# ANNEX 18: CITY OF WINOOSKI


**Chartered: 1846**

**Land Area: 1.43 sq. mi.**

**2020 Population: 7,997**

**Government Address: 27 West Allen Street, Winooski, Vermont**

**Households: 3,252**

**Mitigation Focus: Severe Storm, Extreme Temperatures, Severe Rainstorm**

This section presents the jurisdictional annex for the City of Winooski, 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

## 18.1 HAZARD MITIGATION PLAN – POINT OF CONTACT

| Type | Primary Point of Contact | Secondary Point of Contact |
|---|---|---|
| Name | Elaine Wang | John Audy |
| Title | City Manager | Fire Chief |
| Agency | City of Winooski | City of Winooski |
| Address | 27 West Allen Street | 27 West Allen Street |
| City, State, Zip | Winooski, Vermont | Winooski, Vermont |
| Phone | 802-655-6410 | 802-373-7891 |
| Email | ewang@winooskivt.gov | jaudy@winooskivt.gov |

## 18.2 JURISDICTION PROFILE

- Geographic Region:
- Persons per household: 2.21
- Persons per Square mile: 5592.3
- Median Age: 33.3 years
- Elevations: Near sea level- 177ft

### *Location*

Located on the Winooski River, as of the 2020 U.S. Census the municipal population was 7,997. The city is the most densely populated municipality in northern New England, an area comprising the states of Maine, New Hampshire, and Vermont. It is the smallest in area of Vermont's nine incorporated cities. As part of the Burlington, Vermont metropolitan area, it is bordered by Burlington, Colchester, and South Burlington.

According to the United States Census Bureau, the city has a total area of 1.5 square miles (3.9 km2), of which 1.4 square miles (3.7 km2) is land and 0.1 square mile (0.2 km2) (5.30%) is water.

### *History*

As early as 750 A.D., the Abenaki tribe lived along the shores of a cascading waterfall in a fertile river valley they called "winoskitegw," meaning “land of the wild onion.” Winooski's southern border is formed by the Winooski River, which is alternatively known as the Onion River.[6]

Situated on a main road, Winooski most likely started as a rest stop for travelers. With a set of waterfalls to assist the growth of industry, however, it soon also became a center for wool processing.

In the early 1770s, Ira Allen constructed a blockhouse on the Winooski (then "Onion") River which served both as a fort and as a general store and office for the land-speculating Onion River Company. Fort Frederick was never used for defense, but its presence increased the value of Onion River property and promoted settlement.

*Further information: Winooski Falls Mill District*

After the Revolutionary War, Ira Allen built a dam across the river with a sawmill at each end.

In the late 1830s, the Burlington Mill Company used the river's power for the manufacture of yarns and cloth.

In 1846, James and Lucinda Stone from Winooski settled in Sheboygan County in the Wisconsin Territory and named their new settlement Winooski, Wisconsin.

The American Woolen Company purchased the failing Burlington Mills in 1901 restoring a measure of economic growth to the area. This success eventually led Winooski to incorporate as a city in 1922, breaking away from the town of Colchester.

The mills closed in 1954, resulting in two decades of economic problems for the city. In the 1980s, two old mills were converted into commercial, office, and apartment space, helping to revitalize the area.

In 1979, the city researched the construction of a dome over the entire city of Winooski, to reduce heating costs during the winter. The proposed dome would have been 200 feet (61 m) at the center, and internal combustion engines would have been banned. Though the dome was never built, to this day the city's planner defends the concept, insisting "Economically, it's a slam dunk," and adding "You could have had year-round fly-fishing."

In 2008, the city dismissed their city manager of 11 months, while he was still an at-will employee. His contract had been scheduled for three years.

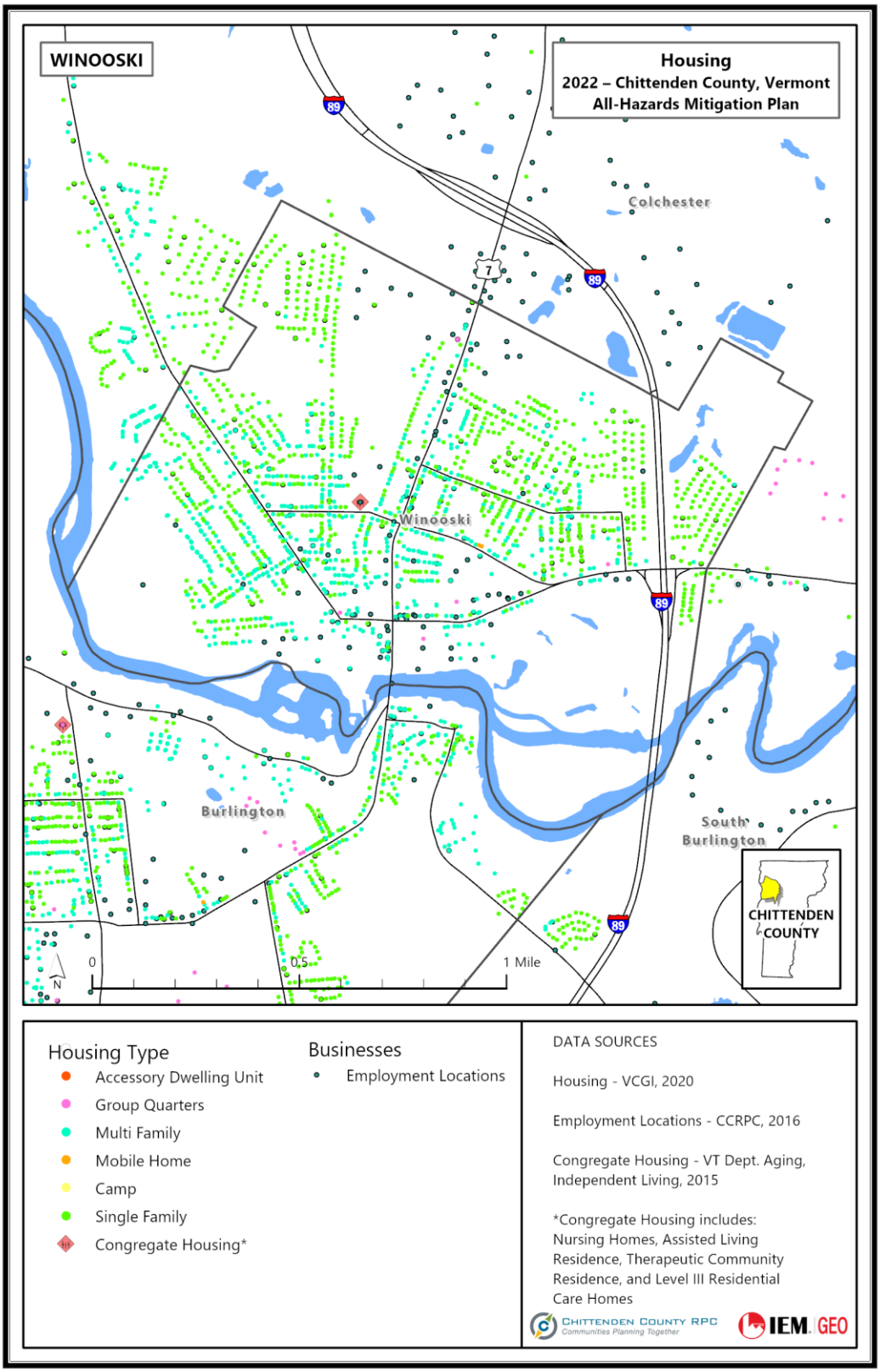
### *Demographics, Economy, and Governance*

The City of Winooski's population has been relatively stable over the past several decades, showing only marginal growth. The City's population is spread out evenly, with 21.5% under the age of 18, 12.3% from 18 to 24, 34.8% from 25 to 44, 17.8% from 45 to 64, and 13.5% who were 65 years of age or older.

**Table 18.1: Demographics, Economy, and Governance in City of Winooski**

| Demographics | Economy | Governance |
|---|---|---|
| **Population Growth Rates**<br>• 1980: 6318<br>• 1990: 6649<br>• 2000: 6551<br>• 2010: 7267<br>• 2020: 7997<br>• 2020-2030 (Projected): 7,693<br>**Race and Ethnicity**<br>Percentage of population identifying as:<br>• White: 77.4%<br>• Asian/Pacific Islander: 16.8%<br>• Hispanic/Latino: 2.7%<br>• Black/African American: 2.7%<br>• Two or more races: 1.4<br>• American Indian: 0.2% | • Median household income (2019): $56,236<br>• Unemployment rate (Sept. 2021):<br>• Per capita income (2019): $32,701<br>• Median home value (2021): 231,300<br>• Percentage below poverty (2019): 29.5% | • City Council-<br>• Mayor<br>• City Manager<br>• Justices of the Peace |

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




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

### Figure 18.1: Housing and Employment, City of Winooski[2]

*Built Environment and Community Lifelines*

The city is the most densely populated municipality in northern New England. It is the smallest in area of Vermont's nine incorporated cities.

The City of Winooski has identified sixteen (15) critical facilities that serve as Community Lifelines.

### Table 18.2: Number of Community Lifelines and Critical Assets in City of Winooski

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

Safety and Security

There is one fire station, one Emergency Operations Center, one law enforcement facility and one military installation located in the City of Winooski. The city also identifies two government assets as critical facilities.

Food, Water, Shelter

There is one Emergency Shelter identified in the City of Winooski. School used for feeding. The church is the emergency shelter, City Hall is the emergency office and EOC, see above. Public Works is the auxiliary location.

Health and Medical

There is one medical facility within the City of Winooski, Winooski Family Health, operated by the Community Health Centers of Burlington. No critical health facilities are identified within the city.

Energy

There is one identified critical energy facility within the City of Winooski, the hydropower dam on the Winooski River, operated by Burlington Electric.

Communications

There are three (3) communications assets identified as base stations for public safety communications within the City of Winooski. Most communications and information systems and infrastructure in the United States are privately-owned; however, the City 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

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

There are no identified critical transportation facilities within the City of Winooski.

### Hazardous Materials

There are no identified critical facilities using, storing, or transporting hazardous materials in excess of 10,000 pounds within the City of Winooski.

### Education

There are four K-12 educational facilities in the City of Winooski: the Winooski School District, St. Francis Xavier School, Centerpoint School, and the Mill School.

### Recreational, Cultural and Historic Sites and Assets

## Natural Environment

The majority land coverage in the City of Winooski is tree canopy, with grass and shrub in limited areas, primarily along the Winooski River, and other waterways (Figure 18.2). The river has designated Special Flood Hazard Areas (SFHA), or 100-year floodplains, on both banks and it and other waterways have River Corridors identified by the Vermont Agency for Natural Resources (ANR) (Figure 18.3).

