

*Adopted by the Town and Village of Albany on  
10/4/22*

**Town and Village of Albany, Vermont  
Multi-jurisdictional  
All-Hazards Mitigation Plan Update**

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**Prepared by:**

Town of Albany, Vermont

Town of Albany, Vermont  
CERTIFICATE OF LOCAL ADOPTION

Town and Village of Albany, Vermont  
Multi-jurisdictional  
All-Hazards Mitigation Plan Update

A Resolution Adopting the All-Hazards Mitigation Plan

WHEREAS, the Town of Albany has worked with the OPH Consulting Services to identify hazards, analyze past and potential future losses due to natural and human-caused disasters, and identify strategies for mitigating future losses; and

WHEREAS, the Town of Albany All-Hazards Mitigation Plan contains recommendations, potential actions and future projects to mitigate damage from disasters in Albany; and

WHEREAS, a meeting was held by the Town of Albany Selectboard to formally approve and adopt the Town of Albany All Hazards Mitigation Plan.

WHEREAS, 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

NOW, THEREFORE BE IT RESOLVED that the  
Town of Albany adopts this All-Hazards  
Mitigation Plan for the town.

10/4/22

Date B. J. J. J.

Selectman Phillip J. J.

Selectman

Selectman

Debra Ann Deffron  
Attested to by City Clerk

B. J. J. J.

Selectboard Chair

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Date

Chad [Signature]

Trustee

Kevin M. [Signature]

Trustee

\_\_\_\_\_

Village Trustee

Selva Ann [Signature]

Attested to by Village of Albany M01VRRSOR

## Executive Summary

In February 2022, the Town of Albany began to update the Town and Village of Albany Multi-Jurisdictional All-Hazard Mitigation Plan. The results of this work are contained herein and represent the collaborative efforts of the Town of Albany Hazard Mitigation Planning Team and associated residents, towns and agencies that contributed to the development of this plan. As hazard mitigation is a sustained effort to permanently reduce or eliminate long-term risks to people and property from the effects of reasonably predictable hazards, the town has communicated its efforts related to developing this plan to its residents and surrounding municipalities, providing a formal opportunity to provide input and review relevant sections of the plan. Along these lines, the town has documented the planning process so that future updates can follow an efficient pattern of capturing information as means of establishing institutional memory related to mitigation. In realization that eligibility to receive federal hazard mitigation grants and optimize state-level reimburse or “match” dollars during a federally declared disaster is dependent on federally approved plan, the town remains committed to sustaining its mitigation efforts and by developing this plan, will have a guide for action that will foster enhanced emphasis on mitigation in the years to come. The town realizes the importance of mitigation inherent to its own resilience as well as a means to establishing strong partnerships with regional support agencies and associations, state government and FEMA. As the town moves towards formally adopting this Local All-Hazards Mitigation Plan, the purpose of this plan is to:

- Identify specific natural, technological and societal hazards that impact the town of Albany
- Prioritize hazards for mitigation planning
- Recommend town-level goals and strategies to reduce losses from those hazards
- Establish a coordinated process to implement goals and their associated strategies by taking advantage of available resources and creating achievable action steps

This plan is organized into 5 Sections:

**Section 1: Introduction and Purpose** explains the purpose, benefits, implications and goals of this plan. This section also describes demographics and characteristics specific to Albany and describes the planning process used to develop this plan.

**Section 2: Hazard Identification** expands on the hazard identification in the Albany Town Plan (2016) with specific municipal-level details on selected hazards.

**Section 3: Risk Assessment** discusses identified hazard areas in the town and reviews previous federally declared disasters as a means to identify what risks are likely in the future. This section presents a hazard risk assessment for the municipality, identifying the most significant and most likely hazards which merit mitigation activity. The most significant identified hazards for Albany are broken down in the grid below:

Severe winter/Ice storm	Extreme Cold	Flooding/Fluvial Erosion/Inundation
High Wind	Pandemic	

**Section 4: Vulnerability Assessment** discusses buildings, critical facilities and infrastructure in designated hazard areas and estimates potential losses.

**Section 5: Mitigation Strategies** begins with an overview of goals and policies in the most recent Albany Town Plan that support hazard mitigation and utilizes a current road inventory to formulate a work plan around major infrastructure projects. An analysis of existing municipal actions that support hazard mitigation, such as planning, emergency services and actions of the highway department are also included. The following all-hazards mitigation goals are summarized below:

- 1) Reduce at a minimum, and prevent to the maximum extent possible, the loss of life and injury resulting from all hazards.
- 2) Mitigate financial losses and environmental degradation incurred by municipal, educational, residential, commercial, industrial and agricultural establishments due to various hazards.
- 3) Maintain and increase awareness amongst the town's residents and businesses of the damages caused by previous and potential future hazard events as identified specifically in this Local All-Hazards Mitigation Plan.
- 4) Recognize the linkages between the relative frequency and severity of disaster events and the design, development, use and maintenance of infrastructure such as roads, utilities and storm water management and the planning and development of various land uses.
- 5) Maintain existing municipal plans, programs and ordinances that directly or indirectly support hazard mitigation.
- 6) Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan into the municipal comprehensive plan as described in 24 VSA, Section 4403(5). This mechanism will be developed by the Planning Commission, Selectboard and NVDA and integrate the strategies into the existing town plan as annexes until the next formal update occurs, where a section devoted to mitigation planning will be integrated into the plan.
- 7) Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan, particularly the recommended mitigation actions, into the municipal/town operating and capital plans & programs as they relate to public facilities and infrastructure within political and budgetary feasibility. The Planning Commission will review the updated LHMP and use language/actions from it to inform the integration and future update processes. Town Meeting Day will serve as the formal time that mitigation strategy budgetary considerations will be approved and incorporated into the town budget.

Section 5 also identifies and provides a detailed discussion on the following mitigation actions and while some of these correspond to emergency preparedness actions, the town holds that by engaging in these actions, they are working towards mitigating future losses to property and resident health and safety.

Action #1: Improve capabilities of existing road and storm water management infrastructure.

Action #2: Improve resilience to severe winter storms

Action #3: Reduce risk and impact of extreme cold

Action #4: Mitigate high wind vulnerability

- Action #5: Develop mitigation measures for water system protection and implementation plan
- Action #6: Raise public awareness of hazards and hazard mitigation actions
- Action #7: Continue fluvial geomorphology (in coordination with state recommendations and protocol) assessments and develop strategies in response to any identified risk
- Action #8: Improve resilience to pandemic event

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## SECTION 1: INTRODUCTION AND PURPOSE

### 1.1 Purpose and Scope of this Plan

This document constitutes an All-Hazards Mitigation Plan for the Town of Albany. While there is a distinct Village in the Town of Albany, with a separate board of trustees which serves to create a multi-jurisdictional approach to this plan, all forward reference to the “Town of Albany”, includes the Village as well. The purpose of this Local, Multi-jurisdictional All-Hazards Mitigation Plan Update is to continue to assist this municipality in identifying all hazards facing their community and in identifying strategies to begin to reduce the impacts of those hazards. The plan also seeks to better integrate and consolidate efforts of the municipality with those outlined in the Town Plan as well as efforts of NVDA, Vermont State agencies, FEMA and the State Hazard Mitigation Plan. The town is aware that community planning can aid significantly in reducing the impact of expected, but unpredictable natural and human-caused events. Community planning can aid significantly in reducing the impact of expected, but unpredictable natural and human-caused events. The goal of this plan is provide hazard mitigation strategies to aid in creating disaster resistant communities throughout Orleans County.

### 1.2 Hazard Mitigation

The 2018 Vermont State All-Hazards Mitigation Plan (SHMP) states:

*“The impact of anticipated yet unpredictable natural events can be reduced through community planning and implementation of cost effective, preventive mitigation efforts. The State of Vermont understands that it is not only less costly to reduce vulnerability to disasters than to repeatedly repair damage, but that we can also take proactive steps to protect our economy, environment and most vulnerable citizens from inevitable natural hazard events. This Plan recognizes that communities have the opportunity to identify mitigation strategies during all phases of emergency management (preparedness, mitigation, response, and recovery) to more comprehensively address their vulnerability. Though hazards themselves cannot be eliminated, Vermonters can reduce our vulnerability to hazards by improving our understanding of both the natural hazards we face and their potential impacts. The 2018 Vermont State Hazard Mitigation Plan (SHMP) presents the hazard impacts most likely to affect Vermont and a mitigation strategy to reduce or eliminate our most significant vulnerabilities.”*

Hazard mitigation strategies and measures can reduce or eliminate the frequency of a specific hazard, lessen the impact of a hazard, modify standards and structures to adapt to a hazard, or limit development in identified hazardous areas. This plan aligns and/or benefits from the State’s 2018 Hazard Mitigation Plan and as part of the Emergency Relief Assistance Funding (ERAF) requirements. With enhanced emphasis on community resiliency, many state agencies and local organizations have an increased awareness of the importance of mitigation planning and have produced plans and resources that towns can use to support their planning efforts. This plan will reference, when relevant, pertinent tools and resources that can be used to enhance mitigation strategies.

### **1.3 Hazard Mitigation Planning Required by the Disaster Mitigation Act of 2000**

Hazard mitigation planning is the process that analyzes a community's risk from natural hazards, coordinates available resources, and implements actions to reduce risks. According to *44 CFR Part 201: Hazard Mitigation Planning*, this planning process establishes criteria for State and local hazard mitigation planning authorized by Section 322 of the Stafford Act as amended by Section 104 of the *Disaster Mitigation Act of 2000*. Effective November 1, 2003, local governments now must have an approved local mitigation plan prior to the approval of a local mitigation project funded through federal Pre-Disaster Mitigation funds. Furthermore, the State of Vermont is required to adopt a State Pre-Disaster Mitigation Plan in order for Pre-Disaster Mitigation funds or grants to be released for either a state or local mitigation project after November 1, 2004.

There are several implications if the plan is not adopted:

- After November 1, 2004, Flood Mitigation Assistance Grant Program (FMAGP) funds will be available only to communities that have adopted a local Plan
- For disasters declared after November 1, 2004, a community without a plan is not eligible for HMGP project grants but may apply for planning grants under the 7% of HMGP available for planning
- For the Pre-Disaster Mitigation (PDM) program, a community may apply for PDM funding but must have an approved plan in order to receive a PDM project grant
- For disasters declared after October 14<sup>th</sup>, 2014, a community without a plan will be required to meet a greater state match when public assistance is awarded under the ERAF requirements (Emergency Relief Assistance Funding)

### **1.4 Benefits**

Adoption and maintenance of this Hazard Mitigation Plan will:

- Make certain funding sources available to complete the identified mitigation initiatives that would not otherwise be available if the plan was not in place
- Lessen the receipt of post-disaster state and federal funding because the list of mitigation initiatives is already identified
- Support effective pre and post-disaster decision making efforts
- Lessen each local government's vulnerability to disasters by focusing limited financial resources to specifically identified initiatives whose importance have been ranked
- Connect hazard mitigation planning to community planning where possible

### **1.5 All-Hazards Mitigation Plan Goals**

This All-Hazards Mitigation Plan establishes the following general goals for the town as a whole and its residents:

1. Reduce at a minimum, and prevent to the maximum extent possible, the loss of life and injury resulting from all hazards.

2. Mitigate financial losses and environmental degradation incurred by municipal, educational, residential, commercial, industrial and agricultural establishments due to various hazards.
3. Maintain and increase awareness amongst residents and businesses of the damages caused by previous and potential future hazard events as identified specifically in this Local All-Hazards Mitigation Plan.
4. Recognize the linkages between the relative frequency and severity of disaster events and the design, development, use and maintenance of infrastructure such as roads, utilities and storm water management and the planning and development of various land uses.
5. Maintain existing municipal plans, programs and ordinances that directly or indirectly support hazard mitigation.
6. Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan into the multi-jurisdictional municipal comprehensive plan as described in 24 VSA, Section 4403(5). This mechanism will be developed by the Joint Planning Commission, Selectboard and NVDA and integrate the strategies into the existing town plan as annexes until the next formal update occurs, where a section devoted to mitigation planning will be integrated into the plan.
7. Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan, particularly the recommended mitigation actions, into municipal operating and capital plans & programs as they relate to public facilities and infrastructure within political and budgetary feasibility. The Joint Planning Commission will review the plan and use language/actions from it to inform the integration and update process. Town Meeting Day will serve as the formal time that mitigation strategy budgetary considerations will be approved and incorporated into the town budgets

## 1.6 Town of Albany Population and Characteristics

**County:** Orleans

**Census Population:** 976

**Land Area:** 38.7 Square Miles

**Population Density:** 21.8 Persons Per Sq. Mi.

**Coordinates (Geographic Center):** 44°44" N 72°23" W

**Altitude:** 956 Feet ASL



### 1.6.1 Population:

The Town of Albany is a small rural community in north-central Vermont. This Orleans County community is part of an area known as the Northeast Kingdom and covers 18,232 contiguous acres. It is composed of forestland interspersed by active farmland and residential property. The 2020 U.S. Census reports a total population of 976 residents, 47.5% female and 52.5% male, indicating a population density of about 21.8 people per square mile acres. Population figures indicate that the number of people residing in Albany in the 1920's was 741. For full 2020 census data:

<https://data.census.gov/cedsci/profile?q=Albany%20town,%20Orleans%20County,%20Vermont&g=06000000US5001900475>

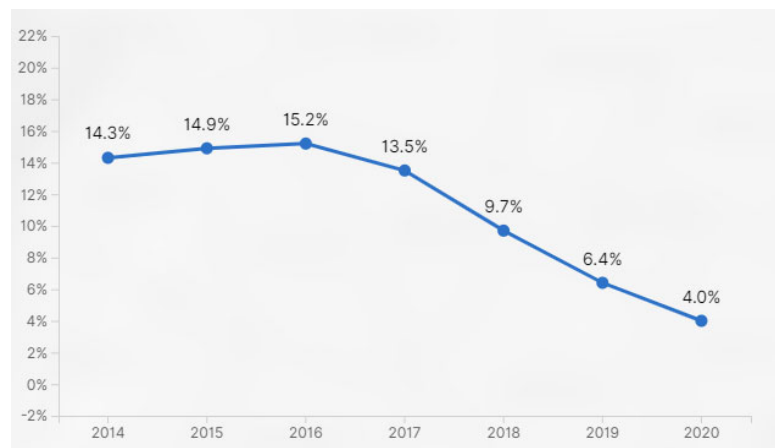
*Table 1-1 Town of Albany, selected population characteristics, 2020 Census*

Category	
Total Population	976
Median Age	46.1
Population age 65 years and over	19.9%
Population under 18 years old	24.5%
Population 18 and over	75.5%

### 1.6.2. Housing and Health

According to the 2020 Census, there are 497 housing units in Albany, with 72 vacant. Of the vacant housing stock, 85 are for seasonal, recreational and occasional use. Albany has 399 households, of which 274 are family households. The average household size is 2.48, and the average family size is 2.86. 26.6% of the population is disabled compared to 16.7% for the county. While 4% of the population does not have health insurance, this rate has decreased dramatically since 2014.

*Table 1-2 Town of Albany, population with no health insurance*



#### 1.6.4. Town Locations:

##### **Hospitals and medical centers near Albany:**

- Maple Leaf Nursing Home (about 9 miles away in Barton, VT)
- Newport Health Care Center (Nursing Home about 10 miles away in Newport, VT)
- Orleans Essex VNA (Home Health Center about 10 miles away in Newport, VT)
- Fletcher Allen Health Care – North Country Dialysis Unit (Dialysis Facility about 10 miles away in Newport, VT)
- North Country Hospital and Health Center (Critical Access Hospitals about 10 miles away in Newport, VT)
- Union House Nursing Home (about 12 miles away in Glover, VT)

##### **Public elementary/middle school in Albany:**

- Albany Community School (Students: 106; Location: 351 MAIN ST; Grades: K-8)

##### **Library in Albany:**

- Albany Town Library: (Operating income: \$22,341; Location: 530 Main St.; 6,000 books; 122 audio materials; 278 video materials; 5 print serial subscriptions)

##### **Cemeteries:**

- Albany Village Cemetery,

##### **Streams, rivers, and creeks:**

- Shalney Branch

## **1.7 Summary of Planning Process**

The work to update this plan was led by the planning team made up of municipal officials, school officials, local businesses, service agencies, and the regional planning organization (NVDA). The update project followed a work plan which provided the public and other stakeholders the opportunity for two-way communication. Existing documents were also researched and incorporated into the plan update. Planning team members, for the most part, fulfill multiple roles in the community and represent a broad array of stakeholders. The following table presents the Planning Team members and their title:

Robert Dewees, Planning Commission  
Chris Jacobs, Planning Commission  
Hannah Dreissigacker, Planning Commission  
Neil Urie, Planning Commission  
Brian Goodridge, ,Selectboard Chair  
Phil Beaudry, Selectboard  
Normand Inkel, Selectboard  
Paige Horner, Road Foreman  
Josh Pilbin, Fire Chief  
Gary Heath Mason, Emergency Management Coordinator

Debra Ann Geoffroy, Town Clerk  
Justin Mason, Asst. Town Clerk  
Terri Campbell, Select Board Admin  
Chad Tollmann, Trustee for Village of Albany

There is a current understanding of the need to integrate the content of this update and its goals, actions and reporting into the daily operational structure and awareness of all town officials so that mitigation planning establishes itself as a consistent topic of concern and discussion. The community survey was made available at the town office and advertised in the local newspaper. One response was received (survey are included in Appendix B). Rather than ask planning team members to complete the survey, input was requested via email and/or phone to the consultant responsible for draft writing. The one survey and interactions with planning team members focused on flooding, emergency notification, sheltering, and pandemic issues. The towns of Craftsbury, Lowell, Glover, Barton, Irasburg, and Eden were notified via email of Albany's update process and given invitation to review and make comments on the draft plan through correspondence with Albany Town Clerk via email or phone. No responses were obtained from this solicitation. Following FEMA guidance in Local Mitigation Plan Review Tool Regulation Checklist, the plan was written using data sources that included:

- Surveys and warned, public meetings collecting public comment (issues raised were addressed in plan and the public meeting)
- 2017 Albany Town Plan (provided current goals and regulations supporting mitigation, recent capital expenditures and infrastructure value helped to drive vulnerability assessment)
- 2018 Vermont State Hazard Mitigation Plan (provided key guidance language and definitions throughout the plan).
- Vermont Agency of Natural Resources (ANR) and Transportation (VTrans) (Provided key policy recommendations on environmental conservation, high accident locations, climate change and fluvial erosion data).
- Vermont Departments of Health (VDH) and Environmental Conservation (DEC) (provided information related with public health services that could be impacted during a disaster and state support functions designated to both VDH and DEC. DEC also provided river corridor data for mapping purposes).
- Great Bay Hydro Erosion Monitoring Report (provided current disaster planning policy initiatives and scoping information on dam breach scenarios).
- FEMA Open Source (data.gov) Data for Disaster History and PA funding (provided comprehensive declared disaster by year and type as well as project descriptions and cost per event).
- FEMA NFIP "Bureau.Net" database (provided detailed information on repetitive loss properties and associated flood insurance claims).

- EPA's Incident Action Checklist for cold weather resilience of water systems (provides a guidance tool for public works to cross-reference actions on the system).
- 2013 ACCD Mobile Home Resilience Plan (served as resource for future mitigation actions)

While many small communities in Vermont face similar circumstances (e.g. flooding, winter storms and remote residents), each one has unique considerations and opportunities. There was a point made to capture the subtle characteristics of the town, its history and its residents. From this, the specific risks, vulnerabilities and mitigation strategies were developed.

