



## 2023 Vermont State Hazard Mitigation Plan

*Making Vermont safer and more resilient as we  
prepare for climate change and natural disasters*



# I: EXECUTIVE SUMMARY

***Hazard mitigation is any sustained action that reduces or eliminates long-term risk to people and property from natural hazards and their effects.***

The 2023 Vermont State Hazard Mitigation Plan (SHMP) presents the natural hazard impacts most likely to affect Vermont, an assessment of our vulnerabilities, and a mitigation strategy to reduce or eliminate our most significant risks. The 2023 Plan accounts for both observed and projected hazard impacts and accounts for changes in population and development. This Plan places a special focus on how hazards affect people beyond loss of life and property damage to account for quality of life and impacts to our frontline communities.

***Mission: to protect life, property, natural resources and quality of life in Vermont by reducing our vulnerability to climate change and natural disasters.***

This SHMP is an update to the 2018 Plan, both in the content of the Plan document and its mitigation actions. Vermont Emergency Management, along with key stakeholders, completed a thorough review of the 2018 SHMP at the beginning of the update process to ensure that nothing developed in previous versions would be lost. The most significant changes from the 2018 SHMP are a stronger focus on people and a more thorough review of vulnerabilities, including compounding hazards and their impacts on the natural environment, built environment, economy, and people.

The impact of anticipated yet unpredictable natural events can be reduced through community planning and implementation of cost-effective hazard mitigation efforts.

The State of Vermont understands that it is not only less costly to reduce vulnerabilities to disasters than to repeatedly repair damage, but that we can also take proactive steps to protect our economy, environment, residents, and visitors 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 vulnerability to hazards by improving overall understanding of both the natural hazards we face and their potential impacts.

## **Audience and Use:**

The 2023 Vermont SHMP has been developed to help the State of Vermont and local governments identify all natural hazards facing our communities and establish actions that reduce risk. The planning process for this update was much broader than previous mitigation planning efforts in order to better integrate the work of State agencies with those of regional and local governments, as well as nonprofit and private partners. The SHMP will serve as a resource for State agencies and other resilience stakeholders to better understand Vermont's exposure to natural hazards and collectively implement actions that reduce our vulnerability.

While Vermont Emergency Management (VEM) produced this Plan, a large network of stakeholders across Vermont have worked together to develop the capability inventory and actions. Accordingly, few of the actions in the 2023 SHMP fall solely on VEM to implement; most will require ongoing, concerted engagement by multiple stakeholders over the next five years.

This Plan is also intended to be a valuable resource for Local Hazard Mitigation Plan (LHMP) development. The capabilities list and disaster history spreadsheet are examples of resources that can be pulled directly from the SHMP for use in LHMPs. Further, several of the mitigation actions in this Plan aim to simplify the LHMP development process.

## THE PROCESS

**Vermont Emergency Management (VEM)** was the lead agency responsible for updating the 2023 Vermont SHMP. The SHMP update process involved three primary groups: the Planning Team (comprised of VEM and VEM's supporting contractor, **SWCA Environmental Consultants (SWCA)**), the **State Hazard Mitigation Planning and Policy Committee (SHMPPC)**, and the **State Hazard Mitigation Plan Steering Committee (Steering Committee)**.

Hazard Mitigation staff at VEM (Ben Rose, Recovery and Mitigation Section Chief, Stephanie Smith, State Hazard Mitigation Officer, and Caroline Paske and Brian McWalters, Hazard Mitigation Planners, Matthew Hand and Hanna Pecora, VEM Interns) were responsible for managing the planning process and development of

*Photo Credit: Stephanie Smith, VEM*



the 2023 SHMP. SWCA was responsible for planning and helping VEM to implement stakeholder engagement related to the Plan, including SHMPPC and Steering Committee meetings, surveys, interview guide, workshops, facilitating Steering Committee review of the draft Plan, and public webinar introducing the updated Plan. For more information on Plan development, see: [Planning Process](#).