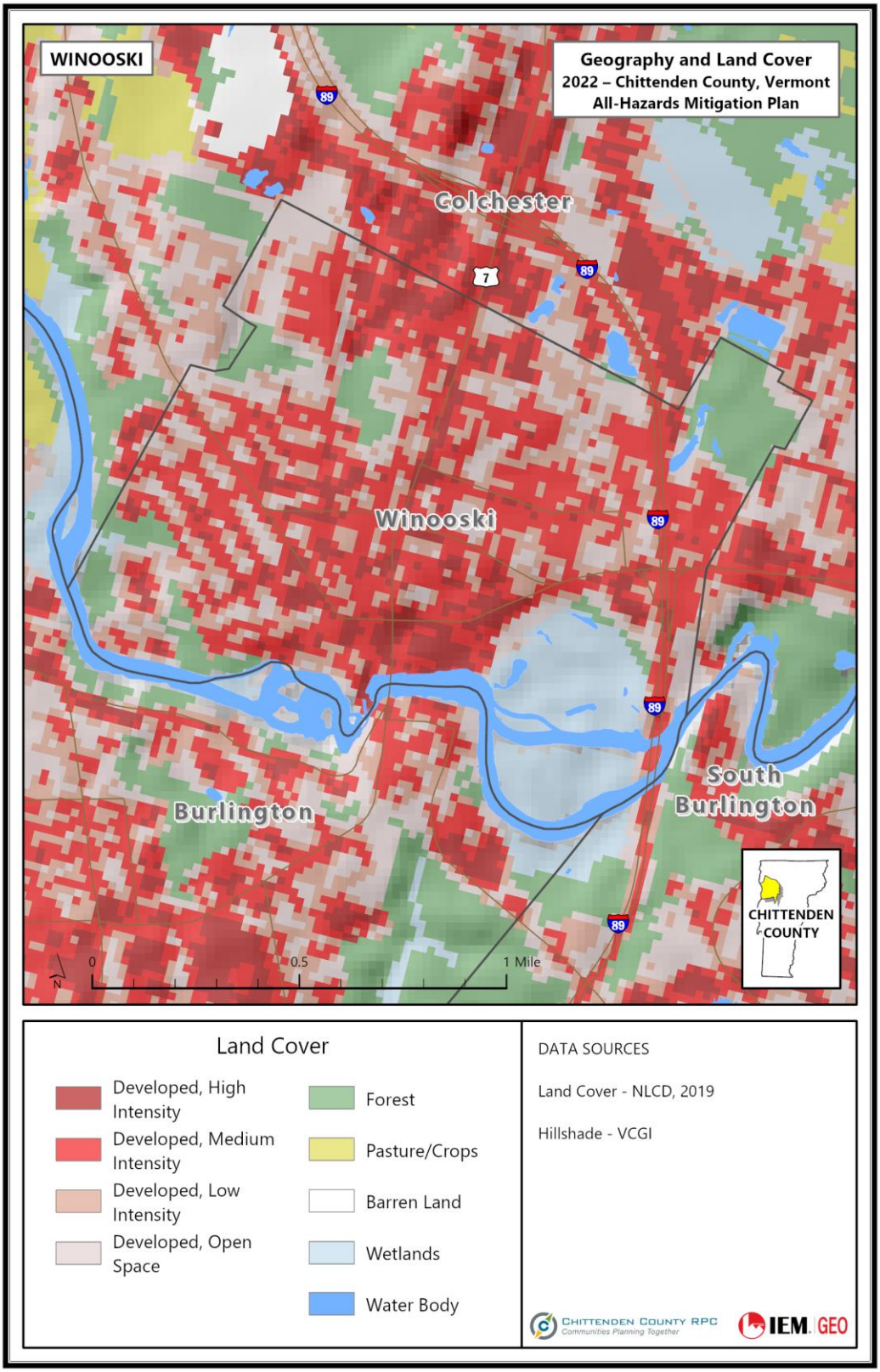



**Figure 18.2: Geography and Land Cover, City of Winooski[3]**

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

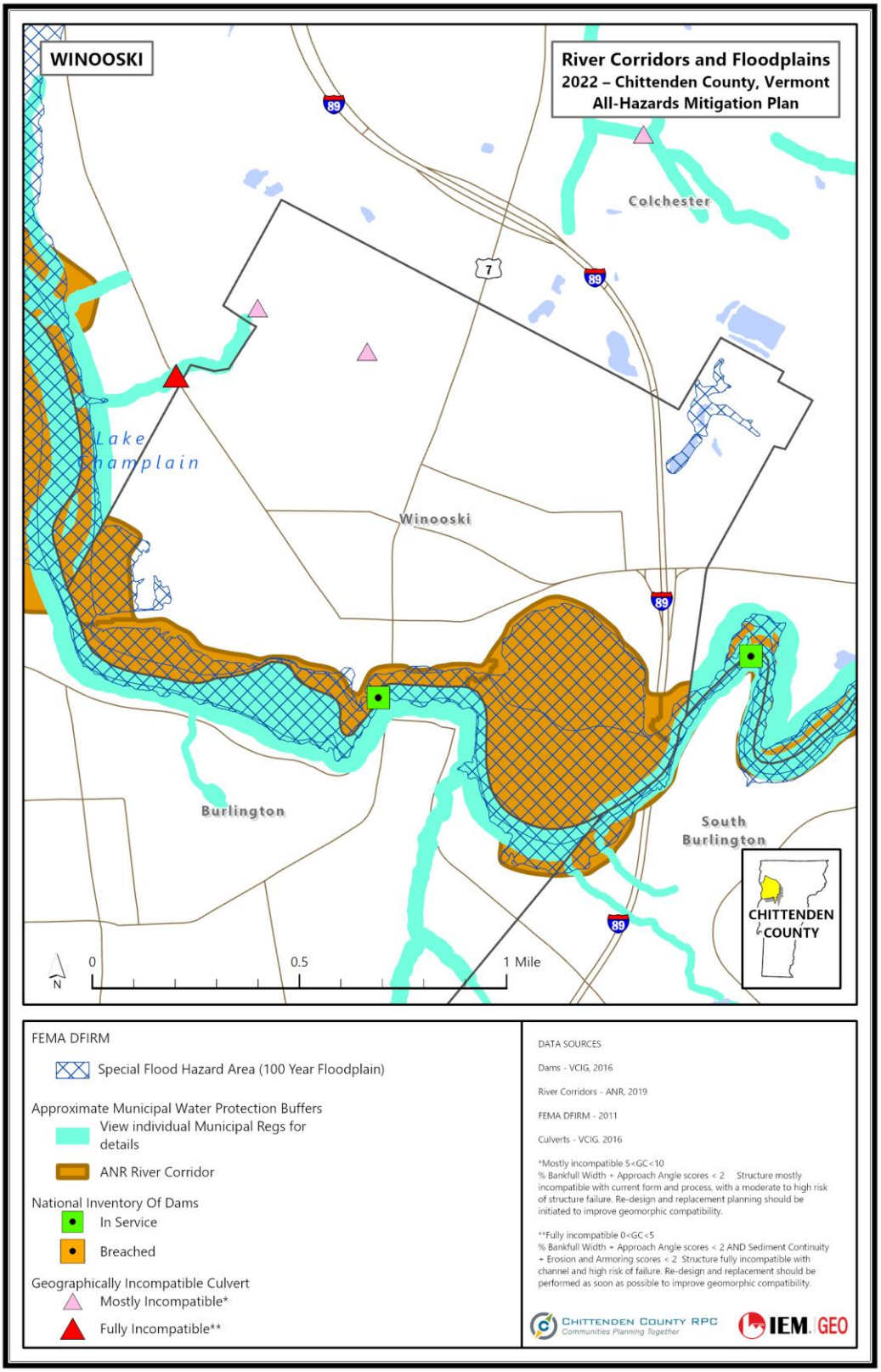
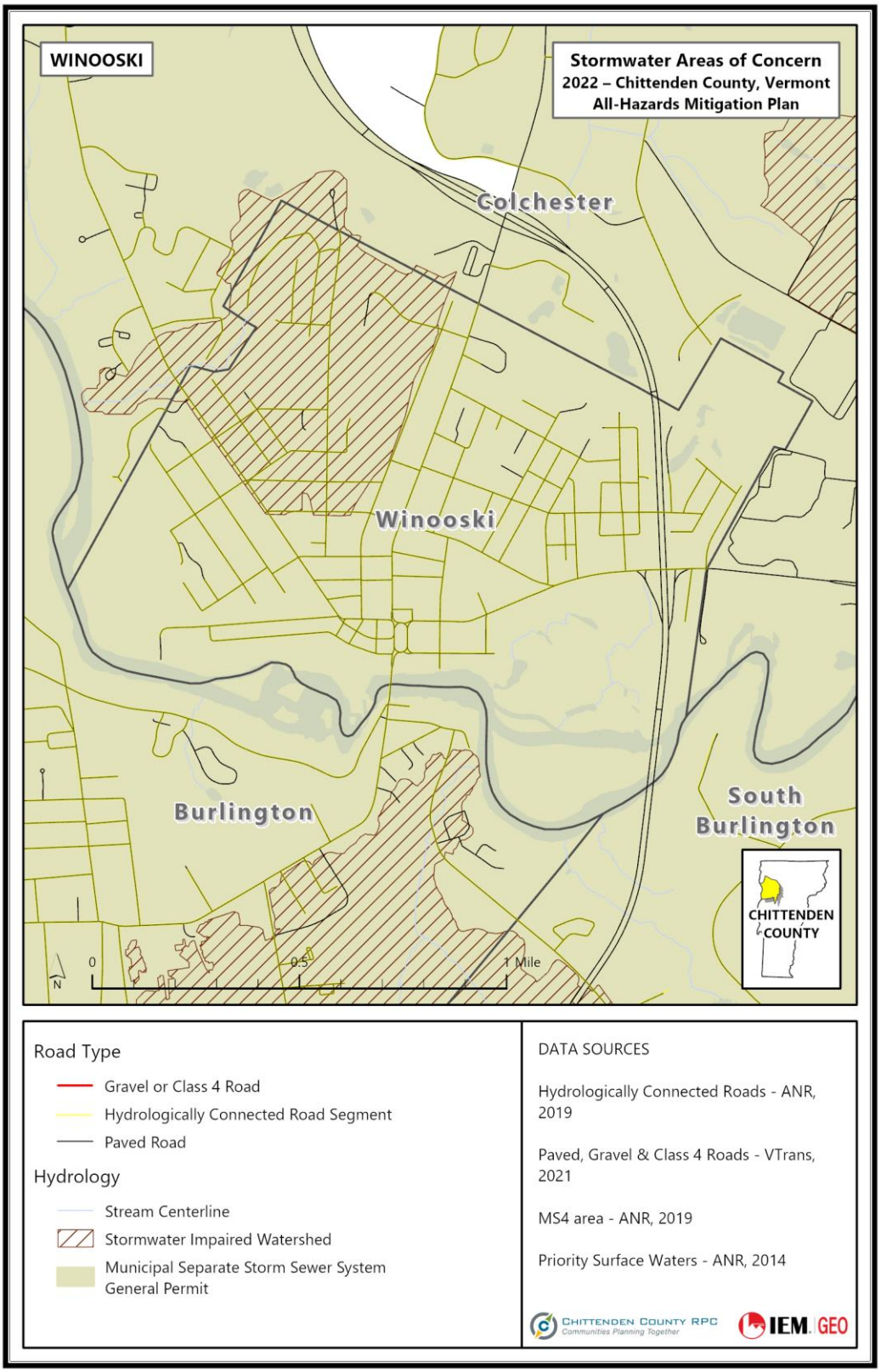



**Figure 18.3:, River Corridors and Floodplains, City of Winooski[4]**

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


WINOOSKI
Stormwater Areas of Concern
2022 – Chittenden County, Vermont
All-Hazards Mitigation Plan
Colchester
Winooski
Burlington
South Burlington
CHITTENDEN COUNTY
0
0.5
1 Mile
N
Road Type
Gravel or Class 4 Road
Hydrologically Connected Road Segment
Paved Road
Hydrology
Stream Centerline
Stormwater Impaired Watershed
Municipal Separate Storm Sewer System General Permit
DATA SOURCES
Hydrologically Connected Roads - ANR, 2019
Paved, Gravel & Class 4 Roads - VTrans, 2021
MS4 area - ANR, 2019
Priority Surface Waters - ANR, 2014
CHITTENDEN COUNTY RPC
Communities Planning Together
IEM. GEO

### Figure 18.4: Stormwater Management System, City of Winooski[5]

## Growth and Development Trends

The City of Winooski's population is stable, showing only a slight increase in the past decade. The greatest period of development in relation to construction of residential properties was between 1980 and 1990, with slight declines in home construction in the decades since. Of the total number of 870 housing units in the city in 2020, approximately 13 percent were built in 2010 or later.

### Table 18.3: Population Trends, 2000-2020[6]

| 2010 | 2020 | Net Change 2010-2020 | % Change 2010-2020 |
|---|---|---|---|
| 7775 | 7997 | +730 | .09% |

### Table 18.4: Winooski Population Projections to 2030[7]

| 2020 Population | 2030 Population | Net Change 2000 -2020 | Percent Change 2000-2020 |
|---|---|---|---|
| 7,997 | 7693 | -304 | -3.8% |

Future population growth within the city is primarily dependent on the economic stability and planned development for the county and region which shows no significant change in the near future. The Planning Area concept adopted by the Chittenden County jurisdictions indicates limited areas within the Village land use category which maintains the compact, mixed-use character of a Vermont village and limits density increases.

[5] Chittenden County Regional Planning Commission, GIS Database; October 14, 2021.
[6] www.census.gov-**QuickFacts**
[7] CCRPC-*Chittenden County Municipal Population Estimates*

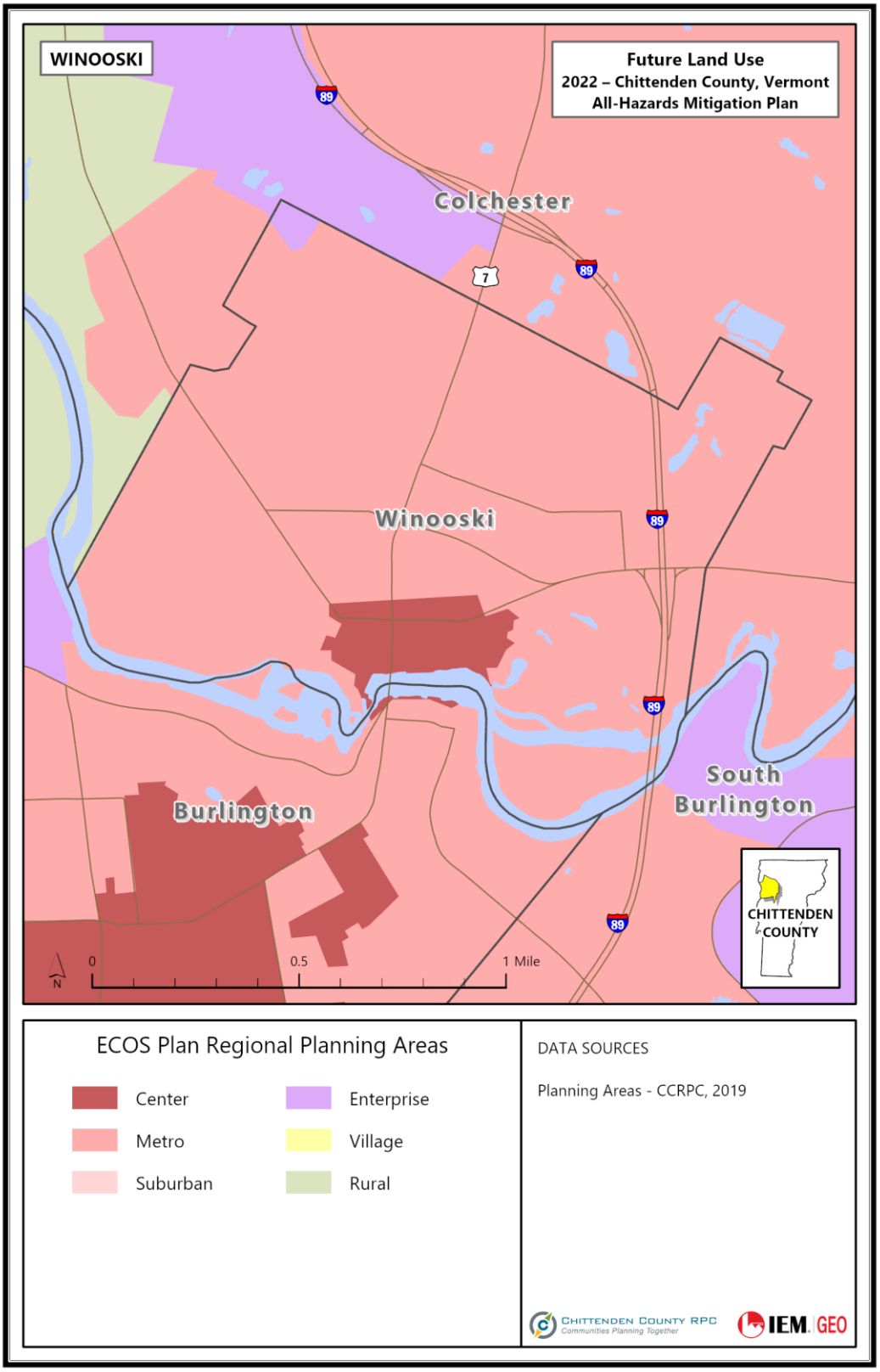



**Figure 18.5: Future Land Use, City of Winooski[8]**

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

## 18.3 JURISDICTION PLANNING PROCESS

| Name | Position/Title | Department/Agency |
|---|---|---|
| John Audy | Fire Chief | City of Winooski |
| Wendy Harrison | Interim City Manager | City of Winooski |
| 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 (AHMPUC). The county also identified the following tasks as part of its mitigation planning responsibilities

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

### *Public Participation*

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

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

In addition to the survey, the public was offered the opportunity to review and provide input to the Draft 2022 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.