Based on the information obtained, input from town and state officials, the planning team, state and federal databases, local associations and NVDA, the plan was created. While many small communities in Vermont face similar circumstances (e.g. flooding, winter storms and remote residents), each one has unique considerations and opportunities. There was a point made to capture the subtle characteristics of the town and its distinct villages. From this, the specific risks, vulnerabilities and mitigation strategies were developed and applicable, broken down to the specific entity impacted. NVDA's role in assisting the entire region with all facets of planning provided crucial information and NVDA's Emergency Management Planning representative attended planning team meetings and provided guidance. While the LEPC provides the best platform to engage representatives from various towns and agencies, all bordering towns were contacted with planning objectives and asked to provide input through a formal email invitation. Vermont Emergency Management (VEM) also provided information during the development of the plan. VEM also has representation at the LEPC meetings and will continue to provide input and guidance as the town moves forward with their mitigation strategies. The following summary represents the timeline for the planning process:

- 4/22/21: Planning Team named and introduced to update process. "Kick-off" meeting at warned community (selectboard) meeting with proposal and acceptance of updated hazards. Community survey logistics decided upon. The public was notified and in attendance at this meeting, however, no comments were received.
- 4/23/21: Meeting with Town Road Foreman to discuss mitigation projects and progress on 2016 mitigation action items related to infrastructure
- 6/3/22: Planning team sent community survey, mitigation action status summary from 2016 plan. Road foreman and town officials sent infrastructure summary status and request for new projects in the next planning cycle
- 6/7/21: Planning team was sent draft sections I and II of update. Update of planning process given at select board meeting.
- 6/20/22: *First meeting with Road Foreman to discuss specific projects for next planning cycle*
- 6/21/22: *Warned meeting to provide planning update. No comments received.*
- 7/5/2022: *Warned meeting to provide planning update. No comments received.*
- 7/8/22: *Draft Sections III, IV and V sent to planning team for review and comment.*



- 7/8/22 All returned Community Input Surveys collected, reviewed and/included in final draft.
- 7/19/22 Proposed mitigation goals and actions were discussed at warned community meeting. The public was notified and in attendance at this meeting, however, no comments were received.
- 7/19/22 All neighboring towns received notice of availability of draft plan for review and comment via the town clerk. No comments were received.
- 7/20/22 Draft plan submitted to VEM for review and approval.
- 9/2/22: VEM review and request for edits obtained
- 9/7/22: Plan revision made and resubmitted to VEM

The draft plan was then revised based on input from the planning team. The revised draft was made available for review at the town office and residents were informed via meeting minutes and the town bulletin board of the ability to review the draft and additional opportunity for formal comment and suggestions. No additional public comment was received. Minor edits were made to the plan following State recommendations and the final draft was resubmitted to VEM for formal review and approval pending municipal adoption. A resolution of adoption will occur following VEM review and “approval pending adoption” status.

## SECTION 2: HAZARD IDENTIFICATION

For this update, the planning team considered the continued inclusion or deletion of the 2016 hazards profiled by developing and researching the natural hazard categories outlined in the state mitigation plan and for each, considered prior history, current trends and available data to estimate risk. Some profiled hazards remain a risk for the town. However, other hazards, due to lack of occurrence frequency, risk and/or vulnerability have been removed in this update. The definitions of each hazard, along with historical occurrence and impact, are described below.

**Types of Natural Hazards:** weather /climate hazards (drought, hurricane/tornado, high winds, severe winter storm, extreme temperatures, climate change, lightning, hail), flooding, geological hazards (landslide / erosion, earthquake, naturally occurring radiation), and fire hazards.

**2022 Updated Profiled Natural Hazards:** Severe Winter Storm/Ice, Flooding/fluvial erosion, Extreme Cold Temperature, High Wind, Pandemic (listed as “Epidemic” in 2016 plan).

There have been 22 disasters and 4 emergencies declared in Orleans County from 1964 through 2021 (it is noted that “Hurricane Irene” was listed as an Emergency, and then “Tropical Storm Irene” was listed as a Disaster a few days later). The following discussion on natural hazards is based upon information from several sources. Often, extent data specific to Albany is not available but when appropriate and available, nearby Newport City data can be used to capture the extent of natural hazard events for the town and villages. General descriptions are based upon the 2018 Vermont State Hazard Mitigation Plan (SHMP). According to NOAA Storm data, there were over 460 severe weather events from 1995-2020 in Orleans County.

The highest risk hazards (severe winter/ice storm, flooding, extreme cold and pandemic) have been profiled to provide the basis of future mitigation strategies. However, lower risk natural hazards (drought, tornado, tornado, high winds, extreme heat, hail, landslide, earthquake, naturally occurring radiation, hurricanes and fire hazards) are omitted from full profiling because they do not pose enough risk to substantiate mitigation efforts at this time. And while the risk of a hazardous materials incident as outlined remain moderate due to border crossings and the associated vulnerabilities that result, the town will focus on natural hazards and pandemic response for this update. Additionally, impacts from hurricanes are addressed under flooding hazard.

*Table 2-1: Summary of Vermont Emergency Declarations*

Number	Year	Type
<b>3437</b>	<b>2020</b>	<b>Pandemic (COVID-19) national 3/13/20</b>
<b>3338</b>	<b>2011</b>	<b>Hurricane Irene</b>
<b>3167</b>	<b>2001</b>	<b>Snowstorm</b>
<b>3053</b>	<b>1977</b>	<b>Drought</b>

*Source: FEMA*

*Table 2-2: Summary of Orleans County Disasters (Green rows indicate town PA received)*

DN	Date	Disaster Type	Incident Type	Title
397	1973	DR	Flood	SEVERE STORMS, FLOODING, & LANDSLIDES
518	1976	DR	Flood	SEVERE STORMS, HIGH WINDS & FLOODING
1063	1995	DR	Severe Storm(s)	EXCESSIVE RAINFALL, FLOODING
1307	2000	DR	Severe Storm(s)	TROPICAL STORM FLOYD
1559	2004	DR	Severe Storm(s)	SEVERE STORMS AND FLOODING
1428	2002	DR	Severe Storm(s)	SEVERE STORMS AND FLOODING
1184	1997	DR	Flood	EXCESSIVE RAINFALL, HIGH WINDS, AND FLOODING
1101	1996	DR	Flood	ICE JAMS AND FLOODING
1228	1998	DR	Severe Storm(s)	SEVERE STORMS AND FLOODING
1715	2007	DR	Severe Storm(s)	SEVERE STORMS AND FLOODING
3167	2001	EM	Snow	SNOW
1995	2011	DR	Severe Storm(s)	SEVERE STORMS AND FLOODING
3338	2011	EM	Hurricane	HURRICANE IRENE
*4001	2011	DR	Severe Storms	SEVERE STORMS AND FLOODING
4178	2014	DR	Flood	SEVERE STORMS AND FLOODING

4207	2015	DR	Severe Storm(s)	SEVERE WINTER STORM
4163	2014	DR	Severe Ice Storm	SEVERE WINTER STORMS
4380	2018	DR	Severe Storm(s)	SEVERE STORM AND FLOODING
4022	2011	DR	Hurricane	TROPICAL STORM IRENE
4066	2012	DR	Severe Storm(s)	SEVERE STORM, TORNADO, AND FLOODING
4356	2018	DR	Severe Storm(s)	SEVERE STORM AND FLOODING
4140	2013	DR	Flood	SEVERE STORMS AND FLOODING
4474	2020	DR	Severe Storm(s)	SEVERE STORM AND FLOODING
160	1964	DR	Drought	DROUGHT & IMPENDING FREEZE
164	1964	DR	Flood	FLOODING
4532	2020	ED	Pandemic	COVID-19

## **2.1 Profiled Hazards**

### *An Introduction to Climate Change:*

*“Over the past several decades, there has been a marked increase in the frequency and severity of weather-related disasters, both globally and nationally. Most notably, the Earth has experienced a 1°F rise in temperature, which has far-reaching impacts on weather patterns and ecosystems. This statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer), is known as climate change. The Intergovernmental Panel on Climate Change (IPCC) forecasts a temperature rise of 2.5°F to 10°F over the next century, which will affect different regions in various ways over time. Impacts will also directly relate to the ability of different societal and environmental systems to mitigate or adapt to change<sup>6</sup>. Increasing temperatures are forecasted to have significant impacts on weather-related disasters, which will also increase risk to life, economy and quality of life, critical infrastructure and natural ecosystems. The IPCC notes that the range of published evidence indicates that the costs associated with net damages of climate change are likely to be significant and will increase over time. It is therefore imperative that recognition of a changing climate be incorporated into all planning processes when preparing for and responding to weather-related emergencies and disasters. Most of the natural hazards identified in this plan are likely to be exacerbated by changes in climate, either directly or indirectly. The National Aeronautics & Space Administration (NASA) reports that global climate change has already had observable effects on the environment: glaciers are shrinking, sea ice is disappearing, sea level rise is accelerating, heat waves are occurring more frequently and intensely, river and lake ice is breaking up earlier, plant and animal ranges have shifted, and trees are flowering sooner. Though climate change is expected to have global reach, the impacts differ by region. While the southwestern United States is expected to experience increased heat, wildfire, drought and insect outbreaks, the northeastern region is predicted to experience increases in heat waves, downpours and flooding. Accordingly, consideration of climate change was identified as a key guiding principle of the 2018 SHMP, addressed in each of the pertinent hazard profiles and incorporated into all relevant mitigation actions.” 2018 SHMP*

From 1962 to 2006, each five-year period resulted in 0-6 Major Disaster Declarations in Vermont. From 2007-2020, there were 23. It is commonly accepted that weather extremes are becoming more commonplace in Vermont. Since 2011, record setting snow, rain and cold have been experienced in the state. In recent years, it has become evident that human activities, mostly associated with the combustion of fuel, have added to the natural concentration of greenhouse gases in the atmosphere and are contributing to rapid climate change on a global scale. While projections of the effects of climate change vary, it is generally predicted that Vermont will have warmer temperatures year-round, with wetter winters and drier summers. An increase in the size and frequency of storms is also predicted. Thus, climate change in the next century will likely increase the chance of weather-related hazards occurring. An increase in precipitation may also result in increased flooding and fluvial erosion. Drier summers may increase the chance of drought and wildfire. A warmer climate may also result in the influx of diseases and pests that cold winters previously prevented. The severity of climate change is difficult to predict, though the effects may be mitigated somewhat if greenhouse gas emissions are reduced soon. In 2011, Governor Shumlin formed the *Vermont Climate Cabinet*. The Cabinet, chaired by the Secretary of Natural Resources, is a multidisciplinary approach to enhance collaboration between various state Agencies. Its primary objectives include providing the Governor with advisory information and facilitating climate change policy adoption and implementation. In 2013, the Vermont Agency of Natural Resources (ANR) released the Climate Change Adaptation Framework which addresses climate change exposures, vulnerability-specific elements within each of the natural resource sectors, and ongoing and proposed actions that can be or have been taken to prepare for the expected changes. In line and in conjunction with the ANR report, the primary goal of a VTrans climate change adaptation policy is to minimize long-term societal and economic costs stemming from climate change impacts on transportation infrastructure.

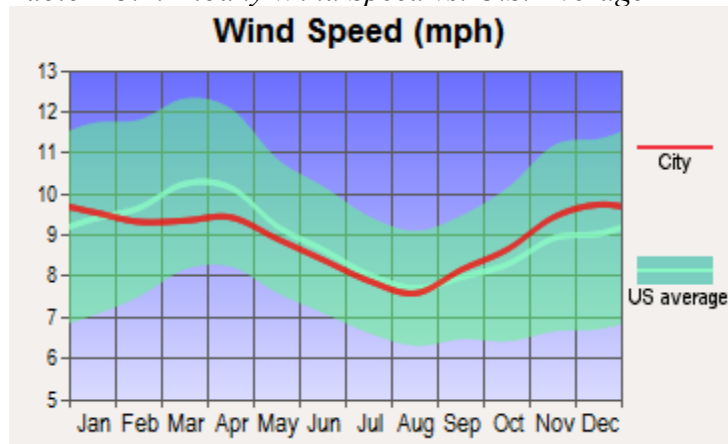
### ***High Winds***

High wind is defined as an event with sustained wind speeds of 40 m.p.h. or greater lasting for 1 hour or longer or an event with winds of 58 m.p.h. or greater for any duration. Thunderstorms can generate high winds and down hundreds of large trees within a few minutes. High winds can impact the entire planning area. In a study completed by the Worcester Polytechnic Institute (Extreme Wind Speed Region in New England and New York, 2008), using wind speed data from the National Climatic Data Center, National Institute of Standards and Technology, and the US National Meteorological Service to develop a probability for extreme wind speeds and their corresponding mean recurrence interval, the purpose of this study was to develop recommendations for transmission line construction based on land contour data. The last recorded high wind event as tracked by the National Weather Service was recorded on 17-18 January 2012. An 81-mph wind gust was measured atop Vermont's highest peak Mount Mansfield. These strong gusts caused numerous power outages across northern New York and parts of central and northern Vermont. At the peak of the event, over 10,000 people were without power across northern New York, including the Saint Lawrence Valley and over 2,500 people had no power in parts of Vermont. During this event, Orleans County had wind speeds of 30-40 mph (category 7-8 on the Beaufort scale). With two declared disasters, due to wind, this hazard remains a concern. Transportation route access and electric power supply are at risk during a major wind event. The following table describes the Beaufort Scale for non-hurricane winds.

*Table 2-3: Beaufort Scale and Albany Windspeed vs. U.S. Average*

Beaufort*	Avg Miles per Hour	Knots	Surroundings
0 calm		0 - 1	Smoke rises vertically and the sea is mirror smooth
1 light air	1.2 - 3.0	1 - 3	Smoke moves slightly with breeze and shows direction of wind
2 light breeze	3.7 - 7.5	4 - 6	You can feel the breeze on your face and hear the leaves start to rustle
3 gentle breeze	8.0 - 12.5	7 - 10	Smoke will move horizontally and small branches start to sway. Wind extends a light flag
4 moderate	13.0 - 18.6	11 - 16	Loose dust or sand on the ground will move and larger branches will sway, loose paper blows
5 fresh breeze	19.3 - 25.0	17 - 21	Surface waves form of water and small trees sway
6 strong breeze	25.5 - 31.0	22 - 27	Trees begin to bend with the force of the wind and causes whistling in telephone wires. Some spray on the sea surface
7 moderate gale	32.0 - 38.0	28 - 33	Large trees sway. Moderate sea spray
8 fresh gale	39.0 - 46.0	34 - 40	Twigs break from trees, and long streaks of foam appear on the ocean
9 strong gale	47.0 - 55.0	41 - 47	Branches break from trees
10 whole gale	56.0 - 64.0	48 - 55	Trees are uprooted and the sea takes on a white appearance
11 storm	65.0 - 74.0	56 - 63	Widespread damage
12 hurricane	75+	64 +	Structural damage on land, and storm waves at sea

*Table 2-3.1: Albany Wind Speed vs. U.S. Average*



### ***Severe Winter Storm:***

Winter storms impact the entire planning area and can include snowstorm, cold, blizzard and ice. According to the 2018 *Vermont State All-Hazards Mitigation Plan*:

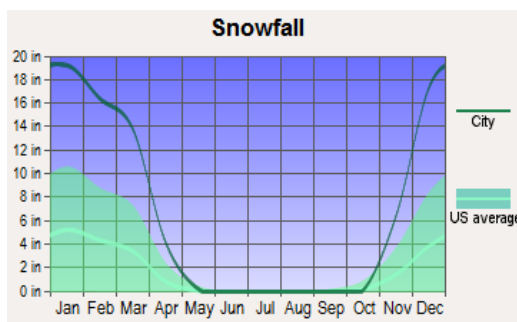
*“Severe winter storms bring the threat of heavy accumulations of snow, cold/wind chills, strong winds, and power outages that result in high rates of damage and even higher rates of expenditures. A heavy accumulation of snow, especially when accompanied by high winds, causes drifting snow and very low visibility. Sidewalks, streets, and highways can become extremely hazardous to pedestrians and motorists. Severe winter storms develop through the combination of multiple meteorological factors. In Vermont and the northeastern United States, these factors include the moisture content of the air, direction of airflow, collision of warm air masses coming up from the Gulf Coast, and cold air moving southward from the Arctic. Significant accumulations of ice can cause hazardous conditions for travel, weigh down trees and power lines, and cause power outages. Freezing rain can also be combined with snowfall, hiding ice accumulation and further hindering travel, or with mixed precipitation and potentially ice jams or flooding.”*

Albany has received PA funding for one major snow event in 2014 for \$11,424, mainly for debris removal. Winter storm frequency and distribution varies from year to year depending on the climatological patterns but snowfall in the town is significantly higher than the national average. The winter of 2010-2011 was the third-snowiest on record for the region with a total of 124.3 inches. The record of 145.4 inches was set in 1970-1971. The potential for a major snowstorm that exceeds the capabilities of town exists every year but with the recent increase in snowfall totals and cold temperature duration, the town realizes that further consideration is required. NOAA's National Centers for Environmental Information is now producing the Regional Snowfall Index (RSI) for significant snowstorms that impact the eastern two thirds of the U.S. The RSI ranks snowstorm impacts on a scale from 1 to 5, similar to the Fujita scale for tornadoes or the Saffir-Simpson scale for hurricanes. NCEI has analyzed and assigned RSI values to over 500 storms going as far back as 1900. As such, RSI puts the regional impacts of snowstorms into a century-scale historical perspective. The index is useful for the media, emergency managers, the public and others who wish to compare regional impacts between different snowstorms. The RSI and Societal Impacts Section allows one to see the regional RSI values for particular storms as well as the area and population of snowfall for those storms. The area and population are cumulative values above regional specific thresholds. For example, the thresholds for the Southeast are 2", 5", 10", and 15" of snowfall while the thresholds for the Northeast are 4", 10", 20", and 30" of snowfall. 2010, 2012 and 2014 have some of the highest rankings for notable storms in Albany. These rankings are based, in part on the severity of the storm using the following system. Since 2000, there has only been one event that reached a category 4 in the Northeast, five reached Category 3, eight were “significant” and all others were notable.

Table 2-4: NOAA's Regional Snowfall Index (RSI)

CATEGORY	RSI VALUE	DESCRIPTION
1	1–3	Notable
2	3–6	Significant
3	6–10	Major
4	10–18	Crippling
5	18.0+	Extreme

Table 2-4.1: Albany Snowfall vs. U.S. Average



Historic January snowfall totals fell in 1987 (47.5''), 1978 and 1979 (46.5'', 45.8''). Total average snowfall in December is 26.2'', January is 22.6'', February averages are slightly less at 16.9'' and March is 18.3''. February 14th-15<sup>th</sup>, 2007 saw the greatest 24-hour max snowfall total at 23.5''. The snowfall totals are annual averages based on weather data collected from 1981 to 2018 for the NOAA National Climatic Data Center. From 2011 to the first half of 2020, there were four recorded "extreme" weather events in Orleans County: February 4<sup>th</sup> and 15<sup>th</sup>: Heavy Snow. January 7<sup>th</sup> and February 1, 2015: Extreme Cold/Wind Chill.

On February 5, 2001, a winter storm event with accumulations of 10 to 14 inches across Orleans County had reported damage in several towns, including Albany: *"A storm system developed off the coast of Virginia early Monday, February 5, 2001 and moved northeast. It moved across extreme southeast coastal New England late Monday night and into the Gulf of Maine early*

*Tuesday, February 6th. Steady snow spread across the area by the afternoon of Monday, February 5th and continued overnight and was heavy at times. The snow tapered off to flurries Tuesday morning, February 6th. Some minor automobile accidents were reported. Barn roofs collapsed in the Towns of Craftsbury and Holland (Orleans County), apparently due to the weight of the snow after the storm ended. Across the counties, generally 10 to 14 inches of snow fell, with Sutton (Caledonia county) reporting 14.4 inches, Chelsea (Orange county) with 12 inches, and Greensboro (Orleans county) with 10.”* The storm of 2014, a declared disaster for Orleans County, resulted in significant debris and the town relied on PA funding of \$11,434 to mitigate the damage to trees.

There are no standard loss estimation models or methodologies for the winter storm hazards. Potential losses from winter storms are, in most cases, indirect and therefore difficult to quantify. According to the 2014 National Climate Assessment, there is an observable increase in severity of winter storm frequency and intensity since 1950. While the frequency of heavy snowstorms has increased over the past century, there has been an observed decline since 2000 and an overall decline in total seasonal snowfall (2018 SHMP).

