabilities that currently support hazard mitigation, and has identified the following areas for improvement:

Table 14.24: Summary of Program/Organization Capabilities, Town of St. George

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

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.

As of October 2021, the Town of St. George is a new participant in the National Flood Insurance Program (NFIP).

Table 14.24: National Flood Insurance Program Status, Town of St. George

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
-	-	-	-	-	-	-

There are zero NFIP policies with total insurance coverage of $0; 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 St. George 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 RPC assists municipalities with identifying and managing funding opportunities through grants and other sources.

Table 14.25: Capability Assessment Summary Ranking for Town of St. George

Planning and Regulatory	Administrative and Technical	Financial	Education and Outreach
Significant	Minimal	Low	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 unmapped flood prone areas.

14.8 MITIGATION ACTIONS

Changes in Priorities

St. George has experienced slight 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 St. George has adopted the five regional goals defined in the Base Plan, Section 6 Mitigation Strategy, and has not identified additional jurisdiction-specific objectives.

Status of Previous Actions

The Town of St. George reviewed its Mitigation Actions described in the 2017 *MHAHMP* and noted the status as documented in Table 14.29.

Table 14.26: Status of Previous Mitigation Actions, Town of St. George

Action Date	Action #	Title of project	Hazard(s)	2022 Status Update
2011	2011-1	Upgrade culverts and ditching along roads to mitigate against repeated damages from stormwater or spring snowmelt	F, FE, SR, SWS	Continued progress being made from 2017 thru early 2022. Move this activity as a new 2022 Mitigation Action.
2011	2011-2	Undertake erosion mitigation projects at various locations	F, FE, SR, SWS	Continued progress being made from 2017 thru early 2022. Move this activity as a new 2022 Mitigation Action.
2017	2017-3	Improve capabilities of existing road infrastructure	F, FE, SR, SWS, ET	Continued progress being made from 2017 thru early 2022. Move this activity as a new 2022 Mitigation Action.
2017	2017-4	Implement roads stormwater management plan	F, FE	Continued progress being made from 2017 thru early 2022. Move this activity as a new 2022 Mitigation Action.
2017	2017-3	Explore benefits of adopting flood hazard and/or river corridor/river corridor protection area regulations is town zoning bylaws	F, FE	Completed, town joined NFIP program in 2021.

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**

Figure 14.10 depicts the locations of previous FEMA Public Assistance Projects in the Town of St. George, demonstrating recovery and mitigation activities including damage to roads and bridges; protective measures; and recreational or other site impacts.