## 18.4 JURISDICTION-SPECIFIC HAZARD EVENT HISTORY

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

## Table 18.5: Federal Disaster and Emergency Declarations (2017-2021), City of Winooski[9]

| Declaration | Date | Hazard | Assistance Type |
|---|---|---|---|
| EM 3567 | August 2021 | Tropical Storm Henri | PA(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 18.6: Summary of Storm Events in the City of Winooski 1950-2021[10]

| Summary of Storm Events in the City of Winooski, 1950-May 31, 2021 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Event Type | # 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 | 13 | 0 | 0 | 0 | 0 | 188,000 | 0 |
| Frost/Freeze | 3 | 0 | 0 | 0 | 0 | 0 | 275,000 |
| Hail | 7 | 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 |

[9] Federal Emergency Management Agency (FEMA), Declared Disasters, Accessed 6/15/2021

[10] National Oceanic and Atmospheric Administration (NOAA), National Centers for Environmental Information (NCEI), Storm Events Database for January 1, 1950, to June 30, 2021. Damage costs are presented in year of occurrence values, as reported by the NCEI. The information listed is a combination of hazards that are specific to the City of Winooski, Chittenden County, and the Eastern portion of Chittenden County where the City of Winooski is located. This information for each of the hazards has the potential to over-inflate the damages, deaths, or injuries that have occurred in the city limits."

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Strong Wind | 30 | 1 | 0 | 0 | 0 | 369,000 | 0 |
| Thunderstorm | 9 | 0 | 0 | 0 | 0 | 106,000 | 0 |
| Winter Storm | 68 | 0 | 0 | 2 | 0 | 1,758,000 | 10,000 |
| Winter Weather | 97 | 1 | 3 | 0 | 0 | 951,000 | 0 |
| **Total** | **283** | **3** | **3** | **3** | **0** | **11,494,000** | **535,000** |

**Table 18.7: Significant Hazard Events Identified by City of Winooski, 2017-2021**

| Date | Hazard | Event and Description |
|---|---|---|
| **10/07/2020** | **Thunderstorm Wind** | A cold front raced across the Champlain Valley during the afternoon of October 7th. Several showers and an embedded thunderstorm developed which produced one localized wind gust in Colchester, VT near Lake Champlain. |
| **08/11/2020** | **Thunderstorm Wind** | A minor disturbance moved across a moderately unstable air mass across the eastern Adirondacks and Champlain Valley during the evening of August 11th. Showers and thunderstorms developed in the Adirondacks during the early evening and crossed Lake Champlain into the Burlington area by mid-evening. One of the more vigorous storms moved through the Burlington vicinity with multiple reports of scattered minor tree damage. |
| **07/28/2019** | **Thunderstorm Wind** | A weak disturbance into a moderately unstable air mass resulted in very isolated thunderstorms across the region. One thunderstorm developed in the Champlain Valley of NY and moved into the Burlington, VT vicinity causing localized damage and then across the mountains into Stowe with more localized damage. |

## High Hazards of Concern to the Jurisdiction

The City of Winooski indicated that Severe Rainstorms and Severe Winter Storms 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 city in relation to the following hazards.

### *Dam/Levee Failure*

There are two sources of information on dams in Chittenden County: a Vermont Dam Inventory (VDI) maintained by the Vermont Department of Environmental Conservation and the National Dam Inventory (NID) maintained by the U.S. Army Corps of Engineers. The Winooski One dam is identified by the NID. It is categorized as low hazard dams.

### Table 18.8: High Hazard Dams in City of Winooski, as of May 2021[11]

| Name | Owner | River | Description | Impoundment Capacity (acre-feet) | Use | Hazard Potential |
|---|---|---|---|---|---|---|
| Winooski One | Burlington Electric | Winooski River | Concrete gravity dam built in 1993, originally for Mill Power and now used for hydroelectricity generation. | 34 | Hydroelectricity | Significant-no probable loss of human life but can cause significant economic or environmental damage and disrupt lifeline concerns. |

[11] *Source: National Dam Inventory*

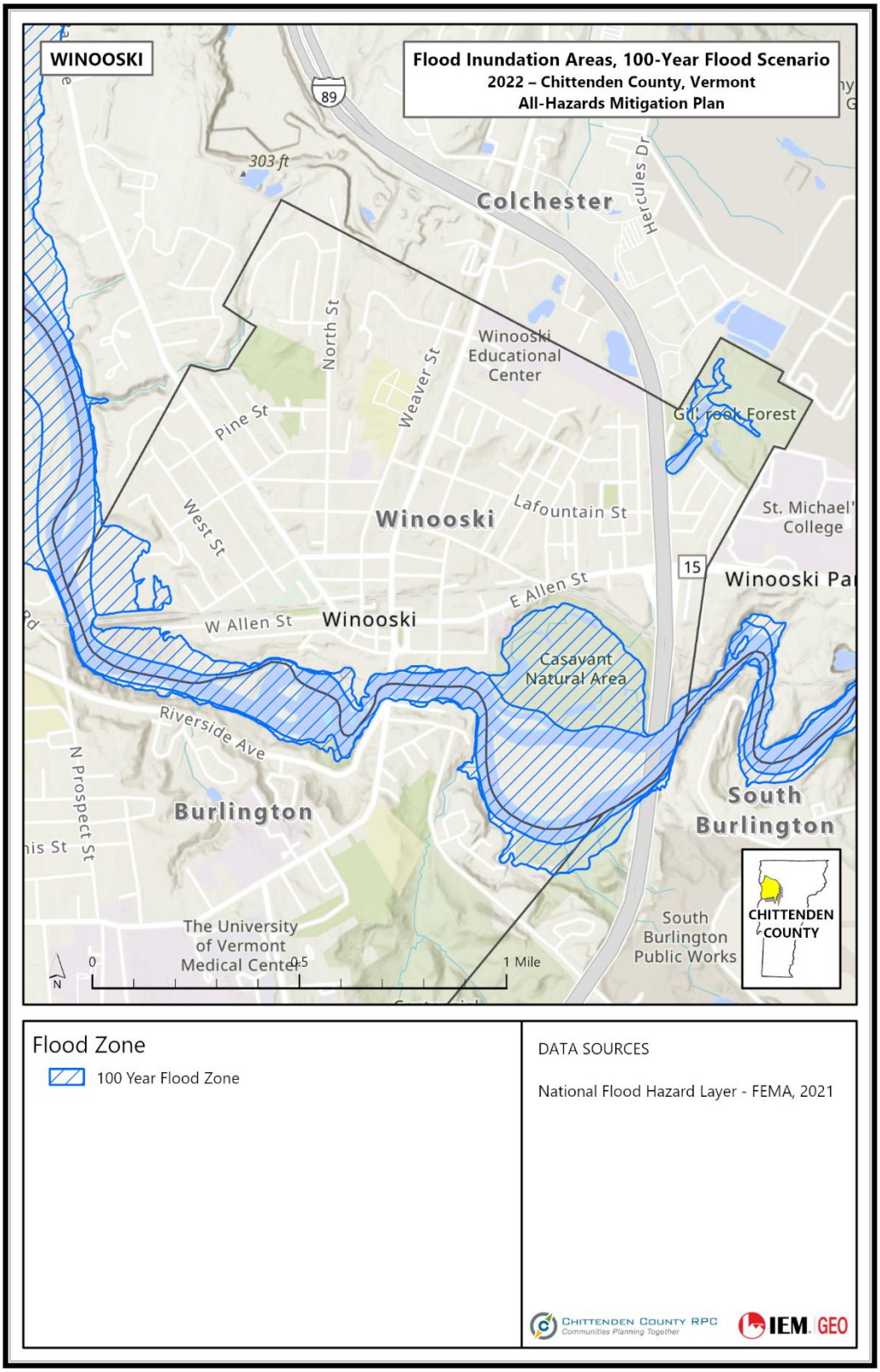



**Figure 18.6: City of Winooski 100-Year Flood Scenario[12]**

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

### *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. Decrease flooding hazards to town roads through upgrades to low-flow or failed culverts

### *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**.

## 18.5 HAZARD RISK RANKING

After developing hazard profiles, the City of Winooski 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 is 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 the City of Winooski 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. Non-natural hazard profiles are presented in **Volume II** of this Plan.

## Table 18.9: Hazard Risk Ranking Summary - Natural Hazards, City of Winooski

| Hazard | Total Probability Score | Overall Risk Score | Total Consequence Score | Hazard Ranking |
|---|---|---|---|---|
| Severe Rainstorm | 5 | 40 | 8 | High |
| Severe Winter Storm | 5 | 45 | 9 | High |
| Extreme Temperatures | 4 | 36 | 9 | Medium |
| Human Infectious Disease | 3 | 24 | 8 | Medium |
| Flood | 4 | 12 | 3 | Low |
| Fluvial Erosion | 4 | 4 | 1 | Low |
| Invasive Species | 0 | 0 | 0 | Low |
| Wildfire | 4 | 4 | 1 | Low |
| Dam/Levee Failure | [Not Ranked] | | | |

## Table 18.10: Hazard Risk Ranking Summary Technological Hazards

| Hazard | Total Probability Score | Overall Risk Score | Total Consequence Score | Hazard Ranking |
|---|---|---|---|---|
| Hazardous Materials Incident | | 24 | 8 | Medium |
| Major Transportation Incident | | 36 | 9 | Medium |
| Multi-structure Fire | | 28 | 7 | Medium |
| Power Loss | | 35 | 7 | Medium |
| Sewer Service Loss | | 25 | 5 | Medium |
| Natural Gas Service Loss | | 15 | 5 | Low |
| Other Fuel Service Loss | | 8 | 4 | Low |
| Water Pollution (algal bloom, etc.) | | 10 | 2 | Low |
| Telecommunications Failure | | 8 | 2 | Low |
| Water Supply Loss | | 15 | 3 | Low |

## Table 18.11: Hazard Risk Ranking Societal Hazards

| Hazard | Total Probability Score | Overall Risk Score | Total Consequence Score | Hazard Ranking |
|---|---|---|---|---|
| Crime | 5 | 40 | 8 | High |
| Economic Recession | 4 | 28 | 7 | Medium |
| Key Employer Loss | 4 | 20 | 5 | Medium |
| Terrorism | 1 | 5 | 5 | Low |
| Civil Disturbance | 3 | 12 | 4 | Low |

## 18.6 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 Plan**.

**Table 18.12: City of Winooski-Typical Vulnerabilities of Natural Hazards of Highest Concern**

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

| | | |
|---|---|---|
| | • Damage to public infrastructure | • Damages to individuals' properties and businesses |
| Extreme Temperatures | • Damage to public infrastructure<br>• Loss of water service<br>• Possible relocation of vulnerable individuals without air conditioning/heat | • Budget impacts due to needed repairs |
| Wildfire | • Damage to private property | • |
| Human Infectious Disease | • Temporary closures of schools, businesses, places of assembly<br>• 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 City of Winooski has a higher vulnerability to the following natural hazards:

- Severe Rainstorms
- Severe Winter Storm
- Major flooding along the Winooski River

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

**Table 18.13: City of Winooski – Typical Vulnerabilities of Technological Hazards of Highest Concern**

| Hazard | Typical Vulnerabilities | Potential Cascading Vulnerabilities |
|---|---|---|
| **Major Transportation Incident** | • Temporary closures of transportation infrastructure<br>• Injuries, deaths | • If major event, potential long term closure of infrastructure |
| **Power Loss** | • Temporary loss of electrical service<br>• Temporary impacts to vulnerable individuals<br>• Damage to public infrastructure | • If extended event, damage to perishable goods or business income<br>• 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<br>• Injuries to persons |
| **Water Service Loss** | • Temporary loss of service<br>• Temporary impacts to vulnerable individuals | • If extensive loss, potential budget impacts to service providers |
| **Gas Service Loss** | • Temporary loss of service<br>• Temporary impacts to vulnerable individuals | • If extensive loss, potential budget impacts to service providers |

| | | |
|---|---|---|
| **Telecommunications Failure** | • Temporary loss of service<br>• Temporary impacts to vulnerable individuals | • If extensive loss, potential budget impacts to service providers |
| **Other Fuel Service Loss** | • Temporary loss of service<br>• Temporary impacts to vulnerable individuals | • If extensive loss, potential budget impacts to service providers |
| **Sewer Service Loss** | • Temporary loss of service<br>• 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, impact to tourism-based businesses |

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

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

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

**Table 18.14: City of Winooski – Typical Vulnerabilities of Societal Hazards of Highest Concern**

| Hazard | Typical Vulnerabilities | Potential Cascading Vulnerabilities |
|---|---|---|
| Crime | • Increased demands on police services and social services | • Injuries<br>• Deaths |
| Key Employer Loss | • Loss of economic activity<br>• Loss of portion of tax base<br>• Increased demands on social services | • Effects increased if employer is of significant size |
| Economic Recession | • Loss of economic activity<br>• Increased demands on social services<br>• Some loss of tax revenue | • Effects increased if event is of extended duration |
| Civil Disturbance | • Injuries to persons<br>• Damage to public and private property | • Budget impacts to police services depending upon severity of event<br>• Deaths |
| Terrorism | • Injuries to persons<br>• Damage to public and private property | • Budget impacts to police services depending upon severity of event<br>• Deaths |

Relative to the County as a whole, there is insufficient data to conclude whether the City 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 the 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 City of Winooski is in an area of lowest vulnerability; however, the level of vulnerability is somewhat higher when considering the race/ethnicity/language and housing type/transportation themes.