#### ***Ice Storm:***

Major Ice Storms occurred in January, 1998, December, 2013 and January, 2014. Albany received PA funding for the 2014 event for \$11,424. The North American Ice Storm of 1998 was produced by a series of surface low pressure systems between January 5 and January 10, 1998. For more than 80 hours, steady freezing rain and drizzle fell over an area of several thousand square miles of the Northeast, causing ice accumulation upwards of 2” in some areas. Albany received .5 to 1 inch of ice. On December 13<sup>th</sup>, 2013, another ice storm hit portions of Orleans County, resulting in a disruption of electric service up to 96 hours. While there is evidence that supports an increase in weather and precipitation severity, the incidence of ice storms remains fairly low. The town expects to have another ice storm but unlike rain and snow events, the occurrence of a major ice storm is not expected every year. But accepted emergency preparedness actions can help to mitigate the consequences of a major ice storm, where-by protecting the health and safety and infrastructure of the town (e.g. sheltering plans, generator power, trimming limbs near power lines, etc. There has been no major ice event since the last approved plan. ([www.wrh.noaa.gov/map/?wfo=sto](http://www.wrh.noaa.gov/map/?wfo=sto)).

#### ***Extreme Cold:***

*“Extreme cold temperatures can have significant effects on human health and commercial and agricultural businesses, as well as primary and secondary effects on infrastructure (e.g. burst pipes from ice expansion and power failure). What constitutes “extreme cold” can vary across different areas of the country based on what the population is accustomed to in their respective climates. Exposure to cold temperatures can cause frostbite or hypothermia and even lead to heart attacks during physically demanding outdoor activities like snow shoveling or winter hiking. When temperatures dip below freezing, incidents of icy conditions increase, which can lead to dangerous driving conditions and pedestrian-related slipping hazards. A large area of low pressure and cold air surrounding the poles, known as a polar vortex, is strengthened in the*



*winter. When these polar vortex winds are distorted, due to cyclical strengthening and weakening or interaction with high-amplitude jet stream patterns, they have the potential to split into two or more patterns, allowing arctic air to flow southward along a jet stream<sup>1</sup>. As this arctic air is able to access more southerly regions, extreme cold conditions can be observed in Vermont, which also have the potential to remain over the region for extended periods” (2018 SHMP).*

While there is no historical evidence to support a concern over the consequences of extremely hot temperatures on human health and safety in Albany, recent extremes in cold temperatures is a concern. 2015 tied the coldest winter (January to March) on record (1923) for Vermont according to the NOAA’s National Climatic Data Center whose dataset dates to 1895. Albany’s winter of 2015 had a mean temperature of 7.8 degrees Fahrenheit. The NOAA Storm Event Database lists five extreme cold events since 2000 with the following narrative for the 2015 event:

*An arctic cold front pushed across Vermont during the afternoon hours of January 7th with plummeting temperatures and brisk, strong winds (15 to 30+ mph) causing dangerously cold wind chills of 25 to 40 degrees below zero during the evening of January 7th into the morning hours of January 8th. These dangerously cold wind chills lead to delayed school openings of 2 hours or cancelled classes on the morning of January 8th. Actual minimum ambient temperatures on the morning of January 8th were 15 to 30 below zero across northern New York. Observed wind chills in the mountains ranged from 40 to 70 below zero. Temperatures by early evening of January 7th were zero to 10 above zero with winds of 15 to 30 mph that created wind chills colder than 20 to 30 below zero through the overnight into the morning hours of January 8th. Actual morning low temperatures on January 8th were 15 below to 30 below zero in Orleans county, including 32 degrees below zero at Morgan, 28 below zero in Greensboro, 22 below zero in Newport, Craftsbury and North Troy, 21 below zero in Derby and 20 below zero in Holland.*

Cold temperatures are expected in the Northeast but they can pose a serious threat to health and safety, especially as the severity and duration increases in conjunction with other technological (e.g. power outage, fuel oil delivery disruption) and societal (ability to purchase heating fuel) factors. Maintaining a safe living environment for livestock during extreme temperatures, especially cold extremes, is a real concern for farmers in Albany and the rest of the state and while the temperatures for the town remain within averages seen in the last 85 years, the town expects dangerously cold temperatures every winter. There is no evidence to support concern over increases in high temperatures for the town as it relates to health and human safety at this time. The NOAA Wind Chill Chart identifies those temperatures and associated wind speeds that may cause frostbite if skin is exposed to the air over a certain period of time:

*Table 2-5: NOAA Wind Chill Chart*

		Temperature (°F)																	
Wind Speed (mph)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
	5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
	45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
	50	25	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
	55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
	60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times

30 minutes

10 minutes

5 minutes

Wind Chill (°F) = 35.74 + 0.6215T - 35.75(V<sup>0.16</sup>) + 0.4275T(V<sup>0.16</sup>)

Where, T = Air Temperature (°F) and V = Wind Speed (mph)

In anticipation of extreme cold temperatures, the National Weather Service may issue the following watches, warnings or advisories, which are aimed at informing the general public as well as the agricultural industry:

- Wind Chill Warning: Dangerously cold wind chill values are expected or occurring
- Wind Chill Watch: Dangerously cold wind chill values are possible
- Wind Chill Advisory: Seasonably cold wind chill values but not extremely cold values are expected or occurring
- Hard Freeze Warning: Temperatures are expected to drop below 28°F for an extended period of time, killing most types of commercial crops and residential plants
- Freeze Warning: Temperatures are forecasted to go below 32°F for a long period of time, killing some types of commercial crops and residential plants
- Freeze Watch: Potential for significant, widespread freezing temperatures within the next 24-36 hours

## Flooding

There are three main types of flooding that occur in Vermont: flooding from rain or snow melt, flash flooding and urban flooding. Flooding has also been known to occur because of ice jams in rivers adjoining developed towns and cities. While ice jam risk for the town is considered low, these events may result in widespread damage in major river floodplains or localized flash flooding caused by unusually large rainstorms over a small area.

The effects of all types of events can be worsened by ice or debris dams and the failure of infrastructure (especially culverts), private and/or beaver dams. Rainstorms are the cause of most flooding in town. Winter and spring thaws, occasionally exacerbated by ice jams, are another significant source of flooding, especially when coupled with high rain levels. Much of this flooding is flash flooding, occurring within hours of a rainstorm or other event. Flash flooding, as opposed to flooding with a gradual onset, causes the largest amount of damage to property and infrastructure. Floods cause two major types of damage: water damage from inundation and

erosion damage to property and infrastructure. The 2018 Vermont State All-Hazards Mitigation Plan discusses flooding extensively:

*"Flooding is the most common recurring hazard event in Vermont. In recent years, flood intensity and severity appear to be increasing. Flood damages are associated with inundation flooding and fluvial erosion. Data indicate that greater than 75% of flood damages in Vermont, measured in dollars, are associated with fluvial erosion, not inundation. These events may result in widespread damage in major rivers' floodplains or localized flash flooding caused by unusually large rainstorms over a small area. The effects of both inundation flooding and fluvial erosion can be exacerbated by ice or debris dams, the failure of infrastructure (often as a result of undersized culverts), the failure of dams, continued encroachments in floodplains and river corridors, and the stream channelization required to protect those encroachments." 2018 SHMP*

Vermont experienced major floods long before Federal disaster assistance became available. But in November of 1927, Vermont experienced catastrophic flooding. In the month before the flood, rains more than 150% of normal precipitation fell after the ground had frozen. The flood itself was precipitated by 10 inches of rain falling over the course of a few days. The flood inundated parts of many towns and damaged or destroyed numerous bridges in the county. As the history of the flooding cited above bears out, the geography and topography are right for a significant localized storm with extreme damage at almost any location in Vermont. Numerous floods have resulted in Presidentially declared disasters and an influx of federal disaster assistance. Of these disasters, the 1973 flood inflicted the most widespread damage, and the residual rains of Hurricane Belle in 1976 resulted in the second highest amount of federal disaster assistance in Vermont.

Widespread, steady rainfall from frontal systems, tropical cyclones, or "northeasters" can result in flooding of large areas. Extensive and disastrous floods are rare but can result from intense spring rains combined with warm, humid winds that rapidly release water from the snowpack. Such was true for the devastating flood of March 11-12, 1936. During this flood, total rainfall and snowmelt ranged from 10 to 16 inches over the southeastern one-half of the State. Rainfall alone can cause disastrous flooding similar to that in November 1927. During that flood, rainfall totals of 5-9 inches were common, and much more occurred at higher altitudes. Intense rainfall caused extensive flooding on September 21, 1938, when the "great hurricane" reached landfall in the southern area of the State. Severe thundershowers more commonly cause localized street and cellar flooding.

Flooding is the most common recurring hazard event in the state of Vermont. June 2015 broke records across the state for the wettest on record. Albany, along with other towns in the NEK received 7 to 8 inches of rain in June. Recent history, including the flooding events of 2011 and the records set in 2015 suggest that increases in total rain fall and severity in terms of rainfall per given unit of time are to be expected along the lines seen with the records seen across the state recently. The Black River is 26 miles in length, originates east of Great Hosmer Pond with headwater tributaries flowing west off Ames Hill in Albany. It drains 134 square miles of land. This river has the lowest gradient of the three main rivers in the basin with an average slope of

about 8 feet per 1 mile. The Black River watershed contains over 600 acres of lakes and ponds, the three largest being Elligo Pond, Little Hosmer Pond and Great Hosmer Pond.

The current is slow. The drop from the source to Lake Memphremagog, including the falls at Irasburg and Coventry is 190 feet. The Black River flows through the central part of the town from south to north, having a number of quite considerable tributaries. It continues meandering in a more northeasterly fashion on the western side of Great Hosmer Pond. It winds through Albany and into Irasburg east of Potters Pond. The river continues northeast through Albany. On July 9<sup>th</sup>, 2013, flash flooding occurred. Showers and thunderstorms developed on a daily basis in the summertime heat, and rainfall rates as high as two to three inches in an hour were observed, and flash flooding resulted in several areas where storms remained stationary or repeatedly moved across the area. Of most recent importance for Vermont was Tropical Storm Irene in 2011. Irene resulted in the worst Vermont flooding in 83 years. During Irene (August 20<sup>th</sup>-29<sup>th</sup>, 2011). While rainfall totals specific to Albany are not available, Orleans County received 7.4'' of rain (NOAA) in a 24-hour period (148% of its 100-year storm expected rainfall total, which was the highest of any Vermont County). The mass and force of water destroyed the Chamberlin Hill Road Bridge which was the greatest single point of destruction from flooding the town has ever seen. Since the last approved plan, DR 4474 of 2020 impacted the town and public assistance was received for three projects totaling to approximately \$64,000.

Tropical cyclones (storms) are officially ranked on one of five tropical cyclone scales, according to their maximum sustained winds and which tropical cyclone basin are located. Only a few scales of classifications are used officially by the meteorological agencies monitoring the tropical cyclones, but some alternative scales also exist, such as Accumulated cyclone energy, the Power Dissipation Index, the Integrated Kinetic Energy Index, and Hurricane Severity Index. Of most recent importance for Vermont was Tropical Storm Irene in 2011. Irene first struck the U.S. as a Category 1 hurricane in eastern North Carolina, then moved northward along the Mid-Atlantic Coast. Wind damage in coastal North Carolina, Virginia, and Maryland was moderate, with considerable damage resulting from falling trees and power lines. Irene made its final landfall as a tropical storm in the New York City area and dropped torrential rainfall in the Northeast that caused widespread flooding. Irene resulted in the worst Vermont flooding in 83 years but Albany, along with much of the surrounding towns were not of the hardest hit. During Irene (August 20<sup>th</sup>-29<sup>th</sup>, 2011) Albany received 3'' of rain (NOAA). By comparison, the following chart shows the three highest recorded rain and wind events for Vermont towns during Irene.

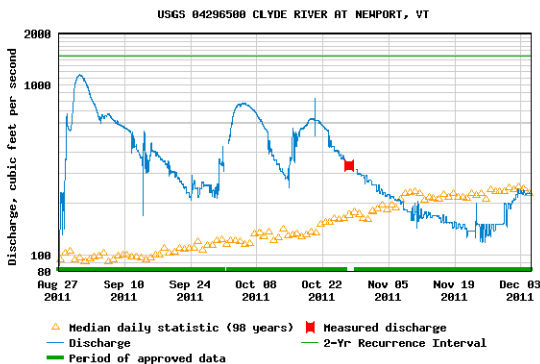
Tropical Storm Irene Rain and Wind Extremes	
Rainfall	Wind
Mendon, 11.23 inches	Burlington, 51 mph
Walden, 7.60 inches	Morrisville, 40 mph
Randolph Center, 7.15 inches	Springfield, 40 mph

Source: <http://www.accuweather.com/en/weather-news/irenes-infamous-top-ten-1/54348>

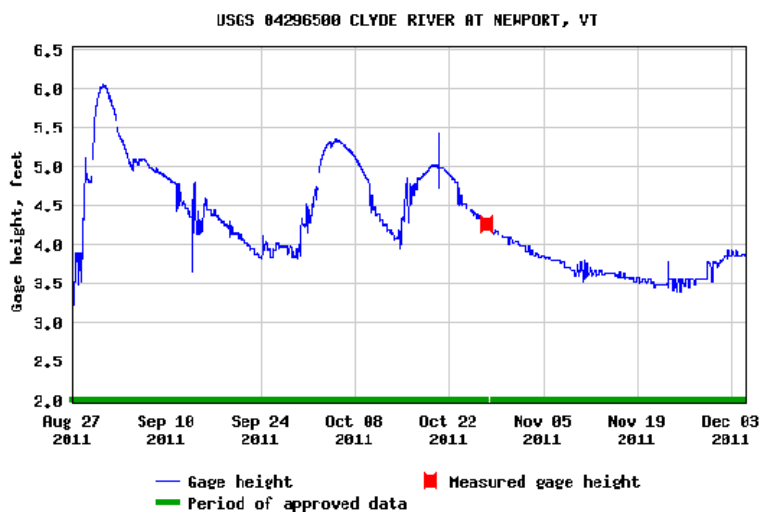
While not classified as a Tropical Storm, the April 2011 rain totals for the NEK reached nearly 7'' compared to the normal precipitation for the month at 3''. The heaviest rainfall event was associated with thunderstorms during the late afternoon of April 26th into the early morning hours of April 27<sup>th</sup>, 2011. These storms resulted in record and near record rainfall and flooding across portions of northern Vermont. Specific records for the town of Albany regarding rainfall

totals were not available but in using nearby Newport City (where the 7” of rain was recorded), the town feels that this event can be used as a benchmark regarding extent.

*Table 2-5: 2011 “Irene” Discharge Rates for Clyde River*



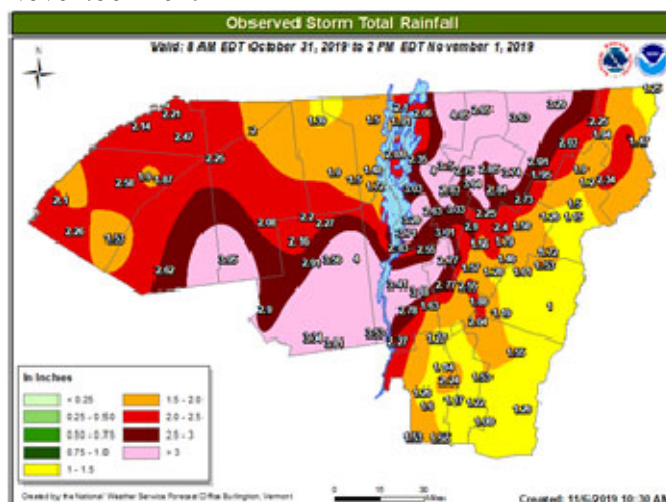
*Table 2-6: 2011 “Irene” Gage Height for Clyde River*



The “Halloween” storm of 2019 (DR4474) proved to be the most damaging flood event for many areas of the County in recent memory. This powerful storm system tracked across the eastern Great Lakes late on October 31<sup>st</sup>, 2019 and produced an axis of 3 to 5 inches of rain, which caused significant flooding across the region. Record rainfall occurred at Burlington, Vermont with 3.30 inches on October 31st, along with a record high temperature of 71 degrees. In addition, very gusty southwest winds developed behind this potent storm, which generated scattered to widespread power outages. Surface wind gusts measured up to 65 mph across northern New York and parts of Vermont, with gusts over 100 mph at the summits. The heavy rainfall washed out numerous roads and culverts from Essex County, New York into parts of

central and northern Vermont, while 10 rivers reached flood stage with 8 reaching moderate to major levels. A new record high level of 14.72 feet was attained at North Troy on the Missisquoi River. Extensive flooding was observed in the following river basins: Missisquoi, Lamoille, Winooski, and Ausable, while flash flooding with very sharp rises of smaller streams and rivers occurred across the higher terrain of the eastern Adirondacks into central and northern Green Mountains of Vermont, including the Champlain Valley. Observed total rainfall recordings were 5.26 inches in East Berkshire, 4.85 inches in Enosburg Falls, 4.80 in Fletcher, 4.32 Westford, and 4.0 inches in Elizabethtown, New York. Table 2-7 below shows the storm total precipitation from 31 October at 8 AM to 1 November 2019 at 2 PM.

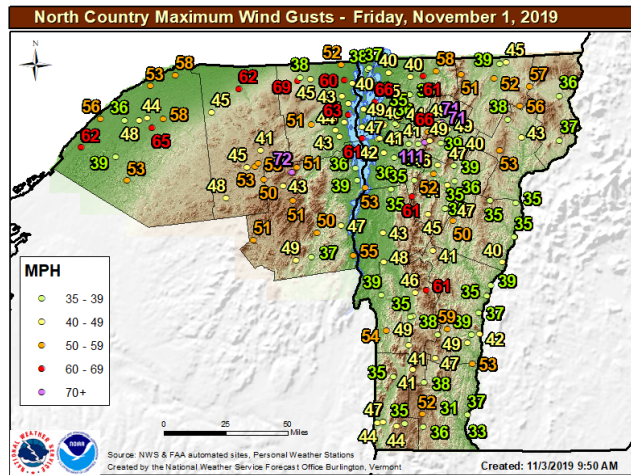
*Table 2-7: Observed storm total rainfall from 8 AM EDT on 31 October to 2 PM EDT on 1 November 2019*



The second significant impact from this powerful storm was the high winds, which caused scattered to widespread power outages across northern New York into Vermont. The core of the strongest winds occurred early morning on November 1st across New York and spread into Vermont during the daytime hours. At the peak, over 120,000 customers were without power across the region. Given how saturated the soils were from the recent heavy rainfall, shallow rooted trees were easily uprooted, exacerbating power outages. A few peak wind gusts included 69 mph at Ellenburg, 65 mph in Potsdam and 62 mph in Malone, New York, while a gust to 71 mph was measured in Johnson, 66 mph at Burton Island and 111 mph at Mount Mansfield in Vermont. Figure 2 below shows a map of observed peak wind gusts across the North County on 1 November 2019. Albany did sustain wind damage that was addressed by electric and telephone service providers.



Table 2-8: Maximum Wind Gust Map for 11/1/2020



### ***Inundation and Floodplains:***

The land area where inundation flooding occurs is known as the floodplain. During high water events, water flows out of the riverbank and spreads out across its floodplain. FEMA defines the portion of the floodplain inundated by the 1% annual chance flood as the Special Flood Hazard Area (SFHA); the area where the National Flood Insurance Program (NFIP) floodplain management regulations must be enforced and where the mandatory purchase of flood insurance applies for federally secured loans.

Inundation flooding on larger rivers and streams typically occurs slowly, over an extended period of time but can spread out over a large area of land. Due to the slower onset of inundation flooding on larger rivers, there is time for emergency management planning (e.g., evacuations, electricity shut-off considerations, etc.) to take place. Though the inundation floodwaters are slower to hit, they often take time to recede as well, and exposure to water for an extended period of time can result in significant property damage. U.S. Geological Survey's (USGS) National Water Information System monitors real-time streamflow gaging stations in Vermont.

Inundation and fluvial erosion may both increase in rate and intensity as a result of human alterations to a river, floodplain, or watershed. For instance, when a dam fails there may be significant, rapid inundation which can occur without warning. Public and private structures and infrastructure become vulnerable when they are located on lands susceptible to inundation and fluvial erosion.