**Table 1: State Hazard Mitigation Planning & Policy Committee**

Secretary Kristin Clouser	Agency of Administration
Deputy Secretary Douglas Farnham	Agency of Administration (alternate)
Secretary Julie Moore	Agency of Natural Resources
Secretary Lindsay Kurrle	Agency of Commerce and Community Development
Secretary Joe Flynn	Agency of Transportation
Commissioner Jennifer Fitch	Buildings and General Services
Secretary Anson Tebbetts	Agency of Agriculture, Food and Markets
Commissioner June Tierney	Public Service Department
Secretary Jenney Samuelson	Agency of Human Services
Director Erica Bornemann	Vermont Emergency Management
Interim Director Eric Forand	Vermont Emergency Management

The SHMPPC was composed of State agency and departmental leadership that are involved in decision making and implementation related to hazard mitigation. The SHMPPC provided high level guidance and oversight to ensure the SHMP process and plan content aligned with other state-level mandates, policies, and programs.

**Table 2: State Hazard Mitigation Plan Steering Committee**

Alyssa Sabetto	Windham Regional Commission
Andrea Wright	Agency of Transportation
Ben Dejong	Agency of Natural Resources (State Geologist)
Ben Rose	Vermont Emergency Management
Bill Jordan	Public Service Department
Bronwyn Cooke	Agency of Commerce and Community Development
Jared Ulmer	Department of Health (Heat & Climate)
Jason Gosselin	Agency of Human Services
John Broker-Campbell	Agency of Natural Resources (Rivers Program)
Karen Horn	Vermont League of Cities and Towns
Kathy Decker	Agency of Natural Resources (Forest Parks and Recreation)
Lesley-Ann Dupigny-Giroux	University of Vermont (State Climatologist)
Marian Wolz	Agency of Natural Resources (Climate Action Office)
Mary Russ	White River Partnership
Nicole Dubuque	Agency of Agriculture Food and Markets
Samara Coble	Vermont Disaster Recovery Fund
Sarah Phillips	Agency of Human Services (Office of Economic Opportunity)
Tara Kulkarni	Norwich University