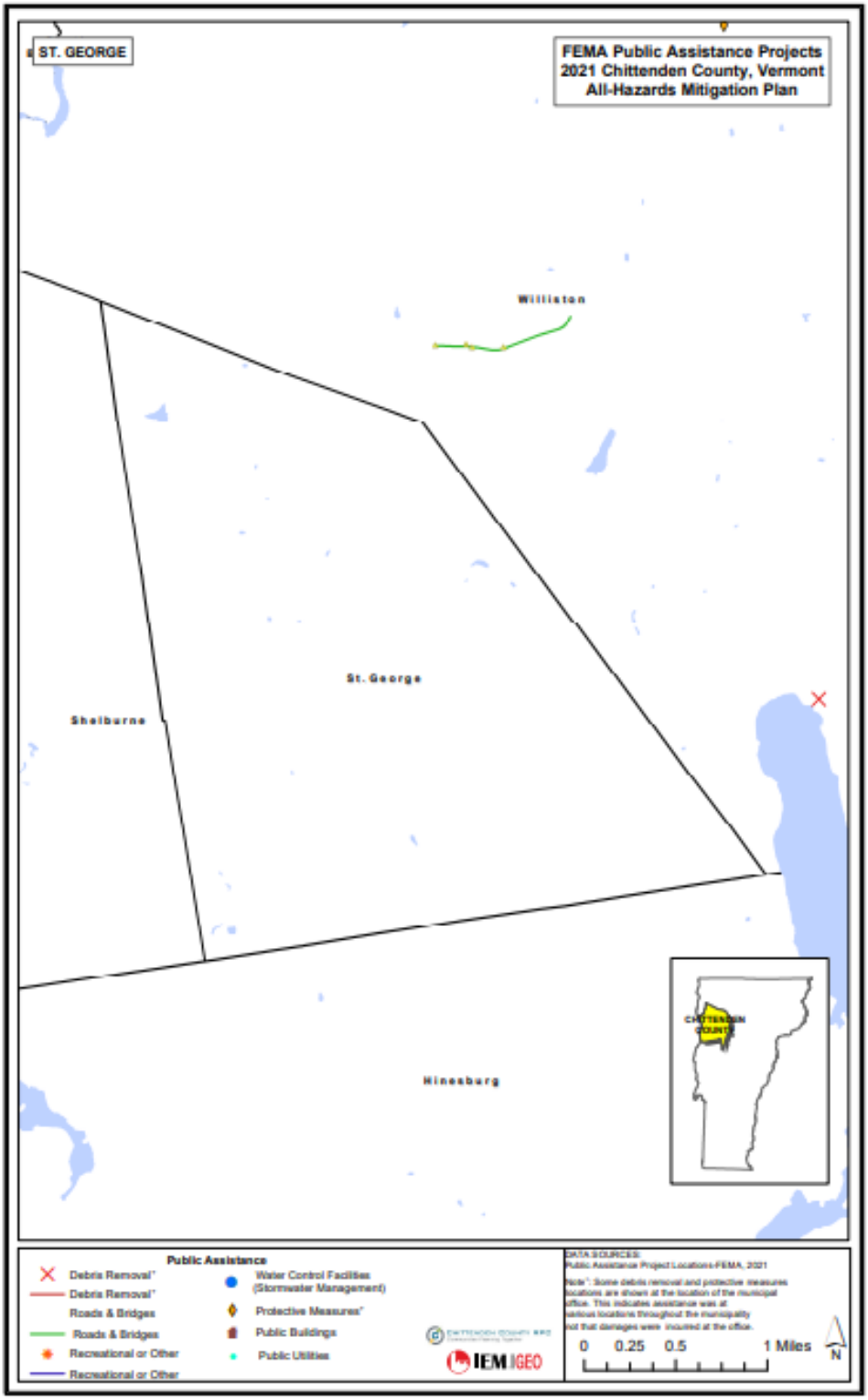

Figure 14.10: Previous FEMA Public Assistance Projects, Town of St. George[21]

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

New Mitigation Actions

The Town of St. George identified four new actions that were prioritized based on the Mitigation Action Ranking System described in **Section 6, Base Plan**. Table 14.30 presents the new mitigation actions combined with four previous actions carried forward from 2017 to this plan and prioritized based on the criteria defined in **Section 6, Base Plan**.

Table 14.28: 2022 Prioritized Mitigation Actions, Town of St. George

Action Number	Proposed Action	Lead Agency/ Department(s)	Risk Reduction Benefit	Hazard(s) Addressed	Estimated Cost	Funding Source	Timeframe
2022-1	Upgrade culverts and ditching along roads to mitigate against repeated damages from stormwater or spring snowmelt	Town Road Commissioner	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
Action Number	**Proposed Action**	**Lead Agency/ Department(s)**	**Risk Reduction Benefit**	**Hazard(s) Addressed**	**Estimated Cost**	**Funding Source**	**Timeframe**
2022-2	Implement requirements of Municipal Roads General Permit to improve capabilities of existing road and stormwater management infrastructure	Town Road Commissioner	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
Action Number	**Proposed Action**	**Lead Agency/ Department(s)**	**Risk Reduction Benefit**	**Hazard(s) Addressed**	**Estimated Cost**	**Funding Source**	**Timeframe**
2022-3	Retrofit all new and existing critical facilities	Town Road Commissioner	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
Action Number	**Proposed Action**	**Lead Agency/ Department(s)**	**Risk Reduction Benefit**	**Hazard(s) Addressed**	**Estimated Cost**	**Funding Source**	**Timeframe**
2022-4	Develop public-private partnerships to address hazard reduction related needs	Town Select Board	Education and awareness programs to mitigate effects of storms, situational	All natural and non-natural hazards	Low: Less than $10,000	Town general funds	2022-2027 New

Action Number	Proposed Action	Lead Agency/ Department(s)	Risk Reduction Benefit	Hazard(s) Addressed	Estimated Cost	Funding Source	Timeframe
			awareness, and fire safety.				

Action Plan for Implementation and Integration

The Town of St. George 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 2026. 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 14.29: Action Plan for Implementation and Integration, Town of St. George

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.
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 Manager who is responsible for floodplain management.
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 Public Works and Road 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	Office of Emergency Management will 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	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.

Existing Plan or Procedure	Description of How Mitigation will be Incorporated or Integrated
Incorporate goals into day-to-day development policies, reviews & priorities	Continue work with Planning and Zoning to incorporate mitigation into day-to-day activities.

14.9 ANNEX MAINTENANCE PROCEDURES

The method and schedule for maintaining, evaluating, and updating the MJAHMP is described in **Section 7, Base Plan**. The Town of St. George 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 St. George has designated the Town Clerk as lead responsible for all Plan Maintenance related activities.

Table 14.30: Plan Maintenance Responsibilities for the *Chittenden County*, Vermont Multi-Jurisdictional All-Hazards Mitigation Plan, Base Plan, Town of St. George

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

Maintenance 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 14.31: Town of St. George Jurisdiction Annex Maintenance Procedure

Activity	Procedure and schedule	Outcome
Monitoring the Annex	Schedule the annual plan review with jurisdiction planning team. 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* HMPRUC Point of Contact
Updating the Annex	1. Coordinate with the HMPRUC 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.

14.10 ANNEX ADOPTION

The Town of St. George Jurisdiction Annex will be adopted by the municipality's governing body concurrently with 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.