Albany's floodplains are depicted on a FEMA Flood Insurance Rate Map (FIRM) from 1/3/1986. This map depicts the Special Flood Hazard areas, which are floodplains that would likely become inundated during a significant flood known as a "base flood." The base flood is often referred to as the "100-year flood." Albany's FIRM is not accompanied by any insurance studies or base flood elevations, which would indicate how high the water would rise in a 100-year flood

event. Regarding flood inundation issues, the 2018 *Vermont State All-Hazards Mitigation Plan* states that:

*“Recent studies have shown that most flooding in Vermont occurs in upland streams and road drainage systems that fail to handle the amount of water they receive. Due to steep gradients, flooding may inundate these areas severely, but only briefly. Flooding in these areas generally has enough force to cause erosion capable of destroying roads and collapsing buildings. These areas are often not mapped as being flood prone and property owners in these areas typically do not have flood insurance (DHCA, 1998). Furthermore, precipitation trend analysis suggests that intense local storms are occurring more frequently. Additionally, irresponsible land use and development will exacerbate the preexisting vulnerability. Urban flooding usually occurs when drainage systems are overwhelmed and damages homes and businesses. This flooding happens in all urban areas, but specifically in Burlington where the area is located at the bottom of a gradient, which adds to the intensity of this localized flooding...*

*...Over the past two decades, flood damage costs have risen dramatically in Vermont due to increasing occurrences of flooding and increases in vulnerability associated with unwise land use development in flood plains or within stream corridors. The geography and topography are right for a significant localized storm with extreme damage at almost any location in Vermont. Heavy rains with previous ground saturation, which causes runoff, are a significant part of the flooding formula in Vermont. Steep topography and narrow, inhabited, stream and river valleys further increase the dangerous nature of this hazard. Furthermore, precipitation trend analysis suggests that intense, localized storms that can cause flash flooding are occurring with greater frequency. While flooding will continue, planning and other mitigation measures can help minimize damages.*

*All of Vermont’s major rivers have inhabited flood plains. While residents in mountain valleys are at risk, they may not be aware of the danger or may choose to ignore it. There are many reasons property owners are reluctant to relocate to less flood prone ground, not the least of which is the lack of personal experience of flooding. In addition, many communities originated beside rivers and streams, some of the most attractive property is located in vulnerable areas. Lakeshore property in Vermont is vulnerable to flooding from high water levels, either by surface water erosion or flooding. Occasionally, water-saturated ground and high-water tables cause flooding to basements and other low-lying areas. Lakeshore property is highly desirable and valuable, making the development of lakeshore areas very likely, even with the high potential for flooding. Restrictions on lakeshore property development have significant negative economic and tax revenue impacts that must be carefully weighed against the gains in personal safety and protection of property.” 2018 SHMP*

All of the planning area has the potential to be affected by flooding. Although, comparatively, the town has remained insulated from the catastrophic flood damage that the state has seen in the last ten years, the community continues to have concerns about impacts of future flooding. The town does maintain current river corridor maps that include properties located within the river corridor (which may or may not include associated floodplains). Despite some historic damage to roads and bridges, the town remains protected from structures being damaged because of their location within the floodplain and/or river corridor and has no history of receiving major or repetitive damage to municipal buildings, critical facilities or residential property.



### ***Fluvial Erosion:***

Erosion occurs on a consistent, but small-scale basis within the riparian corridor of the town's streams and rivers. This is a part of normal natural processes and as such is necessary for the proper functioning of the ecosystem of these waterways. However, fluvial erosion on a large scale can damage stream banks and undercut infrastructure such as roads, bridges and culverts as well as agricultural land and structures, causing severe damage. Fluvial erosion on a large scale can cause stream bank collapses, which are generally classified as landslides. Most flood damage is associated with fluvial erosion rather than inundation. The 2018 *Vermont State All-Hazards Mitigation Plan* contains the following discussion of fluvial erosion:

*"In Vermont, most flood-related damage is due to fluvial erosion. Erosion occurs when the power of the flood (i.e. the depth and slope of the flow) exceeds the natural resistance of the river's bed and banks. Rivers that have been overly straightened or deepened may become highly erosive during floods, especially when the banks lack woody vegetation, or when the course river bed sediments have been removed. In areas where rivers are confined due to human activity and development, they have become steeper, straighter, and disconnected from their floodplains. The more trapped the river is, the greater power it will gain, which eventually results in a greater degree of damage to critical public infrastructure such as roads and stream crossings, as well as homes, businesses, community buildings and other man-made structures built near rivers. Fluvial erosion is also increased downstream when all the eroded materials (i.e. sediment and debris) come to rest in a lower gradient reach, clog the channel, and cause the river to flow outside its banks. When severe enough, fluvial erosion can also be the cause of Landslides (see: Landslides). The land area that a river accesses to meander and overtop its banks to release flood energy without excessive erosion is known as the River Corridor. A river corridor includes the meander belt of a stream or river and a buffer of 50'. The River Corridor, as defined in Vermont statute, is: the land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition, as that term is defined in section 1422 of this title, and for minimization of fluvial erosion hazards, as delineated by the Agency of Natural Resources in accordance with river corridor protection procedures."*

Vermont's River Corridor maps delineate river corridors for larger streams and rivers, and standard setbacks for smaller, upland streams. The setbacks were determined by factoring in the same stable stream slope requirements used when delineating a river corridor using a meander centerline setback. These maps are located on the Vermont FloodReady and Vermont Natural Resources Atlas websites in addition to recent NVDA work for mapping river corridors for towns in the NEK.

The Vermont Agency of Transportation (VTrans) applies the term "scour critical" to stream crossing structures especially vulnerable to streambed scour—the undermining of bridge supports by water action and erosion. A spreadsheet database is maintained by VTrans and

continually updated by the Bridge Inspection Program. Structures inspected are only those 20' or longer owned by a municipality or the state. The scour critical rating is based on the structure itself, and does not take into account debris jams, outflanking, channel change, or other issues commonly associated with fluvial erosion. Water supply source and distribution systems are also endangered by fluvial erosion. Many water distribution systems involve buried pipes that cross streams, which are vulnerable to fluvial erosion, however, the town does not have a municipal water supply. In December 2014 the Vermont Department of Environmental Conservation (DEC) released the "Flood Hazard Area and River Corridor Protection Procedures" guide, outlining specific actions and considerations for all towns in the state. Town bridges suffered the greatest damage in 2011 (DR 4022) due to the magnitude of water and resulted in the greatest expense to repair. The Chamberlin Hill Road Bridge, specifically, needed to be replaced but specific extent data relating to the most significant eroded area in the town or village is not currently available.

In summary, flooding is a significant hazard in Albany, a fact that is unlikely to change. Protecting river systems as a preventative measure, protecting property and human health and safety from flooding and flood-related damage remains important facets of mitigation planning for most Vermont communities including Albany. Albany remains committed to enhancing awareness and incorporating recommendations in future planning and mitigation work. The most common consequence to flooding for many Vermont towns is road and bridge (infrastructure) damage and Albany has sustained infrastructure damage in previously declared disasters. The town has remained relatively protected from major infrastructure failures resulting from both disaster and non-disaster events. The town has engaged the community in identifying transportation-related needs via a community survey. Improving and maintaining the condition of roads and bridges and improving safety were highest priorities reported from the survey. *(Source: Albany Community Survey)*

## **Pandemic**

Pandemic planning in Vermont appears to ebb and flow. Following the H1N1 Virus outbreak in 2009-2010, increased emphasis on pandemic planning was seen across the state. From 2010 to 2019 however, without another major U.S. event, emphasis on pandemic planning diminished. While Vermont, due to its rural nature, has some level of protection from national infection rates during a pandemic, the financial implications experienced during the COVID-19 pandemic in 2020 hit the state extremely hard.

COVID-19 is a new disease, caused by a virus not previously seen in humans. COVID-19 is highly contagious and people with COVID-19 who do not have any symptoms can spread the virus to other people. On March 13, 2020, President Trump declared a nationwide emergency pursuant to Sec. 501(b) of Stafford Act to avoid governors needing to request individual emergency declarations. All 50 states, the District of Columbia, and 4 territories have been approved for major disaster declarations to assist with additional needs identified under the nationwide emergency declaration for COVID-19. Additionally, 32 tribes are working directly with FEMA under the emergency declaration. FEMA announced that federal emergency aid has been made available for the state of Vermont to supplement the state and local recovery efforts in

the areas affected by the Coronavirus Disease 2019 (COVID-19) pandemic beginning on January 20, 2020 and continuing. Public Assistance federal funding was made available to the state and eligible local governments and certain private nonprofit organizations on a cost-sharing basis for emergency protective measures (Category B), including direct federal assistance under Public Assistance, for all areas in the state of Vermont affected by COVID-19 at a federal cost share of 75 percent.

In early 2020, there was a quick return to the tenets of effective pandemic planning. Preparing for hospital surge, high death rates and the medical equipment necessary for both patients and health care workers are examples of the state's early focus. Public information and guidance on safety, isolation, travel and quarantine also became extremely important while mitigating the pervasive economic consequences of reducing work forces, sending students home and closing businesses. Additionally, Vermont had to consider the implication of, and work to control, the immigration of people from other states. Both infection risk and taxing of local resources were the main concerns associated with this real consequence of the pandemic.

While the Northeast Kingdom remained insulated from infection rates (and subsequent deaths) seen elsewhere in the state (e.g., Burlington), issues of border closure, implementing safety protocol and procedures and economic resilience were experienced in every community, including Waterford. As of January 13, 2022, there have been 83,994 cases and 490 deaths in the state. According to the current data, Waterford has had less than 100 cases. Despite these low numbers, the economic and operational consequences of pandemic are of concern to the town. Having the capacity to navigate the funding opportunities as result of the pandemic for the town and residents is a concern in addition to providing resources to residents to mitigate spread (e.g., testing and vaccination services) and assure continuity of operations for government and community-based organizations. (<https://www.healthvermont.gov/response/coronavirus-covid-19/current-activity-vermont#town>)

## SECTION 3: RISK ASSESSMENT

**The following information relates to both the Village and Town:**

### **3.1 Designated Hazard Areas**

#### *3.1.1. Flood Hazard Areas*

Albany is located in the Barton River watershed, a drainage area of approximately 164 square miles. The mainstem of the Barton originates from Tildy's Pond in Glover, then travels through Barton and the Village of Orleans, on to Lake Memphremagog's South Bay in Coventry. The Barton River watershed contains one large tributary watershed, the Willoughby River (62 square miles), which drains from Lake Willoughby in Westmore, runs through Evansville and enters the Barton River just north of Orleans Village. It is difficult to estimate the total number of structures located in designated hazard area because current E911 maps do not correspond accurately to FIRMs. However, currently mapped Zone A's include the following areas:

1. Entire length of western portion of Black River
2. Great Hosmer Pond
3. Seaver Brook
4. Lords Creek (south of Albany Brook)
5. Beaver Brook (northern tip)
6. Southeast portion of Black RiverMcCleary Brook
7. Shatney Brook
8. Albany Brook

Approximately 25% of Albany Village is in Zone A but Albany Center is not.

### 3.1.2. Fluvial Erosion Hazard Areas

About two-thirds of Vermont's flood-related losses occur outside of mapped floodplains, and this reveals the fundamental limitations of the FEMA FIRMs. A mapped floodplain makes the dangerous assumption that the river channel is static, that the river bends will never shift up or down valley, that the river channel will never move laterally, or that riverbeds will never scour down or build up. In reality, river channels are constantly undergoing some physical adjustment process. This might be gradual, resulting in gradual stream bank erosion or sediment deposit – or it might be sudden and dramatic, resulting a stream bank collapse. The losses experienced during the May 2011 storms and Tropical Storm Irene were most often related to the latter. In fact, this type of flood-related damage occurs frequently in Vermont, due in part to the state's mountainous terrain. Land near stream banks is particularly vulnerable to erosion damage by flash flooding, bank collapse, and stream channel dynamics. The Vermont Department of Environmental Conservation, Agency of Natural Resources, has identified river corridors, which consist of the minimum area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition. In other words, the river corridor provides “wiggle room” for a stream as its channel changes over time. Keeping development out of the river corridors therefore reduces vulnerability to erosion. (*Albany Town Plan Draft*).

### Repetitive Loss Properties

The town has no repetitive loss properties (buildings or homes).

## 3.2 Non-designated Hazard Areas

The area north of Seaver Brook and east of Hartwell Pond is a constant concern for the town during high rain events. Road washouts and culvert damage are frequent in this area and the town is being proactive in mitigating risk here.

### 3.3 Previous FEMA-Declared Natural Disasters and Non-declared Disasters

While the Town of Albany has had a history of flooding, losses to public infrastructure have intensified in recent years. The summers of 1996, 1998 and 2002 saw moderate road damage throughout the town and in the village areas. Damage was largely contained to local back roads (unpaved) due to washouts. During Tropical Storm Irene, the Chamberlin Hill Road Bridge was destroyed. This single bridge event was the single greatest expense associated with a natural disaster the town has sustained in recorded history. The town has been fortunate that its buildings and residential property has remained unaffected by recent disasters. Albany has received public assistance funding from FEMA for the following natural disasters:

*Table 3-1: KEY:*

DR	Date	Type
1307	11/10/1999	Severe Storm(s)
1428	07/12/2002	Severe Storm(s)
1715	08/03/2007	Severe Storm(s)
1995	06/15/2011	Severe Storm(s)
4022	09/01/2011	Hurricane
4066	06/22/2012	Severe Storm(s)
4163	01/29/2014	Severe Ice Storm
4532	03/13/2020	Pandemic
4474	07/17/2020	Severe Storm(s)

*Table 3-2: Town of Albany, FEMA-declared disasters and snow emergencies, 2005-2022*

Disaster Number	PW Number	Application Title	Damage Category Code	Project Size	Project Amount	Federal Share Obligated	Total Obligated
4022	284	NCORLALB shute ville	C - Roads & Bridges	Small	\$14,780.71	\$13,302.64	\$13,302.64
4022	311	NCORLALB delano	C - Roads & Bridges	Small	\$13,208.22	\$11,887.40	\$11,887.40
4022	322	NCORLALB chamberlin hill road	C - Roads & Bridges	Small	\$13,652.37	\$12,287.14	\$12,287.14
4022	323	NCORLALB chamberlin bridge removal	B - Protective Measures	Small	\$33,085.38	\$29,776.85	\$29,776.85
4022	340	NCORLALB wells	C - Roads & Bridges	Small	\$18,268.27	\$16,441.44	\$16,441.44
4022	347	NCORLALB creek	C - Roads & Bridges	Small	\$28,987.60	\$26,088.84	\$26,088.84
4022	382	NCORLALB barton	C - Roads & Bridges	Small	\$8,911.79	\$8,020.61	\$8,020.61
4022	503	NCORLALB sinon	C - Roads & Bridges	Small	\$26,988.36	\$24,289.52	\$24,289.52
4022	515	NCORLALB lafont	C - Roads & Bridges	Small	\$2,948.02	\$2,653.22	\$2,653.22
4022	548	NCORLALB page pond	C - Roads & Bridges	Small	\$2,975.19	\$2,677.67	\$2,677.67
4022	581	NCALC01 - Chamberlin Hill Rd Bridge Replacement (B-28)	C - Roads & Bridges	Large	\$360,407.56	\$324,366.81	\$324,366.81

4022	1080	NCAL C09 larabee	C - Roads & Bridges	Small	\$2,412.93	\$2,171.64	\$2,171.64
4022	1361	NCAL c09 south albany	C - Roads & Bridges	Small	\$3,623.80	\$3,261.42	\$3,261.42
4022	1413	NCAL c10 south albany/sawmill	C - Roads & Bridges	Small	\$3,218.66	\$2,896.80	\$2,896.80
4066	3	JCABC1 Burbank Rd	C - Roads & Bridges	Small	\$2,600.00	\$1,950.00	\$1,950.00
4066	26	JCABC2 Sinon Rd.	C - Roads & Bridges	Small	\$2,132.27	\$1,599.20	\$1,599.20
4066	32	JCABC6 Page Pond Rd.	C - Roads & Bridges	Small	\$20,730.35	\$15,547.76	\$15,547.76
4066	33	JCABC4 LaFont Rd.	C - Roads & Bridges	Small	\$11,877.83	\$8,908.37	\$8,908.37
4066	34	JCABC7 Shute Ville Rd.	C - Roads & Bridges	Small	\$6,863.97	\$5,147.98	\$5,147.98
4066	39	JCABC5 Larabe Hill Rd.	C - Roads & Bridges	Small	\$8,336.29	\$6,252.22	\$6,252.22
4066	43	JCABC3 Creek Rd.	C - Roads & Bridges	Small	\$9,013.76	\$6,760.32	\$6,760.32
4066	55	JCABC8 Barton Rd.	C - Roads & Bridges	Small	\$17,814.66	\$13,361.00	\$13,361.00
4163	10	ALBAA01 Town Wide Debris Removal	A - Debris Removal	Small	\$15,232.75	\$11,424.56	\$11,424.56
4474	00034	135455 - Town wide Debris Removal	C - Roads & Bridges	Large	\$110,940.02	\$11,093.99	\$99,846.03

Sources: FEMA and the Town of Albany

Non-declared disasters (e.g. snow and rain storms) have not resulted in damage above and beyond normal maintenance. Extreme, long-lasting cold temperatures during winter months do pose a concern for the town as in many communities where the price of heating fuel often exceeds resident's ability to pay. Coupled with high unemployment, there is an increased risk for the town's residents to not meet the financial requirements for adequate heat, especially during long periods of extremely cold temperatures. Without adequate provisions, 48 hours of extremely cold temperatures could create a serious health hazard. In 2014, the town had a road surplus of \$50,023.46 after spending \$580,248.28 that year.

### 3.3 Hazard Assessment and Risk Analysis

Although estimating the risk of future events is far from an exact science, the Planning Team used best available data and best professional judgment to conduct an updated Hazards Risk Estimate analysis, which was subsequently reviewed and revised by town officials in 2016. This analysis assigns numerical values to a hazard's affected area, expected consequences, and probability. This quantification allows direct comparison of very different kinds of hazards and their effect on the town and serves as a method of identifying which hazards hold the greatest risk based on prior experience and best available data. The following scoring system was used in this assessment:

Area Impacted: scored from 0-4, rates how much of the municipality's developed area would be impacted.

Consequences: consists of the sum of estimated damages or severity for four items, each of which are scored on a scale of 0-3:

- Health and Safety Consequences
- Property Damage
- Environmental Damage
- Economic Disruption

Probability of Occurrence: (scored 1-5) estimates an anticipated likelihood of occurrence based on prior experience and current information.

To arrive at the Overall Risk Value, the sum of the Area and Consequence ratings was multiplied by the Probability rating. The highest possible risk score is 80.

### 3.3.1. Natural Hazards

According to the updated Hazard and Risk Estimation for Albany, the following natural hazards received the highest risk ratings out of a possible high score of 80:

- Severe Winter Storm (32)
- Flooding (48)
- Pandemic (24)
- Extreme Cold (36)

Flood-related disasters have had the greatest financial impact on the town. While no deaths or injuries have been recorded for declared or non-declared disasters, the potential for health and safety risk during a severe winter storm are considered higher than that posed by a flooding event. Lightning and high winds further the risk for power loss and while high winds can occur any time of year (and normally occur in unison with rain or snow events), lightning is isolated to warmer month

*Table 3-2 Natural hazards risk estimation matrix*



<b>Albany Risk Analysis: NATURAL HAZARDS</b>		Drought	Flooding	High Winds	Fluvial Erosion	Landslide	Lightning	Multi-Structure Urban Fire	Pandemic	Winter Storm	Extreme Cold
<b>Area Impacted</b>											
Key:	0 = No developed area impacted										
	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	1	4	1	1	1	1	1	3	4	
<b>Consequences</b>											
<i>Health &amp; Safety Consequences</i>											
Key:	0 = No health and safety impact										
	1 = Few injuries or illnesses										
	2 = Few fatalities or illnesses										
	3 = Numerous fatalities	0	1	1	0	1	1	3	1	2	
<i>Property Damage</i>											
Key:	0 = No property damage										
	1 = Few properties destroyed or damaged										
	2 = Few destroyed but many damaged										
	3 = Few damaged but many destroyed										
	4 = Many properties destroyed and damaged	0	2	2	1	1	1	1	1	1	
<i>Environmental Damage</i>											
Key:	0 = Little or no environmental damage										
	1 = Resources damaged with short-term recovery										
	2 = Resources damaged with long-term recovery										
	3 = Resource damaged beyond recovery	2	2	1	2	1	1	1	1	1	
<i>Economic Disruption</i>											
Key:	0 = No economic impact										
	1 = Low direct and/or indirect costs										
	2 = High direct and low indirect costs										
	2 = Low direct and high indirect costs										
	3 = High direct and high indirect costs	2	3	1	1	1	1	2	2	1	
<b>Sum of Area &amp; Consequence Scores</b>		5	12	6	5	5	5	8	8	9	
<b>Probability of Occurrence</b>											
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	1	4	4	4	1	4	1	4	4	
<b>TOTAL RISK RATING</b>											
	Total Risk Rating =	5	48	24	20	5	20	5	32	36	
	Sum of Area & Consequence Scores										
	x Probability of Occurrence										

### 3.4.4 Hazard Summary

According to the risk estimation analysis, the highest rated hazards for Albany are:

Severe Winter Storm  
Flooding  
Extreme Cold  
Pandemic

Flooding is the highest rated hazard for Albany due to previous damage events and subsequent costs to repair. Within each of the highest rated hazards, there exists the potential for the secondary, but no less important, consequence of increased financial demand on residents because of an event. While winters in Vermont are characterized by cold weather, recent increases in extreme weather events, including extremely cold temperatures increases the costs of heating energy and this is a challenge that the state and local communities are being forced to address. Along these lines, the cases of COVID-19 were minimal in the planning area, but the financial impact of protective measures implemented on a state-level impacted the planning area as it did many of the surrounding communities. Recovery from the pandemic will be a long road for some and the consequences for residents and the town have the potential of being severe. The next planning cycle will give the planning team an opportunity to assess and work to mitigate these consequences.