# Figure 1: 2023 Vermont SHMP - Stakeholder Engagement Process

2023

**2018 SHMP Review  
Priorities for 2023**

*Steering Committee - September*

**Plan for Addressing Capabilities,  
Hazards and Vulnerability**

*Steering Committee - October*

**Engagement Planning**

**Steering Committee Members 2022**

*SHMP Planning & Policy - August*

**Engagment Plan Review**

*Frontline Communities  
Working Group - November*

**Launching  
the Process**

**Progress Update  
Changes for 2023**

*SHMP Planning & Policy - December*

**Proposed Vulnerability Approach  
Stakeholder Workshop Development**

*Steering Committee - January*

**Hazard Assessment Review**

*Stakeholder Engagement -  
November to December*

**Regional Planning Survey  
Municipal Survey  
Workshop Orientation**

*Stakeholder Engagment -  
January to March*

**Understanding  
the Challenges**

**Action Development**

*Stakeholder Workshop - April (Virtual)*

**Action Development &  
Prioritization**

*Steering Committee - May*

**Action Development**

*Stakeholder Workshop - April (In-Person)*

**Hazard Profiles Review  
Vulnerability Section Review**

*Steering Committee - May*

**Creating a Plan**

**Plan Review  
Top Action Review**

*SHMP Planning & Policy - June*

**Public Review of Draft Plan**

*Public Webinar - July*

**Mitigation Strategy Review  
Prioritize Top Actions**

*Steering Committee - June*

**Implementation Plan  
& Tracker Development**

*Steering Committee - August*

**Finding Solutions**

**Moving Forward**

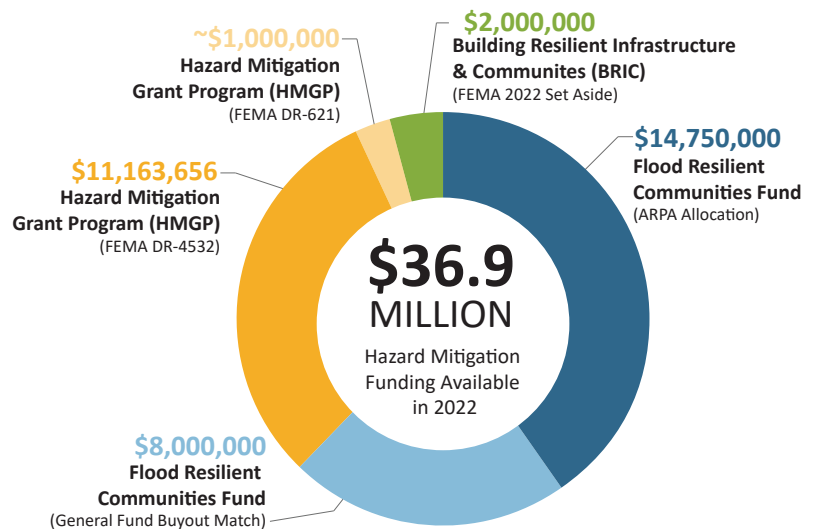
## KEY CAPABILITY IMPROVEMENTS

This Plan conveys an array of mitigation capabilities that exist within Vermont. The capabilities section and its extensive inventory address the improvements of existing capabilities as well as new capabilities that have been developed since the 2018 SHMP. The most significant improvements or additions to Vermont’s mitigation efforts are identified below. For information on all capabilities identified through this process, see: [State & Local Capabilities](#).

### Funding Hazard Mitigation:

Funding available in Vermont to complete hazard mitigation activities was unprecedented in 2022 across programs, including FEMA’s Hazard Mitigation Assistance (HMA) programs as well as the State’s new Flood Resilient Communities Fund (FRCF) at a total of \$36.9 million. Funding available exceeded the \$34 million available following Tropical Storm Irene.

As a top priority from the 2018 Plan, the **Flood Resilient Communities Fund (FRCF)** has filled gaps in project eligibility under **FEMA’s Hazard Mitigation Assistance (HMA)** grants.



With a focus on Vermont’s erosion risk, the FRCF addresses public safety and water quality concerns posed by climate-related flood hazards through landscape and community resilience measures across Vermont. FRCF prioritizes projects that are not eligible under HMA, to reduce inequity within the HMA programs and to better address flood risk in Vermont. The program aims to leverage other funding sources or filling funding gaps to make projects viable, with a specific focus on buyouts of flood vulnerable properties and floodplain restoration.

As a new funding opportunity that has streamlined the process associated with HMA, FRCF has enabled hazard mitigation funding to reach communities and individual flood-vulnerable households quicker and with a reduced administrative burden. A wider array of applicants are eligible for the program, including non-profits, which has allowed projects to be funded in communities that would not be able to manage a FEMA grant. The seed funding to create this program is from the American Rescue Plan Act (ARPA) and funding is required to be obligated by the end of calendar year 2024 and spent by the end of calendar year 2026. It is a top priority of the 2023 SHMP to establish a permanent state fund to continue hazard mitigation work outside of FEMA eligibility and beyond ARPA.



## Flood Resilient Communities Fund

Building watershed resilience in the face of climate change

Since Tropical Storm Irene, Vermont has been proactive in addressing vulnerabilities to natural hazards. Through various funding sources, VEM has facilitated the acquisition and demolition of nearly 170 flood-vulnerable properties. Most notably, through coordinated efforts with the State, regional and local project developers, Vermont has been prioritizing larger mitigation initiatives that more comprehensively address vulnerability, like floodplain restoration efforts in Middlebury, Cambridge, and Brattleboro.