**Table 18.15: Vulnerable Population in the City of Winooski, by Age Group[13]**

| Category | Percent |
|---|---|
| Children Under 5 | 5.8% |
| Population age 65+ | 11.6% |
| Disabled Population | 17.0% |
| Population Below Poverty Level | 29.5% |

### *Built Environment*

A vulnerability analysis was conducted at the county level, utilizing the Hazus modeling scenarios. Consequently, a Hazus vulnerability analysis was not developed for individual municipalities.

The statistical overview of roads in the City of Winooski shows the range of road types within the city, 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 18.16 City of Winooski, Highway mileage by class[14]**

| Class 1 | Class 2 | Class 3 | Class 4 | State Hwy | Total 1, 2, 3, State Hwy |
|---|---|---|---|---|---|
| 1.976 | 2.810 | 12.80 | 0.02 | 1.255 | 18.841 |

[13] **Source: U.S Census (1970-2020),** www.census.gov-**QuickFacts,**

[14] Publications | Agency of Transportation (vermont.gov)

### Table 18.17 City of Winooski, Highway mileage by surface type[15]

| Paved | Gravel | Soil or Graded | Unimproved | Impassable | Unknown | Total |
|---|---|---|---|---|---|---|
| 18.821 | 0.2 | 0.2 | 0 | 0 | 0 | 19.221 |

| Total Known | Total Unpaved | % Paved | %Unpaved |
|---|---|---|---|
| 19.221 | 0.4 | 97.9% | 2.1% |

The statistical overview of roads in the City of Winooski 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 18.18 City of Winooski, High crash road sections[16]

| | | | Severity Index |
|---|---|---|---|
| Route | System | Mileage | ($/Accident/1.) |
| US-7, W. Allen St., Winooski City, VT-15, E. Canal St., Winoos, W. Center St., Winoo, <T000> | Principal Arterial (u)/Minor Arterial (u) | 0.040-0.230 | $18,000 |
| VT-15, I-89 | Principal Arterial (u) | 0.700-0.720 | $33,372 |
| US-7, E Spring St., Winooski City, W Spring St., Winooski City | Principal Arterial (u)/Urban Collector (u) | 0.430-0.450 | $38,900 |
| VT-15, East St., Winooski City. | Principal Arterial (u)/Minor Arterial (u) | 0.190-0.210 | $42,296 |
| VT-15, Dion St., Winooski City | Principal Arterial (u)/Urban Collector (u) | 0.570-0.590 | $27,117 |

### Table 18.19 City of Winooski, Hazardous materials storage and use locations

| Facility Name | Type of Substance |
|---|---|
| BioTek Instruments Inc | |
| BioTek Instruments Inc | |
| Chucks Service Center | |

[15] Ibid.
[16] Ibid.

| | |
|---|---|
| Fairpoint Winooski Co (FPT-VT471501) | |
| Fairpoint Winooski Co (FPT-VT471501) | |
| Food Mart-Winooski | |
| GMP Winooski substation #46 | |
| Simons Gas | |
| Super-Temp Wire & Cable, Inc | |
| Twincraft | |
| Vermont Army National Guard- Winooski Armory | |

**Table 18.20 City of Winooski, Culverts with a geomorphic compatibility rating of "Mostly Incompatible" or "Incompatible"**

| Bankfull Width | Compatibility Score | Town | Location | GIS Road Name | Stream Name |
|---|---|---|---|---|---|
| 31.75 | 10 | Winooski | At least house on Pine Grove Terrace, east of road | Private Driveway | Tributary to Morehouse Brook |

The City of Winooski maintains bridge and culvert inventories.

Analysis of the city's development pattern indicates that most residential and non-residential development is not typically located in SFHAs or River Corridors.

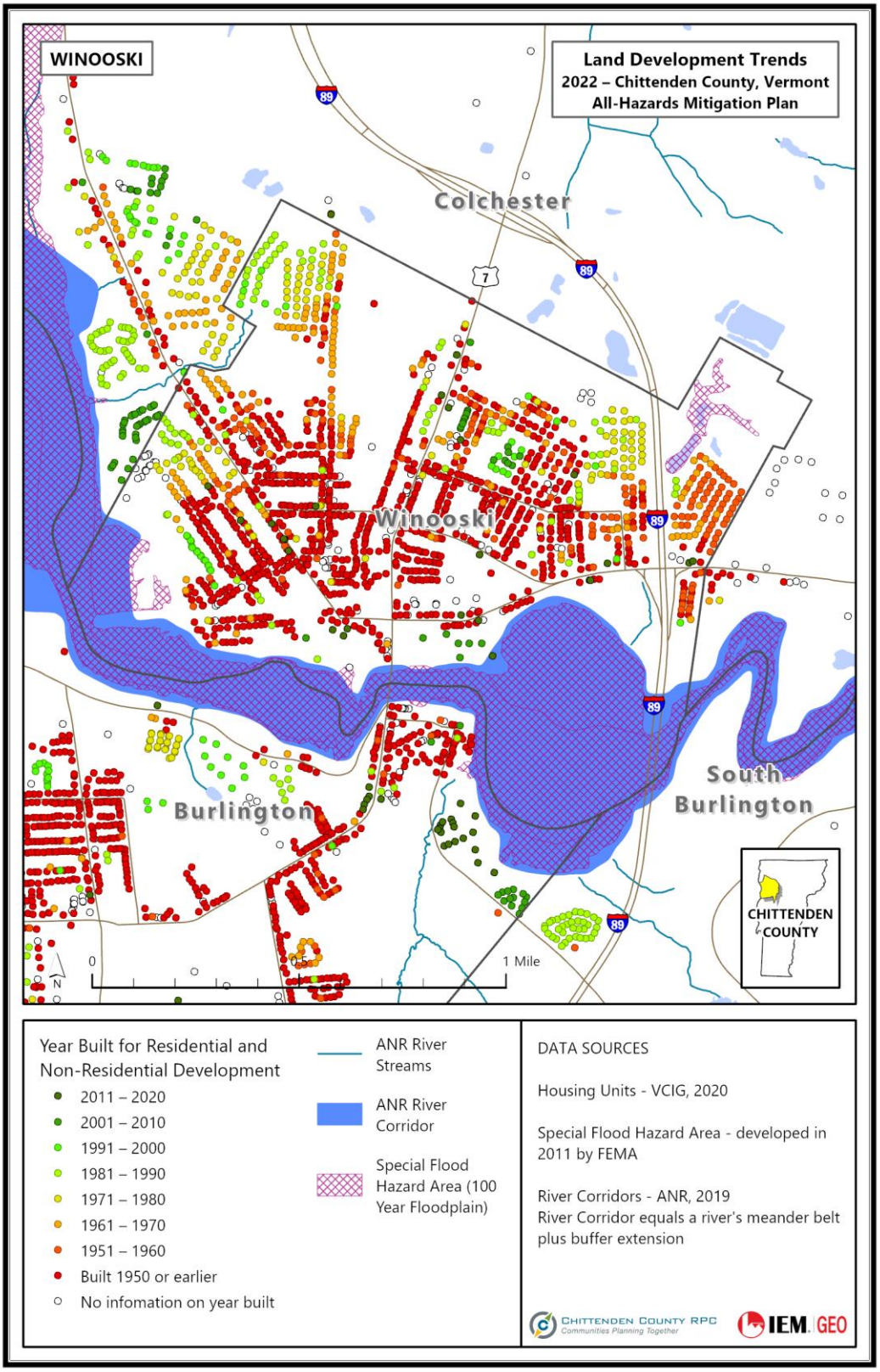



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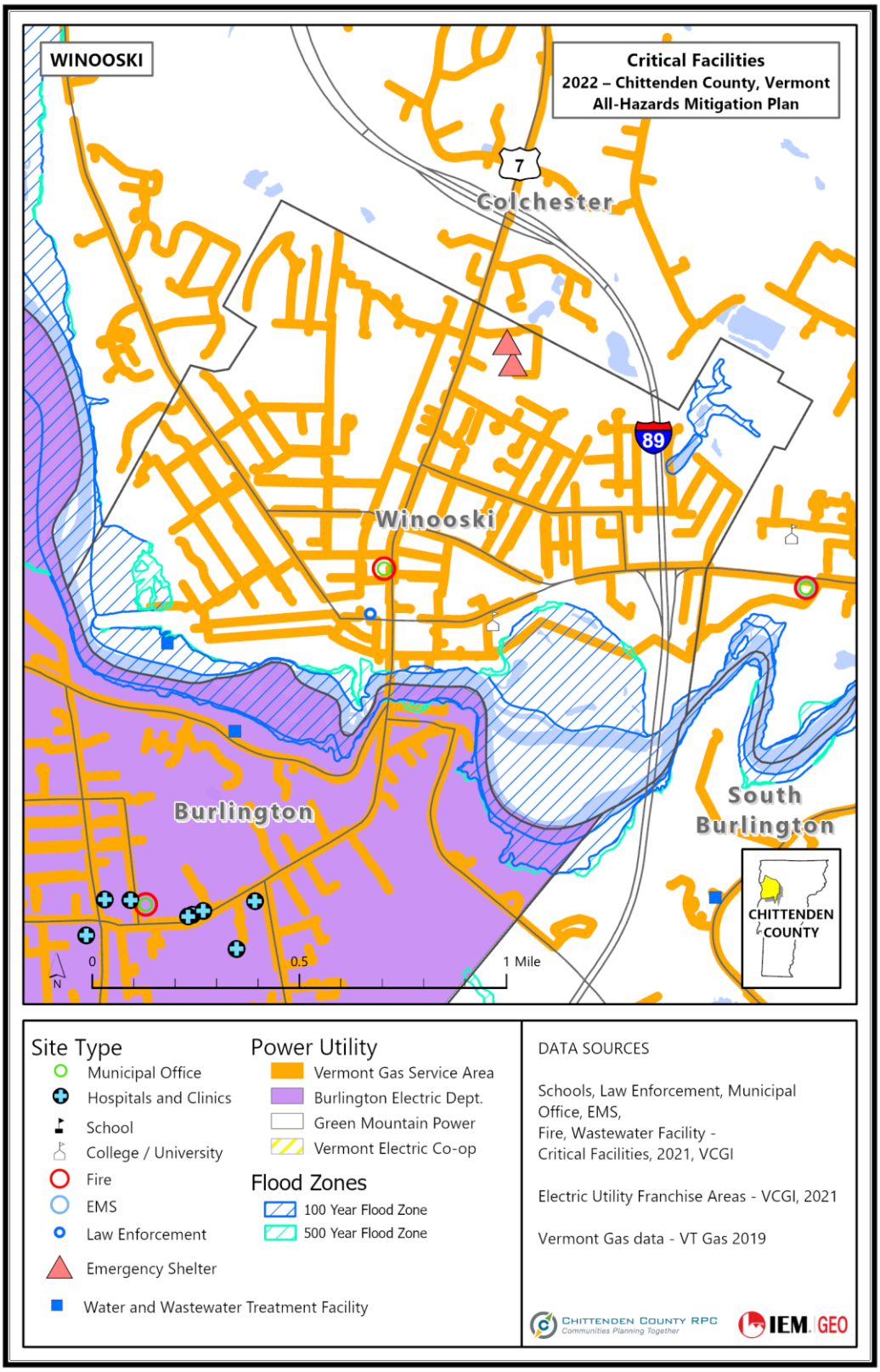
**Figure 18.7: Land Development Trends, City of Winooski- 1950-2020[17]**

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


WINOOSKI
Critical Facilities
2022 – Chittenden County, Vermont
All-Hazards Mitigation Plan
7
Colchester
89
Winooski
Burlington
South
Burlington
CHITTENDEN
COUNTY
0
0.5
1 Mile
N
Site Type
Municipal Office
Hospitals and Clinics
School
College / University
Fire
EMS
Law Enforcement
Emergency Shelter
Water and Wastewater Treatment Facility
Power Utility
Vermont Gas Service Area
Burlington Electric Dept.
Green Mountain Power
Vermont Electric Co-op
Flood Zones
100 Year Flood Zone
500 Year Flood Zone
DATA SOURCES
Schools, Law Enforcement, Municipal Office, EMS,
Fire, Wastewater Facility -
Critical Facilities, 2021, VCGI
Electric Utility Franchise Areas - VCGI, 2021
Vermont Gas data - VT Gas 2019
CHITTENDEN COUNTY RPC
Communities Planning Together
IEM. GEO

### Figure 18.8: Critical Facilities, City of Winooski[18]

The City MJ-AHMP Planning Committee noted the following buildings or sites as its top assets:

- Fire Department
- City Hall/Police Station
- Wastewater Treatment Facility
- Hydro Dam (In Winooski but owned by Burlington Electric)
- Schools
- Community Center/Senior Center
- Consolidated switch station on West Allen Street

### Table 18.21: Critical Facilities Exposed to FEMA Floodplains, City of Winooski

| Total Facilities | In 100-year Floodplain | In 500-year Floodplain |
|---|---|---|
| **1 Water/Wastewater** | **1 Water/Wastewater** | **0** |

*Historical/Cultural Assets*

[18] Chittenden County Regional Planning Commission, GIS Database; October 14, 2021. Note the location of the Municipal Office needs to be corrected (collocated with Law Enforcement, not Fire) and will be during the annual update process.