## SECTION 4: VULNERABILITY ASSESSMENT

Vulnerability refers to the potential impact of a specific loss related to an identified risk. Albany is a small town with very few buildings aside from residential. While the loss of any one facility would cause a disruption in town services and operations, the overall vulnerability is low. There are roads, bridges and culverts vulnerable to flooding and those are identified below. Loss of equipment function for the highway department is a vulnerability for the town but the risk is not due or predicted to be a result of a disaster, merely, the required maintenance expected of highway-related machinery. For this section of the plan, the planning team looked at prior history and worst-case scenarios. The primary vulnerability for the town and village is transportation-related infrastructure during flood events. Using declared disaster PA funding as a guide to understanding the relationship between natural hazards and infrastructure damage, the most significant, single location damage event was that of the Chamberlin Hill Road Bridge removal (\$33,085.00) and replacement (\$360,407.00) due to disaster 4022. With a total of 14 PA projects resulting from this event (all considered small projects aside from Bridge), 4022 was historic in terms of infrastructure damage. Second to 4022, was the May floods of 2011 (DN: 1995) with 8 projects totaling \$90,120.00 in Federal assistance. Albany has 28 E911 structures in the Special Flood Hazard Area but none have a history of repeated damage. The following represents information for both the village and town:

### **Severe winter/ice storm: Moderate**

Summary: While all structures are vulnerable to major snow loads, there is little evidence to support concern over structure failure due to snow loads on roofs, ice on gutters, etc. Town snow

removal equipment is vulnerable to damage with greater use, especially during emergency situations as well as road damage from plowing. Populations caught outdoors, commuting or working outside during a severe winter storm are more vulnerable to cold-related injury and/or snow related accidents but winter comes every year and residents and the town are accustomed to making intelligent decisions regarding safety and protection of infrastructure. Special populations (e.g. aging, disabled, etc.) are more vulnerable in terms of mitigating structure loads, hazardous travel and relocating to safety.

### **Extreme Cold: Moderate**

Summary: Recent evidence shows that greater extremes in temperature and overall weather fluctuation are occurring with increased frequency. A long-duration cold snap can cause significant damage to structures due to bursting pipes and the residential health and safety considerations include factors related to financial resources, fuel supply, sheltering, provisions and employment.

### **Flooding: High**

Summary: Flood vulnerability is specific to transportation routes and infrastructure more-so than buildings and people. However slight in terms of probability, a riverbank breach of significant magnitude could have catastrophic implications on homes, buildings, people and equipment. The magnitude of financial resources devoted to flood-related damage in the town equates to high vulnerability. Flooding impacts the planning area by inundation damage to structures, which are considered well-below the FEMA flood hazard elevation and roadway drainage structures. Most of the damage is to road surfaces, drainage structures (culverts, ditching) and driveways. Roadways are also an issue for municipal road crews in each jurisdiction when they become inundated and cut off traffic.

### **Pandemic: High**

Summary: Not only is the COVID-19 current during the drafting of this plan but it will likely remain active, at very least, over the 2020-2021 flu season. While Vermont has remained relatively insulated from the worst-case scenarios already seen in other states in regard to infection rates, there have been significant financial impacts for the region and state. There are several important considerations for the town and villages to take on. Issues such as tax revenue reductions from failure to pay on a large scale to how a major storm event could compromise pandemic response (e.g., sheltering operations and resource allocation).

*Table 4-1: Vulnerability Summary Table*

Hazard	Vulnerability	Extent (Storm Data from most severe event)	Impact (economic/health and safety consequence)	Probability
Flood	Culverts, bridges, road infrastructure.	The greatest 24-hour rainfall record for immediate region occurred in late October 31st, 2019 at 3''. The greatest level of precipitation in any month occurred in August 2011 at 11''. No detailed data was available for fluvial erosion damage in town in terms of numbers of acres lost during each event.	The most significant, single location damage event was that of the Chamberlin Hill Road Bridge removal (\$33,085.00) and replacement (\$360,407.00) due to disaster 4022. With a total of 14 PA projects resulting from this event (all considered small projects aside from Bridge), 4022 was historic in terms of infrastructure damage. Second to 4022, was the May floods of 2011 (DN: 1995) with 8 projects totaling \$90,120.00 in Federal assistance.	High
Extreme Cold/ Snow/Ice Storm	The entire planning area is vulnerable, including road infrastructure, town and privately-owned buildings, utility infrastructure	Snowfall has varied, from a few inches to over a foot or more. Heavy snow and wind may down trees and power lines. Snow/ice contributes to hazardous driving conditions.	For roof collapse: monetary damages will depend on each structure but, collapse of barn roof is often a total loss. This does not include the loss of livestock. Collapse of a house roof may be at a 50% loss. For car crashes due to poor driving conditions: minimal damage to vehicle to totaled vehicle and operator injury. Health impacts could vary significantly. Loss of energy or communication capabilities may occur and impede recovery. Albany	High

			received PA funding for the 2014 ice event for \$11,424. On December 13 <sup>th</sup> , 2013, another ice storm hit portions of Orleans County, resulting in a disruption of electric service up to 96 hours	
High Wind	Medium	The entire town and village is vulnerable to the results of high wind exposure. Significant damage possible to trees, power lines, building roofs.	With two declared disasters, due to wind, this hazard remains a concern. Transportation route access and electric power supply are at risk during a major wind event	Medium
Pandemic	The entire planning area is vulnerable in both health and financial stability	COVID-19 has far-exceeded severity of 2009-2010 HINI Pandemic	2020 COVID-19 has resulted in the greatest infectious disease-related financial consequence for the planning area in history	High

#### 4.1 Critical Facilities

The Center for Disaster Management and Humanitarian Assistance defines critical facilities as: “Those structures critical to the operation of a community and the key installations of the economic sector.” All critical facilities in the town are outside the designated flood hazard areas and have no history of damage due to a disaster. In this regard, the town is resilient to critical facility damage during a natural disaster most likely to affect the region

*Table 4-1 Critical facilities in the Town of Albany*

Facility Type	Number of Facilities	Value
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Education Facility	1	Not owned by town
Town Office/fire station	1	\$841,500
Emergency Shelters	2	Not owned by town
Town Garage	2	\$322,600
Recycling Center	2	\$205,000
The Albany Historical Society	1	Not owned by town
Post Office	1	Not owned by town
Town Hall/Library	1	\$248,900
Village Water System	2 wells	\$50,000 annual income

## 4.2 Infrastructure

### Town Highways

The major transportation route in Albany is VT Route 14 which had an Annual Average Daily Traffic (AADT) volume of 1,400 in 2012. This route runs northeast to southeast through town and connects Albany with Orleans, Newport City and Derby to the northeast, Hardwick and Montpelier to the south, and Burlington to the southwest. This route is categorized as a “Major Collector” by the Vermont Agency of Transportation. Major routes connect the Town to employment, healthcare, education, shopping, and many other services. According to Vermont General Highway Map, there are approximately 46.6 miles of town roads in Albany, and 6.7 miles of state highways. Other transportation routes in Town included approximately 16 miles of snowmobile trails maintained by the Vermont Association of Snow Travelers (VAST), which are also used by Nordic skiers.

*Table 4-2 Town highway mileage by class, Town of Albany*

Class 1	Class 2	Class 3	Class 4	State Hwy	Fed Hwy	Interstate	Total 1, 2, 3, State Hwy
0	16.04	30.56	0	6.722	0	0	53.322 Miles

*Source: data derived from VTrans TransRDS GIS data –Albany Town Plan 2015*

### Bridges, Culverts, and Dams

#### Bridges:

There are a variety of bridges, culverts and dams (beaver only) located in the town. The following bridges are contained in an inventory maintained by VCGI, VTrans and the NVDA and represent those of greatest concern for the town. This analysis does not take into account the fluvial geomorphology or the elevation of the bridge above the floodplain.

*Table 4-4 Inventoried bridges and culverts in the Town of Albany with identified risk*

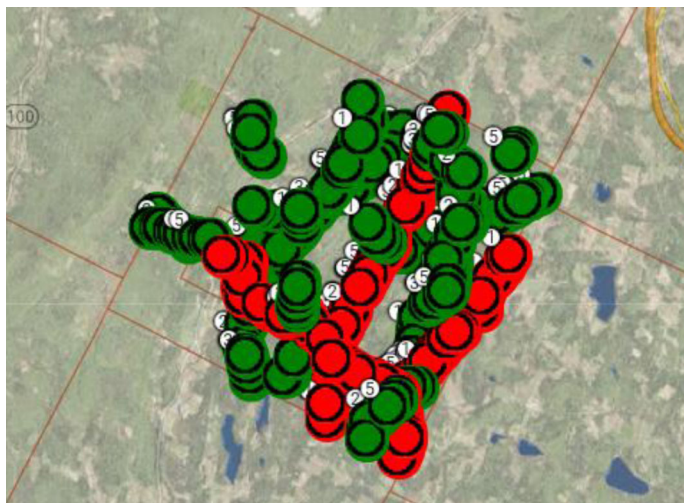
Bridge	Wylie Hill Rd.
Bridge	Water St
Bridge	W. Town Farm Rd.
Culvert	Shutesville Rd.
Bridge	Old St.
Culvert	E. Daniels Rd.
Bridge	Chamberlain Hill Rd. near jct. of Creek Rd.
Bridge	Near jct. of Wells and Creek Rd.

The entire Bridge Inventory with maps for the town can be found on the state site: <https://vtculverts.org/bridges#list>

#### Culverts:

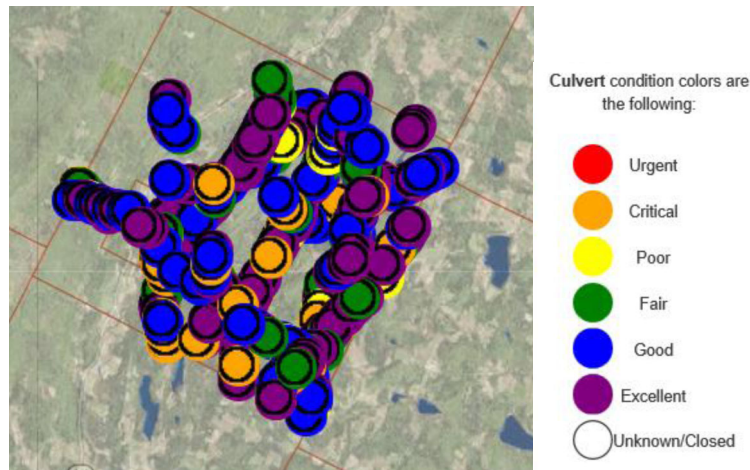
There are currently 439 culverts in the town and are classified in the system. The majority of the culverts are in GOOD or EXCELLENT condition. Most of the culverts in town have low vulnerability or importance (green dots in Table 2-4). The red dots indicate high importance, and many are located on Creek Rd., Hartwell Pond Rd and Page Pond Rd. This inventory is updated by the Town in conjunction with NVDA and VTrans. As of 2010, very few culverts, if any, were rated as critical along the high-risk areas.

*Table 4-3: Vulnerability Ranking Map for Albany Culverts*



Source: <https://www.vtculverts.org/structures>

Table 4-4: Condition Ranking Map for Albany Culverts



Source: <https://www.vtculverts.org/structures>

The Town maintains a culvert inventory that assesses over data on length, overall condition, size and location. This data guides the town's culvert maintenance and replacement plan. Culverts most at risk of failing have been identified in the Road Erosion Site Inventory created in adjunct to this plan. The entire Culvert Inventory with maps for the town can be found on the state site: <https://vtculverts.org/map>.

#### Water, Wastewater and Natural Gas Service Areas

There are two public community water supply systems in Albany; a system which serves the Albany School and a system which serves properties in the incorporated village. The Albany Town School has its own community water and sewage system. The Village water system currently has 97 connections. Water service is not metered to individual customers. The water system is managed by Simon Operation Services based in Waterbury, Vermont. The Village Trustees own approximately 20 acres in the Source Protection Area (SPA) for the Village Water system. All other water and sewer systems are the sole responsibility of the property owner and they are required to meet state and federal regulatory standards. While there is no history of damage to this long-established system, the village-managed water supply systems is a significant source of income (\$50,000 annually) and protecting the integrity of the system is a goal. Increased communication and knowledge of Simon Operation Services and their emergency/contingency plans is planned

### 4.3 Estimating Potential Losses in Designated Hazard Areas

There are structures, including portions of town roads and bridges within the 100-year floodplain, many of which are indicated within the river corridor maps when compared to FIRM. According to most current American Community Survey 5-Year averages, the median value of an owner occupied housing unit in Albany is \$112,500. With no repetitive loss properties, the town does not believe that even during a flooding event similar to those of 2011 that there would



substantial damage to buildings or residential housing that exceeded 1%. However, given the magnitude of damage to town bridges, the potential for costs exceeding the annual road budget does exist. However, the repairs and enhanced resilience of locations damaged or destroyed as a result of recent declared disasters greatly reduces the potential for a recurrence. The following list had been populated from the 2014 River Corridor Maps developed for the town by NVDA. As mentioned, there are several designated floodplains in town and despite not having any repetitive loss properties, those structure in, or close to, designated flood hazard hazards are at increased risk, the number of properties by Zone A designation are included below:

Zone A Location	Number of structures
Black River	18
Great Hosmer Pond	1
Lords Creek	1
McCleary Brook	2
Shatney Brook	2
Albany Brook	4

Assuming that each structure is a residential home at average value for the town, a loss of all properties listed above would result in a 6.5% reduction in taxable property for the town. While the likelihood of such an occurrence is very low, it provides a framework of understanding the financial impact of losing property in the flood hazard areas.

## SECTION 5: MITIGATION STRATEGIES

The greatest advancement in mitigation planning the town has achieved is from the direct experiences in responding to, and recovering from, the major disasters that have impacted the town and villages in the last decade. These disasters, have, to a large extent, redefined how the entire state views and approaches mitigation. The work of state agencies, including those devoted to transportation, planning and emergency management have also changed the way towns go about their day-to-day operations and planning, both in emergency situations and out. It is because of this that the town views this update as the new standard in their mitigation planning efforts. This plan update allows for a continuation of the systematic documentation of mitigation efforts in the next planning cycle. We feel that the implementation matrix captures specific progress in certain areas but more importantly, gives the town a guide from which all future action and updates can be based on.

### 5.1 Land Use and Development Trends Related to Mitigation

Since the last approved mitigation plan, there has not been a significant change in development in the town or village. As result of this, overall vulnerability of the community at-large has not been impacted in the positive or negative direction. The Albany General Store reopened in June

2021 in Albany Village. This is a valuable asset to the Town in terms of food commodities, community meeting space and an event notification board.

Agriculture has historically helped to characterize the Town of Albany and continues to today. In 2012, Albany had 10,599 acres enrolled in Vermont's Current Use Program, both agricultural and forestry properties, constituting roughly 43% of the Town's total land area. In Albany, there are 15 properties that are listed as "farms" on the Town's Grand List, which range from 0.83 acres to 436 acres in size, with the average size being 178 acres. There are 44 properties identified as "woodland", many of which contain sugar houses, ranging in size from 10 acres to 378 acres, the average size being 84 acres. Albany's farms cover a total of 2,667 acres, and woodland parcels cover a total of 3,704 acres. Combined, they cover approximately 26% of the Town's total land area. The Vermont Land Trust has conserved a total of 1,076 acres in Albany, approximately half of which is agricultural land at 534 acres. 555 acres of this land received financial assistance from the Vermont Housing and Conservation Trust Fund (VHCB). In addition, 43 acres of property now part of the Albany Community School, was purchased with the help of a grant from assistance from VHCB and combined with an appropriation from the Town of Albany. The greatest concentration of dwelling units in Albany is within the center of the incorporated Village, along Main Street, Water Street, Old Street, and New Street. The 2010 census counted a total of 511 housing units in the Town, 83 of which were located within the incorporated village. There is also a small cluster of dwellings in the area of South Albany. The rest of the Town's housing units are dispersed along Route 14, and on the paved and unpaved town roads. Albany sits within the watershed of the Black River, which flows into Lake Memphremagog, ultimately into the Saint Lawrence River in Canada and then into the Atlantic Ocean. Each of the watersheds that our waters drain into has been affected by nonpoint source pollution, which occurs when runoff such as rainwater or snowmelt moves over the land surface and washes with it a number of manmade or natural pollutants into lakes, rivers, wetlands, and even groundwater. The main nonpoint sources of contaminants are sediment, bacteria, nutrients, toxic chemicals, and metals. Land uses such as agriculture, forestry, construction, residential areas, and septic systems are all potential nonpoint pollution sources. The Vermont Division of Water Quality is working through the Basin Planning Program to assess streams and rivers for such pollutants.

There are a number of ponds within Albany (either entirely or partially), including Great Hosmer, Page Pond, Hartwell Pond, and Griggs Pond. The Hosmer Ponds Watershed Initiative is an informal group of Craftsbury and Albany Residents which wants to increase its appreciation and understanding of the community's natural resources through outings, workshops, and gatherings. This group strives to engage community members to think about long-term conservation goals for the region and the tools available to reach such conservation goals. This effort began in 2007, supported by the Vermont Land Trust through a small grant from the Vermont Community Foundation. The Hosmer Ponds Watershed Initiative recently joined forces with the Craftsbury Outdoor Center.

Riparian buffers and corridors, including stream banks and lakeshores, serve vital functions that have significant environmental, economic, and social value. Conserving riparian ecosystems allows them to carry out their many functions, which include: protecting water quality and aquatic habitats for terrestrial wildlife, including travel and dispersal corridors; supporting

significant natural communities and adjacent wetlands and protecting channel-forming processes and channel stability. Riparian vegetated buffer strips can contribute to addressing residents' concerns about water quality and supply, pollution of water sources, disappearance of natural areas, and wildlife habitat.

The wetlands of the state of Vermont are valuable natural resources. It is estimated that Vermont's existing wetlands comprise less than 5 percent of the state's surface area. In addition to being Vermont's most reproductive ecosystems, wetlands serve a wide variety of functions beneficial to the health, safety, and welfare of the public, including:

- Retaining storm water runoff, reducing food peaks, delaying flood crests, and thereby reducing flooding.
- Protecting the quality and quantity of groundwater.
- Improving surface water quality by storing organic materials. Chemically breaking down or removing pollutants, and by filtering eroded sediments and organic matter from the surface runoff.
- Stabilizing soil and dissipating wave and current energy.
- Providing spawning, feeding and general habit for fish.
- Providing a wide diversity of habitat for wildlife, including waterfowl, birds, mammals, furbearers, amphibians, and reptiles.
- Providing habitat critical for survival of rare, threatened, or endangered species of plants and animals.
- Providing both representative and rare examples of plant communities which make up the state's natural wetland heritage.
- Providing valuable resources for education and research in natural sciences.
- Providing a diversity of recreational and economic benefits.
- Contributing to the open space character and overall beauty of the landscape.