In the wake of the COVID-19 pandemic considerable **Hazard Mitigation Grant Program (HMGP)** funding was made available under DR-4532, totaling \$11.2 million. The magnitude of COVID-19 disaster declaration substantially increased the capabilities of the HMGP program allowing for numerous projects to receive funding that would not have been available before the disaster declaration. These projects tackled a variety of vulnerabilities including floodplain restorations, property buyouts, dam removals, generators, and infrastructure improvements – increasing resiliency throughout the State.

All HMA programs require a non-federal match, typically 25%, though this match requirement can be lowered for certain communities or funding rounds. The **Building Resilient Infrastructure and Communities (BRIC)** program, for example, allows communities that meet FEMA’s definition of Economically Disadvantaged Rural Communities (EDRC) to apply for a 90% federal share. The yearly BRIC program has greatly improved in both flexibility and adaptability over its predecessor, the Pre-Disaster Mitigation program. The State has been provided with more regularity in available funding with consistent increases in the state set-aside in recent years from \$600,000 in FY 2020 to \$1 million in FY 2021 to \$2 million in FY 2022.



Landslide buyout project in Rockingham, VT with funding through the Flood Resilient Communities Fund  
Photo Credit: Town of Rockingham

This increase has been valuable for Vermont as it allows for flexibility in the submission of a variety of scoping and planning activities. However, Vermont may have a hard time accessing competitive BRIC funding over this set-aside based on the competitive criteria to-date, which significantly prioritizes funding for states with statewide commercial and residential building codes. While Vermont does have a commercial building code, there has historically not been broad political support for a statewide residential building code, placing Vermont at a significant disadvantage for competitive BRIC funding.

In 2021 and 2022, the Vermont Legislature obligated around \$1 billion under the **American Rescue Plan Act** (ARPA). Broadly, funding was invested in broadband infrastructure, clean water, climate action, housing, and economic development. Many of these projects have co-benefits of reducing future risk from natural hazards in Vermont. Additionally, funding was made available to municipalities – the bulk of which functions as State dollars and can be used towards matching of federal funds.

The recent **Infrastructure Investment and Jobs Act** (IIJA) of 2023 has provided additional federal funding to the State through several different programs that aim to tackle resiliency and hazard mitigation in some of Vermont’s most vulnerable built assets. The new **Promoting Resilient Operations for Transformative, Efficient, and Cost Saving Transportation** (PROTECT) program will be used to fund upgrades and resiliency projects to transportation infrastructure. The IIJA also allocates dam resilience funding through the Rehabilitation of High Hazard Potential Dams Program aimed at assisting the State in the upkeep and rehabilitation of eligible dams.

#### **Planning & Interagency Coordination:**

The **Global Warming Solutions Act** (GWSA, Act 153) was passed by the Vermont State Legislature to create legally binding greenhouse gas emissions reduction requirements. It directed a new **Vermont Climate Council** to consider opportunities for carbon sequestration through conservation and strategies to help Vermont communities prepare for the impacts of climate change. This Council produced a **Climate Action Plan** that outlines actions for the State to meet its greenhouse gas reduction requirements, increase its potential for carbon sequestration, and to prepare for the impacts of climate change. The Agency of Natural Resources’ **Climate Action Office** (CAO) is responsible providing coordination, expertise, and capacity on State-led climate initiatives, as well as the monitoring, assessment and tracking of climate adaptation, greenhouse gas mitigation, and resilience activities needed to fulfill the requirements of the GWSA.

#### ***Municipal Vulnerability Index:***

The Agency of Natural Resources’ Climate Action Office has been in the process of developing a tool called the Municipal Vulnerability Index (MVI). This will be a mapping tool with the goal of identifying where Vermont communities are vulnerable to climate change with a focus on pressures that climate change will place on Vermont’s transportation, electric grid, housing, emergency services, and communications infrastructure.

#### ***Municipal Climate Toolkit:***

Additionally, the Agency of Natural Resources’ Climate Action Office is currently working to develop a Municipal Climate Toolkit that will connect municipalities with climate action resources. This toolkit will include resources that cover a broad approach, including public health, frontline and impacted communities, how to support a just transition, and how to reach rural communities.