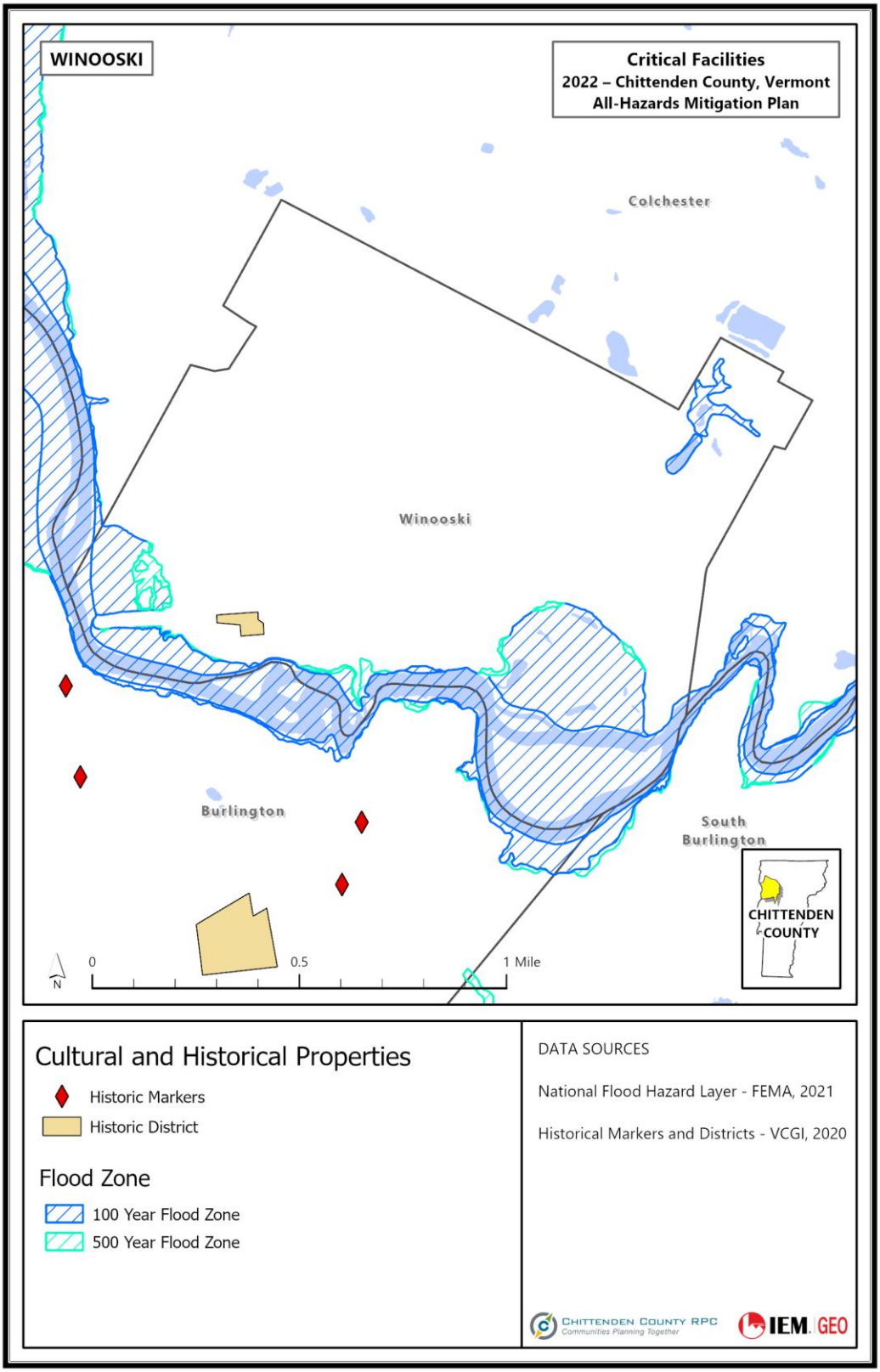



**Figure 18.9: Cultural and Historic Properties Exposed to FEMA Floodplains, City of Winooski[19]**

[19] National Flood Hazard Layer, FEMA 2021; Vermont Center for Geographic Information, 2022. Note the historic district boundaries need to be corrected and will be during the annual update process.

## 18.7 CAPABILITY ASSESSMENT

### Capabilities Assessment Summary Ranking and Gap Analysis

*Planning and Regulatory*

The City of Winooski has significant plans and regulatory capabilities that support and address hazard mitigation:

- Master Plan
- Hazard-specific Plan
- Transportation Plan
- Land Use Regulations
- Floodplain Management Ordinance
- Continue to work with the CCRPC to expand municipal capabilities.

**Table 18.22: Summary of Planning Regulatory Capabilities, City of Winooski**

| Summary of Planning Regulatory Capabilities, City of Winooski | |
|---|---|
| Comprehensive Plans | X |
| Capital Improvement Plans | - |
| Economic Development Plan | X |
| Local Emergency Management Plan | X |
| Continuity of Operations Plan | - |
| Transportation Plan (Town Plan, MRGP, Bridge) | X |
| Stormwater Management Plan | - |
| Community Wildfire Ordinance/Protection Plan | - |
| Land Use Regulations (Zoning, subdivisions) | X |
| Floodplain Management Ordinance/Plan | X |
| TOTAL | 6 |

City is built out. Winooski River is the primary hazard. The City is above the based flood elevation for the river therefore regulations are adequate to protect property and reduce risk.

*Administrative and Technical Capabilities*

The City of Winooski has identified significant administrative and technical capabilities that support and address hazard mitigation.

### Table 18.23: Summary of Administrative and Technical Capabilities, City of Winooski

| Summary of Administrative and Technical Capabilities, City of Winooski | |
|---|---|
| Planner(s) or engineers with knowledge of land development | X |
| Engineer/ professionals trained in construction practices related to buildings and/or infrastructure | X |
| Planners /Engineer(s) with an understanding of natural and/or manmade hazards | X |
| Floodplain Manager (Mutual Aid Compact) | - |
| Surveyor(s)/Building Inspector(s) | X |
| Staff with education or expertise to assess the community's vulnerability to hazards | X |
| Emergency Manager | X |
| Personnel skilled in GIS and/or HAZUS | X |
| Scientist familiar with hazards of the community | - |
| Civil Engineer | X |
| Grant writer(s) | - |
| Warning systems or services (automated callout, sirens, etc.) | X |
| TOTAL | 7 |

The City of Winooski has significant administrative and technical capabilities and has identified the following areas for improvement:

- Additional funds provided to increase staffing and technology.
- Professional staff trained in construction practices that reduce hazard impacts related to buildings and infrastructure.
- Continue to work with the CCRPC to expand municipal capabilities.

*Fiscal Capability*

The City of Winooski has identified significant fiscal capabilities that support and address hazard mitigation.

### Table 18.24: Summary of Fiscal Capabilities, City of Winooski

| Summary of Fiscal Capabilities, City of Winooski | |
|---|---|
| Capital improvements project funding | X |
| Authority to levy taxes for specific purposes | X |
| Fees for water, sewer, gas, or electric services | X |
| Impact fees for new development | - |
| Storm water utility fee | - |
| Incur debt through general obligation bonds and/or special tax bonds | X |
| Incur debt through private activities | - |
| Community Development Block Grant | X |
| Other federal funding programs | - |

| | |
|---|---|
| Historic Preservation | X |
| State funding programs | X |
| Public/Private partnership funding sources | X |
| TOTAL | 8 |

The City of Winooski has significant fiscal capabilities and has identified the growing of city staff as an area for improvement.

### *Program/Organization Capabilities*

The City of Winooski has not identified any program or organizational capabilities that currently support hazard mitigation.

**Table 18.25: Summary of Program/Organization Capabilities, City of Winooski**

| Summary of Program/Organization Capabilities, City of Winooski | |
|---|---|
| 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 CONTINUED COMPLIANCE

Winooski 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. According to the National Flood Insurance Program[20] there are no Repetitive Loss Properties located in the City of Winooski. The City Zoning Administrator and the City's Development Review Board (DRB) monitor compliance with the National Flood Insurance Program. The Development Review Board (DRB) reviews and adjudicates applications for development within the floodplain including any proposed new construction in the Special Flood Hazard Area (SFHA), which is highly regulated. The City also works with the Vermont Department of Environmental Conservation (DEC) to respond to any local requests for Floodplain identification including questions about mapping.
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 City's Floodplain Management regulations. Additionally, the city will continue to:

[20] National Flood Insurance Program, Community Status Report, September 2021.

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

In an effort to meet NFIP requirements, the City of Winooski 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 city will also continue to incorporate into future planning documents, including HMP updates, changes to the locations, and designations of mapped floodplains.

**Table 18.26: National Flood Insurance Program Status, City of Winooski[21]**

| 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 |
|---|---|---|---|---|---|---|
| 7/18/2011 | 281 | 294,717 | $78,815,300 | 204 | $2,618,614 | 0 |

*Support for Municipal Capabilities*

It should be noted that the Chittenden County Regional Planning Commission (RPC) 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 18.27: Capability Assessment Summary Ranking for City of Winooski**

| Planning and Regulatory | Administrative and Technical | Financial | Education and Outreach |
|---|---|---|---|
| High | High | Medium | - |

## 18.8 RESILIENCE TO HAZARDS

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

- Not enough City Staff
- Housing
- Appropriated general fund budgets (lack of)

[21] National Flood Insurance Program, Community Status Report, May 2022, VEMA Repetitive Loss Properties data.

- Aging Infrastructure
- Airport flight path/noise
- Limited road network/Winooski River Bridge

## 18.9 MITIGATION ACTIONS

### *Changes in Priorities*

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

### *Goals and Objectives*

The City of Winooski adopted the five regional goals defined in Section 6, Mitigation Strategy. In addition, the following vision statements were defined during the mitigation strategy development process for this Plan update:

- Continued replacement of 100+-year-old water mains consistent with our water distribution masterplan schedule.
- Improved transportation network (better roadway conditions, enhanced pedestrian and bike facilities
- Underground existing overhead utilities along the Main Street corridor
- Improve cyber-security measures for city-wide networks.
- Expand housing stock, especially to accommodate larger families
- To be more reflective of those we most serve, increase staffing levels to keep up with service demands

### *Status of Previous Actions*

The City of Winooski reviewed its Mitigation Actions described in the 2017 *MHAHMP* and noted the status as documented in Table 18.28.