#### *5.1.1 Proposed Land Use*

While the town currently does not participate in the NFIP, it is committed to reducing flood risk and vulnerability and increasing the location of new residential and commercial uses in its designated village districts. Residential homes or businesses in the floodplain and at risk of flooding is not an outstanding concern for the town. With adopted Flood Hazard Area Regulations in 2004, the town demonstrated its willingness to address flood risk but currently had no zoning. Also, the level of repetitive flood damage to property in the town is very low, if not non-existent. However, a current town goal as stated in the 2016 Town Plan Draft is to explore participation in the FEMA Community Rating System (CRS) so as to secure a discount on flood insurance. Historically, the relationship between the town and village governance is positive and effective. The following narratives represent the best interests of both the village and the town.

#### *5.1.2. Land Use Goals*

The town is committed to retaining its rural character and its economic base of working farms and productive forests without hampering the landowner's ability to profit from either the use or sale of his or her assets.

### *5.1.3. Land Use Strategies*

The town will continue to encourage stewardship of its natural resources through information and education and promote viability of resources through current use, Vermont Land Trust and Local Vermont products. This will educate the public on the benefits of Village Center designation and pursue Village Center re-designation for Albany Village while monitoring rural residential development trends in order to identify potential conflicts with long-range land use goals. Additionally, the Albany Planning Commission will investigate the feasibility of implementing subdivision regulations to preserve open space, and discourage loss of farmland and, if found appropriate, shall draft such regulations for submission to the Selectboard.

### *5.1.4. Future Development and Housing*

Despite the advantages of attracting new businesses and housing, the town does not foresee major development occurring in the next five-year planning cycle. Other than individual real-estate transactions, there is little anticipated business development projected. However, the town plans to investigate incentives, such as a low interest loan program, that will promote business development in the Village, including a general store. The town will also consider the benefits of Village Center designation and encourage the development of commercial enterprises in town that make use locally grown or harvested products while preserving and enhancing the recreational potential of land as a draw for eco-tourism.

*5.1.5.* The rate of growth in occupied (year-round) housing units and family households in Albany was significantly higher than in the county and state. Family households in Albany increased by 12.6% from 2000-2010, while Orleans County had growth of only 2% and the State, only 1.7%. Occupied housing units increased by 17.2% in Albany, while the increase was only 8.4% and 6.6%, respectively, in the county and state.

The vast majority of new housing units built occurred outside of the incorporated village, with only 4 of the 58 new units occurring inside the village boundaries. However, percentage-wise, the growth in population and family households was greater within the village than in the town as a whole, with population in the village increasing by 17% compared to growth of 12% town-wide.

Within the village, the number of units that was renter-occupied increased by 7 while owner-occupied units decreased by 4. Percentage-wise, the number of renter-occupied units increased at a greater rate than owner-occupied units town-wide. While this increase (22.8%) was significantly higher than the percent increase in rental units county-wide and state-wide, owner-occupied units still account for the majority (about 82%) of the households in Albany. County-wide, owner-occupied units account for 75.6 % of all households, and state-wide, 70.7% of units. Factors such as the capacity of the Village water system, the location of fluvial erosion hazard areas, and the presence of soils unsuitable for septic systems will influence the ability of the Village to absorb more residential density. Future residential development should occur in such a way that it will not stress existing resources, including community facilities and services. Increased residential density in the Village is not desirable at this time, although improvement in the condition of existing housing resources in the village through restoration, rehabilitation or rebuilding is desirable. New residential development occurring outside the Village should make

use of existing roads and infrastructure and avoid impacting existing and potential agricultural and recreational use of the land.

#### *5.1.6. Residential Development Patterns*

Albany has no zoning and although the Town will consider adopting flood hazard regulations town-wide in order to qualify for membership in the National Flood Insurance Program, there are currently no local regulations that might hinder the development of affordable types of housing, including manufactured home parks or multiple unit dwellings. However, all new residential development needs review and approval of an on-site septic system from the State.

#### **Housing Goals and Objectives**

Albany is dominated by owner occupied dwellings and will continue to be so for the foreseeable future. Goals include:

- Retain existing scale and density of housing in the Village by encouraging restoration and/or rebuilding of existing dwellings while not encouraging development of new housing on open land.
- Preserve the agricultural and recreational use of lands in Town by encouraging new residential development occurring outside the Village to make use of existing roads and infrastructure, and to avoid impacting existing and potential agricultural and recreational use of the land ( *Albany Town Plan*).

## **5.2 Albany Town Goals and Policies that support Hazard Mitigation**

### *5.2.1. Community Goals*

- a. Continue supporting state standards with local, POS water/sewer sources.
- b. Take advantage of the UVM/ACCD mobile home park preparedness programs to support resiliency of this disproportionately impacted population during disasters.
- c. Consider implementation of special population tracking within the community where-by residents unable to drive or that have no one to depend on can self-identify for inclusion in a maintained database so that rescue personal and emergency managers can account for this demographic.
- d. Work with residents, NVDA, rescue services, Vermont EMS and the LEPC to accomplish community outreach to develop understanding of the scope of practice of EMS in rural Vermont.
- e. The Selectboard and Planning Commission shall pursue grant funding for shelter emergency generators.
- f. Selectboard and Planning Commission shall continue to study the availability of firefighting water supplies, recommend locations and install dry hydrants where needed.
- h. The Selectboard and Planning Commission shall pursue grants and program participation for the provision of wireless and broadband communications.

#### *5.2.2. Capital Improvement Goals*

- a. Provide services and facilities deemed necessary for the orderly and rational development of the Town.
- b. Selectboard shall investigate options for the construction of public building or buildings to house Road Department equipment and operations and possibly an animal holding facility for dogs impounded by the Town and propose such facility to the voters.

#### *5.2.3. Public Participation Goals*

- a. Continue to solicit input regarding planning issues from town residents and from other entities which can help to offer solutions and insight into the problems the Town faces both now and in the future via formal meetings and advertised opportunities for input.
- b. Utilize the LEPC and NVDA to increase awareness, enhance planning and engage in exercises that address needs in the community.

#### *5.2.4. Regulatory Devices Goals*

- a. The town is confident that state regulations will serve the town best and adopts to not have zoning at this time.
- b. Maintain and continue a Capital Expense Budget and Program for the purpose of ensuring that Albany's rate of growth does not outstrip the Town's ability to pay for the associated necessary services such as roads, schools, police and fire protection, solid waste, etc.
- c. Develop and maintain a "No Adverse Impact" (NAI) approach to flood hazard management by institutionalizing the best practices set forth by the ASFPM.
- d. Utilize best practices in flood-plain management for farm-related development in town

#### *5.2.5. Land Use*

- a. Work to develop a Flood Hazard Area Overlay District to include all designated flood hazard areas. The purpose of the Flood Hazard Area Overlay District is to (1) protect public health, safety, and welfare by preventing or minimizing hazards to life and property due to flooding, and (2) to ensure that private property owners within designated flood hazard areas are eligible for flood insurance under the National Flood Insurance Program (NFIP). The town has elected not to be part of the NFIP but is dedicated to not encouraging new development in the floodplain. The town has no mobile home parks but has a substantial number of mobile homes (13.5% of grand list) and very few residences at risk of flooding with no repetitive loss properties (*Source: Repetitive Losses / BCX Claims Federal Emergency Management Agency: VERMONT*)

#### *5.2.6 Natural Resources*

- a. Ensure that the existing health ordinance is enforced to maintain protection of both surface and groundwater supplies.
- b. Ensure that permits issued for development near sensitive areas, such as steep slopes, high elevations, wetlands, scenic vistas, and wildlife habitats, contain conditions

assuring conformance to the goals set forth by the state of Vermont and when applicable and feasible, those defined as best practices by floodplain management organizations such as the ASFPM as well as those set forth in this plan and the most recent town plan.

c. The town should work with the NVDA and ACCD to continue the process of identifying the Town's land conservation priorities, and to the degree possible, link them to broader regional conservation work.

d. In line with the VTrans mission statement regarding climate change, the town remains committed to:

- Ensure that there are viable alternative routes around vulnerable infrastructure such as bridges and roadways
- Make safety a critical component in the development, implementation, operation and maintenance of the transportation system
- Develop contingency plans for a wide variety of climate impacts to be implemented as data/information becomes available
- Utilize information technology to inform stakeholders during times of emergency
- Educate of the public and other stakeholders on the threats posed by climate change and fluvial erosion hazards
- Increase inspection of infrastructure if warranted by climate change indicators
- Apply a decision-making framework to incorporate cost-benefit analyses into adaptive plans and policy
- Work to protect essential ecosystem functions that mitigate the risks associated with climate change
- Educate individuals within the agency to use best-practices during recovery periods to avoid ecological damage that may further exacerbate risk
- Recognize the interconnected nature of our built environment with ecological processes
- Protect the state's investment in its transportation system and adapting transportation infrastructure to the future impacts of climate change

e. In line with DEC's best practices regarding fluvial erosion, the town will work to:

- Slowing, Spreading, and Infiltrating Runoff (The State Surface Water Management Strategy is found at <http://www.watershedmanagement.vt.gov/swms.html> and <http://www.watershedmanagement.vt.gov/stormwater.htm>)
- Avoiding and Removing Encroachments. [http://www.watershedmanagement.vt.gov/rivers/htm/rv\\_floodhazard.htm](http://www.watershedmanagement.vt.gov/rivers/htm/rv_floodhazard.htm) [http://www.watershedmanagement.vt.gov/rivers/docs/rv\\_RiverCorridorEasementGuide.pdf](http://www.watershedmanagement.vt.gov/rivers/docs/rv_RiverCorridorEasementGuide.pdf)
- River and Riparian Management: DEC has prepared a compendium of *Standard River Management Principles and Practices* to support more effective flood recovery implementation; improve the practice of river management; and codify best river management practices in Vermont. The document compiles the most current river management practices based on the best available science and

engineering methods to create consistent practice and language for risk reduction while maintaining river and floodplain function. Best practices are established to address common flood damages, including:

- Erosion of banks adjacent to houses and infrastructure
- Erosion of road embankments
- Channel movement across the river corridor
- Riverbed down-cutting that destabilizes banks, undermines structure foundations, exposes utility crossings, and vertically disconnects rivers from adjacent floodplains
- Bridge and culvert failure

Source: [http://www.watershedmanagement.vt.gov/permits/htm/pm\\_streamcrossing.htm](http://www.watershedmanagement.vt.gov/permits/htm/pm_streamcrossing.htm)

#### 5.2.7. Policies

a. Through both town and state-level management, the town will work to:

- Encourage and maintain naturally vegetated shorelines, buffers and setbacks for all rivers, ponds and streams
- Allow higher density or cluster development in existing and designated settlement areas and low-density development in the remaining areas
- Reduce flood hazard and repetitive road and driveway washout through continued updates and adherence to priorities in road, bridge and culvert improvement projects developed in adjunct to this plan (see Appendix E)
- Identify and manage pollution, flooding and fluvial erosion hazards along rivers and streams as they arise

#### 5.2.8. Transportation Plan

In adjunct to town-specific planning, the town is committed to continually subscribing to all current state standards related to:

- a. Maintaining safe operating conditions on the present system of town roads through design and modification to keep traffic at appropriate speeds and to assure the safest possible driving conditions, including consideration of additional paving (though only on portions of roads prone to damage) should state funding become available.
- b. Protection of existing town roads from flood damage and uncontrolled storm water runoff.
- c. Preserving the capacity of town roads and maintain adequate traffic flows and safety.
- d. Support the road maintenance crew through Town-provided training sessions. This includes ICS training along with the Road Commission (Selectboard ).
- e. Support policies and procedures that ensure longevity of essential town-equipment and develop and maintain MOUs with neighboring towns related to equipment use.
- f. Continue long term access opportunities to gravel and sand deposits for future road maintenance use.
- g. Consider developing a standard operating procedure (SOP) based on ICS principles for highway department response events were coordination, communication and support are at a heightened level.



#### *5.2.9. Utilities and Facilities Goals*

- a. Maintain current relationships with the Vermont State Police and Rescue for police and emergency medical services, respectively.
- b. Develop policies and procedure that ensures equipment longevity to the greatest extent possible.
- c. Develop a retention plan for highway department personnel to help avoid high turnover and preserve institutional memory.
- d. Promote high-speed internet access in the Village to encourage local businesses to reside in Albany.
- e. Ensure adequate provision of water sources for fire suppression by requiring dry hydrants, fire ponds, water storage, or other measures where appropriate. The Planning Commission will work with developers and property owners on this task.

#### *5.2.9.1. Educational Goals*

- a. The School Board should work with the Selectboard, the American Red Cross and Orleans Fire Department to ensure that the necessary equipment exists at the school for its use as an emergency shelter.
- b. Increase emergency planning cohesion between school and town EOPs through mutual participation and presentation at scheduled LEPC meetings and town and/or school meetings.
- c. Continue collaboration with the Vermont Chapter of the American Red Cross on their sheltering initiative program to further readiness with training and supplies related to sheltering operations.

### **5.3 Existing Town of Albany Actions that Support Hazard Mitigation**

Excluding the water system management by the Village, all town actions are inclusive regarding the village. With that, the town has done an excellent job at monitoring and addressing transportation issues, engaging in a documented and systematic approach to mitigation actions. The town relies on the road crew to keep its residents informed on maintenance issues regarding the roads or town garages. A road maintenance budget for repairs and upkeep of existing roads and structures is set every year at Town Meeting. Albany's current road policy allows the Select board to accept and maintain new and upgraded Class 4 roads into the Town Highway system only with a vote from the Town Residents. Participation by the Town in the Northeastern Vermont Development Association (NVDA) Transportation Advisory Committee (TAC) allows Albany to have a voice in the regional transportation infrastructure prioritization. NVDA also conducts Road Foreman meeting through the Agency of Transportation District Offices and at NVDA. This is an excellent peer learning opportunity and builds relationships between communities. The town has also adopted municipal road and bridge standards that meet or exceed the 2013 standards and has an approved and adopted Local Emergency Operations Plan and the 2016 Town Plan is slated for adoption. Related to flood resilience goals and strategies,

the 2016 Town Plan states:

*5.3.1. Flood Resilience Goals:*

- Mitigate Albany's flood hazards in the most cost-effective manner possible
- Minimize the risk exposure and associated expense to Albany taxpayers
- Ensure the Town and its facilities are prepared to meet the demands of the next flood
- Ensure the Town can receive the maximum outside assistance in the event of the next Federally declared disaster

*5.3.2. Flood Resilience Strategies:*

- Identify and protect Albany's natural flood protection assets, including floodplains, river corridors, other lands adjacent to streams, wetlands, and upland forested cover
- Adopt flood hazard regulations that at a minimum, protect property from known risks
- Review and evaluate statewide river corridor information, when it becomes available.
- Consider adopting regulations that will protect erosion prone areas for additional Development and encroachment
- Maintain and regularly update the Local Emergency Operations Plan.
- Continue to meet the VTrans Road and Bridge standards. Participate in regional Road Foreman trainings and Transportation Advisory Committee meetings to stay abreast of flood resilience measures for the Town's roads and bridges
- Continue to update the Town's transportation infrastructure information in the Vermont
- Online Bridge and Culvert Inventory Tool
- Replace undersized and failing culverts
- Develop a Local Hazard Mitigation Plan
- Equip the town's emergency shelter (the school) with a generator

*Table 5-1: Existing municipal actions that support hazard mitigation, Town of Albany*

Type of Existing Protection	Description /Details/Comments	Issues or Concerns
<b>Emergency Response</b>		
Police Services	Vermont State Police	None at this time
Fire Services	Orleans VFD and Town of Albany VFD	Water access for fire department is problematic; some roads are difficult to access.
Fire Department Personnel	Chief plus PT staff	Need for new volunteers remains
Fire Department Mutual Aid Agreements	Northeast International Mutual Aid (19 participants)	None at this time
EMS Services	Orleans	Staffing longevity and community awareness of scope of services
<b>Other Municipal Services</b>		
Highway Services	Town Highway Department	Stabilizing transition of operational structure/staff and assuring equipment longevity
Highway personnel	3 FTE field personnel	MOU's completed with residents to avoid future conflict and liability over culvert and ditching work and other towns to assure equipment availability
Water / Sewer Department	Village Managed	Protection measures for well needed
Planning and Zoning personnel	Town positions filled	None at this time
Residential Building Code / Inspection	No	None at this time
<b>Emergency Plans</b>		
Local Emergency Operations Plan (LEOP)	2022	Assure sheltering plans and contact information is up to date and vulnerable populations are addressed.
School Emergency/Evacuation Plan(s)	2016	Increased collaboration (with town staff, school, LEPC, NVDA), knowledge of roles and drills are next step.
Municipal HAZMAT Plan	None	Not required but enhanced knowledge via HMEP funded transportation study conducted by LEPC would benefit town.
Shelter, Primary	Albany School	Working with ARC's Shelter Initiative and have obtained certification, training and supplies. Include volunteer staff in planning communication and schedule drills to test efficacy.
Replacement Power, backup generator	HMGP grant approved/award awaiting Hazard Mitigation plan approval	Stay proactive with state and FEMA regarding town interests.
Shelter, Secondary:	Congregational Church	Assure continued communication lines are open and contacts are correct (See LEOP comments)
Replacement Power, backup generator	None	
<b>Municipal Plans</b>		
Town / Municipal Comprehensive Plan	2017	None at this time
Hazard Specific Zoning (slope, wetland, conservation, industrial, etc.)	Utilize most current state regulations	Consider using current best practices to guide actions for achieving a "No Adverse Impact" policy as well as assuring future farm development occurs with defined best practices
Participation in National Flood Insurance Program (NFIP) and Floodplain/Flood Hazard Area Ordinance	No, the town elects not to participate	Residential homes or businesses in the floodplain are not an outstanding concern for the town and the barrier to obtaining mortgages would serve has a deleterious consequence to participating. SFHA mapping update is needed.
Culvert and bridge Inventory	2020	Bridge inventory needs to be populated Strive to coordinate lists and keep up to date

### 5.3 Town of Albany All-Hazards Mitigation Goals

The following goals were developed by the planning team, vetted during a warned community meeting and approved by the Town of Albany during the development of this plan:

1. Reduce at a minimum, and prevent to the maximum extent possible, the loss of life and injury resulting from all hazards.
2. Mitigate financial losses and environmental degradation incurred by municipal, educational, residential, commercial, industrial and agricultural establishments due to various hazards.
3. Maintain and increase awareness amongst the town's residents and businesses of the damages caused by previous and potential future hazard events as identified specifically in this Local All-Hazards Mitigation Plan.
4. Recognize the linkages between the relative frequency and severity of disaster events and the design, development, use and maintenance of infrastructure such as roads, utilities and storm water management and the planning and development of various land uses.
5. Maintain existing municipal plans, programs and ordinances that directly or indirectly support hazard mitigation.
6. Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan into the municipal comprehensive plan as described in 24 VSA, Section 4403(5). This mechanism will be developed by the Planning Commission, Selectboard and NVDA and integrate the strategies into the existing town plan as annexes until the next formal update occurs, where a section devoted to mitigation planning will be integrated into the plan.
7. Develop a mechanism for formal incorporation of this Local All-Hazards Mitigation Plan, particularly the recommended mitigation actions, into the municipal/town operating and capital plans & programs as they relate to public facilities and infrastructure within political and budgetary feasibility. The Planning Commission will review the updated LHMP and use language/actions from it to inform the integration and future update processes. Town Meeting Day will serve as the formal time that mitigation strategy budgetary considerations will be approved and incorporated into the town budget.

### 5.4 Mitigation Actions

In following FEMA guidance, the following mitigation action categories form the basis of the town's future mitigation actions. For each mitigation action to follow, an indication of group will be given with the abbreviations listed below:

#### **Mitigation Action Groups:**

(P) Prevention: Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include capital improvement programs, open space preservation, and storm water management regulations.

(PP) Property Protection: Actions that involve the modification of existing buildings or infrastructure to protect them from a hazard, or removal from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, flood proofing, storm shutters, and shatter-resistant glass.