Act 154 was passed in Vermont in 2022, enacting a statewide **Environmental Justice Policy**. This policy codifies Vermont's commitment to providing resources to environmental justice populations for resilience planning and disasters recovery. The Act directs numerous State agencies to embed environmental justice considerations into their operations through the development of an **Environmental Justice Interagency Committee** as well as an **Environmental Justice Advisory Council**. Agencies will be required to develop community engagement plans focused on environmental justice populations and report annually on their alignment with the policy.

### Resources & Tools:

Vermont Agency of Transportation (VTrans) has developed the **Transportation Resilience Planning Tool** (TPRPT) to identify bridges, culverts, and road embankments across the State that are vulnerable to damage from floods, estimates risk based on the vulnerability and criticality of roadway segments, and identify potential mitigation measures. This tool was initially developed for pilot watersheds under the FEMA grant to update the 2018 SHMP. As of 2023, all watersheds have now been completed. A statewide training effort is also underway to educate a variety of users, including VTrans District staff, project designers, local municipalities, and regional planners on how to effectively utilize the TRPT.

The **Functioning Floodplain Initiative** (FFI) is a program headed by Vermont's Department of Environmental Conservation (DEC) to identify areas where nature-based projects can have the biggest impact advancing environmental goals. DEC is currently in the process of rolling out the mapping tool for public use and developing next steps for this tool, to include applications such as the development of priority headwater storage conservation and restoration, as well as a benefit-cost assessment tool specific to Vermont.



Greenway Trail Bridge in Cambridge, VT was replaced and the floodplain restored to reduce future flooding in historic downtown Jeffersonville with funding through the Hazard Mitigation Grant Program  
*Photo Credit: Seth Jensen, LCPC*

## HAZARD ASSESSMENT

VEM staff used several methods to identify risks in Vermont, including the evaluation of historical data, consideration of our changing climate trends, and feedback from stakeholders during the hazard assessment process.

A task group composed of subject matter experts from the Steering Committee, VEM, and the National Weather Service ranked natural hazard impacts as part of the hazard assessment process, and the Steering Committee confirmed final scores. Ranking was determined by multiplying the probability of occurrence by an average score for potential impact to the built and natural environments, people, and economy. Specific hazard impacts on the built and natural environments, people, and economy are expanded upon within the [Hazard Assessment](#).

The results of the hazard assessment ranking by the Steering Committee are found in Table 3. As with the previous SHMP, fluvial erosion and inundation flooding continue to be the first and second most significant natural hazards in Vermont, respectively. One of the most significant changes from 2018 is the change in ranking for **heat**. In 2018, heat was ranked in the 6th highest row, and in 2023, heat moved ahead of wind, snow, and ice to be the third ranking hazard for Vermont. For more information on all hazards addressed, see: [Hazard Assessment](#).

Hazard Impacts	Probability	Potential Impact					Score*:
		Built Environment	People	Economy	Natural Environment	Average:	
Fluvial Erosion	4	4	4	4	4	4	16
Inundation Flooding	4	4	4	4	2	3.5	14
Heat	4	2	4	3	2	2.75	11
Wind	4	3	2	2	2	2.25	9
Snow	4	2	3	2	1	2	8
Ice	3	2	3	3	2	2.5	7.5
Drought	3	1	3	3	3	2.5	7.5
Infectious Disease Outbreak	3	1	4	4	1	2.5	7.5
Cold	3	2	3	2	2	2.25	6.75
Invasive Species	3	2	1	3	3	2.25	6.75
Landslides	3	3	2	1	2	2	6
Wildfire	2	3	3	3	3	3	6
Earthquake	2	2	2	2	2	2	4
Hail	3	1	1	2	1	1.25	3.75

\*Score = Probability x Average Potential Impact

**Table 4: Hazard Assessment Ranking Criteria**

	<b>Frequency of Occurrence:</b> Probability of a plausibly significant event impacting the community or regional scale based on previous occurrences and climate change projections.	<b>Potential Impact:</b> Severity and extent of damage and disruption to population, property, environment and the economy
<b>1</b>	Unlikely: <1% probability of occurrence per year.	Negligible: isolated occurrences of minor built or natural environmental damage, potential for minor injuries, health, or well-being impacts, or minimal economic disruption.
<b>2</b>	Occasionally: 1–10% probability of occurrence per year, or at least one chance in next 100 years.	Minor: isolated occurrences of moderate to severe built or natural environmental damage, potential for injuries or health or well-being impacts, minor economic disruption.
<b>3</b>	Likely: >10% but <75% probability per year, at least 1 chance in next 10 years.	Moderate: severe built or natural environmental damage on a community scale, injuries, fatalities or impacts to individual and community well-being, short-term economic impact.
<b>4</b>	Highly Likely: >75% probability in a year.	Major: severe built or natural environmental damage on a community or regional scale, multiple injuries or fatalities or severe long-term impacts to individual and community well-being, significant long-term economic impact.



Snowmobile bridge near Waterbury, VT flexes as debris and water rush past following Tropical Storm Irene  
 Photo Credit: [www.mansfieldheliflight.com/flood](http://www.mansfieldheliflight.com/flood)

### Climate Change:

Warming temperatures, shrinking winters and increasing incidence of intense storm events are beginning to have a significant impact on Vermont’s economy, people and environment and require immediate attention across all planning efforts. Accordingly, and as a guiding principle of this Plan, we have aimed to recognize and include the impacts of climate change throughout Plan development, most notably reflected in the hazard profiles and mitigation actions. Both direct and indirect impacts of climate change are addressed within pertinent hazard profiles, as well as the potential for compounding impacts.

An example of a concerning compounding impact of climate change is that warming temperatures (Figure 3) will increase the prevalence of invasive species and infectious disease outbreaks. This invasive species is decimating Vermont’s ash population, not only shifting the composition of our forests, but also creating additional debris that may exacerbate impacts of other hazards, such as flooding or wildfire. Extreme heat can result in the disruption of many natural environmental processes, increasing the severity of other hazards. As a result, Extreme Heat has risen to the 3rd most important hazard in the Plan, highlighting the threat that rising temperatures poses to Vermont.