**Table 18.28: Status of Previous Mitigation Actions**

| Action Date/Winooski | Action Number | Title of project | Hazard(s) | 2022 Status Update |
|---|---|---|---|---|
| **2017-1** | **A-1** | Upgrade pipes, culverts, catch basins, manholes, etc. on discrete streets | Severe Rainstorm, Water Pollution | Some progress made and this is an ongoing activity. Ongoing move to 2022 actions. |
| **2017-2** | **B-1** | Catch Basin cleaning & street sweeping | Severe Rainstorm, Flooding, Fluvial Erosion, and Water Pollution | Ongoing activity, integrate into action A-1 above as part of 2022 actions. |

| | | | | |
|---|---|---|---|---|
| **2017-3** | **B-2** | Land development proposal review & regulations. | Severe Rainstorm, Flooding, Fluvial Erosion and Water Pollution | Ongoing activity |
| **2017-4** | **B-3** | Begin implementation of the Flow Restoration Plan for Morehouse Brook. | Severe Rainstorm, Flooding, Fluvial Erosion and Water Pollution | Ongoing activity |
| **2017-5** | **B-4** | Develop Phosphorus Control Plan and begin to implement plans to reduce overall loading of phosphorus from within municipal boundaries that is eventually discharged into Lake Champlain. | Severe Rainstorm, Flooding, Fluvial Erosion and Water Pollution | Completed: Plan developed and submitted to DEC |
| **2017-6** | **C-1** | Install Heat Trace Line Service at vulnerable properties. | Extreme Temperature | Ongoing activity |

| | |
|---|---|
| **Acronym Key:** | Dam Failure: **DF** |
| | Extreme Temperatures: **ET** |
| | Flood: **F** |
| | Fluvial Erosion: **FE** |
| | Human Infectious Disease: **HID** |
| | Invasive Species: **IS** |
| | Severe Rainstorm: **SR** |
| | Severe Winter Storm: **SWS** |
| | Wildfire: **WF** |

The locations of previous FEMA Public Assistance Projects in the City of Winooski demonstrate that disaster costs related to recovery and mitigation activities include damage to roads and bridges; protective measures; and recreational or other site impacts

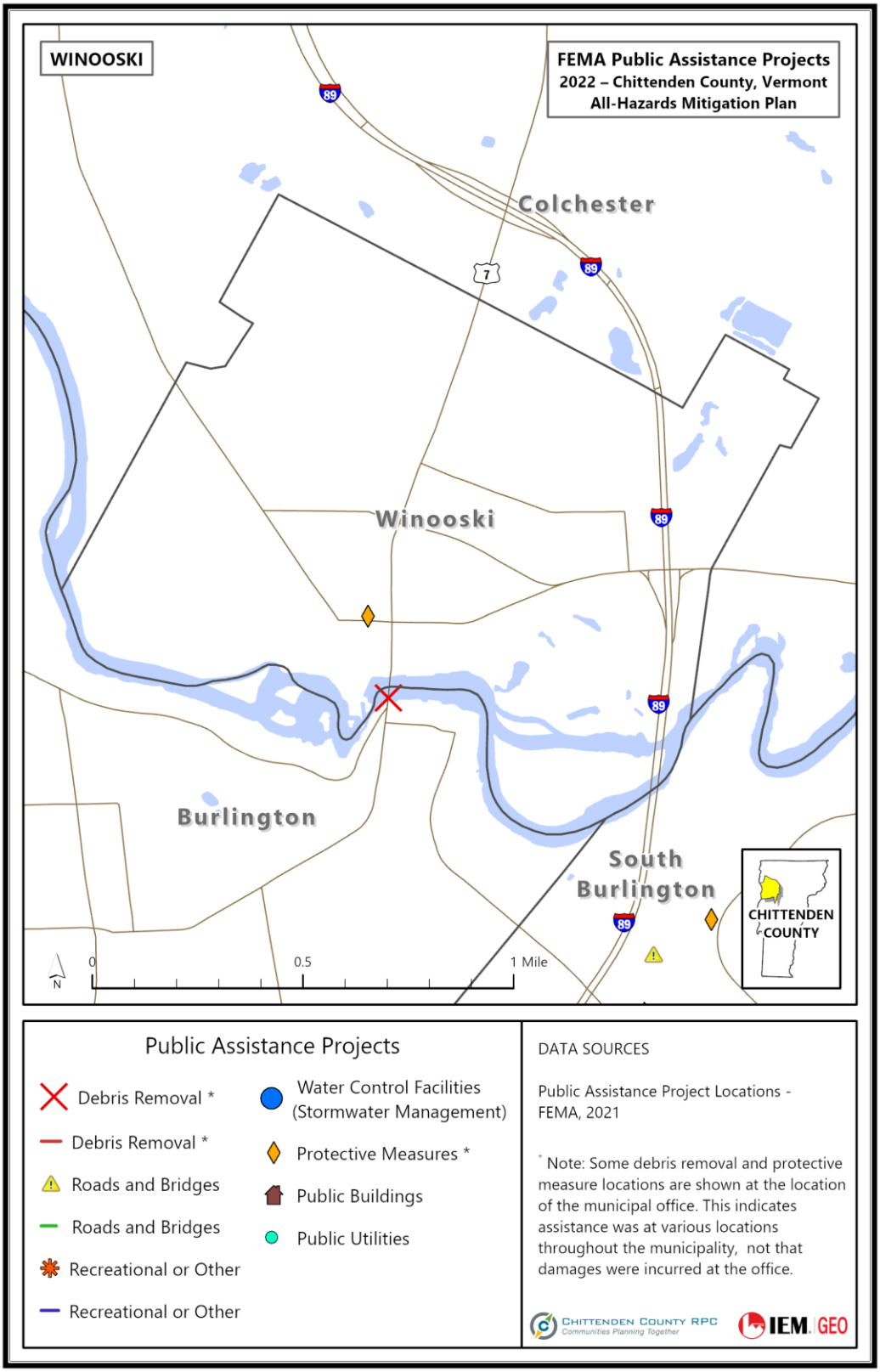



**Figure 18.10: Previous FEMA Public Assistance Projects, City Winooski[22]**

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

*New Mitigation Actions*

The City of Winooski identified seven 2022 Mitigation Actions that were prioritized based on the Mitigation Action Ranking System described in **Section 6, Base Plan**.

**Table 18.29: Action Plan for Implementation and Integration, City of Winooski**

| Action Number | Proposed Action | Lead Agency/ Department(s) | Risk Reduction Benefit | Hazard(s) Addressed | Estimated Cost | Funding Source | 2021 Status | Priority Ranking |
|---|---|---|---|---|---|---|---|---|
| **2022-1** | Upgrade pipes, culverts, catch basins, manholes, etc. on discrete streets; catch basin cleaning & street sweeping | Public Works | Addresses damage to new/existing public infrastructure and buildings. Mitigates temporary road and bridge closure and budgetary impacts | Wildfire, Severe Rainstorm, Severe Winter Storm, Flooding, Fluvial Erosion | High: $100,000 or greater | State VANR Grants, HMA, Municipal funds | 2022-2021 | Medium |
| **2022-2** | Install Heat Trace Line Service at vulnerable properties. | Public Works | Addresses potential loss of life and related medical issues from overheating. | Extreme Temperature | Medium: $10,000 to $100,00 | State VANR Grants, Municipal funds | 2022-2021 New | Medium |
| **2022-3** | Retrofit new and existing critical facilities to withstand impacts of identified hazards | Public Works | Addresses damage to new/existing public infrastructure and buildings | Wildfire, Severe Rainstorm, Severe Winter Storm, Flooding, Fluvial Erosion | High: $100,000 or greater | State VANR Grants, HMA, Municipal funds | 2022-2021 New | High |
| | | | | | | | | |
| **2022-5** | Underground existing overhead utilities along the Main Street corridor | Public Works | Addresses damage to new/existing public infrastructure and buildings. Mitigates temporary road and bridge closure and budgetary impacts | Wildfire, Severe Rainstorm, Severe Winter Storm, Flooding, Fluvial Erosion | High: $100,000 or greater | State VANR Grants, HMA, Municipal funds | 2022-2021 | Medium |
| **2022-6** | Improve cyber-security measures for city-wide networks. | IT Team | - | Crime | Medium: $10,000 to $100,00 | Municipal funds | 2022-2021 | Medium |
| **2022-7** | Airport Noise Mitigation | Planning and Zoning | - | SIP | Medium: $10,000 to $100,00 | Municipal funds and grants | 2022-2021 | High |

*Action Plan for Implementation and Integration*

The City of Winooski identified several existing plans or planning processes that can serve to integrate hazard mitigation during the 2022-2027 planning cycle. The city will incorporate the mitigation actions outlined in this plan into the town plan during the next plan update process in 2027. The city 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 18.30: Action Plan for Implementation and Integration, City of Winooski**

| Existing Plan or Procedure | Description of How Mitigation will be Incorporated or Integrated |
|---|---|
| Integrate goals into the 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 the floodplain management program (NFIP) | Support Floodplain Manager who is responsible for floodplain management. |
| Enhance floodplain management through Community Rating System (CRS) | Work with the 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 the 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. |
| Incorporate goals into day-to-day development policies, reviews & priorities | Continue work with Planning and Zoning to incorporate mitigation into day-to-day activities. |

## 18.10 ANNEX MAINTENANCE PROCEDURES

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

**Table 18.31: City of Winooski Plan Maintenance Responsibilities for the *Chittenden County*, Vermont Multi-Jurisdictional All-Hazards Mitigation Plan, Base Plan**

| | |
|---|---|
| **Monitoring the Plan** | • Participate in the monitoring process as requested by the CCRPC staff<br>• Assist in collecting and analyzing data<br>• Assist in disseminating reports to stakeholders and the public<br>• Maintain records and documentation of all jurisdictional monitoring activities<br>• 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<br>• Assist in collecting and analyzing data<br>• Assist in disseminating reports to stakeholders and the public<br>• Maintain records and documentation of all jurisdictional monitoring activities<br>• 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<br>• Collect and report data to the Update Coordinator<br>• Maintain records and documentation of all jurisdictional plan review and revision activities<br>• 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 18.32: City of Winooski Jurisdiction Annex Maintenance Procedure**

| Activity | Procedure and schedule | Outcome |
|---|---|---|
| **Monitoring the Annex** | Schedule the annual plan review with jurisdiction planning team.<br>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:<br>Status update of all mitigation actions<br>Summary of any changes in hazard risk or vulnerabilities and capabilities<br>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.<br>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 AHMPUC to identify the method and schedule for the five-year update of the *MJAHMP*.<br>2. Participate in the planning process.<br>3. Provide input related to the plan components.<br>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. |

## 18.11 ANNEX ADOPTION

The City of Winooski 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.

## 18.12 ATTACHMENTS

**ATTACHMENT 1: Adoption Resolution**

**ATTACHMENT 2: Planning Worksheets and Documentation**

**ATTACHMENT 3: Documentation of Public Participation**

**ATTACHMENT 4: Mitigation Actions**

**City of Winooski**
Vermont's Opportunity City

27 West Allen Street
Winooski Vermont 05404
802 655 6410
**winooskivt.gov**

# Resolution

## 2022 City of Winooski Local Hazard Mitigation Plan

**Whereas**, the City of Winooski has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the 2022 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 City of Winooski has developed and received conditional approval from Vermont Emergency Management (VEM) for its 2022, Vermont Local Hazard Mitigation Plan (Plan) under the requirements of 44 CFR 201.6; and

**Whereas**, the Plan specifically addresses hazard mitigation strategies, and Plan maintenance procedures for the City of Winooski and

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

**Whereas**, adoption of this Plan will make the City of Winooski eligible for funding to alleviate the impacts of future hazards; now therefore be it

**Resolved** by the Winooski City Council:

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

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 City Council by the Emergency Management Director or Coordinator.

5. **In Witness Whereof**, the undersigned have affixed their signature and the corporate seal of the City of Winooski this 5th day of December 2022.

Affirmative Vote:

Mayor

Councilor

Councilor

Councilor

/s/ Thomas Renner

Councilor

January 3, 2023

Adopted

Rejected

Attest (City Clerk)