(PEA) Public Education & Awareness: Actions to inform and educate citizens, elected officials, and property owners about potential risks from hazards and potential ways to mitigate them.

Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

(NRP) Natural Resource Protection: Actions that, in addition to minimizing hazard losses also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

(SP) Structural Projects: Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include storm water controls (e.g., culverts), floodwalls, seawalls, retaining walls, and safe rooms.

#### *5.4.1. Current Capabilities and Need for Mitigation Actions*

The Town Plan's goals and policies that support hazard mitigation and the existing mitigation actions demonstrate the variety of policies and actions forming the foundation of this All Hazards Mitigation Plan. Generally, the Town considers its existing capabilities are adequate to address the identified priority hazards in this Plan. The town understands the distinction between preparedness actions and mitigation actions and that by enhancing infrastructure resilience to disasters is the foundation of mitigation for many small communities in the region, the potential for a natural disaster event to exceed capabilities of infrastructure and services exists. While the town has seen little change in demographics and/or population, community impact and subsequent needs resulting from the pandemic provided new challenges and insights. Given this new awareness of the social vulnerabilities (e.g., loss of income, aging population, and access to health care) seen with the pandemic in addition to the health risks and that the town has continued to make progress in mitigated risk to the natural hazards, there is an opportunity to shift focus on addressing some lower priority items that serve enhance community resilience in a wholistic manner. With that and regarding mitigating long-term risk, the town and village need to develop policy and procedures and implement to reduce long-term risk associated with an event that exceeds capabilities.

#### **Progress in Mitigation Efforts**

The resulting mitigation actions taken in response to the events of 2011 have served to protect the town during subsequent flooding events. The table below provides status updates on the mitigation actions listed in the last approved plan.

**River Corridor:** Planning Commission looked at FEMA flood risk maps that covered Albany more recently when they considered whether or not to recommend to the Select Board adoption of a Town Flood Plan with the State for National Flood Insurance purposes about 3 years ago, but no studies were done, and they decided not to make any recommendation to the Select Board.

- **Infrastructure Assessment for Storm Water Vulnerability:** MRGP study completed in 2019; updates are added on-line for annual April 1<sup>st</sup> certification.
- **Culvert Upgrades:** VTCulverts.org website – All previous annual updates completed (except for updating 2021 culverts as website is still down in beta testing for new site features).
- **Develop SOP for Emergency Events:**

- ARPA funds for 2023 usage: to add (2) repeater towers for Fire Dept/EMT frequency & Road Crew frequency for improving coordination of emergency services.
- ARPA funds for 2023 usage: order 911 address markers for Albany residents to improve upon mutual aid emergency services.
- **Road Improvements & Tracking System:**
  - Developed *Daily Maintenance Log Sheet* for road project locations to record: Qty of Product Used; Time & Type of Equipment Used – 4/2019
  - Developed *Road Maintenance Procedures* for Class 2 & 3 Highways - 4/2020
  - Adopted new Town Road & Bridge Standards – 9/17/2019
  - Grants received for Pickens Rd East: 3rd class road improvement including deberming, culvert replacement with added culvert, stone
    - East Daniels Rd. Road improvement project with culvert replacement and stone ditching.5
- **Erosion/Landslide Mitigation:**
  - **FEMA:** Larabee Hill Box Culvert project – funded by FEMA for summer 2022 completion.
- **Maintain/Improve Shelter Capability:**
  - ARPA funds for 2023 usage: Purchase a generator for Town Clerk office.
  - A 20' x 40' Celina Tent is stored in the Albany Town Hall and can be moved and assembled as needed for emergencies or other events – purchased 12/2018
- **Assure Optimal Snow Response & Removal Capabilities:**
  - Purchased new truck with plow using MaxxFer rebate of \$9,653.83 - April 2021
  - Vt Elec Coop completed limb trimming in Albany on their electrical lines during 2020/2021 summer season.
  - Selectboard revised *Albany Road Policy* to clarify right-of-way clearances for winter snow removal and summer grading/bush-hogging – Feb. 2022
- **Economic Resilience:**
  - Town Hall – Developed association with Hardwick Area Food Pantry as the *Albany Food Shelf* with a dedicated area within the Town Hall for weekly food distribution boxes and take-out meals since Summer 2020 and now on-going with annual voter approved funding.
- **Assess Vulnerable Population:**
  - Albany Neighborhood Task Force - Volunteers developed a plan determining who was at risk via contacting residents from the Albany voter list. Volunteers are dispatched to assist with a variety of requests that are received via email or phone, such as: food delivery/medical visits/prescription pick-up.
  - Albany's EMC uses *Citizens Assistance Registry for Emergencies(CARE)* which keeps track of Albany residents who are on file with Vermont 9-1-1. Albany's EMC, incident commanders with law enforcement, fire, and EMS can gain access to this information in the event of an emergency where we might need to find out if anyone could possibly need assistance during an evacuation. The Albany Neighborhood Task Force is aware of CARE and promotes the registry with residents who may need it.

- Albany Community School has best facilities as an evacuation location. Albany Town Hall and Albany Fire Station would be additional secondary locations.
- **Fire Prevention Programs :**
  - Albany Municipal Volunteer Fire Department provides on-site Fire Prevention programs at the Albany Community School.
  - The Albany Municipal Volunteer Fire Department holds Open House Days at the Fire Station for residents to meet the volunteers and ask questions on fire prevention.
  - Albany's EMC provides hazard updates via social media and provided a recap of issues annually in the Town Report.
- **Improve resilience of Albany Village Water System:**
  - Albany Source Protection Plan and Sanitary survey completed by SOS
  - Updates or emergency notifications are sent from the Village Trustees to the residents via phone, Facebook, and radio.

#### 5.4.2. Prioritization of Mitigation Strategies

Descriptions of specific projects, where available, are listed in Table 5-3 below. Because of the difficulties in quantifying benefits and costs, it was necessary to utilize a simple "*Action Evaluation and Prioritization Matrix*" in order to affect a simple prioritization of the mitigation actions identified by the jurisdiction. The following list identifies the nine questions (criteria) considered in the matrix so as to establish an order of priority. Each of the following criteria was rated according to a numeric score of "1" (indicating poor), "2" (indicating below average or unknown), "3" (indicating good), "4" (indicating above average), or "5" (excellent).

#### Criteria List:

1. *Does the action respond to a significant (i.e. likely or high risk) hazard?*
2. *What is the likelihood of securing funding for the action?*
3. *Does the action protect threatened infrastructure?*
4. *Can the action be implemented quickly?*
5. *Is the action socially and politically acceptable?*
6. *Is the action technically feasible?*
7. *Is the action administratively realistic given capabilities of responsible parties?*
8. *Does the action offer reasonable benefit compared to its cost of implementation?*
9. *Is the action environmentally sound and/or improve ecological functions?*

The ranking of these criteria is largely based on best available information and best judgment, as many projects are not fully scoped out at this time. The highest possible score

is 45. It is anticipated that, as the town begins to implement the goals and actions of their Mitigation Strategies, they will undertake their own analysis in order to determine whether or not the benefits justify the cost of the project. Also, most proposed FEMA mitigation projects will undergo a benefit-cost analysis using a FEMA BCA template and approved methodology.

Rank	Mitigation Action	Responds to high hazard	Funding potential	Protection value	Time to implement	Social and Political acceptance	Technical feasibility	Admin feasibility	Benefit to Cost	Environmental advantage	TOTAL
2	Improve highway, culvert and bridge programs and infrastructure.	5	4	5	3	5	5	4	5	4	40
5	Improve resilience to pandemic event	4	5	4	3	5	4	3	3	2	33
3	Improve resilience to severe winter storms	4	4	5	4	5	3	3	5	2	39
8	Reduce risk and impact of extreme cold	2	2	3	2	3	2	2	3	3	22
4	Develop mitigation measures for water system protection and implementation plan	4	5	5	4	5	3	3	5	4	38
6	Mitigate high wind vulnerability	2	3	3	3	5	1	1	5	1	24
1	Raise public awareness of hazards, hazard mitigation and disaster preparedness	4	5	5	5	5	5	5	5	3	43
7	Continue fluvial geomorphology (in coordination with state recommendations and protocol) assessments and develop strategies in response to any identified risk	3	2	4	2	2	2	2	3	3	23

*Table 5-2: Albany Action Evaluation and Prioritization Matrix*



### *5.4.3. Specific Mitigation Actions*

The following seven actions define the mitigation measures to be taken by the town and village in the next five years:

- Action #1: Improve capabilities of existing road and storm water management infrastructure.
- Action #2: Improve resilience to severe winter storms
- Action #3: Reduce risk and impact of extreme cold
- Action #4: Mitigate high wind vulnerability
- Action #5: Develop mitigation measures for water system protection and implementation plan
- Action #6: Raise public awareness of hazards and hazard mitigation actions
- Action #7: Continue fluvial geomorphology (in coordination with state recommendations and protocol) assessments and develop strategies in response to any identified risk
- Action #8: Improve resilience to pandemic event

Each of the seven actions listed above are explained below in regard to status, progress, project leads and partner agencies and specific action steps:

#### **Action #1: Improve capabilities of existing road and storm water management infrastructure. Group: SP, NRP, PP**

Lead Responsible Entity: Town of Albany Road Foreman and Selectboard

Potential Partner Entities: Vermont Agency of Natural Resources; Vermont Agency of Transportation; NVDA, Agency of Commerce and Community Development

Funding Requirements and Sources: FEMA or other hazard mitigation grants; FHWA grants; VAOT grants; Municipal Operating and Capital budgets only if sufficient.

Progress: The Road Foreman continually monitors road and storm water management capabilities. All bridges and culverts have been electronically accounted for and the town is diligent in maintaining a comprehensive road plan that serves to guide action. The Town of Albany Road Erosion Site Inventory (2016) specifies actions, areas of road erosion, estimated costs of repair and future needs. As mentioned, the town has done an outstanding job in acquiring Hazard Mitigation funding to address critical facilities and can begin moving forward when this plan is approved. The town has an updated Local Emergency Operations Plan and has adopted Road and Bridge Standards that exceed previous levels. Lastly, the town has worked successfully with FEMA to acquire public assistance to address major damage to infrastructure caused by flooding and maintains the institutional memory to properly track and document work and expenditures that will support efficiency and viability of future funding opportunities.

### Specific Identified Tasks:

1) Infrastructure Assessment for Storm Water Vulnerability – Funding and staff resources permitting, assess the vulnerability and operational capability of municipal-owned roads, culverts and other storm water management infrastructure to predicted storm water and snowmelt in areas with a documented history of recurring problems. The infrastructure will be evaluated regularly prior to replacement or upgrades of the existing infrastructure.

2) Infrastructure Assessment for Fluvial Erosion/Landslide Vulnerability – Funding and staff resources permitting, assess the operational capability and vulnerability of municipal-owned roads, culverts, bridges and other infrastructure to fluvial erosion of varying severity as determined by Strategy #1 above.

3) Culvert Upgrades – Upgrade culverts and ditching along various roads to mitigate against repeated damages from storm water or spring snowmelt:

Note: For the next planning cycle, mitigation work will follow a logic model based on the information collected in the MRGP study completed in 2019. Updates are added on-line for annual April 1<sup>st</sup> certification and will be used to derive project list.

4) Continued Monitoring of Vulnerable Infrastructure – Monitor bridges and culvert locations that have erosion and scouring concerns. Track findings and report to VTCulvert.org inventory with NVDA assistance.

5) Road Improvements – Within political and financial restraints, develop process to select road re-engineering projects to lower overall maintenance costs, improving snow plowing speeds and improve overall capability of roads to handle current and projected traffic volumes. Specific projects include: See Albany Road Erosion Site Inventory.

6) Erosion / Landslide Mitigation – Develop process to assess future erosion or landslide risk and develop strategy to address high risk areas.

7) Documenting – Develop a methodology that serves to efficiently capture work and expenditures on sites and keep this information at the town office.

8) Increase Awareness of Funding Opportunities - Increase understanding of FEMA's HMGP program so that this potential funding source can be utilized.

9) ICS Training and Emergency Operations (SOP) Plan Development – Enhance knowledge of the principles of ICS and develop a Standard Operating Procedures that details the relationship, roles and responsibilities of the Highway Department and Road Commission during major events.

Rationale / Cost-Benefit Review: Conducting vulnerability assessments facilitates a targeted and effective approach to road and storm water management infrastructure. This will prove useful in the development and implementation of municipal capital and operating plans as well as the development and implementation of grant-funded mitigation projects. Some areas suffer low-level but consistent damage during heavy rains and snowmelt. Mitigating against these problems would reduce short and long term maintenance costs and improve the flow of traffic for personal and commercial purposes during flooding events. Tracking road work and understanding the HMGP program can open funding streams into the town and can make the application process much easier when required information is already available. A basis understanding of ICS will serve the town and at little or no cost. As a requirement for an approved LEOP, municipal ICS-

awareness is seen as necessary state-wide. During an emergency event when the Highway Department personnel are required to work beyond normal capacity, increased communication and collaboration between the Highway Department and local entities can be enhanced with a basic SOP. An SOP can also serve to increase institutional memory when there are staff changes at every level as well as provide a template from which tabletops and drills can be based off of.

## **Action #2: Maintain and improve resilience to severe winter storms**

**Group: SP, PP, PEA**

Primary Responsible Entities: Town of Albany selectboard, planning commission, village trustees and highway department

Potential Partner Entities: LEPC, Albany Fire Chief, ARC's Sheltering Initiative Program, Trans

Funding Requirements and Sources: DEMHS or FEMA hazard mitigation funding; existing programs, contingent on available resources and funding.

Progress: Roads are monitored and altered, when necessary so that plowing can occur without damage to trucks and/or road. Albany Elementary School has been identified as the primary emergency shelter. The school does have an emergency generator. Snow clearing equipment is regularly serviced and the town maintains an adequate supply of salt.

### Specific Identified Tasks:

- 1) Maintain Existing Shelter Capability: Maintain and improve capabilities of existing shelters. Notification procedures and shelter staffing is a priority for the town and intends to move forward on planning and public involvement. More formalized training is required and the ARC's "Shelter Initiative Program" can be used at no cost to the town to enhance both shelter management knowledge and sheltering supply cache.
- 2) Reduce risk of power failure due to ice storms: Enhance collaboration between town road foreman and electric company related to down-limbed induced power failure. Maintain function of generators.
- 3) Notification: Develop a notification/communication plan that conveys essential sheltering information using school phone system and back-up methodology (email, text, etc.)
- 4) Residential Programs: Provide guidance and communication to residents on the structural and mechanical actions that can occur to reduce risk to severe winter storms (e.g. weather-proofing, anchoring, alternative heating sources, tree trimming, financial programs, etc.)
- 5) Continue to monitor roads for safe and effective plowing: Efficient snow removal is the foundation to winter storm (snow) events, assuring roads are plowable before winter remains an important facet of highway department functions
- 6) Increase awareness of ICS structure and recommended practices: The town can mitigate the effects of a severe winter by understanding how a large scale storm is managed when the State EOC is operational. Additional awareness of local-level roles and responsibilities during statewide event is a mitigation action.

### Rationale / Cost-Benefit Review:

This mitigation action serves to reduce the economic impact and risk to both human and animal (livestock and pet) health and safety during severe winter storm events by reducing risk and enhancing the mechanisms of winter storm mitigation in the long term. More formalized policy formation in both staffing and notification procedures, especially pertaining to vulnerable populations where transportation and special needs are a concern could potentially significantly reduce the physical, psychological and social impacts of a disaster.

### **Action #3: Reduce risk and impact of extreme cold durations**

**Group: PEA, PP, SP**

Risk or Hazard Addressed: Risk to infrastructure, livestock and residents

Primary Responsible Entities: Town of Albany Selectboard and planning commission, NVDA, Albany School, local/regional assistance organizations.

Potential Partner Entities: Vermont DMEHS, LEPC

Timeframe: 2017 – 2022

Funding Requirements and Sources: Financial factors may produce barriers to change. Strategic planning and understanding of the total scope of needs and potential for change is logical first-step.

### Specific Identified Tasks:

- 1) Economic Resilience: Establish relationships with utility companies to offer special arrangements for paying heating bills, if not already required by state law. Develop and sustain a program that serves to connect resource organizations with residents in need of support services.
- 2) Maintain Existing Shelter Capability: Maintain and improve capabilities of existing shelters. Notification procedures and shelter staffing is a priority for the city and intends to move forward on planning and public involvement. More formalized training is required and the ARC's "Shelter Initiative Program" can be used at no cost to the town to enhance both shelter management knowledge and sheltering supply cache.
- 3) Assess Vulnerable Population— Develop an awareness of the most at-risk community members during an evacuation and/or sheltering event. Focusing on those that lack resources or capability to reach facilities when in need and create plans, including outreach protocol on how to address this potential hurdle.
- 4) Notification and Education – Investigate and develop a notification/communication plan that conveys essential sheltering information. Educating citizens regarding the dangers of extreme cold and the steps they can take to protect themselves when extreme temperatures occur by sustaining a process that serves to disseminate educational resources for homeowners and builders on how to protect pipes, including locating water pipes on the inside of building insulation or keeping them out of attics, crawl spaces, and vulnerable outside walls. Inform homeowners that letting a faucet drip during extreme

cold weather can prevent the buildup of excessive pressure in the pipeline and avoid bursting through a yearly public service campaign.

- 5) Work with business owners and residents to determine magnitude of problem. Identify current resources available for identified at-risk populations and engage in outreach to alert those in need of assistance of the resources available. Requiring minimum temperatures in housing/landlord codes.

Rationale / Cost-Benefit Review:

With an increase in extreme weather, including cold, there is a need to protect property and the population. Given the magnitude of population dependence on social services, indicating economic and other social vulnerabilities, effective outreach, education and collaboration with resources supports this mitigation action category.

**Action #4: Reduce vulnerability to high wind events with accepted best practices**

**Group: SP, PP**

Lead Responsible Entities: Albany Planning Commission, Fire Chief, NVDA.

Specific Identified Tasks:

1. Developing and maintaining a database to track community vulnerability to severe wind: Use GIS to map areas that are at risk to the wind hazard associated with different non-hurricane conditions and identify concentrations of at-risk structures. Create a severe wind scenario to estimate potential loss of life and injuries, the types of potential damage, and existing vulnerabilities within a community to develop severe wind mitigation priorities.
2. Establish standards for all utilities regarding tree pruning around line: Incorporate inspection and management of hazardous trees into the drainage system maintenance process. Support and suggest the testing of power line holes to determine if they are rotting. Support the inspection of utility poles to ensure they meet specifications and are wind resistant. When feasible, support burying power lines to provide uninterrupted power after severe winds. Avoid use of aerial extensions to water, sewer, and gas lines when possible. Support use of designed-failure mode for power line design to allow lines to fall or fail in small sections rather than as a complete system to enable faster restoration.
3. Public Outreach: Ensure that school and hospital officials are aware of the best area of refuge in buildings and that their plans are viable in high wind mitigation events. Instruct property owners on how to properly install temporary window coverings before a storm. Support education to design professionals to include wind mitigation during building design/modification to an extent deemed necessary.

Rationale / Cost-Benefit Review:

High winds have impacted the city and do pose a risk for infrastructure, transportation and public safety. Many mitigation actions associated with high wind risk also address and reduce risk associated with other hazards affecting the city and maintaining the functionality of the city is not only important for the city and its residents but for the region as well.

### **Action #5: Improve resilience of Village Water System**

**Group: SP, NRP, P**

Lead Responsible Entities: Albany Village Trustees, Simon Operation Services

Progress: The Village and Simon OS work to assure the continued functionality of the system with a routine maintenance and inspection plan.

Specific Identified Tasks:

1. Develop understanding of best practices associated with small municipal water system management, including well longevity and protection from contamination.
2. Develop strategy to prioritize actions that will lead to greatest resilience of system at the least amount of cost.
3. If customer action is determined to influence resilience of system, develop and disseminate information on recommendations and notification procedures in the event of contamination.
4. Develop action plan that assesses the relationship between flood events and water system integrity.

Rationale / Cost-Benefit Review:

The Village Water System is a long-standing service and provides a substantial amount of revenue into the Village. Loss of the system would have major financial consequences for the village residents, school, village and town. Effort placed on the study and development of actions to increase resilience of this system is needed.

### **Action #6: Raise public awareness of hazards, hazard mitigation and disaster preparedness and develop emergency plan specific to mobile home residents**

Status: Ongoing

Lead Responsible Entities: Town of Albany, Orleans Fire Chief, LEPC, NVDA.

Progress since 2005: The Volunteer Fire Department annually conducts fire preparedness programs and school and family programs related to hazard awareness and disaster preparedness, including providing information at Town Meeting. The LEPC meets regularly and covers a host of topics related to emergency preparedness and raises awareness in the community about what organizations are doing around emergency response planning and chemical safety. Town meeting day can serve as an annual update and outreach opportunity as well.

Specific Identified Tasks:

- 1) School Programs – Continue school programs to raise student awareness of hazards, safety, preparedness and prevention.
- 2) Family Programs – Continue family programs, such as car safety seat and bike safety programs, to raise family awareness of hazards, safety, preparedness and prevention.
- 3) Fire Prevention Programs – Continue National Fire Prevention Week and other programs to raise public awareness of fire hazards, safety, preparedness and prevention.

4) Other hazard awareness programs – Develop public awareness programs, based on all-hazards needs. Programs to address pandemic hazards, preparedness and mitigation may be appropriate as directed by the state Department of Health and the Agency of Agriculture.

5) Hazard Resilience for Property Owners- Develop and maintain education materials to inform property owners on how to protect their homes and businesses through accepted hazard resilience actions (e.g. securing their structures from high winds, elevating their electrical equipment/furnaces in basements, protecting from lightning strikes by grounding electrical outlets, etc.). UVM and ACCD have developed essential planning services for mobile home resilience. The town will incorporate these resources into an outreach campaign.

Rationale / Cost-Benefit Review: Improved public awareness could potentially significantly reduce the loss of life and property damage through ongoing, formal, ongoing, public information campaigns that address property protection actions (flood proofing, elevation, anchoring mobile homes/propane tanks, electric and water system elevation, electric grounding, etc.) Improved awareness would also build understanding and public support for municipal mitigation actions to reduce potential infrastructure and liability costs.

**Action #7: Continue fluvial geomorphology assessment and develop strategies in response to identified risks in addition to investigating increased mapping of the SFHA.**

Status: Ongoing

Primary Responsible Entities: NVDA, Agency of Natural Resources (VT ANR) (for assessments and mapping), Town of Albany Selectboard (for ordinance changes and other actions).

Potential Partner Entities: Nonprofits, other Town of Albany officials, and other appropriate entities.

Timeframe: 2016 – 2021

Progress: The Vermont Agency of Natural Resources has established a Stream Geomorphic Assessment Data Management System (<https://anrweb.vt.gov/DEC/SGA/default.aspx>), the town and NVDA can access pertinent and helpful information to assist with mapping and planning.

Funding Requirements and Sources: Through EMPG funding, NVDA can assist in enhanced mapping of the floodplain within the town. Continuation of assessments and strategy development is contingent upon individual municipalities and/or regional and local organizations, securing funding in partnership with ANR. The level of municipal participation is contingent upon the level of participation asked of staff and that such work would not hinder the ability of municipal staff to carry out their day-to-day municipal duties.

Specific Identified Tasks

1) Fluvial Geomorphic Assessments - Funding permitting, continue fluvial geomorphic assessments on streams and waterways in Albany. If using PDM funding, individual municipalities may select only a subset of streams upon which to perform these assessments and therefore may choose to assess only those sections of streams wherein the history of flood and erosion damage, the history of channel management, and the proximity of existing or potential development or public infrastructure to the active channel makes an assessment a priority. Justification should be provided for streams, watersheds, or stream reaches not selected for fluvial assessment. Fluvial assessments shall be conducted as guided by the VT ANR Fluvial Geomorphic Assessment Protocols.

2) Fluvial Erosion Hazard Mapping - Within a year of completed geomorphic assessments for a waterway, funding permitting, a GIS provider (NVDA) should rate the fluvial erosion hazard for

each assessed reach, and develop a fluvial erosion hazard map for the waterway, using the GIS extension known as SGAT (or Stream Geomorphic Assessment Tool) for assessed stream reaches. As assessments are completed, a map of all assessed waterways in the town should be created. This data will undergo town review and QA/QC by VT ANR before a final map is drawn.

3) River Corridor Management Plans – River Corridor Management Plans (RCMP) are encouraged for waterways where Phase I and Phase II assessments have been completed.

Creating such a plan requires additional fieldwork and work with local landowners to identify acceptable reach-based management options that enable stream systems to reach equilibrium conditions. Management measures may include stream corridor buffer planting, culvert replacement and roadway improvements, berm removal, and corridor easements. Under Act 110, the Agency of Natural Resources will be identifying best management practices for shore lands and river corridors, and will be providing financial incentives, such as grants and pass-through funding. While the town relies on state regulations for zoning and other regulations, incorporating a RCMP into the Town Plan will only serve to increase the town's awareness in this crucial facet of mitigation planning. Using current river corridor maps, the town should consider developing a strategic plan that creates information and resources for residents within and in close proximity to the defined river corridor, while avoiding having 'zoning' regulations.

4) Fluvial Erosion Hazard Mitigation Implementation - Within five years of completing the final fluvial erosion hazard map, the town will draft strategies to avoid or mitigate losses from the identified fluvial erosion hazards. These strategies may include the adoption and implementation of programs, mechanisms or regulations to prevent endangerment of persons and property in riparian corridor areas from fluvial adjustment processes. Efforts could range from a relatively simple, public information campaign about the map to the adoption of a municipal ordinance or by-law that restricts development in such hazard areas.

#### Rationale / Cost-Benefit Review:

Continuing this project will require a sustained succession of grants, state appropriations and other funding to complete assessments in Albany. Successful completion will provide municipal and regional benefits. The municipality's fluvial erosion areas would be adequately and electronically mapped. This will enable the municipality to make residents and businesses aware of fluvial erosion hazards and potentially lead to municipally-directed programs, mechanisms and regulations that further mitigate against this hazard, protecting existing structures and infrastructure. Identifying fluvial erosion hazard areas could also help the municipality restrict future development in hazardous areas, if that should be an advantage to the town in the future. More accurate knowledge of fluvial geomorphology will enable the community to have a better understanding of hazard areas and what mitigation measures might most effectively address those concerns. Flooding is the most common and most significant hazard that can trigger a Federal disaster declaration in Albany. Along with an update to the flood hazard area maps, identifying the fluvial erosion hazard areas provides improved opportunities for the community to mitigate potential losses and gauge future development initiatives.

#### **Action #8: Reduce risk and impact of a pandemic event**

**Group: PEA, PP, SP**



Risk or Hazard Addressed: Risk to infrastructure, environment and residents

Lead Responsible Entities: Town of Albany, ACCD, VDH

Timeframe: Summer 2022- as required

Potential Partner Entities: VEM, FEMA

Funding Requirements and Sources: Pandemic planning funding is secondary to financial stability funding in response to potential economic consequences not known to be a serious consequence of infection mitigation efforts. State and Federal funding are primary sources with limited but important local opportunities.

Specific Identified Tasks:

- 1) Work with facility leads on understanding risk factors and what can be done to mitigate and enhance training and skills for response
- 2) Enhance awareness and planning for COVID-19-related mandates, communication, isolation and quarantine logistics for residents, municipal operations and maintaining economic stability
- 3) Maintain process for funding acquisition related to COVID-19 for schools, government, impacted residents, and other essential services
- 4) Develop and maintain continuity of operations plans for critical government and community services

## **5.5 Implementation and Monitoring of Mitigation Strategies**

### *5.5.1. Public Involvement Following Plan Approval*

After adoption, the town will continue to maintain web-presence of the mitigation plan with an opportunity for community input available on its website (via NVDA). Additionally, the town will hold an annual public meeting after performing the annual progress report for the mitigation plan to discuss achievements and the following year's implementation plan. At town meeting, the town will present mitigation information and provide the public an opportunity to increase understanding and involvement with planning efforts. The LEPC will also host an annual mitigation plan presentation where response/state agencies, neighboring communities and other stakeholders can provide input. The town will also notify its neighboring municipalities of the availability of information for review and any significant risks and/or mitigation actions that have an impact on surrounding towns. The village will be included in all correspondence and assume ownership of mitigation actions related to the water system with town input.

### *5.5.2. Project Lead and Monitoring Process*

The town's Selectboard chair is the project lead and will work in conjunction with the selectboard, village trustees, town clerk and NVDA to complete the yearly progress report included in the plan. The town will create a mitigation action collection system that will be used as the source of future updates following the annual evaluation that will occur in conjunction with the progress report using the Plan Implementation Matrix provided below. While mitigation actions are, by default, often addressed at monthly Selectboard meetings, the town will schedule

one meeting annually to formally assess the plan and adopt updates following the annual progress report and community meeting regarding the LHMP. Once the plan is approved by FEMA, the calendar will begin for annual review. The town will take the following implementation matrix and add actions to it each year, modifying tasks and/or needs as required so that the next LHMP update will be populated with the specific actions related to each mitigation strategy by year.

#### *5.5.3 Plan Evaluation and Update Process*

The town's Selectboard chair, with participation from the Village Trustee will lead the plan evaluation process as part of the annual progress report. Prior to town meeting and in preparation for the annual town report, a mitigation section will be included that provides an executive summary for the public that addresses the following topics:

- Status of recommended mitigation actions for the five-year planning period
- Identification of barriers or obstacles to successful implementation or completion of mitigation actions, along with possible solutions for overcoming risk
- Identification of a lead person to take ownership of, and champion the Plan if different from Selectboard Chair
- An approach to evaluating future conditions (i.e. socio-economic, environmental, demographic, change in built environment etc.)
- Discussion of how changing conditions and opportunities could impact community resilience in the long term
- Discussion of how the mitigation goals and actions support the long-term community vision for increased resilience

By engaging in the annual evaluation, the town will have a viable method for capturing the facets of efficacy and areas needing revision and improvement in its mitigation plan. The town is committed to "institutionalizing" mitigation into its normal operating procedures and with approval of this plan, embarks on the formal incorporation of mitigation actions and discussion, maintaining an awareness that involves not only the Village Trustees, Selectboard, Town Clerk and Road Foreman but also the community at large, including the organizations represented by the current planning team. Along these lines, the town will maintain a contact list of the current planning team and make revisions as required, including the team on the evaluation process each year. Through this consistent attention resulting from the evaluation process, progress reports and communication in the annual town report, the town will achieve the consistency required to enhance resilience through planning, assessment and actions devoted to mitigation.

#### *5.5.4. Plan Update Process*

The Plan update will be led by the Selectboard Chair, Village Trustee lead and Town Clerk. Depending on funding availability, the town may elect to acquire the assistance of NVDA and/or a consultant to update the plan following a declared disaster and/or the next five-year planning cycle. To assure that the Plan does not expire, the town will begin the update process within no less than six months of the current Plan's expiration date. Following a disaster and during the recovery phase, the town will use the experience to assess the current Plan's ability to address the impact of the most recent disaster and edit the plan accordingly. Using the annual progress reports and evaluation narratives as a guide, along with perceived changes in risk or

vulnerabilities supported by data and/or observation, strategies will be captured in accordance with FEMA guidelines, which includes reconvening the planning team during the update process. The town will establish a “Mitigation File” that documents all evaluations and progress reports, along with actions, especially related to infrastructure improvement projects. While the progress reports are designed to capture the specific actions the town has accomplished related to implementation, keeping a narrative list with dates on all actions relatable to mitigation (e.g. school drills, LEOP updates, Fire Safety Awareness, meetings, etc.), will provide the town the bulk of information required in the update process.

#### *5.5.5. Implementation Matrix for Annual Review of Progress*

The following table is intended to aid municipal officials in implementing the mitigation actions for Albany and to facilitate the annual monitoring and progress reporting. Progress has been included as a guide to future updates. Each year, the town will reserve a Selectboard and Village Trustee meeting to review and update the Implementation Matrix as means to establishing an accurate evaluation of the plan’s efficacy and the information required for the succeeding update to the plan.

**Table 5-3: Albany All-Hazards Mitigation Plan Implementation Matrix**

Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Improve road infrastructure and municipal systems protection programs	<b>Town Road Foreman</b> and associated municipal systems managers	Spring 2022 and each subsequent spring	Infrastructure Assessment for Storm Water Vulnerability	
	Town Road Foreman	Spring 2022 and as-needed related to weather patterns	Assessment for Fluvial Erosion, Landslide Vulnerability	
	Town Road Foreman	As needed during entire planning period	Culvert Upgrades	
	<b>Town Road Foreman</b> and associated municipal systems managers	Ongoing each fall and spring of planning period	Continued Monitoring of Vulnerable Infrastructure	
	Town Road Foreman	Spring 2022- Fall 2026 (each project will be selected based on capability and level of need within the planning period)	For the next planning cycle, mitigation work will follow a logic model based on the information collected in the MRGP study completed in 2019. Updates are added on-line for annual April 1 <sup>st</sup> certification and	

			will be used to derive project list.	
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Maintain and improve resilience to severe winter storms	Town Selectboard and <b>Road Foreman</b>	Fall 2022 and each subsequent fall	Maintain Existing Shelter Capability	
	Town Selectboard and <b>Road Foreman</b>	Fall 2022 and each subsequent fall	Reduce risk of power failure due to ice storms	
	Town Selectboard and <b>Road Foreman</b>	Winter 2022- Summer 2026	Notification	
	Town Selectboard and <b>Fire Chief</b>	Winter 2022- Fall 2026	Residential Programs	
	Town Road Foreman	Fall 2022 and each subsequent Fall in planning period	Monitor roads for safe and effective plowing	
	<b>Emergency Management Director</b>	Fall 2022- Winter 2026	Increase awareness of ICS structure and recommended practices	
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Reduce impact of extreme cold durations	<b>Planning Commission Chair</b> , NVDA, School, local/regional assistance organizations.	Winter 2022 and ongoing each fall	Economic Resilience	
	<b>Town EMD</b> and	Fall 2022 and	Maintain Existing	

	Selectboard	ongoing as preparation for winter	Shelter Capability	
	<b>EMD, NVDA, School, local/regional assistance organizations.</b>	Fall 2022 and ongoing as preparation for winter	Notification and Education	
	<b>Fire Chief, Planning Commission,</b>	Fall 2022- Fall 2023	Assess Vulnerable Population	
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Reduce vulnerability to high wind events with accepted best practices	<b>Local Utility leads</b>	Summer 2022-Spring 2026	Assure ongoing planning relationships and collaboration with utility leads for mitigated power/communication loss resulting from downed trees. Establish or work to assure standards for all utilities regarding tree pruning around line  Support and suggest the testing of power line holes to determine if they are rotting. Support the	

			inspection of utility poles to ensure they meet specifications and are wind resis	
	<b>Road Foreman</b>	Summer 2022-Spring 2026	<p>Developing and maintaining a database to track community vulnerability to severe wind:</p> <p>Use GIS to map areas that are at risk to the wind hazard associated with different non-hurricane conditions and identify concentrations of at-risk structures. NVDA mapping could layer structure density by tree density against known high-wind risk areas as start.</p>	
	Planning Commission	Fall 2022- Fall 2026	Create a severe wind scenario to estimate potential loss of life and injuries. Initial emphasis should be placed on mobile	

			homes.	
	EMD	Fall 2022 and ongoing as needed	Learn the types of potential damage, and existing vulnerabilities to develop severe wind mitigation priorities.	
	Road Foreman	Winter 2022 and on-going as needed	Incorporate inspection and management of hazardous trees into the drainage system maintenance process.	
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Continue fluvial geomorphology assessments in collaboration with DEC and develop strategies and regulatory actions in response to identified risks	Department of Environmental Conservation, NVDA, <b>Agency of Natural Resources</b> (VT ANR), Selectboard	Spring 2023- Fall 2024	Fluvial Geomorphic Assessments	DEC has a comprehensive and interactive database for Basin 15 and TransCanada has done some of this work in the past that the town can build from.
	Department of Environmental Conservation, NVDA, <b>Agency of Natural Resources</b> (VT ANR), NVDA	Spring 2024- Fall 2024	Fluvial Erosion Hazard Mapping	The town has CAI software capabilities and can enhance knowledge and bases for policy with mapping abilities.
	Department of Environmental Conservation,	Spring 2023- Fall 2023	River Corridor Management Plans	Zoning Administrator has taken the lead in suggesting a no-development policy in SFHA and River Corridor.



	NVDA, <b>Agency of Natural Resources</b> (VT ANR)			
	Road Foreman	Spring 2023- Fall 2023	Fluvial Erosion Hazard Mitigation Implementation	Major infrastructure enhancement has occurred on Simpson Brook (Hale Road) that withstood Irene.
Action	Responsible Entity	Timeline	Specific Identified Tasks	Annual Progress
Reduce risk and impact of a pandemic event	<b>Planning Commission</b> ACCD, VDH, NVDA, school	Summer 2022- Spring 2023 (as-required)	Work with facility leads on understanding risk factors and what can be done to mitigate and enhance training and skills for response. Explore ESSER funding for school.	
	<b>Planning Commission</b> ACCD, VDH, NVDA	Summer 2022- Spring 2023 (as-required)	Enhance awareness and planning for COVID-19-related mandates, communication, isolation and quarantine logistics for residents, municipal operations and maintaining economic stability	
	Planning Commission	Summer 2022- Spring 2023 (as-required)	Develop and maintain continuity of operations plans for	

Action	Responsible Entity	Timeline	critical positions Specific Identified Tasks	Annual Progress
Improve resilience of Village Water System	Albany Village Trustees, Simon Operation Services	Fall 2017-Fall-2019	<p>Develop understanding of best practices associated with small municipal water system management, including well longevity and protection from contamination.</p> <p>Develop strategy to prioritize actions that will lead to greatest resilience of system at the least amount of cost.</p> <p>If customer action is determined to influence resilience of system, develop and disseminate information on recommendations and notification procedures in the event of contamination.</p>	<p>Collaboration and information from EPA and VT ANR required</p> <p>Cost-benefit analysis will help to determine future actions</p> <p>Public outreach can help build resilience of system</p>

			Develop action plan that assesses the relationship between flood events and water system integrity.	Specific focus on flood risk to system may be necessary
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## **APPENDICES**

**NOTE: Appendices B-C not included with State submission or for FEMA review)**

**Appendix A: 2022 Community Survey Results**

**Appendix B: No Adverse Impact Floodplain Management Fact Sheet (ASFPM)**

**Appendix C: Farm Structures in Designated Flood Hazard Area Planning Checklist (VAAFPM)**

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## 2022 Town of Albany Hazard Mitigation Community Outreach Form

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**Introduction:** Hello, our Town of Albany is in the process of updating its Hazard Mitigation Plan. Mitigation planning works to protect a community from natural hazard vulnerabilities and is a mandatory requirement before any FEMA funding can be awarded to a town to repair infrastructure or acquire critical equipment. By maintaining an approved plan, our Town can earn a greater percentage of state funding during recovery from a disaster and be better prepared to handle a future event. Your input is crucial to the planning process and the information you provide will help produce a plan that will serve the Town for years to come. **Please take the time to share your thoughts on the questions below.**

**Thank you! ~ Albany Selectboard**

**Please return form by May 26, 2022 to: Town Clerk of Albany**

- Mail: PO Box 284, Albany, VT 05820
- In-person at Town Clerk Office, or place in the front door mail slot
- Email: [albanytct@gmail.com](mailto:albanytct@gmail.com)

### Community Survey

1. Have you been impacted by a natural disaster within the last 5 years, including COVID-19? Circle: Yes or **No** If yes, please explain below:

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2. What are your general concerns about emergency events within the Albany area?  
**Although we've never had to use them, I am concerned about the response time of fire, rescue, law enforcement services.**

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3. What do you think the Albany community should plan to accomplish to be better prepared for the next emergency event?

**Getting the word out about an impending and/or real-time disaster, should be assessed and methods at the ready to inform all Albany residents. A notice on the bulletin board at the Town Clerk's office is NOT enough. Multiple channels of notification are likely necessary as Albany residents use different channels (ACT Facebook page, FPF, TV, radio... to get news.**

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