**Vermont Average Temperature (1895-2023)**

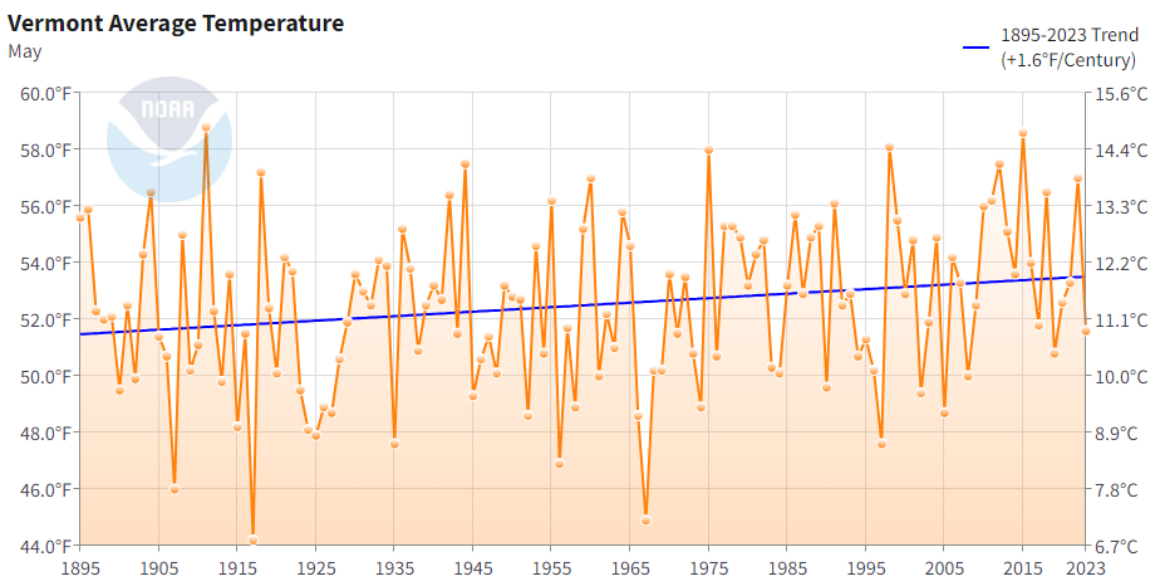


Figure 3: Vermont average temperature (1895-2023)

Data Source: [www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/time-series](http://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/time-series)

Stakeholder engagement session to develop plan actions

Photo Credit: Lisa Kolb, VEM



## VULNERABILITY SUMMARY

A significant change from the 2018 Plan to the 2023 Plan was the addition of more in-depth discussions of vulnerability within each hazard profile as well as cross-cutting and compounding hazards. Each hazard profile addresses the impacts of the hazard on people, the built environment, the natural Environment, and the economy. In practice, there is no separating each category as they are each connected with cross-cutting challenges. Many vulnerabilities that are identified within each hazard profile are shared among other profiles, painting a picture of risk and exposure across Vermont. A new Section 5 was added to this 2023 SHMP that summarizes vulnerability across hazards and explores the compounding vulnerabilities observed in the hazard profiles due to the exposure to natural hazards and climate change.

Compounding natural hazards are hazards which may accelerate other hazards.

This is not just reserved for hazards that occur simultaneously. A compounding hazard can impact the occurrence of other hazards days, weeks, or months later.

Invasive species and extreme heat are two hazards which have been noted to cause major compounding and cross-cutting impacts. Invasive species can accelerate the frequency of landslides, wildfires, and infectious disease outbreaks. Extreme heat has been associated with an increase in drought, wildfire, invasive species, and infectious disease. For more information on vulnerability, see: [Vulnerability Summary](#).



*Photo Credit: Town of Huntington*

### Compounding Social Issues:

Beyond the scope of natural hazards and the potential impacts to the built environment, economy, and the natural environment, Section 5 takes a critical look at the compounding social issues arising from vulnerabilities to people. As the State and municipalities direct planning and funding efforts to adapt to changing climatic conditions concepts of environmental justice are also worked into building a more resilient future. Addressing environmental justice provides the opportunity to connect hazard mitigation, environmental quality, and social equity. As a result, the discussion of vulnerable populations and conditions to natural hazards emphasizes those groups with predetermined risk, such as children, older adults, and the immune-compromised.

Environmental justice acknowledges that the burden of climate change disproportionately falls on low-income, marginalized, and frontline populations. Vermont's Environmental Justice Policy states that environmental justice requires providing a proportional amount of resources for community revitalization, ecological restoration, resilience planning, and a just recovery to communities most affected by environmental burdens and natural disasters. Issues that environmental justice policy seeks to address cover a wide range of topics including housing, food security, economically underprivileged populations, and individual and community well-being.

Additionally, hazards can have far-reaching and complex impacts. As climate change continues to increase the climatological instability of other regions of the United States, Vermont may experience a population influx of “climate refugees.” Projected future trends of climate migration illustrate the importance of planning for a possible large-scale increase in population. Affordable housing is an issue that many current Vermont residents are faced with, and as the State welcomes climate migrants, increased demand may push the price of housing higher. The effects of global climate change and local hazards on housing availability, and the related need for safe housing, demonstrates the interconnectedness of hazards with all aspects of our communities.

### **Local Vulnerability:**

Vermont’s varied topography and mountainous terrain can result in geographic isolation during storms, in which one town may be severely impacted while a neighboring town remains unscathed. Because of the steep mountain topography, damage from frequently occurring extreme weather events in any specific location may occur often or only once in a lifetime, which makes it difficult to plan for and respond to events. Section 5: Vulnerability Summary identifies the local vulnerabilities that different communities face and works to establish resources for vulnerable communities.

Based on the VEM hazard mitigation planning survey circulated to towns in 2023, upgrading infrastructure and expanded communication before and during disasters are high priorities for better protecting their most vulnerable residents. In order to do this, they not only need funding, but expanded local staff capacity and additional technical assistance. These priorities and needs align with the assessment done through the State hazard mitigation planning process and proposed mitigation strategy.

For more information on vulnerability, see: [Vulnerability Summary](#).

## **MITIGATION STRATEGY**

The Steering Committee, with input from the stakeholder engagement process as noted above, reviewed the 2018 plan actions to develop a mitigation strategy that would be implementable, leverage cross-sector resources and effectively and efficiently reduce Vermont’s vulnerability to natural hazards. Below are the actions for this 2023 SHMP, which were retained from the 2018 SHMP:

**Protect, restore and enhance Vermont’s natural resources to promote healthy, resilient ecosystems.**

**Enhance the resilience of our built environment – our communities, infrastructure, buildings, and cultural assets.**

**Develop and implement plans and policies that create resilient natural systems, built environments, and communities.**

**Create a common understanding of – and coordinated approach to – mitigation planning and action.**

In support of these goals, stakeholders developed a significant list of proposed **mitigation actions**. These actions were sorted by goal and then further sorted according to similar themes, called “strategies”. The Steering Committee then prioritized the list of 112 mitigation actions based on each action’s Positive Impact, Negative Impact, and Feasibility. Assessing negative impacts was added during the 2023 SHMP update process to review actual or perceived negative consequences associated with proposed actions. This prioritization process yielded 43 priority actions, which were then further prioritized into the following top ten priorities by the Steering Committee.

#### Priority Plan Actions:

Utilizing existing FEMA mapping updates and the Functioning Floodplain Initiative, develop an inventory of critical headwater and floodplain storage areas that would result in a measurable abatement of flooding.

Develop a drought plan for Vermont to include analyzing water level/monitoring data to use as predictor of drought and rates of recovery.

Develop a wildfire mitigation plan, to include research on the long-term future risk of wildfire due to climate change, determine existing infrastructure for wildfire suppression, and develop wildfire mitigation options.

Support municipalities in developing a prioritized list of transportation infrastructure improvements that increase resilience using PROTECT and/or other funding sources.

Increase Public Service Department capacity to maximize utilization of available federal dollars (including IJA, IRA, ARPA, and EDA) towards utility resilience implementation work.

Assess all state/federal funding/technical assistance programs, as well as State permitting programs, to determine areas for better alignment around state hazard mitigation priorities.

Identify sustainable, long-term funding to support hazard mitigation and local match, to include: purchase of hazard-prone properties and easements to conserve river corridors, floodplains, and wetlands identified as key flood attenuation areas.

Complete an assessment of heat risks in urban areas of Vermont and expected impacts on historically disadvantaged populations, identify strategies for mitigating impacts (e.g., urban forestry, green roofs, green infrastructure, and/or other vegetative strategies; increased use of highly reflective and/or high emittance materials for pavement, roofs, and building).

Develop a methodology and protocol for quantifying climate mitigation, resilience, and adaptation impacts (Climate Action Office measuring and assessing progress tool).

Develop an analysis of existing Resilience Hub locations, including identification of new locations, and identification of key components that should be co-located within a Resilience Hub.

The majority of the mitigation actions identified in this Plan require collaboration between multiple organizations. Though this will necessitate significant coordination, we believe it also broadens ownership, and therefore improves the implementation potential of the 2023 SHMP.

For the full list of mitigation actions, including lead entities for implementation, see: [Mitigation Strategy](#).