14.11 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

November 17, 2022
TOWN OF ST. GEORGE, Vermont Selectboard

A RESOLUTION ADOPTING THE TOWN OF ST. GEORGE, Vermont 2022 Local Hazard Mitigation Plan

WHEREAS, the Town of St. George has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the 2022 Town of St. George. Vermont Local Hazard Mitigation Plan, which result in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Town of St. George has developed and received conditional approval from Vermont Emergency Management (VEM) for its 2022 Town of St. George, Vermont Local Hazard Mitigation Plan (Plan) under the requirements of 44 CFR 201 R ; and

WHEREAS, the Plan specifically addresses hazard mitigation strategies, and Plan maintenance procedures for the Town of St. George; and

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

RESOLVED by Town of St. George Selectboard:

1. The 2022 Town of St. George, Vermont Local Hazard Mitigation Plan is hereby adopted as an official plan of the Town of St. George;

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 undersig ed have affixed their signature and the corporate seal of the Town of St. George this 1 17' day of022.

Se ectboard ha'

Selectboard Member

ATTEST

Town Clerk
ATTEST

Town Clerk

ATTACHMENT 2: Planning Worksheets and Documentation

Natural Hazards Estimated Risk Matrix										
St. George		**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		0	0						
	1= Less than 25% of developed area impacted				1		1			
	2= Less than 50% of developed area impacted							3		3
	3= Less than 75% of developed area impacted									
	4= Over 75% of developed area impacted								4	
Consequences										
Health & Safety Consequences										
Key:	0= No health and safety impact		0		0		0			0
	1= Few injuries or illnesses			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					
	2= Few destroyed but many damaged								2	
	3= Few damaged and many destroyed									
	4= Many properties destroyed and damaged							3		3
Environmental Damage										
Key:	0= Little or no environmental damage		0	0			0			
	1= Resources damaged with short-term recovery				1			1	1	1
	2= Resources damaged with long-term recovery									
	3= Resources destroyed beyond recovery									
Economic Disruption										
Key:	0= No economic impact			0	0		0			
	1= Low direct and/or indirect costs		1						1	

	2= High direct and low indirect costs									
	3= Low direct and high indirect costs									
	4= High direct and high indirect costs							3		3
Sum of Area & Consequences Scores			**1**	**2**	**3**		**1**	**11**	**9**	**10**
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	4		
	5= Once a year or more occurrence								5	
Total Risk Rating										
	Total Risk Rating=		**4**	**8**	**12**		**4**	**44**	**45**	**30**
	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												
St. George		**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				0		0					
	1= Less than 25% of developed area impacted		1			1			1	1		
	2= Less than 50% of developed area impacted	2		2								
	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		2	2								
	3= Numerous fatalities											
Property Damage												
Key:	0= No property damage				0	0	0		0	0		0
	1= Few properties destroyed or damaged	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		1									
	2= Resources damaged with long-term recovery	2										
	3= Resources destroyed beyond recovery											
Economic Disruption												
Key:	0= No economic impact				0		0					
	1= Low direct and/or indirect costs	1	1			1			1	1		
	2= High direct and low indirect costs							2				

	3= Low direct and high indirect costs											
	4= High direct and high indirect costs			3								3
Sum of Area & Consequences Scores		**7**	**6**	**9**	**0**	**3**		**8**	**2**	**3**		**7**
Probability of Occurrence												
Key:	1= Unknown but rare occurrence				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		4
	5= Once a year or more occurrence							5				
Total Risk Rating												
	Total Risk Rating=	**14**	**12**	**27**	**0**	**9**	**0**	**40**	**2**	**12**		**28**
	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							
St. George		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	1
	2= Less than 50% of developed area impacted			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		0	
	1= Few injuries or illnesses		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						
	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**	**4**	**7**	**3**	**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	3	
	4= 25 years or less occurrence		4	4			
	5= Once a year or more occurrence						
Total Risk Rating							
	Total Risk Rating=	**3**	**16**	**16**	**21**	**9**	**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**						

ATTACHMENT 3: Documentation of Public Participation

Posted on the Chittenden County Front Porch Forum (online)

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

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

More Information

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.

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- 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: STAPLEE Criteria for Ranking

(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?**

Mitigation Actions Prioritization Worksheet

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

Prioritization Worksheet

JURISDICTION: _____ Person(s) Completing Form: _____

Date Submitted: _____	Project Description		Project Benefits								
A	B	C	1	2	3	4	5	7	8	9	
Project #	Mitigation Action	Hazard/ Project Type*	Protect Life, Safety, & Property	Funding is Available	Matching Funds Available	Strong BCA	Environmental Benefits	Technically feasible	Short-term or Long-term	TOTAL SCORE	Ranking
	Mitigate the development on the steeper terrain and deforestation due to crop harvesting, dredging in streams to remove excess silt										
	Acquire the properties in floodplains, or elevate the properties in the floodplains, update/set building codes to prevent building in current floodplains.	Flood, Heavy Rains, Snowmelt									
	Roadside drainage improvements, ditches, bridges, structures, culverts, paving where applicable, etc.										
	Improve drainage along he dirt roads in the town	Flood/Snowmelt/ Heavy Rains									
	Improve the stormwater drainage sections along roads 100meeters at a time, out of 454 segments total.										
	Update flood rate maps/risk maps										
	Municipal Roads General Permit/Stormwater Management Plan										