January 3, 2023

Approved Date

## ATTACHMENT 2: Planning Worksheets and Documentation

| Natural Hazards Estimated Risk Matrix | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Winooski** | | 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 | | 0 | | | 0 |
| | 1= Less than 25% of developed area impacted | | | | | | | | | |
| | 2= Less than 50% of developed area impacted | | | | | | | | | |
| | 3= Less than 75% of developed area impacted | | | | | | | | | |
| | 4= Over 75% of developed area impacted | | 4 | | | | | 4 | 4 | |
| | | | | | | | | | | |
| **Consequences** | | | | | | | | | | |
| | | | | | | | | | | |
| Health & Safety Consequences | | | | | | | | | | |
| Key: | 0= No health and safety impact | | | 0 | 0 | | 0 | | | 0 |
| | 1= Few injuries or illnesses | | 1 | | | | | 1 | 1 | |
| | 2= Few fatalities or illnesses | | | | | | | | | |
| | 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 | | 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 | | 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 | | 2 | | | | | | 2 | |
| | 4= High direct and high indirect costs | | | | | | | | | |
| | | | | | | | | | | |
| **Sum of Area & Consequences Scores** | | | **9** | **3** | **1** | | **0** | **8** | **9** | **1** |
| | | | | | | | | | | |
| **Probability of Occurrence** | | | | | | | | | | |
| Key: | 1= Unknown but rare occurrence | | | | | | 0 | | | |
| | 2= Unknown but anticipate an occurrence | | | | | | | | | |
| | 3= 100 years or less occurrence | | | | | | | | | |
| | 4= 25 years or less occurrence | | 4 | 4 | 4 | | | | | 4 |
| | 5= Once a year or more occurrence | | | | | | | 5 | 5 | |
| | | | | | | | | | | |
| **Total Risk Rating** | | | | | | | | | | |
| | Total Risk Rating= | | **36** | **12** | **4** | | **0** | **40** | **45** | **4** |
| | 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** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Winooski** | | **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 | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1= Less than 25% of developed area impacted | | | 1 | 1 | 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 | | | | | | | | | | | |
| | | | | | | | | | | | | |
| **Consequences** | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Health & Safety Consequences | | | | | | | | | | | | |
| Key: | 0= No health and safety impact | | | | | | 0 | | | 0 | | |
| | 1= Few injuries or illnesses | 1 | | | 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 |
| | 1= Few properties destroyed or damaged | 1 | 1 | 1 | 1 | 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 | 1 | | | 1 | | 1 | | | |
| | 2= Resources damaged with long-term recovery | 2 | | | | | | | | | | |
| | 3= Resources destroyed beyond recovery | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Economic Disruption | | | | | | | | | | | | |
| Key: | 0= No economic impact | | | | | | | | | | | |
| | 1= Low direct and/or indirect costs | | | | | 1 | 1 | | 1 | 1 | | 1 |
| | 2= High direct and low indirect costs | 2 | | | 2 | | | 2 | | | | |
| | 3= Low direct and high indirect costs | | | 2 | | | | | | | | |
| | 4= High direct and high indirect costs | | 3 | | | | | | | | | |
| | | | | | | | | | | | | |
| **Sum of Area & Consequences Scores** | | **8** | **9** | **7** | **5** | **4** | **2** | **7** | **5** | **2** | | **3** |
| | | | | | | | | | | | | |
| **Probability of Occurrence** | | | | | | | | | | | | |
| Key: | 1= Unknown but rare occurrence | | | | | | | | | | | |
| | 2= Unknown but anticipate an occurrence | | | | | | | | | | | |
| | 3= 100 years or less occurrence | | | | | | | | | | | |
| | 4= 25 years or less occurrence | | | | | | | | | | | |
| | 5= Once a year or more occurrence | | | | | | | | | | | |
| | | | | | | | | | | | | |
| **Total Risk Rating** | | | | | | | | | | | | |
| | Total Risk Rating= | **24** | **36** | **28** | **15** | **8** | **10** | **35** | **25** | **8** | | **15** |
| | 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 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Winooski** | | **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 | |
| | 3= Less than 75% of developed area impacted | | | 4 | 3 | | |
| | 4= Over 75% of developed area impacted | | 4 | | | | |
| | | | | | | | |
| **Consequences** | | | | | | | |
| | | | | | | | |
| Health & Safety Consequences | | | | | | | |
| Key: | 0= No health and safety impact | | | | | 0 | |
| | 1= Few injuries or illnesses | 1 | | 1 | | | 1 |
| | 2= Few fatalities or illnesses | | 2 | | 2 | | |
| | 3= Numerous fatalities | | | | | | |
| | | | | | | | |
| Property Damage | | | | | | | |
| Key: | 0= No property damage | | | 0 | 0 | | |
| | 1= Few properties destroyed or damaged | 1 | 1 | | | 1 | 1 |
| | 2= Few destroyed but many damaged | | | | | | |
| | 3= Few damaged and many destroyed | | | | | | |
| | 4= Many properties destroyed and damaged | | | | | | |
| | | | | | | | |
| Environmental Damage | | | | | | | |
| Key: | 0= Little or no environmental damage | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1= Resources damaged with short-term recovery | | | | | | |
| | 2= Resources damaged with long-term recovery | | | | | | |
| | 3= Resources destroyed beyond recovery | | | | | | |
| | | | | | | | |
| Economic Disruption | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Key: | 0= No economic impact | | | | | | |
| | 1= Low direct and/or indirect costs | 1 | 1 | | | | |
| | 2= High direct and low indirect costs | | | | | 2 | 2 |
| | 3= Low direct and high indirect costs | | | 2 | | | |
| | 4= High direct and high indirect costs | | | | 3 | | |
| | | | | | | | |
| **Sum of Area & Consequences Scores** | | **4** | **8** | **7** | **8** | **5** | **5** |
| | | | | | | | |
| **Probability of Occurrence** | | | | | | | |
| Key: | 1= Unknown but rare occurrence | | | | | | 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 | | 5 | | | | |
| | | | | | | | |
| **Total Risk Rating** | | | | | | | |
| | Total Risk Rating= | **12** | **40** | **28** | **24** | **20** | **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** | | | | | | |

**Jurisdiction_ City of Winooski_____ Date: March 2022**

**Participants:**

**Name: John Audy Position/Title: Fire Chief Department/Agency: Winooski**

**WORKSHEET: CAPABILITY ASSESSMENT**

***Planning and Regulatory***

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

| **Plans** | • **Yes or No?**<br>• **Year** | • **Does the plan address hazards?**<br>• **Does the plan identify projects to include in the mitigation strategy?**<br>• **Can the plan be used to implement mitigation actions?** |
|---|---|---|
| Comprehensive/Master Plan | Yes. 2019 | Yes |
| Capital Improvements Plan | No | |
| Economic Development Plan | Yes. 2018 | |
| Impact fees for new development | Drafted | |
| Local Emergency Operations Plan | Yes | |
| Continuity of Operations Plan | No | |
| Transportation Plan | Yes. 2017 | |
| Stormwater Management Plan | No | |
| Community Wildfire Protection Plan | No | |
| Other special plans (e.g., brownfields redevelopment, disaster recovery, Local Waterfront Redevelopment Plan, climate change adaptation, etc.) | Yes. 2021 | Parks and Open Space Master Plan |
| **Building Code, Permitting, and Inspection** | **Yes or No?** | **Are codes adequately enforced?** |
| Building Code | Yes | Yes, through issuance of BLD permits, Certificates of Occupancy, and Certificates of Fitness |
| Building Code Effectiveness Grading Schedule (BCEGS) Score | No | |

| | | |
|---|---|---|
| Fire Department ISO rating | 4 | 2020 Assesment |
| Site Plan review requirements | Yes | Yes |
| **Land Use Planning and Ordinances** | **Yes or No?** | • **Is the ordinance an effective measure for reducing hazard impacts?**<br>• **Is the ordinance adequately administered and enforced?** |
| Zoning ordinance | Yes | Yes |
| Subdivision ordinance | Yes | Yes |
| Floodplain ordinance (Inundation Hazard Area) | Yes | Yes |
| Natural hazard specific ordinance (stormwater, steep slope, wildfire) | No | |
| Flood insurance rate maps | Yes | Yes |
| Acquisition of land for open space and public recreation uses | No | |
| Other | N/A | |
| **How can these capabilities be expanded and improved to reduce risk?** | | |
| City is built out. Winooski River is the primary hazard. The City is above the based flood elevation for the River therefore regulations are adequate to protect property and reduce risk. | | |

### *Administrative and Technical*

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

| Staff/Personnel Resources | Have Capability Y/N | Department/ Agency and Position | Effective Coordination? | Adequate Staffing? | Integrated into Mitigation Planning? |
|---|---|---|---|---|---|
| A. Planner(s) or engineer(s) with knowledge of land development and land management practices | Yes | City Engineer, Planning & Zoning Manager, Director of Public Works | Yes | Yes | Yes |

| | | | | | |
|---|---|---|---|---|---|
| B. Engineer/professionals trained in construction practices related to buildings and/or infrastructure | Yes | Public Works | Yes | Yes | |
| C. Planners/Engineer(s) with an understanding of natural and/or manmade hazards | Yes | Planning & Zoning Manager, Director of Public Works | Yes | Yes | Yes |
| D. Floodplain manager | No | | | | |
| E. Surveyor(s) | No | | | | |
| F. Staff with education or expertise to assess the community's vulnerability to hazards | Yes | Fire, Public Works | Yes | Yes | Yes |
| G. Personnel skilled in GIS and/or HAZUS | Yes | Planning & Zoning Manager | Yes | Yes | Yes |
| H. Scientist familiar with hazards of the community | No | | | | |
| I. Emergency manager | Yes | City Manager/Fire Chief | Yes | Yes | Yes |
| J. Grant writer(s) | NO | | | | |
| k. Warning systems or services (automated callout, sirens, etc.) | Yes/ Nixle | ALL | Yes | Yes | Yes |
| **How can these capabilities be expanded and improved to reduce risk?** | | | | | |
| Additional funds provided to increase staffing and technology. | | | | | |

### *Financial*

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

| Funding Resource | Access/ Eligibility (Y/N) | Has the funding resource been used in the past and for what type of activities/ | Could the resource be used to fund future mitigation actions? |
|---|---|---|---|
| Capital improvements project funding | Y | Approved capital expenditures including public safety assets and projects. | Y |
| Authority to levy taxes for specific purposes | Y | Approved local government expenditures including capital expenses | Y |
| Fees for water, sewer, gas or electric services | Y | Water and sewer (storm and sanitary) fees. Water distribution, sewer treatment and distribution. | Y |
| Impact fees for new development | N | | |
| Storm water utility fee | Y | Stormwater distribution system | Y |
| Incur debt through general obligation bonds and/or special tax bonds | Y | Approved Capital expenditures | Y |

| | | | |
|---|---|---|---|
| Incur debt through private activities | N | | |
| Community Development Block Grant | | | |
| Other federal funding programs | Y | Multiple programs municipal government eligible | Y |
| State funding programs | Y | Multiple programs municipal government eligible | Y |
| Public/Private partnership funding sources | Y | Development | unknown |
| **How can these capabilities be expanded and improved to reduce risk?** | | | |
| Grow city staffing | | | |

### *Education and Outreach*

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

| Program/Organization | Yes/No | Describe program/organization and how relates to disaster resilience and mitigation.<br><br>Could the program/organization help implement future mitigation activities? |
|---|---|---|
| Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | | |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education, household recycling, etc.) | | |
| Natural disaster or safety related school programs | | |
| StormReady certification | | |
| Firewise Communities certification | | |
| Public-private partnership initiatives addressing disaster-related issues | | |
| Other | | |

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

## WORKSHEET: NFIP SURVEY FORM

### National Flood Insurance Program (NFIP) Survey Form

Jurisdiction: _____ Floodplain/NFIP Administrator_____

Phone: _____Date:_____ Email: _____

Jurisdiction Participants: _____

Please provide the information below to document your community's participation in and continued compliance with the NFIP, as well as to identify areas for improvement that could be potential mitigation actions. Indicate the source of information, if different from the one included.

| NFIP Topic | Source of Information | Comments |
|---|---|---|
| **Insurance Summary** | | |
| How many NFIP policies are in the community? What is the total premium and coverage? | State NFIP Coordinator or FEMA NFIP Specialist | |
| How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage? | FEMA NFIP or Insurance Specialist | |
| How many structures are exposed to flood risk within the community? | Community Floodplain Administrator (FPA) | |
| Describe any areas of flood risk with limited NFIP policy coverage | Community FPA and FEMA Insurance Specialist | |
| **Staff Resources** | | |
| Is the Community FPA or NFIP Coordinator certified? | Community FPA | |
| Is floodplain management an auxiliary function? | Community FPA | |
| Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability) | Community FPA | |
| What are the barriers to running an effective NFIP program in the community, if any? | Community FPA | |
| **Compliance History** | | |

| | | |
|---|---|---|
| Is the community in good standing with NFIP? | State NFIP Coordinator, FEMA NFIP Specialist, community records | |
| Are there any outstanding compliance issues (i.e., current violations)? | | |
| When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)? | | |

## WORKSHEET #6: THE MITIGATION STRATEGY – GOALS AND OBJECTIVES

### STEP 1: Develop Hazard Mitigation Goals:

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

**A. What are *Most Valuable Top Three Assets* most vital to your community?**

This list could include assets that fall into categories such as
Planning Team members should brainstorm and identify many assets and then identify the top three.

| | Our Community's Top Assets |
|---|---|
| | Fire Department |
| | City Hall/Police Station (Same facility) |
| | Wastewater Treatment Facility |
| | Hydro Dam (In Winooski but owned by Burlington Electric) |
| | Schools |
| | Community Center/Senior Center |
| | |
| | |
| | |

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

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

| Our Community's Three Biggest Challenges | |
|---|---|
| Not enough City Staff | |

| | |
|---|---|
| Housing | |
| Appropriated general fund budgets (lack of) | |
| Aging Infrastructure | |
| Airport flight path/noise | |
| Limited road network/Winooski River Bride | |
| | |

## C. What is your *Vision of your Community* in 10 years?

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

| **In ten years, I want my community to:** |
|---|
| DPW related items;<br>• Continued replacement of 100+ year old watermains consistent with our water distribution masterplan schedule.<br>• Improved transportation network (better roadway conditions, enhanced pedestrian and bike facilities<br>• Underground existing overhead utilities along the Main Street corridor<br>• Improve cyber-security measures for city-wide networks. |
| Housing;<br>• Expand housing stock, especially to accommodate larger families |
| City Services;<br>To be more reflective of those we most serve, increase staffing levels to keep up with service demands |
| |
| |
| |
| |
| |

| |
|---|
| |

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

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

## D. Develop the Chittenden County Vision Statement

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

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

## E. Identify Chittenden County Goals and Objectives

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

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

| Chittenden County 2022 Hazard Mitigation Plan Goals and Objectives - DRAFT | |
|---|---|
| **Goal 1:** | **Protect life and property from natural and manmade hazards** |
| **Objective 1.1** | Maximize the utilization of the latest technology to provide adequate warning, communication, and mitigation of hazard events |
| **Objective 1.2** | Reduce the danger to, and enhance protection of, high risk areas during hazard events |
| **Objective 1.3** | Protect and maintain critical facilities and services |
| | |
| **Goal 2:** | **Protect new and existing properties** |
| **Objective 2.1** | Reduce repetitive losses to the National Flood Insurance Program (NFIP) |
| **Objective 2.2** | Maximize insurance coverage, including NFIP, to provide financial protection against hazard events |
| **Objective 2.3** | Enact and enforce regulatory measures to ensure that development will not put people in harm's way or increase threats to existing properties |
| | |
| **Goal 3:** | **Promote a Whole Community approach to understanding hazard risks and implementing mitigation initiatives** |

| Chittenden County 2022 Hazard Mitigation Plan Goals and Objectives - DRAFT | |
|---|---|
| **Objective 3.1** | Heighten public awareness of the full range of natural and human-caused hazards faced locally and regionally |
| **Objective 3.2** | Educate the public on actions they can take to prevent or reduce the loss of life or property from all hazards. |
| **Objective 3.3** | Maximize participation of property owners in protecting their properties |
| **Objective 3.4** | Train and empower public officials and other community leaders on ways to build on current mitigation effort |
| **Objective 3.5** | Build and expand the cadre of committed volunteers to safeguard the community before, during, and after a disaster |
| | |
| **Goal 4:** | **Foster countywide collaborative mitigation efforts to decrease hazard vulnerability** |
| **Objective 4.1** | Build and support local partnerships to lessen vulnerability to hazards |
| **Objective 4.2** | Build hazard mitigation concerns into the county and town planning and budgeting processes |
| | |
| **Goal 5:** | **Invest appropriately in areas planned for managed growth** |
| **Objective 5.1** | Identify potential sites for reuse, rehabilitation, redevelopment, infill, and brownfield remediation that avoid hazard-prone areas |
| **Objective 5.2** | Support mitigation initiatives and policies that protect cultural, economic, and natural resources |
| **Objective 5.3** | Preserve natural systems within areas targeted for development |
| **Objective 5.4** | Support hazard mitigation research and development that helps identify additional mitigation opportunities and incorporates climate change considerations |
| **Objective 5.5** | Improve and strengthen regional economic systems to increase and promote business opportunities for employers and employees |

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

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

____ *The goals and objectives are not comprehensive and need minor revision to cover the scope of all potential hazard vulnerabilities and mitigation actions that should be included in the plan.* ***With minor revision, they will also be applicable to my jurisdiction and no additional goals and objectives are needed****.*

____ *The goals are comprehensive as they relate to the county as a whole; however,* ***they do not sufficiently describe the goals and/or objectives for my jurisdiction****. Additional goals (and objectives) that should be considered for my jurisdiction are:*

Goal:

Objective:

Objective:

Goal:

Objective:

Objective:

Goal:

Objective:

Objective:

## Worksheet #7: The Mitigation Strategy – Actions

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

**Types of Mitigation Actions**

| Types of Mitigation Measures and Sample Mitigation Actions | | |
|---|---|---|
| **Local Plans and Regulations** | | |
| ***Mitigation Measure*** | ***Examples*** | |
| • Government authorities, policies, or codes that influence the way land and buildings are developed and built | • Comprehensive plans<br>• Land use ordinances<br>• Subdivision regulations<br>• Development Review<br>• Building codes and enforcement<br>• NFIP Community Rating System | • Capital improvement programs<br>• Open space preservation<br>• Stormwater management regulations and master plans<br>• Community wildfire protection plans, fuels Management & fire breaks |
| **Structure and Infrastructure Projects** | | |
| ***Mitigation Measure*** | ***Examples*** | |
| • Modifying existing public and certain private structures and infrastructure to protect or remove them from hazard areas.<br>• Create a built environment to reduce the impact of hazards.<br>• Many actions FEMA HMA eligible. | • Acquisitions and elevations of structures in flood prone areas<br>• Utility undergrounding<br>• Structural retrofits (e.g., shelters)<br>• Floodwalls and retaining walls | • Detention and retention structures<br>• Culverts<br>• Safe rooms |
| **Natural Systems Protection** | | |
| ***Mitigation Measure*** | ***Examples*** | |
| • Minimize damage and losses and preserve or restore the functions of natural systems. | • Sediment and erosion control<br>• Stream corridor restoration<br>• Forest management | • Conservation easements<br>• Wetland restoration and preservation |
| **Education and Awareness Programs** | | |
| ***Mitigation Measure*** | ***Examples*** | |
| Educate citizens, elected officials, and property owners about hazards how to mitigation them. Participate in national programs: StormReady, Firewise, etc. | • Radio or television spots<br>• Websites with maps and information<br>• Social media<br>• Real Estate disclosure | • Presentations to school groups or neighborhood organizations<br>• Mailings to residents in hazard-prone areas<br>• StormReady, Firewise |

In addition to the mitigation action categories thus described, the plan will compile and present a summary of preparedness actions (which will not be used for compliance with DMA 2000) that have been taken or are in place to prepare for or respond to hazard incidents, such as:

- Evacuation and sheltering
- Emergency Planning
  - Activating resources for response
  - Pre-staging equipment
  - Shutting off power to threatened areas
  - Closing streets or bridges
  - Monitoring water levels
- Communications

Emergency Response Equipment (excluding emergency generators)

**Chittenden County Multi-Jurisdictional Hazard Mitigation Plan**
**Sample Blank Mitigation Action Worksheet**

(Name of Jurisdiction)

| **Action Worksheet** | | | |
|---|---|---|---|
| **Project Name:** | Overhead Utility undergrounding – Main Street | | |
| **Project Number:** | | | |
| **Risk / Vulnerability** | | | |
| **Hazard of Concern:** | High winds, severe winter storms | | |
| **Description of the Problem:** | Electrical and internet/communications services susceptible to outages from storm events. The Main Street corridor is a major transportation route and consists of higher density mixed-use multi-story buildings. | | |
| **Action or Project Intended for Implementation** | | | |
| **Description of the Solution:** | **Undergrounds electrical and communication services.** | | |
| **Is this project related to a Critical Facility?** | **Yes X** | **No** ☐ | |
| If yes, this project must intend to protect the Critical Facility to the 500-year flood event or the actual worst damage scenario, whichever is greater. | | | |
| **Level of Protection:** | | **Estimated Benefits (losses avoided):** | unknown |
| **Useful Life:** | 50 years | | |
| **Estimated Cost:** | $2,600,000 | | |
| **Plan for Implementation** | | | |
| **Prioritization:** | High | **Desired Timeframe for Implementation:** | 2024 |
| **Estimated Project Timeline:** | 2024 | **Potential Funding Sources:** | City Funds, Grants |
| **Responsible Organization:** | City of Winooski, GMP, Telecommunication agencies | **Implementation through Integration with Local Planning Mechanisms.** | Yes |
| **Three Alternatives Considered (including No Action)** | | | |
| **Alternatives:** | **Action** | **Estimated Cost** | **Evaluation** |
| | No Action | $0 | |
| | | | |
| | | | |
| **Progress Report (for plan maintenance)** | | | |
| **Date of Status Report:** | | | |
| **Report of Progress:** | | | |

| | |
|---|---|
| **Update Evaluation of the Problem and/or Solution:** | |

## Chittenden County Multi-Jurisdictional Hazard Mitigation Plan
## Sample Completed Mitigation Action Worksheet

Chittenden County

(Name of Jurisdiction)

| **Action Worksheet** | | | |
|---|---|---|---|
| **Project Name:** | Backup power for critical facilities | | |
| **Project Number:** | CC-1 | | |
| **Risk / Vulnerability** | | | |
| **Hazard of Concern:** | All hazards: flood, high winds, severe winter storm, and others | | |
| **Description of the Problem:** | Identify and rank in priority assets requiring backup power sources and determine processes for project funding allocation and order of projects implemented | | |
| **Action or Project Intended for Implementation** | | | |
| **Description of the Solution:** | Develop a list of all fire, law enforcement, water treatment, government, and medical facilities that require back up power. Identify those currently protected and those that do not have generators or other backup. Develop cost estimates and rank facilities based on community needs and funding availability. | | |
| **Is this project related to a Critical Facility?** | **Yes x** | **No** ☐ | |
| If yes, this project must intend to protect the Critical Facility to the great of the two: 500-year flood event, or the actual worst damage scenario. | | | |
| **Level of Protection:** | 500-year | **Estimated Benefits (losses avoided):** | Maintain continuity of operations for all services, minimize loss of life or property damage stemming from asset failure. |
| **Useful Life:** | 30 years | | |
| **Estimated Cost:** | Identify per project location | | |
| **Plan for Implementation** | | | |
| **Prioritization:** | High | **Desired Timeframe for Implementation:** | One year |
| **Estimated Project Timeline:** | Two years | **Potential Funding Sources:** | BRIC, local match, |
| **Responsible Organization:** | Chittenden County Office of Emergency Management (can't find such an office) | **Implementation through Integration with Local Planning Mechanisms.** | Emergency Operations Plans, COOPs |
| **Three Alternatives Considered (including No Action)** | | | |
| **Alternatives:** | **Action** | **Estimated Cost** | **Evaluation** |
| | No Action | $0 | Potential for continued loss of life and property damage |
| | Implement program at all vulnerable sites at one time | $ 25 million | Projects can only be completed as funding allows |
| | Select one facility from each jurisdiction to include in this effort | $10 million | There are multiple critical projects in each jurisdiction |
| **Progress Report (for plan maintenance)** | | | |
| **Date of Status Report:** | | | |

| | |
|---|---|
| **Report of Progress:** | |
| **Update Evaluation of the Problem and/or Solution:** | |

**WORKSHEET #8: PRIORITIZE MITIGATION ACTIONS**

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

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

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

**Step 1: Review Ranking System for Prioritizing Mitigation Actions**

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

| Category | Points | Criteria |
|---|---|---|
| **(1) Life Safety/Property Protection** | 4 | Likely to protect more than 50% of the population and/or critical infrastructure and community assets. |
| | 3 | Likely to protect at least 50 % of the population and/or critical infrastructure and community assets. |
| | 2 | Could potentially protect up to 25 % of the population and could potentially protect critical infrastructure and community assets |
| | 1 | Could potentially protect up to 10 % of the population and could potentially protect critical infrastructure and community assets |
| | 0 | Potential for protecting lives and critical infrastructure and/or community assets cannot be determined at this time. |
| | | |
| **(2) Funding Availability** | 4 | Little to no direct expenses |
| | 3 | Can be funded by operating budget |
| | 2 | Grant funding identified |
| | 1 | Grant funding needed |
| | 0 | Potential funding source unknown |
| | | |
| **(3) Probability of Matching Funds** | 4 | Funding match is available, or funding match not required |
| | - | N/A |
| | 2 | Partial funding match available |
| | - | N/A |
| | 0 | No funding match available or funding match unknown |
| | | |
| **(4) Benefit Cost Review** | 4 | Likely to meet Benefit Cost Review |
| | - | N/A |
| | 2 | Benefit Cost Review not required |
| | - | N/A |
| | 0 | Benefit Cost Review unknown |

| Category | Points | Criteria |
|---|---|---|
| | | |
| **(5) Environmental Benefit** | 4 | Environmentally sound and relatively easy to implement; or no adverse impact on environment. |
| | 3 | Environmentally acceptable and not anticipated to be difficult to implement |
| | 2 | Environmental concerns are somewhat difficult to implement because of complex requirements |
| | 1 | Difficult to implement because of significantly complex requirements and environmental permitting |
| | 0 | Very difficult to implement due to extremely complex requirements and environmental permitting problems |
| | | |
| **(6) Technical Feasibility** | 4 | Proven to be technically feasible |
| | - | N/A |
| | 2 | Expected to be technically feasible |
| | - | N/A |
| | 0 | Technical feasibility unknown or additional information needed |
| | | |
| **(7) Timeframe of implementation** | 4 | 1 year or less (Short Term) |
| | - | N/A |
| | 2 | 2 – 5 years (Long-Term) |
| | - | N/A |
| | 0 | More than 5 years (Long-Term) |
| **Minimum = 0**<br>**Maximum = 28** | **Ranking Level:**<br>**Low: 0-10 Medium: 11-20 High: 21-28** | |

**Step 2: Prioritize Mitigation Actions**

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

**Instructions:**

1. Provide the information requested in Columns (A), (B), and (C).

2. Using the Ranking System provided above, assign a numerical score for each category in Columns (1) through (7). If exact data is unavailable, a "best guess" is acceptable.

3. Add the individual scores in Columns (1) through (7) to determine a *Total Score* (Column 8).

4. The total score represents the action's priority. Using the Ranking Level guide provided in the last row of the Mitigation Ranking System criteria (above), assign each action a ranking of high, medium, or low.

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

***Abbreviations for Project Types:**
LPR - Local Plans and Regulations
SIP - Structure and Infrastructure Projects
NSP - Natural Systems Protection
EAP - Education and Awareness Program

### Prioritization Worksheet

**JURISDICTION: _____** **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 |
| Sample : 1 | **Elevate 4 homes on Elm Street** | **Flood/ SIP** | **1** | 1 | 2 | 4 | 3 | 4 | S T | 15 | M |
| | **Utility Undergrounding – Main St.** | **NSP** | **1** | 1 | 2 | 0 | 4 | 4 | 2 | 14 | M |
| | **Airport Noise Mitigation** | **SIP** | **3** | 3 | 4 | 4 | 4 | 4 | 4 | 26 | H |
| | | | | | | | | | | | |
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## 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:<br>• Protect public safety and prevent loss of life and injury.<br>• Lessen impact to existing and future development.<br>• 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.<br><br>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.<br><br>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 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<br><br>Or<br><br>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.<br><br>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?<br>• **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?<br>• **Long-term solution:** does the action solve the problem or only a symptom?<br>• **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?<br>• **Funding allocated:** does the jurisdiction have the funding to implement the action or can it readily be obtained?<br>• **Time:** can the action be accomplished in a timely manner?<br>• **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?<br>• **Local champion or proponent:** is there a respected community member willing to help see the action to completion?<br>• **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?<br>• **Existing local authority:** are proper laws, ordinances, and resolutions in place to implement the action?<br>• **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?<br>• **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?<br>• **Contribution to economic goals:** does the action contribute to community economic goals, such as capital improvements or economic development?<br>• **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?<br>• **Impact on endangered species:** how will this action impact endangered species?<br>• **Impact on hazardous materials and waste sites:** how will this action impact hazardous materials and waste sites?<br>• **Consistency with community environmental goals:** is this action consistent with community environmental goals?<br>• **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 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |