Town of Weathersfield

2023-2028 Local Hazard Mitigation Plan

Adopted by the Town of Weathersfield Selectboard on _____

Effective _____ – _____

Submitted March 20th for VEM Final Approval

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Prepared by

Town of Weathersfield, Vermont

and

Mount Ascutney Regional Commission

FEMA Approval Letter

[Insert when received]

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Adoption Resolution

Town of Weathersfield, VT

A RESOLUTION OF WEATHERSFIELD ADOPTING THE TOWN OF WEATHERSFIELD 2023-2028 LOCAL HAZARD MITIGATION PLAN

WHEREAS the Town of Weathersfield Selectboard recognizes the threat that natural hazards pose to people and property within Weathersfield; and…

WHEREAS the Town of Weathersfield has prepared a multi-hazard mitigation plan, hereby known as the Town of Weathersfield 2023-2028 Local Hazard Mitigation Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and…

WHEREAS the Town of Weathersfield 2023-2028 Local Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Weathersfield from the impacts of future hazards and disasters; and…

WHEREAS the updated Town of Weathersfield 2023-2028 Local Hazard Mitigation Plan demonstrates the community's commitment to implementing the mitigation strategies and authorizes responsible agencies to execute their actions; and…

WHEREAS adoption by the Town of Weathersfield Selectboard demonstrates its commitment to hazard mitigation and achieving the goals outlined in the Town of Weathersfield 2023-2028 Local Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED BY THE TOWN OF WEATHERSFIELD, VT that the Town of Weathersfield Selectboard hereby adopts the Town of Weathersfield 2023-2028 Local Hazard Mitigation Plan for municipal use and implementation. While content related to Weathersfield may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the Selectboard to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

ADOPTED by a vote of ___ in favor and ___ against, and ___ abstaining, this __ day of _____, 2024.

Weathersfield Selectboard

_____
Michael Todd, Chair

_____
Kelly O'Brien

_____
Paul Tillman, Vice Chair

_____
Wendy Smith

_____
David Fuller

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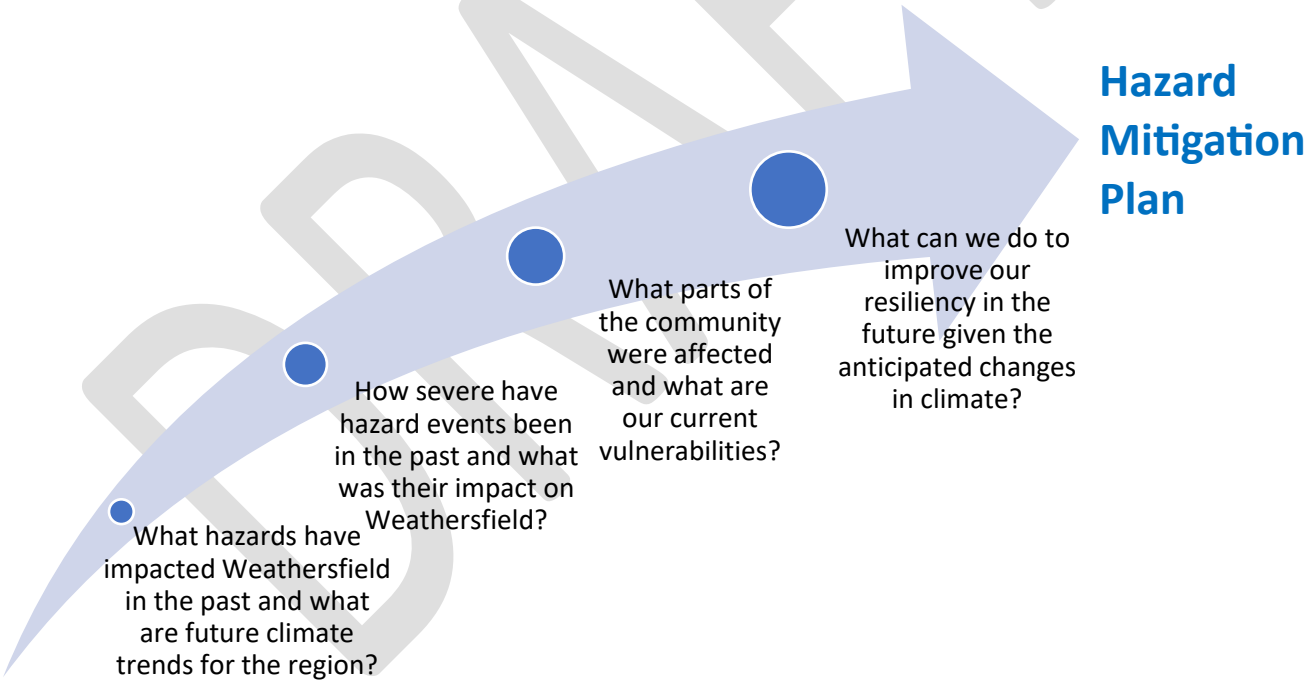
1. Introduction

This Local Hazard Mitigation Plan is intended to assist the Town of Weathersfield in identifying and understanding the risks of natural hazard events to the community and developing strategies and actions that can be taken to improve the resiliency of the local community to hazard events.

Local Hazard Mitigation Planning is the process of identifying strategies and policies to develop a long-term plan of action that will reduce or remove future risk and losses to a community caused by natural or man-made hazard events. This planning effort involved an assessment of local capabilities and resources, an awareness of historical and future hazard occurrences, an understanding of the potential impacts to life, local economy, infrastructure and the environment, and a determination of vulnerable areas and assets within the community. These efforts concluded with a list of actions that can be found in **Table 6.2-1** at the end of this plan that are to be monitored for progress over the next five-year period.

This plan will focus on assessing natural hazards and mitigating actions. The Weathersfield community has provided input to this plan in the form of local and historic knowledge and experience.



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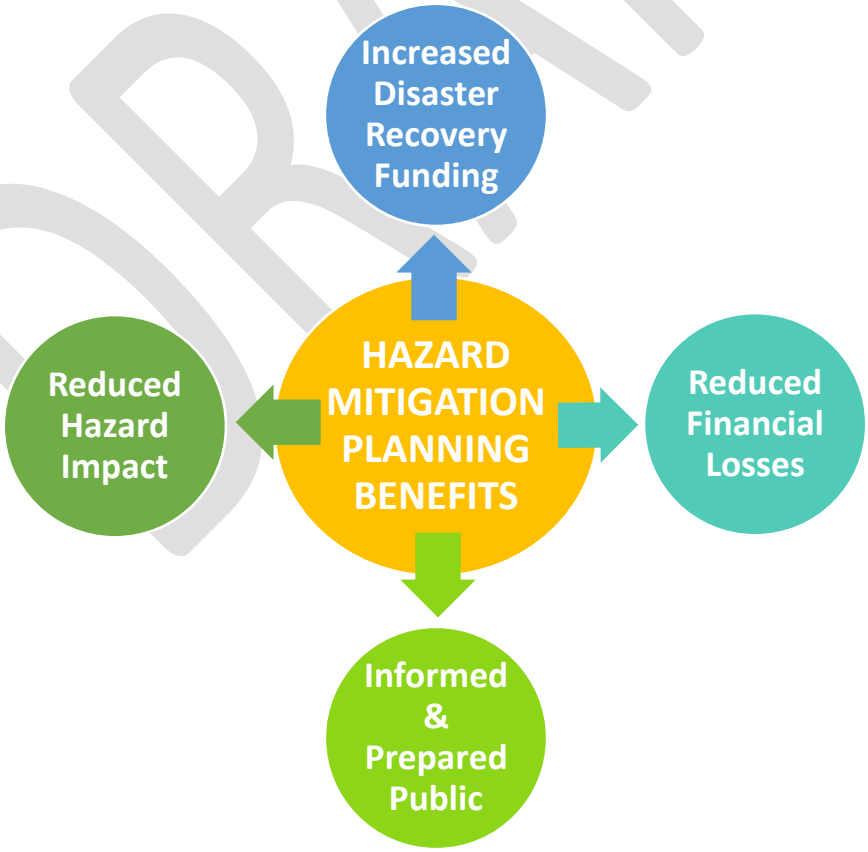
2. Purpose

The Federal Emergency Management Agency (FEMA), Vermont Emergency Management (VEM), and local towns have come to recognize that it is less costly to take action to minimize the impact of natural hazards than to repeatedly repair damage after a disaster has struck. Hazards cannot be eliminated, but it is possible to determine what the hazards are, and which are more likely to occur and tend to have the greatest impact on a community. With some research and outreach, a local community can determine the extent and impact of these hazards and which assets and areas are most at risk. A culmination of these efforts is a working dynamic list of specific strategies and actions that can be taken to reduce the impact of these hazards on the community. This plan also recognizes and has identified opportunities for mitigation measures during all the other phases of emergency management: Preparedness, Response, and Recovery.

This is a single jurisdictional update on the 2018-2023 Town of Weathersfield and Village of Perkinsville Local Multi-Jurisdictional Hazard Mitigation Plan. This Plan update addresses and includes the villages of Ascutney and Perkinsville. Reference to "Weathersfield", "town," and the "Town of Weathersfield" should be considered to include the Village of Ascutney and Village of Perkinsville, unless specifically noted otherwise. The Perkinsville government has been dissolved and the Town now has one governing body, the "Town of Weathersfield." All maintenance and planning for the villages is done by the Town. There is no separate localized data for the villages and is incorporated throughout this plan in discussion with the town. There are no separate emergency management, highway, or administrative personnel for the villages.



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3. Town Profile

Weathersfield is a rural community, with forest lands and agricultural fields surrounding small villages and hamlets. Weathersfield is located within Windsor County in southeastern Vermont, bordered by the towns of Windsor, West Windsor, Reading, Cavendish, Baltimore, Chester, and Springfield in Vermont, and the towns of Cornish and Claremont in New Hampshire.

The array of land uses present in Weathersfield today represents the typical evolution of countless towns across New England. In its earliest days, Weathersfield consisted of widely scattered farms interspersed with the services they needed to survive. Centers grew up in Ascutney on the Connecticut River and Perkinsville on the Black River. Perkinsville was particularly robust with industries taking advantage of the waterpower from the Black River. Perkinsville no longer supports the commerce and industry of its past and is primarily a concentration of residences.

Ascutney's water system is operated by the Ascutney Fire District, while outlying areas are served by private wells and on-site septic systems. Residential areas outside the village centers are primarily rural in nature, and of low- or moderate-density.

Many farms that once dominated the landscape have disappeared - as the various forms of farming became less and less profitable. Farmlands have been subdivided and developed as residences (for the most part) and the Town has become primarily a bedroom community. Commercial and industrial activities are small scale and tend to be located along the Town's major highways in the Ascutney area and at Downers. While committed to maintaining a rural environment, Weathersfield residents depend on surrounding towns for shopping, banking, health care, employment, and recreational activities. This includes jobs and services offered in nearby New Hampshire towns such as Claremont, Charlestown, and Lebanon.

Weathersfield's landscape is predominantly forested. These lands provide habitat for a variety of species such as deer, bear, moose, and a multitude of birds. Forested land provides employment, recreational, and economic opportunities, as well. Of particular significance are the state owned Little Ascutney Wildlife Management Area and the Mount Ascutney State Park. Approximately 500 acres of the park's total 3,131 acres are in Weathersfield. These are important forested lands. The Town also owns 300 acres of forested land off Thrasher Road on the south slope of Mt. Ascutney and approximately 45 acres around the transfer station.

Agricultural use of land is scattered throughout the Town along river valleys and other areas where the best soils and flat ground are found. Over a quarter of Weathersfield's total land area is enrolled in Vermont's Current Use program, which incentivizes landowners to manage their lands for forest or agricultural purposes. (See **Appendix A: Map 1 – Current Land Use**).

Regional highways, including VT Routes 5, 131, and 103, connect with neighboring towns and are part of the National Highway System. The Town maintains approximately 70 miles of public roadway (Class 2 and Class 3). There are 857 culverts and 12 bridges in town. (See **Appendix A: Map 4 – Transportation**).

The climate is generally temperate with moderately cool summers and cold winters, as in the rest of Vermont. The annual average precipitation is around 40 inches and annual average snowfall is around 70 inches. The weather can be unpredictable, and large variations in temperature, precipitation, and other

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conditions may occur both within and between seasons. Extremes in temperature fluctuations and precipitation have been exacerbated in recent years due to climate change.

Windsor County's population of 55,191 (2020 U.S. Census Bureau), experienced uninterrupted growth since 1950, averaging 7.9%. However, according to the Census, over the last decade from 2010-2020, the population of Windsor County has decreased by 2.98%, while the Vermont state population has increased by 2.77%. Windsor County's population had been decreasing since 2000 from 57,481 to 55,191 in 2020 but gained population to 57,593 in 2021. Over the same period, the median age and household income for the county have been trending up; now at 47.8 years of age and $60,987, respectively.

Median income for Weathersfield in 2021 was $67,236, falling slightly above the Windsor County average of $63,787.

According to the U.S. Census Bureau, the population of Weathersfield was 2,836 in 2021. The population in 2018, when the previous Local Hazard Mitigation Plan was adopted, was 2,771. This growth indicates the possibility for future development increasing the value and importance of regulatory tools such as flood hazard regulations and zoning regulations. These tools allow for the town to deter growth away from areas deemed unsafe and potentially prone to hazards. The current zoning map designates uses and areas of development which are sufficient to handle current development trends.

Development Trends and Impact on Hazard Risk

The population of Weathersfield is not anticipated to grow significantly for the next 20 years. Therefore, many of the identified public infrastructure goals are based upon maintaining the existing facilities, such as roadway maintenance and culvert replacements, as well as evaluating the feasibility of future water or wastewater infrastructure solutions. Weathersfield aims to encourage economic development in ways that reinforce revitalization of village centers and use of public infrastructure while maintaining rural character, and preserve/enhance quality of life. However, special consideration is taken to prohibit certain structural development in the flood hazard areas and river corridors. Weathersfield adopted flood hazard regulations as part of the town's 2021 Zoning Bylaws that restrict development in special flood hazard areas and river corridors (See **Appendix A: Map 2 – Water Resources**).

There has been some development in recent years, with 38 permits issued by the Land Use Administrator in 2022 and 27 so far in 2023. Permits are primarily for single-family dwellings and accessory structures. Since the adoption of the last plan, no new primary structures have been developed in flood zone areas or river corridors; it can be inferred that development has not increased the Town's vulnerability to natural hazards such as flooding and fluvial erosion.

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4. Planning Process

The local planning process used to develop this hazard mitigation plan follows guidance by the Federal Emergency Management Agency (FEMA) and Vermont Emergency Management (VEM). The planning process began in July 2023 with the Weathersfield Town Manager reaching out to municipal staff and local volunteers to participate as members of a Hazard Planning Mitigation Team (HMPT). A HMPT was formed to direct the activities of the process with guidance from Mount Ascutney Regional Commission's (MARC) Community Development Specialist. All correspondence was via phone or email and meetings were conducted both virtually and in-person.

MARC followed up with the Team members on the planning process, roles, and responsibilities with updating the plan and overseeing the public process. MARC staff were responsible for overseeing the planning process and distribution and posting of planning documents, conducting the public meetings, conducting a survey, documenting public input, updating hazard data, drafting, and circulating the plan and guiding the plan through review to adoption.

Team Members from the Town and their responsibilities are listed below. All members of the HMPT were tasked with assessing and prioritizing natural hazards, providing local input, status of past actions and identifying vulnerable areas and mitigation action items for the plan.

- **Weathersfield Town Manager** - Provide staff to take meeting minutes, ensure public notice postings, provide information on Capabilities and Resources, Local Flood Regulations, inform Boards of progress, oversee presentation and adoption of the plan.
- **Emergency Management Director** - Provide input on historical occurrences, extent of impact of previous hazard events and vulnerability of critical public facilities.
- **Highway Superintendent** - Provide input on historical occurrences, extent of impact of previous hazard events and vulnerability of road infrastructure.
- **Town Clerk** – ensure public notice postings, provide information on Capabilities and Resources, input on historical occurrences, extent of previous hazard events and vulnerability, and impacts to residents.
- **Fire Department** - Provide input on historical occurrences and extent of impact of previous hazard events on the community at large and status of current shelter.

MARC Staff:

- Assistant Planner
- Community Development Specialist

The process began with creating a *Weathersfield Climate Change Survey* which was posted on the Town website and on MARC's webpage titled "Weathersfield Local Hazard Mitigation Planning Update Process.". A copy of the survey and a summary of the responses can be found in **Appendix F: Survey Results**. The process proceeded with the tasks and timeline as depicted in **Appendix B: Plan Process Flow Chart**. Public meetings were noticed, and participants recorded. The meeting materials can also be found in **Appendix C**. The MARC webpage was created as a repository for planning and meeting documents and the link was provided with the notices.

At the first public meeting each hazard was assessed and prioritized for the probability of future occurrence and the potential impact each would have on life, infrastructure, the local economy, and the

environment. Vulnerable areas and potential mitigation actions assets were identified during the hazard assessment as part of the discussion on historical impact.

As part of the update process, the HMPT conducted a review of the status of prior plan actions and other progress made in mitigation and preparedness **(Section 4.3a: Status of Previous Plan Mitigation Actions).** Municipal capabilities and available resources for hazard mitigation planning and implementation were also discussed and suggestions made for improving **effectiveness (Section 4.3c: Status of Town Resources and Capabilities).** A thorough review of the Town Plan policies and recommendations identified common strategies which generated ideas for new mitigation actions **(Section 4.3b: Review of Weathersfield Town Plan).**

MARC provided potential mitigation actions for consideration from other regional town LHMPs, technical resources listed in **Section 4.2: Resources Consulted** and from the **FEMA Hazard Mitigation Guide**.

This is an extensive rewrite of the previous plan and includes several revisions and improvements. The following is a partial list of revisions:

- General updates to Town profile and town maps with new graphics and visuals.
- Inclusion of an easy-to-read Process Flow Chart to depict and manage the planning process.
- Reorganization/restructuring of the plan contents to better reflect required FEMA elements.
- New table for assessing Capabilities and Resources
- Reevaluation of hazards with a new methodology for scoring similar to that of the Vermont State 2018 Hazard Mitigation Plan to better recognize the integral natural of hazard events and hazard impacts and how hazards can impact a community in different ways.
- Update of hazard data using updated data sources and localized data.
- Prioritization of mitigation strategies/actions and correlation to plan goals and incorporation of phasing large projects.
- Recognition of specific prior actions completed but not previously identified in prior plan.
- Review and integration of new relevant reports and documents.
- A formalized Plan Monitoring process to maintain focus on plan goals and to encourage progress, annual reporting, recording of local hazard events, identification of new vulnerable assets, and public outreach over the plan period.

4.1 Public Involvement

Public outreach during the planning phase consisted of a survey and several public meetings. These activities are detailed below.

Plan Document Repository

MARC provided a dedicated webpage on the MARC website to house all planning documents which was kept current throughout the process. A link to this webpage was included in all public notices posted on the Town website and community webpage. The repository included agendas, notices, link to the survey, survey responses and other meeting materials such as hazard data, templates to provide input, results from technical sources and plan draft

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Community Survey

Public outreach consisted of a Hazard Mitigation Survey entitled 'Weathersfield Climate Impact Survey' prepared by MARC and released on May 25, 2023, to the local community of Weathersfield on the Town's Website. A link to the survey was also posted on the MARC website with hard copies provided at the Town Office, and the following community locations:

- Perkinsville Post Office
- Weathersfield Proctor Library
- Ascutney Market
- Country Estates

The survey remained open until the final draft at which time responses were reviewed, summarized, and incorporated into this plan. See **Appendix F** for a summary of the responses.

Public Meetings

The first publicly noticed meeting, held on May 25, 2023, was noticed on the Town website, as is customary for the Town. A link inviting the public to participate in the virtual meetings was offered along with a link to the agenda and meeting materials. The notice and webpage encouraged residents to attend the meeting, provide direct public comment to MARC and to complete the survey. The Town Manager and Selectboard members were tasked with keeping the Town Selectboard and relevant commissions abreast of the planning progress and noticed meetings and to help encourage participation of the public. This first meeting was attended by members of the HMPT and no members of the public; public comments were not received at this meeting.

A second public meeting was held on July 18, 2023, to continue planning the draft. Significant input was received from the HMPT during the planning stage for hazard assessment, historical occurrences, vulnerable areas, and mitigation ideas. Comments from the public included project updates from the fire department. Public input was primarily provided through the 'Weathersfield Climate Impact Survey.'

A preliminary plan draft was circulated to the Hazard Mitigation Planning for review on August 22, 2023. A third public meeting was held on August 24, 2023, to review the draft and finalize mitigation actions and a process for monitoring the plan. Members of the public provided their input and recommendations for the mitigation actions.

Circulation of Plan Draft

The draft was submitted to the Vermont State Hazard Mitigation Officer for review on September 25, 2023 and feedback was received on January 2, 2024. VEM review requirements were then incorporated with public input into a revised draft and released to the public and neighboring towns for comment on _____. The draft was made available for public viewing on the Town website and Facebook page and provided for posting to other Stakeholders, if applicable.

A complete list of stakeholders can be found in **Appendix C: Public Involvement Documents.**

Individuals were provided a copy of the draft with a request to provide any comments and a request to circulate to town boards and commissions, and to post the draft on their websites. Comments could be provided in person, or via phone or email. The draft was made available for public viewing on the Town

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website and Facebook page and provided for posting to other Stakeholders when applicable. A paper draft was made available at the Town Office.

As part of the announced release, the local public and other Stakeholders were invited to a presentation and review at a noticed Selectboard meeting on _____. MARC presented the revised plan for comment and questions and to finalize mitigation actions and a process for monitoring the plan. ___ attended the meeting and comments received include: _____.

Plan Adoption

A final plan draft was resubmitted on _____ to complete the Vermont State Hazard Mitigation Officer review for referral to FEMA for Approval Pending Adoption (APA). Following APA, the Town may then adopt the Local Hazard Mitigation Plan and forward a copy of the adoption resolution for FEMA to complete the plan approval and adoption process.

The final adopted Local Hazard Mitigation Plan will also be posted on the Town and Mount Ascutney Regional Commission websites and made available at the Weathersfield Town Office.

The public notices, agendas, attendance sheets, and other meeting materials can be found in **Appendix C: Public Involvement Documents.**

4.2 Resources Consulted

Several plans, studies, reports, technical information, and web data sources were consulted in addition to local input during the preparation of this plan. These sources provided data on hazard extent and historical trends, and ideas for new hazard mitigation actions. A listing of these sources includes the following:

- 2018-2023 Town of Weathersfield and Village of Perkinsville Local Multi-Jurisdictional Hazard Mitigation Plan
- Weathersfield Town Plan (2017)
- Bridge and Culvert Inventory (2016)
- Road Erosion Inventory (2017 Assessment)
- Vermont DEC Watershed Project Database
- US Census Bureau
- NOAA Storm Events Database
- Climate.gov / Climate Explorer
- EPA Climate Change Indicators
- Vermont Division of Fire Safety
- US Climate Data
- USGS WaterWatch
- FEMA Disaster Declarations
- Vermont Agency of Natural Resources Atlas Mapper
- State of Vermont 2018 Hazard Mitigation Plan
- Drought.gov
- Valley News
- Vermont Transportation Resilience Planning Tool

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- Mount Ascutney Regional Commission for mapping data

**Additional sources for information are provided throughout the plan as needed (i.e. tables, footnotes).*

4.3 Review of Town Progress, Resources, and Capabilities

4.3a Previous Plan Period Mitigation Actions

Table 4.3-1 below lists the mitigation and preparedness projects and actions from the previous 2018-2023 Town of Weathersfield and Village of Perkinsville Local Multi-Jurisdictional Hazard Mitigation Plan and indicate the status of each as determined by the Hazard Mitigation Team. Three of these 16 actions have been completed and two are ongoing/in-progress. One action was deemed to be ineffective or unnecessary and has been dropped. The remaining will be reevaluated, modified, and carried forward for inclusion **in Section 6.2, Table 6.2-1: 2023-2028 Mitigation/ Preparedness Strategies and Actions** at the end of this document.

Table 4.3-1: Status of Previous Plan Mitigation Actions

High Priority
Moderate Priority

2018 MITIGATION ACTION (*Indicates Action to be included in this update)	**2023 Status**
Independent power supply for schools/government buildings*	To be carried over; the Town is pursuing generator installation at the Town Highway and at the Weathersfield School. An emergency generator was installed at the Town Hall in spring of 2023.
Culvert upgrade (identify culvert 1 remaining)	Complete.
Annual culvert inspection program*	To be carried over; the Town routinely checks culverts on an as needed basis.
Complete study of critical facilities to identify deficiencies prior to use as EOC*	To be carried over; the Town seeks to assess deficiencies of critical facilities (Town garage & 1879 Schoolhouse) to increase hazard resiliency.
Carry out identified retrofits outlined in the assessment study to ensure long-term stability of critical facilities*	To be carried over; Town is pursuing funding.
Dry hydrant mapping and needs assessment	Complete.
Continued specialized hazardous materials training and exercises	Fire Departments complete training annually (Fire 1 & Fire 2 Status). Dropped from this plan update as no longer a profiled hazard.
Cell booster acquisition for Highway Department	Complete; cell reception at the Highway Department is good and radios are also available.

2018 MITIGATION ACTION (*Indicates Action to be included in this update)	**2023 Status**
Conduct outreach to schools regarding fire safety information*	Ongoing; the school has an annual Fire Safety program.
Review State of 2017 Commodity Flow Study	Dropped from this plan update as no longer a profiled hazard.
Hydrant system for Ascutney needs discussion*	To be carried over; system is needed. An engineering study for water and sewer in both villages is currently being conducted.
Stone line ditch – Amsden Hollow Road*	To be carried over; Town is pursuing funding.
Research funding opportunities for WWVFD station repairs*	Ongoing/in progress; ARPA funds will be used for a roof repair in summer 2023. A new boiler was installed in 2019. Additional repairs and upgrades are still needed.
Incorporate new MRGP Standards in identifying and prioritizing vulnerable hydrologically connected roadways and implement required practices to meet standards *as funding becomes available**	Ongoing.
Provide NFIP materials to Town residents*	To be carried over.
The Town will participate in Firewise programs including "Communities Compatible with Nature" *	To be carried over.

The following was also reported by the Highway Superintendent:

- Completed an average of 12-15 culvert replacements per year
- Completed 17 culvert replacements in 2023
    - To include replacement on Lottery Road
- Pursuing repairs to Quarry Rd, Thrasher Rd, Wellwood Orchards Rd, Bowen Hill.
- Plans to add culvert to Beaver Pond Rd
- Funding received to install a new drainage ditch and retaining wall at Skyline Dr
- Repairs completed at Gulf Rd, Roberts Rd, Thrasher Rd, West Camp Hill Rd., Victory Circle, Tarbell Hill, and Goulden Ridge Rd.
- Starting in 2023: contractor will perform Annual Bridge Inspection
- Ascutney Basin Bridge needs to be replaced; trucks need access to this bridge for logging operations
- Little Ascutney Road – bridge abutments need repair

- Grant received to repair Levin Rd wooden bridge; needs to be updated to higher weight-rating
- Upper Falls Covered Bridge needs stabilization; rip rap washed away during 2023 July flooding event.
- Highway staff works with Mount Ascutney Regional Commission staff to update the MRGP Inventory on an as needed basis.

4.3b Review of Town Plan

The Weathersfield Town Plan was updated and adopted in 2017. Compared to earlier plans, the community is making strides in its efforts to address sustainable development, natural resource conservation, flood resiliency, and hazard mitigation. The current Town Plan includes information that outlines the importance of:

- Regulating development in special flood hazard areas and river corridors
- Regulating development that is proposed in areas prone to damage from fluvial erosion
- Creating and maintaining vegetative buffers along wetlands, streams, rivers, and public ponds
- Continuing to maintain adequate bridge and culvert sizing
- Community outreach on flood resiliency, preparedness, and mitigation

The Town Plan has outlined goals, policies, and recommendations related to hazard mitigation and flood resiliency, which can be found in **Appendix D.** Upon review, the HMPT has identified mitigation strategies and actions that will meet objectives for both the Town Plan and the Hazard Mitigation Plan. These proposed actions can be found in **Section 6.2, Table 6.2-1: 2023-2028 Mitigation/Preparedness Strategies and Actions.**

Weathersfield currently participates in the National Flood Insurance Program (NFIP) and will continue to regulate floodplain development and use through the floodplain and floodway regulations as adopted in the *Town of Weathersfield Zoning Bylaws (2021).* These regulations apply to the Special Flood Hazard Areas, as determined by the most current published flood insurance maps by NFIP/FEMA, and to the River Corridor as determined on the most current River Corridor Map published by the Vermont Agency of Natural Resources. Base flood elevations and floodway limits provided by NFIP and in the Flood Insurance Study and accompanying maps are used to administer and enforce these regulations. The Land Use Administrator acts as the Administrative Officer and is charged with implementing and enforcing these regulations and advising residents on floodplain development.

4.3c Community Resources and Capabilities

Table 4.3-2 below is a compilation of community resources and capabilities including town authorities, policies, and programs, which can be helpful in reducing hazard risk for the Weathersfield. Opportunities for improvement have been identified. These resources and capabilities are useful in regulating development, building design, environmental conservation, and best management practices to reduce flooding and erosion.

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Some Improvement Opportunities noted in **Table 4.3-2** have been added as action items for this plan update and can be found in **Section 6.2, Table 6.2-1: 2023-2028 Mitigation/Preparedness Strategies and Action.**

Table 4.3-2: Status of Capabilities

Plans and Studies		
Capability	**Description**	**Improvement Opportunity**
Town Plan	Plan for coordinated town-wide planning for land use, municipal facilities, etc. Updated every 8 years. Current draft is 2017.	When updating the plan, integrate hazard mitigation goals and policies into each section where applicable.
Local Hazard Mitigation Plan	Plan for town-wide mitigation planning for hazard events and impacts. Updated every 5 years.	Begin update process earlier to avoid expiration and formalize annual review process to plot progress during plan period.
Stormwater Plan	Plan for stormwater management that helps reduce pollution and contamination.	Consider creating a Stormwater Management Plan.
Local Emergency Management Plan (LEMP)	Basic municipal procedures for emergency response. Updated annually.	Continue updating annually; public posting of management plan each update to raise awareness.
Forest Management Plan	Plan for forest management that considers forest blocks, habitat connectivity, and public trees.	Town Forest inventory is currently in progress. Tree Warden is interested in preparing a tree plan.
Invasive Species Management Plan	Plan for the management and prevention of invasive species.	Continue evaluating existing plan and updating as needed.
Capital Improvement Plan	Municipal plan to coordinate financing of capital improvements over a 5-year period.	Maintenance plan in effect for historic buildings; Capital Improvement Plan is under review/in progress. Incorporate a review of plan mitigation actions during budget process.
Culvert Inventory (VT Culverts)	Statewide program to collect and report culvert locations and conditions.	Continue updating annually.
Administrative Capacity and Capability		
Emergency Management Director	An appointed individual in each town or city who has direct responsibility for the organization, administration, and coordination of the local organization for emergency management.	Continue working closely with Town Manager, Emergency Management Coordinator, and RPC. Maintain status with VEM and FEMA trainings.

Planning Commission	Town Commission responsible for the development and updating of the Town Plan, Zoning Bylaws, and Subdivision Regulations.	Ensure that the Commission is involved with planning as it relates to hazard mitigation.
Zoning Administrator	Town administrative officer responsible for administering the Zoning and Subdivision regulations, to include Flood Hazard Area regulations.	Effectiveness is determined by periodic updates in zoning and FHA regulations and enforcement. Outreach to public to create awareness of regulations and their role in hazard mitigation may improve effectiveness.
Tree Warden	A tree warden is the appointed individual in each Vermont community responsible for making determinations about the care and stewardship of shade trees in public ways and places.	Continue to work closely with Town Manager and Highway Superintendent; consider management practices as they relate to hazardous trees.
Selectboard	Town governing body that has general supervision and control over the affairs of the Town.	Continued coordination with Zoning Administrator and Planning Commission will improve effectiveness.
Mutual Aid Agreements	Agreement for regional emergency services and state assistance if/when requested. West Weathersfield Fire Dept. is a member of the Upper Valley Regional Emergency Services Association.	Continue implementing current agreements; keep agreements up to date.
VEM Training	Training opportunities are provided via in-person and online courses administered through the Learning Management System (LMS).	Ensure training is kept current for the Emergency Management Director, Coordinator, and support staff.
Highway Department	Town Department responsible for maintaining Town roads and right of ways in accordance with VT's best management standards.	Continued coordination with Zoning Administrator, Planning Commission, and RPC will improve effectiveness.
Town Clerk/Manager/Administrative Assistant	Town Officials responsible for recording and filing Town documents.	Continued coordination with Zoning Administrator, Planning Commission, Selectboard, and RPC will improve effectiveness. Opportunities for community outreach.
Town Planner	Town staff responsible for developing land use plans and programs.	The Town employs a Land Use Administrator. Effectiveness is determined by implementation

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		of land use bylaws and coordination with Planning Commission, Selectboard, Town Manager, and RPC.
Financial Resources		
Town Budget	Fiscal spending plan that operates on a calendar year of July 1 through June 30.	Continue updating annually.
Municipal Bonds	A bond or note or evidence of debt constituting a general obligation of the municipality.	Continue administering.
Taxing Authority	The Town; the governmental authority responsible for the administration of local taxes.	Continue administering.
Outreach and Education		
Town Newsletter	Routinely distributed newsletter by the Library and Historical Society containing information and resources for residents.	Outreach to the public to increase newsletter distribution list may improve effectiveness.
Town Website	Official Town website for community information.	Maintained by Town.
Town Facebook Page	Official Town Facebook page for community information.	Maintained by Town.
Water Bill	Municipal bill sent to individual residences on a quarterly basis.	Outreach opportunity that would reach approximately 200 residents.
Zoning and Regulations		
National Flood Insurance Program (NFIP)	Provides ability for residents to acquire flood insurance; Town enrolled since 1985.	Town is currently enrolled; maintain enrollment.
SFHA Bylaws	Regulates development in FEMA flood hazard areas.	Continued implementation and enforcement of *Town Zoning Bylaws* is critical to effectiveness. Town is considering updating bylaws to further integrate flood resiliency.
Zoning	Regulates land use and development.	Continued implementation and enforcement of *Town Zoning Bylaws* is critical to effectiveness. Town is considering addition of River Corridor protections.
Road Standards	Design and construction standards for roads and drainage systems.	Continued implementation of State Road standards is critical to effectiveness.

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NFIP CRS	A voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the NFIP.	Town has expressed interest in participating in CRS; coordinating with RPC.
Wetland Protections	Regulates development in wetland areas.	Continued implementation and enforcement of *Town Zoning Bylaws* is critical to effectiveness. Town is considering addition of River Corridor protections to zoning bylaws.
River Corridor Bylaws	Regulates development in River Corridors.	Town has expressed interest in adopting River Corridor bylaws; coordination with RPC will improve effectiveness.
Green Infrastructure Bylaws	Regulates development.	Town does not have green infrastructure bylaws.
Building Codes	Regulates building development.	Town does not have a building inspector. The Town Manager serves as the Health Officer and performs residential building inspections. The Land Use administrator may regulate building construction or flood damage repair per NFIP.

Table 4.3.-2: Community Shelter Sites

Site	Address	Overnight	Generator	Heating	Cooling	Kitchen	Showers	Pets	Notes
Martin Memorial Hall*	5259 US Route 5	Yes	Yes	Yes	Yes	Yes			
1879 Schoolhouse	1862 VT-106	Yes	No	Yes	No	Limited	No	Yes	
Weathersfield School	135 Schoolhouse Rd	Yes	No	Yes	Yes	Yes			
Center Church	79 Center Church Rd			Yes	No	Yes			Seasonal
Weathersfield Proctor Library	5181 US-5	No	No	Yes	Yes	No	No		

**Primary Local Shelter per 2023 Local Emergency Management Plan*

5. Hazard Identification and Assessment

This Section describes the process used to identify the natural hazards that are likely to have the greatest impact on the community in the future and provides a basis for the selected mitigation strategies and actions listed in **Table 6.2-1: 2023-2028 Mitigation/Preparedness Strategies and Actions**.

The following assessment addresses all of the natural hazards identified during the hazard analysis. The probability of occurrence and impact to the town were used to assess the town's vulnerability to each hazard and can be found in **Section 5.1**. Following this assessment, it was determined that only those hazards that were more likely to occur were further examined for historical occurrence, extent of impact, future trends and community risk and vulnerability as outlined in **Section 5.2**.

5.1 Hazard Impact Assessment

A hazard impact assessment for Weathersfield began with identifying all possible natural hazards as addressed in the 2018 Vermont State Hazard Mitigation Plan. Prior to the exercise, MARC discussed the difference between a weather event and the hazards, or impact of these weather events. For example, **Wind** is a natural hazard which can impact a community from different types of weather events: Hurricanes, Thunderstorms and Winter Storms; **Erosion and Flooding** can result from Tropical Storms, Thunderstorms, Ice Jams, or spring melt from an extreme heat event during the winter. This discussion also allowed for better understanding of the relationship between these natural hazards and on the secondary hazards, such as structure fire, power outages, and ice jams.

Input from the Climate Survey, the first public meeting, and the HMPT was used to determine a **Probability of Occurrence Score** for each natural hazard for the Weathersfield community. The group considered the historical trends of and expected changes in climate to determine the probability of occurrence in the future. The potential severity and extent of damage and disruption to public infrastructure, economy, natural environment, and quality of life which includes damage to personal property and potential for injuries. These scores were averaged and used to generate an overall **Hazard Assessment Score** for each natural hazard as shown in **Table 5.1-1: Hazard Probability of Occurrence and Impact Assessment**. The methodology used for this exercise is detailed below the table.

Table 5.1-1: Hazard Probability of Occurrence and Impact Assessment

Hazard Impacts	Probability of Occurrence Score	Potential Hazard Impact (Score 1-4)					Hazard Assessment Score
		Public Infrastructure	Life & Property	Economy	Natural Environment	Avg.	
Inundation/Flash Flooding	2	3	1	2	3	2.3	**4.5**
Fluvial Erosion/Slope Failure	1	2	1	1	3	1.8	1.8
Ice	4	2	2	1	1	1.5	**6.0**
Heavy Snow	3.5	3	2	2	3	2.5	**8.8**
High Wind	3	3	2	1	2	2.0	**6.0**
Hail	3	2	1	1	1	1.3	3.8
Extreme Heat	3	2	3	2	3	2.5	**7.5**
Extreme Cold	3	2	3	2	3	2.5	**7.5**
Wildfire	2	2	2	1	3	2.0	4.0
Earthquake	1	3	2	1	3	2.3	2.3
Drought	2	2	2	3	4	2.8	**5.5**

Invasive Species	1	3	2	1	3	2.3	2.3
Infectious Disease Outbreak	2	1	3	2	1	1.8	3.5

Potential Hazard Impact Scoring Methodology

Historical Occurrence: Relative frequency of occurrence experience in the past 10 years

1 = Rarely	0 to 2 occurrences
2 = Few Occurrences	2 to 5 occurrences
3 = Several Occurrences	5 to 9 occurrences
4 = Annual Occurrence	10 or more occurrences or typically experienced at least once annually

Probability of Future Occurrence: Probability of occurrence over next 10 years.

1 = Not Likely	Not expected to occur
2 = Occasionally	Could plausibly occur at least once
3 = Likely	Likely to occur in any one year
4 = Highly Likely	Highly likely to occur at least once in any one year

Potential Impact: Probability of a Significant Impact defined as 'Severity and extent of damage and disruption to population property, environment and the economy'

1 = Negligible	Isolated occurrences of minor property and environmental damage, minor disruption of critical facilities and infrastructure, potential for minor injuries, no to minimal economic disruption
2 = Minor	Isolated occurrences of moderate to severe property and environmental damage, brief disruption of critical facilities and infrastructure, potential for injuries, and minor economic disruption
3 = Moderate	Severe property and environmental damage on a community scale, temporary shutdown of critical facilities, injuries or fatalities, short-term economic impact
4 = Major	Severe property and environmental damage on a town-wide or regional scale, shutdown of critical facilities, and/or multiple injuries or fatalities, significant economic impact

5.2 Hazard Profile

While the assessment scores in **Table 5.1-1** are not intended to prioritize hazard risk, they can be used to get a general sense of which hazards are of greatest concern to the Weathersfield community. The HMPT had determined that only those natural hazards which scored over a "4.5" out of a possible 16 were considered for mitigation/preparedness actions and are highlighted in the **Table 5.1.-1** above. These and other hazards which are trending higher in the region due to climate change, as determined in the *2018 Vermont State Hazard Mitigation Plan*, are profiled in this plan in **Section 5.2.**

Subsections provide additional detail of each of these natural hazards and include a description of the hazard and its general impact on a community; a discussion of historical local occurrences and extent of the hazard impact based on available data; hazard trend and discussion of vulnerability and populations and community assets at risk. Weathersfield is a small rural town, and much of the town-specific data for these natural hazards does not exist. Previous occurrence hazard data specific to Weathersfield has been provided where available. Where no town-specific data exists, the most relevant available data or information has been provided, such as county, regional or state data, or data from a neighboring town.

Excluded Hazards

For purposes of the plan update, the following hazards have been excluded from detailed discussion given that the likelihood of occurrence is either very low with no account of recent local occurrence or the hazard impact is very isolated or minimal as described below. For more information on these hazards, the reader is directed to the *2018 Vermont State Hazard Mitigation Plan*.

Slope Failure can be a real threat along river corridors as a result of erosion and from stormwater runoff over valley walls during heavy and persistent rain events. Should they fail and block an underpass, or roadway some isolated flooding could occur.

Hail does occur but very rarely and has not resulted in reported damage to the Town of Weathersfield. These incidents are very difficult to predict or mitigate and can only be addressed through preparedness and effectiveness of emergency response. Regional weather warnings and safety measures are issued when an extreme event is projected. The Town indicated that homeowner's insurance provides sufficient assistance with any related damages.

There is a potential for **Wildfire** in rural regions that are heavily forested. However, wildfire incidents have been low in past years. Most incidents are related to brushfires ignited by human initiated burn piles particularly in the early spring before green-up. 'No Burn' events are well posted and noticed and are at times extended, if need be, during the spring months.

Although **Earthquakes** can be a significant hazard, the likelihood of occurring in Weathersfield over the plan period would be negligible for New England per the Vermont State Hazard Mitigation Plan. Local regional recollection of this type of hazard occurring has been the sensation of minor tremors felt from distant events.

Plant Infestations from **Invasive Species** due to climate change are beginning to gain recognition. While more information is needed, the Town recognizes that this could become a hazard for town roads and infrastructure and has impacted the Town's vulnerability to flooding and erosion due to shallow rooted Japanese Knotweed in riverbeds.

Infectious Disease Outbreak is defined by the Vermont Department of Health as one that is caused by micro-organisms, such as bacteria, viruses and parasites as noted in the State Hazard Mitigation Plan. A COVID-like pandemic may be plausible but is unlikely to occur during the plan period. While tick-borne diseases have been experienced and will continue to be a seasonal challenge, the Weathersfield residents believe protection from this hazard risk is local common knowledge.

Changes from Prior Plan Hazard Assessment

- Flooding and flash flooding continue to be a priority for the Town
- High Wind is now identified separately as a significant hazard impact from winter storms and severe weather events with a high probability of occurrence and prevalence of higher wind gusts.
- Wildland Fire has been dropped as a priority hazard given a low probability of occurrence over the past several years and isolated or minimal potential impact to the community.
- Extreme Heat and Extreme Cold continue to be a priority due to an increase in probability of occurrence and duration of events with climate change. The aging of Weathersfield's residents, a more vulnerable population, was also a consideration.

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- Ice Jams and Dam Failure are now recognized as potential impacts or secondary events due to infrastructure deficiencies and are covered under Flooding, the primary natural hazard that triggers them.
- Structure Fire is now recognized as a secondary human-caused incident that can result from a natural hazard occurrence. The Town recognizes that these incidents may be secondary hazards to Wildland Fire, lightning, drought, and improper heating methods during extreme cold and can be addressed or reduced through mitigation of these natural hazards.
- Transportation incidents and Hazardous Material Spill are not considered natural hazards by FEMA although they are closely tied to road conditions following a hazard event. Therefore, the Town recognizes that transportation related hazards would be addressed through mitigation of natural hazards such as ice and heavy snow.
- Variability in temperatures, as well as the extremes for heat or cold, was discussed by the Town and worth noting here. Several remarked that the variability during the fall, winter, and spring seasons has become a trigger for the frequency of several hazards such as ice, heavy snow, ice jams, flooding, and erosion.

The types of hazards having the greatest impact on a regional basis can be gleaned from **Table 5.2-1**, a listing of **FEMA Disaster Declarations for Windsor County** since 1990. It can be seen from this table that these are typically severe storms with heavy rains that cause flooding.

Table 5.2-1: Federal Disaster Declarations for Windsor County, VT

Federal Disaster Declarations: Windsor County 1990 – 2020(current)			
FEMA Disaster	**Date of Declaration**	**Description**	**Date Occurred**
4720-DR-VT	July 14, 2023	Vermont Severe Storms, Flooding, Landslides, & Mudslides	July 7, 2023-July 17,2023
3595-EM-VT	July 10, 2023	Vermont Flooding	July 9, 2023
3567-EM-VT	August 22, 2021	Tropical Storm Henri	August 22, 2021
DR-4532-VT	April 8, 2020	Vermont COVID-19	January 20, 2020
3437-EM	March 13, 2020	Vermont COVID-19	January 20, 2020
DR-4445-VT	June 14, 2019	Severe Storms and Flooding	April 15, 2019
4330	August 16, 2017	Severe Storms and Flooding	June 29, 2012
4207	February 3, 2015	Severe Winter Storm	December 9-12, 2014
4140	August 2, 2013	Severe Storms and Flooding	June 25-July 11, 2013
4022	September 1, 2011	Tropical Storm Irene	August 27-September 2, 2011
1790	September 12, 2008	Severe Storms and Flooding	July 21-August 12, 2008
1715	August 3, 2007	Severe Storms and Flooding	July 9-11, 2007
1698	May 4, 2007	Severe Storms and Flooding	April 15-21, 2007
1488	September 12, 2003	Severe Storms and Flooding	July 21-August18, 2003
1336	July 27, 2000	Severe Storms and Flooding	July 14-18, 2000
1307	November 10, 1999	Tropical Storm Floyd	September 16-21, 1999

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1228	June 30, 1998	Severe Storms and Flooding	June 17-August 17, 1998
1101	February 13, 1996	Storms and Flooding	January 19-February 2, 1996
938	March 18, 1992	Flooding, Heavy Rain, Ice Jams	March 11, 1992

Source: FEMA Disasters Declaration website, accessed 8-21-2023.

5.2a Inundation & Flash Flooding

Hazard Assessment Score: 4.5

Flooding, including **flash flooding** and **inundation flooding,** is a significant natural hazard event for Vermont and Windsor County. Flooding directly impacts mostly those properties located near or in flood prone areas. However, during severe events they can indirectly impact the whole community.

Flash flooding can occur near smaller upstream tributaries in mountainous terrain. It is characterized by intense, high velocity torrent of water moving downstream following a heavy rainstorm. Flash floods are very dangerous and destructive, causing severe land erosion and property damage. This type of flooding threatens high-elevation drainage areas called alluvial fans where water transitions from steep grades to flatter terrain. These events typically occur during summer when a single or series of weather events result in excessive rainfall over a short period of time on already saturated soils from a spring melt. Flash floods can also be triggered by a dam breach causing further damage downstream.

The damage from spring flooding events can vary greatly depending upon the amount of precipitation, snow cover, spring melt, soil saturation, existing erosion, and topography. Road infrastructure within the narrow stream valleys receive drainage from the higher elevations and are often the most vulnerable to damage from flash flooding.

Inundation Flooding occurs in lower lying areas when water levels rise overflowing the banks of a river or lake. In hilly or mountainous areas, drainage from higher elevations flows to the lower reaches or valleys of a watershed causing these waters to rise quickly. Instances of inundation type flooding can occur long after precipitation has ended or when no precipitation has occurred, such as an extreme winter warming event causing river ice to melt resulting in ice jams obstructing the flow of river waters. These waters often carry with it debris which can block culverts or a bridge underpass, exacerbating flooding.

Stable river channels naturally meander adjusting with periodic flooding. Floodwaters will rise and enter low lying floodplain areas temporarily which lessens the volume and velocity of water flowing downstream reducing the flood risk to downstream properties, villages, and town centers. When floodwaters are restricted from their natural corridor, water velocity increases and erosion occurs with the scouring of riverbeds and riverbanks as the river tries to adjust. This action destabilizes nearby roads, bridges, residential properties, and other man-made structures built within the river's natural corridor.

- **Floodway:** The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height; also known as the regulatory floodway. As designated and determined by FEMA.

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- **Special Flood Hazard Area (SFHA):** the land in the flood plain within a community subject to a 1 percent or greater chance of flooding in any given year; also known as **floodplain**. As designated by FEMA. Key part of the National Flood Insurance Program (NFIP). Includes Floodway Fringe (Zone A and Zone AE).
- **River Corridor:** 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 and for minimization of fluvial erosion hazards. Generated automatically as a 50-foot buffer on each side of the meander belt width. As delineated by the Agency of Natural Resources in accordance with river corridor protection procedures. (See figure below).
- **Fluvial Erosion:** the erosion or scouring of riverbeds and banks during high flow conditions of a river. Fluvial erosion can be catastrophic when a flood event causes a rapid adjustment of the stream channel size and/or location. These areas are found within the River Corridor.

This figure depicts a typical stream with its River Corridor area highlighted in yellow and an example of the meandering pattern of the stream over time within that corridor.

Areas within the river corridor are considered areas of both flood and erosion risk as rivers and streams seek equilibrium in accommodating the high flows causing major flood and erosion damage even outside of SFHAs. Flood damage within and outside of the river corridor is becoming more frequent due, in part, to the relative frequency of these storms which continue to scour unvegetated streambanks before they've had the time to regenerate and also to remaining loose debris in streambeds that are washed downstream blocking bridges and culverts causing flooding in these atypical areas.

The Vermont Agency of Natural Resources has mapped SFHAs and River Corridors for the Town of Weathersfield and can be found online. River Corridors are currently being modified to reflect the valley topography more closely and will allow for improved identification of elevated fluvial erosion hazard areas.

Fluvial Erosion, which often accompanies flood events, is the predominant form of flood damage in Vermont. Rivers are dynamic and move both water and sediment. As a result, river channels may move vertically or horizontally. High flows can cause sediment to become detached from a riverbed or riverbank, which can range from gradual bank erosion or massive slope failure to catastrophic changes in river channel location and dimension. The sediment and stone that is dislodged can expose tree roots and wash away vegetative buffers which are carried downstream blocking culverts and bridges causing further flood damage.

Ice Jams can also cause a secondary event of flooding and threaten many of the same properties located within the FEMA Special Flood Hazard Area. Common in New England, ice jams occur during winter and spring months when river water levels rise, or a spring or mid-winter thaw breaks the ice into large chunks which become jammed at manmade and natural obstructions. Ice can build up against bridge abutments and expanses, undersized structures, and other obstructions to create a temporary dam impounding large volumes of water that has the potential to damage infrastructure and flood surrounding areas.

Flooding: History and Extent of Impact

Flooding is one of the most common types of natural hazards that occur frequently in Vermont. During the hazard assessment exercises, flooding was identified as the outcome from various weather events including hurricanes, tropical storms, ice jams, severe thunderstorms, or heavy rain events.

The town has three watersheds that function independently of one another (Mill Brook – Connecticut River in the north, the Black River in the west, and the Little Sugar River – Connecticut River in the east). This reduces the chances that a singular storm event will impact the entire town at the same time and/or scale. Stream geomorphic assessments for the major watershed in Weathersfield, the Black River, have been completed with a 2016 update to include smaller tributaries that drain directly to the Connecticut River. These tributaries include Mill Brook in Weathersfield, Blood Brook, Spencer Brook, and some unnamed tributaries. River Corridor Protection Areas have been mapped and are available online at the Vermont Agency of Natural Resources Designated River Corridor Protection Areas delineate those areas where development is subject to erosion hazard risks and are also referred to as Fluvial Erosion Hazard (FEH) Zones. The Black River is a scenic and somewhat shallow river that flows across a rock and boulder-strewn channel into Weathersfield from Cavendish. The North Branch has a particularly wide floodway and associated floodplain. Like the Black River and the North Branch, Branch Brook is fairly shallow and strewn with rocks and boulders. The Black River Corridor Plan identifies erosion hazard areas and potential ways to address erosion threats to property. Future development must be directed away from locations that are prone to damages from both inundation and erosion.

State and Regional Flood and Erosion History and Impact

Although hurricanes and tropical storms rarely impact Vermont, they have historically caused the greatest state natural disasters. Prior to Tropical Storm Irene in August of 2011, Vermont was impacted by Tropical Storm Floyd in November of 1999, causing major flooding and power outages. However, the Hurricane of 1938 may have been the most powerful tropical storm to hit Vermont in modern times, with sustained winds of 74mph which was claimed to have changed the landscape of the state with the extensive tree damage.

The Flood of 1927 termed ‘the greatest natural disaster’ was a 500-year flood event caused by a tropical system in Vermont in November with over 9 inches of rain falling on frozen ground that caused the most extensive flooding and structural damage and greatest loss of life in recorded history for the state. The Great New England Hurricane of 1938, one of the most powerful and destructive hurricanes to hit southern New England and the region of Southeast Vermont with winds over 100 mph caused over $300M in damages ($5 billion in current dollars). In the year 2011, four regional disaster declarations were issued in Vermont due to flooding and fluvial erosion. The fourth was Tropical Storm Irene, estimated at over a 100-year flood event, occurred in late August when up to 11 inches of rain fell in

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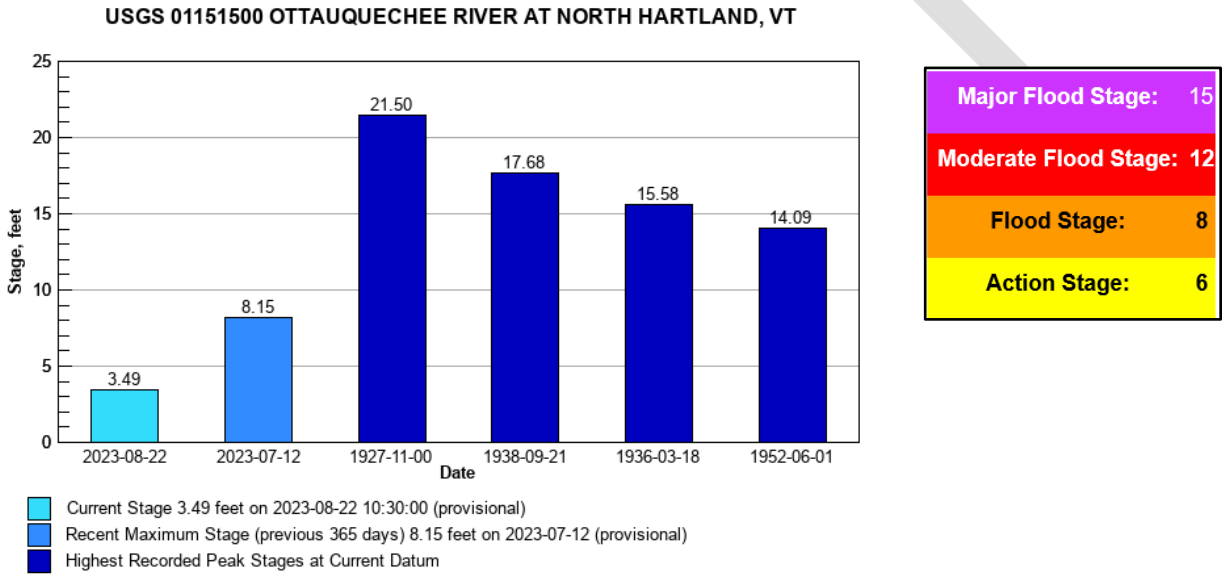
some areas of the State. The recently declared flood disaster is still under assessment and is not yet included.

On a regional level, of the 19 FEMA Declarations for Windsor County since 1992, 16 were related to flooding, one to a winter storm and the most recent two to COVID-19. FEMA assistance for the most recent of these Declarations impacting Windsor County is shown in **Figure 5.2-2: Regional Impact of Federally Declared Disasters**. These flood damages are associated with inundation flooding and fluvial erosion; however, data indicate that greater than 75% of flood damages are associated with fluvial erosion.

The United States Geological Survey (USGS) maintains a stream gage on the Ottauquechee River in North Hartland, which is the closest daily monitored gauge location unimpeded by instream structures and most representative of Weathersfield, north of the North Springfield Flood Control dam. Gage height approached moderate flood stage during the recent July 2023 event, as shown below in **Figure 5.2-1**.

Figure 5.2-1: Historical Gage Heights for the Ottauquechee River near North Hartland, VT



Source: https://waterwatch.usgs.gov accessed 8/22/2023, Flood-Tracking Chart.

Figure 5.2-2: Regional Impact of FEMA Declared Disasters

Severe Storms and Flooding

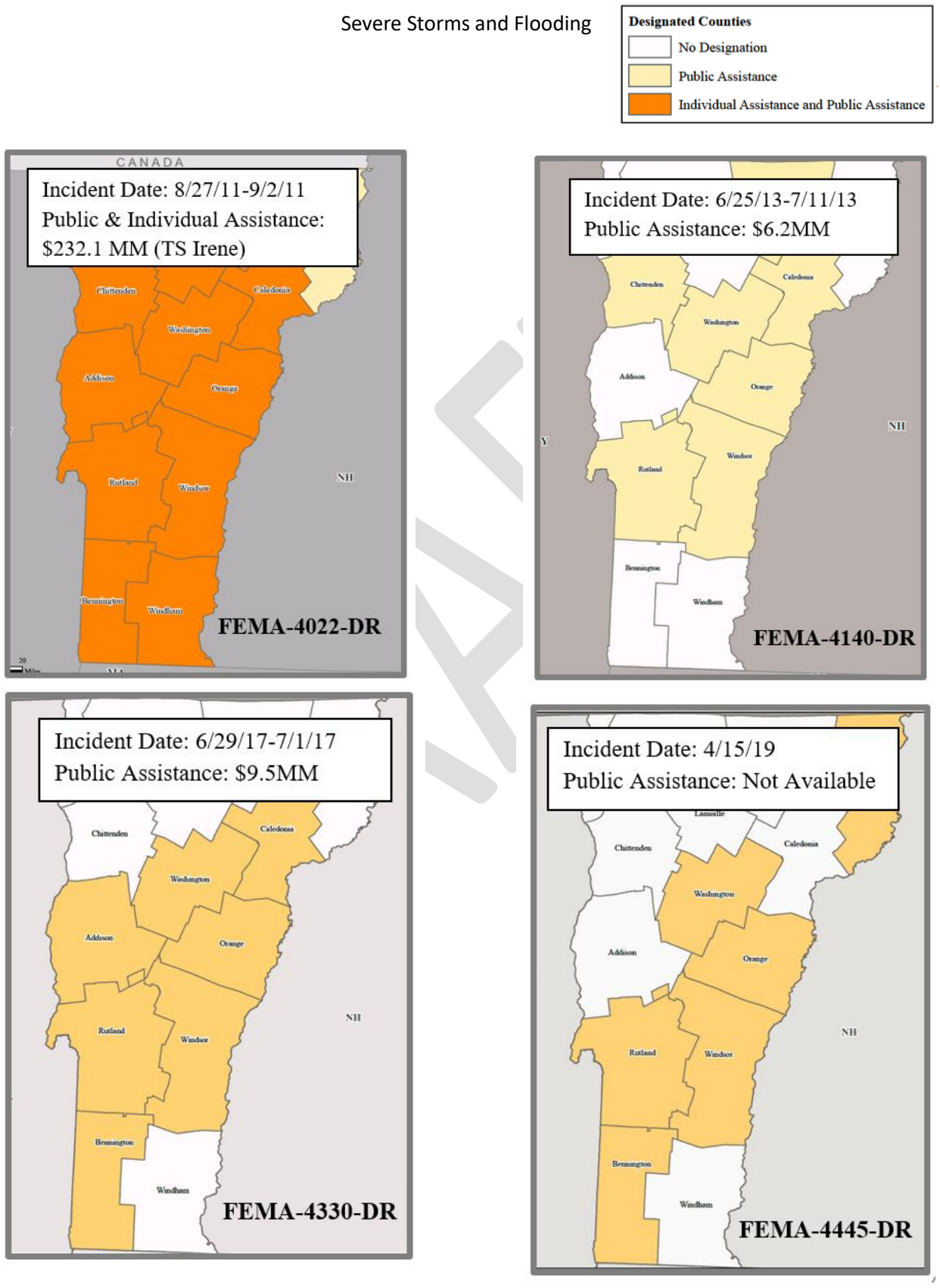
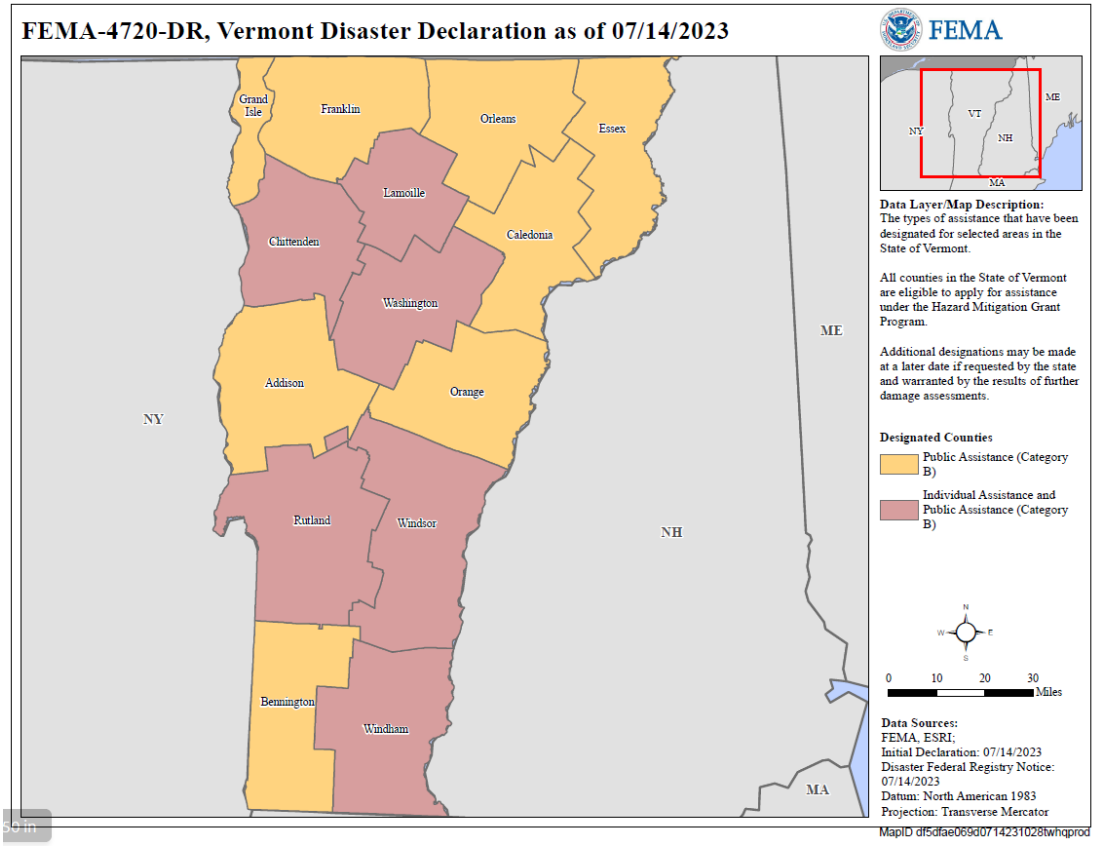


Figure 5.2-3 Regional Impact of July Flood Event



At the time of this plan writing, severe storms and flooding in Vermont have severely impacted several counties in Vermont prompting a Federally Declared Disaster #DR-4720-VT, announced on July 14th, 2023. Severe storms and heavy rainfall on July 7th, following weeks of prior persistent precipitation, caused catastrophic flooding, erosion, and infrastructure damage in Windsor County.

Local Flood History and Impact

One of the worst widespread flood disasters recorded in the State of Vermont that occurred in November 1927, dropped nearly 10 inches of rain on frozen ground causing extensive damage statewide. Relatively recent widespread flooding occurred in June 1973, when up to 6 inches of rain fell resulting in $64 million in damage. However, over the past several years, flooding has occurred in limited areas from intense, scattered storm events and ground saturation from persistent and excessive rainfall. This characterized the pattern of flooding in 2011 in Vermont during which there were four regional disaster declarations issued due to flooding and fluvial erosion. The fourth was Tropical Storm Irene in late August when up to 11 inches of rain fell in some areas of the State and up to 8 inches in the Weathersfield area. According to the *State of Vermont Hazard Mitigation Plan*, studies show that areas of the State can expect a greater frequency of flooding with an increase in extreme rainfall amounts.

Significant damage occurred to Routes 131 and 106 in both Weathersfield and Cavendish during Tropical Storm Irene. During Tropical Storm Irene, the North Branch caused substantial damage at the bridge on

Ascutney Basin Road and Branch Brook caused significant damage to Branch Brook Road and VT Route 131.

A significant rain event in July 2012 caused widespread erosion along areas of 106.

A significant rain event in July 2017 caused widespread erosion and washouts along town roads.

A significant rain event in on July 9, 2023, caused widespread erosion and washouts, and resulted in the following:

- Upper Falls Covered Bridge closed for safety
- VT-131 closed from Downers Four Corners to Cavendish
- VT-106 closed from Downers Four Corners to Amsden School RD
- Little Ascutney Road closed from Lottery Lane to VT-106
- 200+ residents without power in the northwest part of town
- Ascutney Basin Road closed
- Tarbell Hill Road closed
- The road in front of the transfer station floods (State Road)
- By the 11th, all roads were passable in some way (residents were able to travel to and from their homes).

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Flooding: Trends and Vulnerability

Over the past several years, flooding has occurred in limited areas of the State from intense, scattered storm events and ground saturation from persistent and excessive rainfall. In the past 13 years, since Tropical Storm Irene, Windsor County has experienced 8 FEMA declared flooding events. The prior 19 years saw a total of 9 declared flooding events which indicates a trend of increasing frequency. In recent years, flood intensity and severity also appear to be increasing. According to prior State of Vermont Hazard Mitigation Plans, studies show that areas of the State can expect a greater frequency of flooding with an increase in extreme rainfall amounts.10 The frequency and extent of Fluvial Erosion is also increasing given the frequency of flash and inundation flooding which leaves stream banks eroded and unable to revegetate before the next heavy rain or flood event.

A region's vulnerability to flooding and erosion depends on topography, as well as meteorological events. Weathersfield lies within the Connecticut River Drainage Basin; split among the watersheds of the Black River, Mill Brook, and smaller east-draining watersheds south of Mill Brook (Basin #10). Local roads north of VT Route 131 are vulnerable to Mt. Ascutney's influence on weather and storm water runoff.

The Town has several residences located either within floodways or river corridors (See **Appendix A: Map 2 – Water Resources** and **Map 6 – Structures in the Flood Zone**). A significant flood event in any of these areas would disrupt evacuation routes, and could impact private and public property, vulnerable populations, town services, and hazardous waste storage sites.

For the Town of Weathersfield, vulnerability from a major flood event is influenced by several factors:

- Approximately 6% of all structures in Weathersfield, and 4% of all residential structures are located within a SFHA or River Corridor.

- Many of the primary evacuation routes along Rt. 131 and Rt. 106 are either completely or partially within the flood zones or river corridors.

Table 5.2-4 below lists the number and types of vulnerable structures in Weathersfield that lie within the Special Flood Hazard Zones (Floodway and Floodway Fringe) and the River Corridor. There are 96 structures in these high-risk areas, 66% of which are residential structures. 26% are camps and campgrounds.

Table 5.2-4 Weathersfield Structures Located within Flood Hazard Zones and River Corridor

		Flood Zone			
Building Type	Total # in Town	# Units in SFHA	# Units in River Corridor	Total Units at Flood Risk	% of Total at Risk
Accessory Building	16	1	0	1	6%
Camps & Campgrounds	43	23	2	25	58%
Commercial	37	1	0	1	3%
Civic/Religious	17	1	0	1	6%
Mobile Home	259	1	4	5	2%
Multi-Family	7	1	2	3	43%
Single-Family	1211	27	28	55	5%
Other	80	2	3	5	6%
TOTALS	1670	57	39	96	6%

Source: GIS analysis using E911 building points (2023), FEMA-mapped floodplains (2022), and ANR-mapped River Corridors (2019). Some structure locations may have changed since this data was compiled.

Special Flood Hazard Zones are based off the most recent Town flood map, effective September 2007 (see https://msc.fema.gov/portal/search?AddressQuery=weathersfield%2C%20vt).

National Flood Insurance Program (NFIP)

The town has been enrolled in the NFIP program since 1985 and will continue to regulate floodplain use through the Weathersfield Flood Hazard Regulations last updated and adopted on April 5, 2021. The town will continue to enforce these regulations to maintain future NFIP compliance. As outlined in the regulations, the Zoning Administrator (Land Use Administrator) and Zoning Board of Adjustment, is charged with implementing and advising residents on development, as well as regulating construction within Flood Hazard Areas and NFIP compliance. There have been 4 NFIP insurance claims filed since 1985 and there are no repetitive loss properties in the Town of Weathersfield. NFIP policies and claims are summarized in **Table 5.2-5**.

The Town has in place a contract agreement with MARC staff to assist and advise the AO with project development review for compliance with Town floodplain regulations. MARC staff have received FEMA disaster training including the substantial damage assessment process with expertise in floodplain management. MARC staff will inform and assist the AO on regulating rebuilding damaged structures, improvements on existing structures, and any other proposed development in the floodplain and river corridor for compliance with the Town's floodplain regulations.

Following an event, a MARC staffer accompanies the AO/Town Manager on site visits to damaged properties, assists in the assessments and in implementing the substantial improvement/substantial

damage provisions of the Town's FHARs. The Town did not need to conduct any substantial damage assessments from the recent flood event of July 2023.

Table 5.2-5: Weathersfield National Flood Insurance Program Statistics (Report date 6/26/2018)

# of Policies	# of Policies in A Zone	Total Premium	Total Coverage	# LOMCS	# of Claims Since 1978	Claims Paid Since 1978	# of Repetitive Losses
9	4	**$6,066**	$2,001,200	**13**	4	$131,370	0

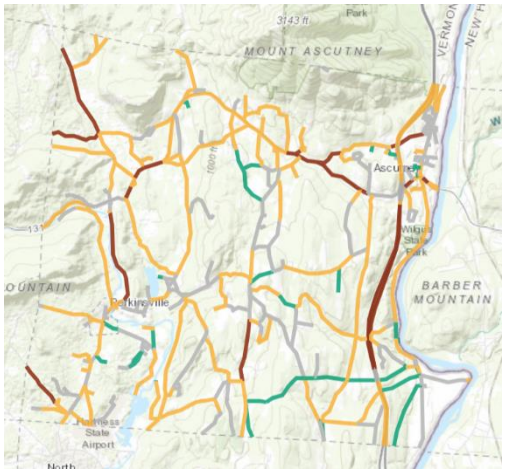
Source: Vermont Flood Ready Community Reports for FEMA Policy & Claim Statistics for Flood Insurance - Claim Information by Town, accessed 8/22/2023

The community areas most at risk for flooding and erosion became apparent following Irene and more recent storm events. Although repairs made at that time have reduced the Town's flooding and erosion risk with upgraded culverts and bridges and other best management practices to control stormwater runoff, most of the impacted areas in Town remain vulnerable.

Bridges and culverts are also vulnerable to flood and fluvial erosion damage, as much of this infrastructure remains undersized constricting flow or is poorly aligned. Blocked culverts compromise the structural integrity and safety of the road crossing resulting in damage to adjacent properties. Bridge and Culvert Inventory assessments are conducted every three years and provide the Town with information used to plan for infrastructure replacements and upgrades. In addition, the Black River Corridor Plan identifies culvert and bridge upgrades or removal projects for reducing flood and erosion hazard risk, as well as opportunities for increasing access to natural floodplains.

Vermont State has focused its efforts over the past four years on "hydrologically-connected" road segments as part of the ***Municipal Roads General Permit (MRGP) Standards***. These standards will help to increase flood resiliency and reduce the risk of road erosion. A new road inventory, completed in 2019 based on these new standards, provides the Town with information on roads most vulnerable to erosion and is consulted in prioritizing road work each year. Weathersfield has made significant progress in bringing high priority segments into compliance (See **4.3a Previous Plan Period Mitigation Actions**).

The Vermont Transportation Resilience Planning Tool (TRPT) combines river science, hydraulics and transportation planning methods and is applied at a watershed scale. The Tool identifies bridges, culverts, and road embankments that are vulnerable to damage from floods and estimates risk based on the vulnerability and criticality of roadway segments, and identifies potential mitigation measures based on the factors driving the vulnerability. A snippet is shown here while the full map is accessible online.



5.2b Ice, Heavy Snow, and Extreme Cold

Hazard Assessment Scores: Ice – 6.0, Heavy Snow – 8.8, Extreme Cold – 7.5

Heavy Snow and **Ice** are significant natural hazard events for Vermont and Windsor County. Both have a high probability of occurrence and have the greatest impact on town infrastructure and can isolate some vulnerable residents.

Winter storms and **blizzards**, with **snow**, **ice**, **wind** and **extreme cold** in varying combinations, are fairly commonplace in Vermont, Windsor County and occur town wide in Weathersfield. Heavy accumulation of snow can be accompanied by strong winds, cold and low wind chills. Drifting of snow from high winds causes low visibility and makes it difficult to keep roads clear. Heavy wet snows of early fall and late spring, as well as ice storms and **freezing rain**, often result in power outages and property damage, leaving people without adequate heating capability. Ice glazed roadways and sidewalks, difficult to detect, are extremely hazardous to pedestrians and motorists. Power and communication loss is often the result of downed trees from heavy wet snow or ice accumulation combined with strong wind gusts which pull down utility lines and can disrupt traffic and emergency response by making roads and driveways impassable.

Severe winter storms in the northeastern United States develop through the combination of weather and atmospheric conditions including 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. Winter weather related Warnings, Watches and Advisories are issued by the local National Weather Service office based on local criteria.

A Nor'easter is a large weather system traveling from South to North, passing along, or near the Atlantic seacoast. Cyclonic winds impact the coast and inland areas from a northeasterly direction. The sustained winds may meet or exceed hurricane force.

Blizzards are defined by the National Weather Service as "sustained winds or frequent gusts of 35 mph or greater (and) considerable falling and/or blowing snow reducing visibility frequently to 1/4 mile or less for a period of three hours or more."

Ice Storms are defined by the National Weather Service as "occasions when damaging accumulations of ice are expected during freezing rain situations. Significant accumulations of ice are considered to be of ¼" or greater." Multiple sources state that a ¼ inch of ice accumulation from an ice storm can add 500 pounds of weight on the lines between two power lines.

Flash Freeze occurs when temperatures rapidly fall below freezing during precipitation with sudden severity in travel conditions. Extreme variations in topography and altitude on Vermont roadways make this a common hazard for motorists. Bridges and overpasses are particularly dangerous because they freeze before other surfaces.

Black ice is a deadly driving hazard defined as patchy ice on roadways or other transportation surfaces that cannot easily be seen. It is often clear (not white) with the black road surface visible underneath. It is most prevalent during the early morning hours, especially after snow melts on the roadways has a chance to refreeze over night when the temperature drops below freezing. Black ice can also form when roadways are slick from rain and temperatures drop below freezing overnight.

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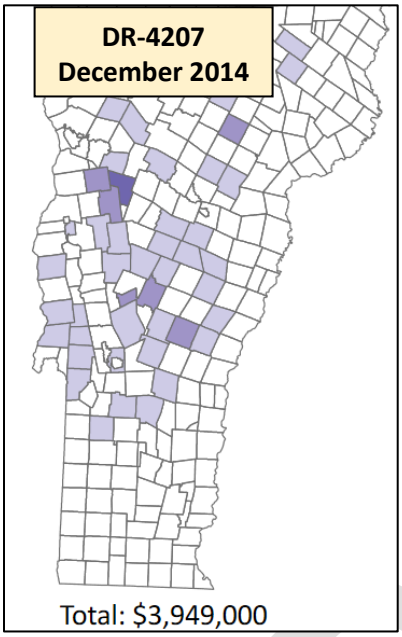
Extreme Cold temperatures are part of Vermont's climate tendency to stray above or below expected temperature values. What constitutes 'extreme cold' can vary and is based on what a population is accustomed to in their respective climates. For Weathersfield, this hazard was assessed as having a relatively high probability of occurrence with high impact.

Heavy Snow, Extreme Cold, and Ice: History and Extent of Impact



There are no standard models or methodologies for estimating loss from winter storm hazards, however, extreme winter weather is considered a way of life in Vermont and many rural Towns are accustomed and prepared for these events.

While the history of winter storm events in Vermont and the historical damaged caused is extensive, Windsor County has been a designated area in only one federally declared disaster event over the past 20 years. DR-4207 occurred over a four-day period in mid-December 2014 when heavy, wet snow and ice resulted in more than 175,000 power outages in the region, the 2nd most power outages due to weather in Vermont.[1] The damage assessment for Windsor County was estimated to be over $200,000 and impacted the northwest corner of the county.

A review of NOAA's database for Winter Storm events for Windsor County suggests that a snowfall of over 10 inches is likely to occur two to three times in a winter/early spring season. Snowfalls of over 24 inches have occurred at least once at most. Reports of ice accumulation of 1/10th inch or more are common over the course of a winter season.

Over the past five years the NOAA has recorded 23 Winter Storm events for Windsor County, an average of four per year with the most impactful events occurring in the month of March. **Table 5.2-6** below is a sampling of historical winter storm events and the extent of their impact.

TABLE 5.2-6: Notable Winter Storm Events in Windsor County, 2016-2022

Occurrence Date	Estimated Property Damage	Event Description
11/29/2016	$25,000	Ice accumulation less than one tenth of an inch. Numerous vehicle accidents from icy roads. Accident between a vehicle and a tractor-trailer resulted in a fatality.
3/14/2017	$20,000	Snowfall totals across Windsor County generally ranged from 12 to 24 inches.
3/31/2017	$25,000	Widespread 8 to 16 inches of a heavy, wet snow across the region. Scattered power outages from the snow loading on trees and power lines.
4/1/2017	$25,000	Widespread 8 to 16 inches of a heavy, wet snow fell across the region with scattered power outages from snow loading on trees and power lines.
12/12/2017	$20,000	A widespread 8 to 16 inches of snow fell across the region.
3/7/2018	$40,000	A long duration snow event dropped 12 to 26 inches across the region, with highest totals along the southern Green mountains. Scattered to numerous power outages occurred in areas of the heaviest snow fall.

[1] 2018 Vermont State Hazard Mitigation Plan

3/13/2018	$20,000	Long duration snowfall event eventually delivered 10 to 20 inches across the region. Some isolated to scattered power outages were reported.
11/26/2018	$250,000	Light rain changed to a pasty, heavy wet snow that resulted in downed tree limbs and power outages. across VT. Snow accumulated 3 to 6 inches in the valleys but quickly rose to 12 to 20 inches above 1000 feet.
1/19/2019	$20,000	A widespread snowfall of 10 to 18 inches occurred across the region.
3/22/2019	$15,000	A heavy wet snow fell across the region with snowfall totals of 8 to 12 inches and higher totals in the higher elevations.
3/23/2020	$5,000	A period of heavy snow with 2-3 inches per hour rates moved through during the evening hours with storm total snowfall of 7-10 inches. Minor, isolated power outages.
12/16/2020	$ 20,000	Record snowfall described below
1/16/2021	$50,000	A heavy, wet snow fell across the region with totals ranging from 3 to 5 inches in the valleys to 18 inches in the higher terrain. Numerous power outages reported.
12/25/2021	NA	Ice accumulation of up to ¼" from freezing rain caused numerous vehicle accidents resulting in the closure of portions of I89 and 25 miles of I91.
2/3/2022	$50,000	Heavy snow and ice combination with 6-12 inches of snow followed with ¼" of ice causing numerous power outages.

Source: NOAA, National Centers for Environmental Information, accessed 8/22/23.

Local snow totals can vary tremendously. A recent snowfall event in December 2020 recorded snow rates of 4+ inches per hour for 6 to 8 hours across much of Windsor County. Local reports for the December snowfall event had nearby towns of Springfield and Ludlow the hardest hit with recorded totals of 41 inches.

In 2021, for the Windsor County region, there were a total of seven winter weather events as listed in NOAA. Three were heavy snow events of 8-12 inches, and four were heavy wet snow, freezing rain or sleet causing power outages which is indicative of the extreme variance in temperatures during the winter season due to climate change.

The following instances of **extreme cold** have occurred in recent years:

- January 14-15, 2022: Dangerously cold wind chills of 25 to 35 below zero were observed across the region with actual air temperatures of 10 to 15 below zero Friday evening through midday Saturday. Overnight minimum temperatures Saturday night-Sunday morning were 10 to 20 below zero with calm/light winds.
- January 7-8, 2015: 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 10 below to 20 below zero in Windsor County.

There is no specific region in Vermont that is more vulnerable to ice storms, according to *the 2018 Vermont State Hazard Mitigation Plan*. The state plan identifies accumulations for ice storms in December 2008 and January 1998 of 1/2-3/4" of ice plus 1-2" of sleet and 3" of ice, respectively. Local data for ice storms is not available. 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 (SHMP 2018).

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Residents have not identified areas within town that receive more snow and ice than other areas. They did note that properties located near powerlines or large trees are particularly vulnerable to heavy snow and wind events.

Heavy Snow, Extreme Cold, and Ice: Trends and Vulnerability

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 (SHMP 2018).

This is consistent with the local low temperature and snow data and can be visualized when a trendline is applied as shown in **Figures 5.2-4 and 5.2-5**. The area is seeing a greater range in temperature extremes which make for more hazardous conditions for flooding and icing. In the current year, 75-degree swings in winter temperatures ranged from -20.9 to 53.1°F in January and -2.9 to 72.1°F in February.

Figure 5.2-4: Annual Snowfall Trend

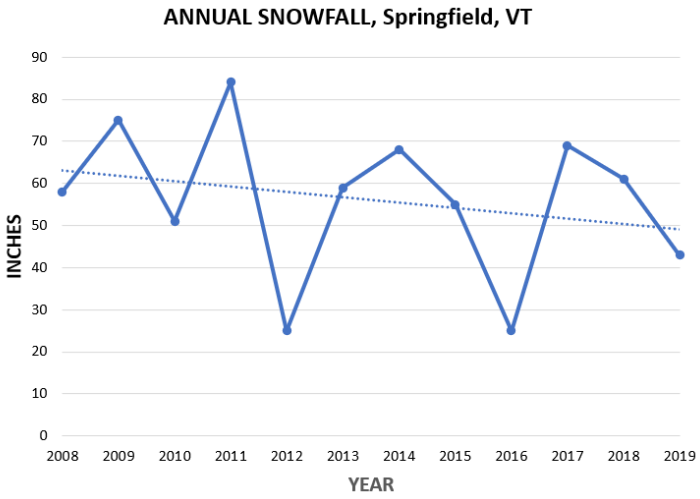
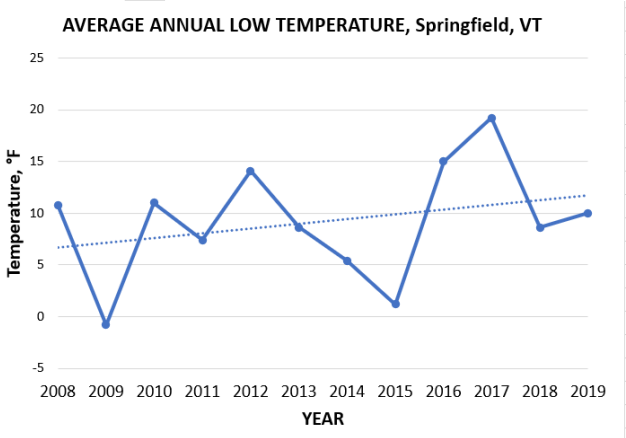
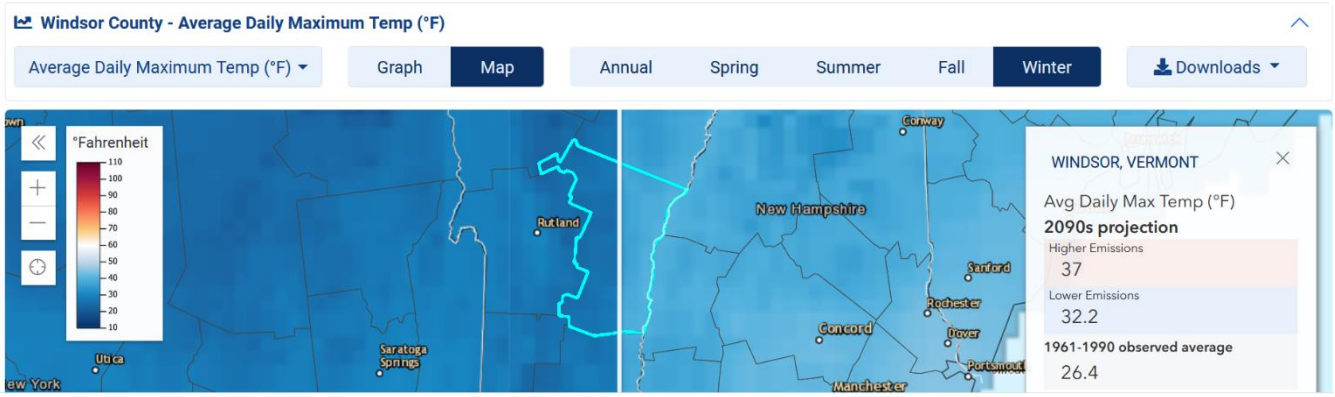
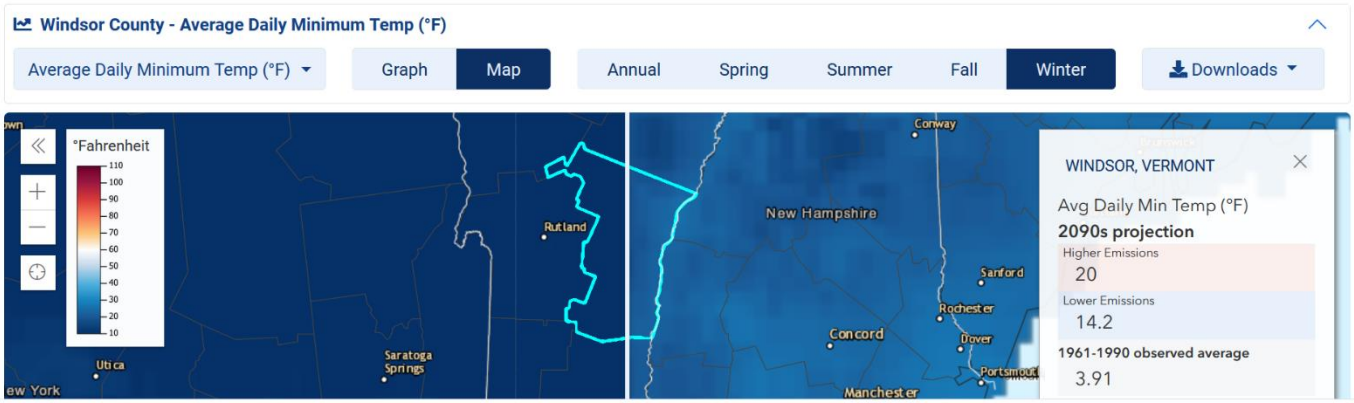


Figure 5.2-5: Annual Low Temperature



Data from Climate.gov's map generator, Climate Explorer, compares historical to projected temperatures in the divided images below. According to this source, average daily maximum winter temperatures are projected to rise above freezing to 37°F by the 2090's for Windsor County with higher emissions compared to observed historical averages of 26°F. If emissions are lower, the maximum will reach 32°F. The average daily minimums winter temperatures will also rise to 20°F over the same period compared to 4°F, observed historical averages.





Statewide, damage from winter storms can vary depending upon wind speeds, snow or ice accumulation, storm duration, tree cover and structural conditions such as heavy snow and ice accumulation on roof tops, barns, or aged structures in deteriorating condition. A roof may collapse with little or no warning, and one common misconception is that only flat roofs are susceptible to collapse. Residents can expect at least 60 pounds of weight per square foot on their infrastructure during winter months. Older residents need to be vigilant when clearing snow from walkways and driveways.

Vermont communities are well prepared to handle heavy snowfall. However, it is typically the secondary hazards that are most concerning to the town. Depending on the event, particularly with heavy, wet snow or ice, electricity may be down for a few hours or days due to downed powerlines from falling trees. This is a time when residents are most vulnerable to structure fire hazard or carbon monoxide poisoning. Many residents heat their homes with open flame heating sources including fireplace, wood, or pellet stoves, and will supplement with electric or kerosene space heaters. Extended periods of extreme cold or loss of power during the winter months require continued vigilance on the safety of heating to reduce the risk of a structure fire as a secondary hazard.

Green Mountain Power, the utility company that currently serves Weathersfield, follows a regular tree-trimming schedule. Town officials believe this can be improved to mitigate damage and power outages caused by downed trees and tree limbs during events. However, with major state thoroughfares Routes 106 and 131 also serving as local emergency access roads in Weathersfield, keeping surfaces clear of snow and ice is critical to the safety of residents. The lack of sidewalks in village centers poses added risk to Weathersfield residents and businesses who rely on walking during winter weather to access public services. The frequency of ice events in the region requires sufficient Town inventories of sand and salt which can be difficult when supplies are limited.

Extreme weather conditions can also lower the distribution of cellular signals from a cell tower to the receiving device. Reliability of these communications for reporting an emergency can be compromised during extreme winter weather events. This can become a greater concern as there is a trend to eliminate home landlines to save utility costs is growing.

5.2c High Wind

Hazard Assessment Score: 6.0

High Winds can be generated from a thunderstorm, hurricane or tropical depression, a localized microburst, Nor'easter, or simply just a windstorm. Any of these events can produce wind gusts up to 50 mph or greater causing property damage and disruption in electric and telecommunication utilities, transportation, and commercial businesses. Although difficult to predict, these events also pose a high risk of injuries and loss of life but tend to be localized.

Severe thunderstorms are a relatively common hazard in Vermont, particularly in the spring and summer months. Although typically short in duration, they can produce damaging winds, heavy rain and flooding, dangerous lightning, and large hail. Multicell cluster thunderstorms are likely to cause local flash flooding. It is the winds from these storms that have most impacted the town.

The downward draft from these storms can produce **microbursts** which are not uncommon in Vermont. These events can come with wind speeds in excess of 80 mph, and pose an additional threat to low flying aircraft, making it difficult for them to maintain altitude. Although less common in Vermont, **super cell thunderstorms** are the largest, longest lasting, and most devastating thunderstorms, which can produce **tornadoes** and widespread destruction of crops and property. **Tropical storms, hurricanes, nor'easters,** and **winter storms** can also cause high wind damage throughout the state.

The **Beaufort Wind Scale** shown below can be used to predict damage based upon wind speeds. The National Weather Service will issue Wind Advisories when sustained winds of 31-39 mph are reached for at least one hour or gust between 46-57 mph and High Wind Warnings for winds of 58 mph or higher. Thunderstorm winds tend to affect areas of Vermont with significant tree stands as well as areas with exposed property and infrastructure and aboveground utilities (SHMP 2018).

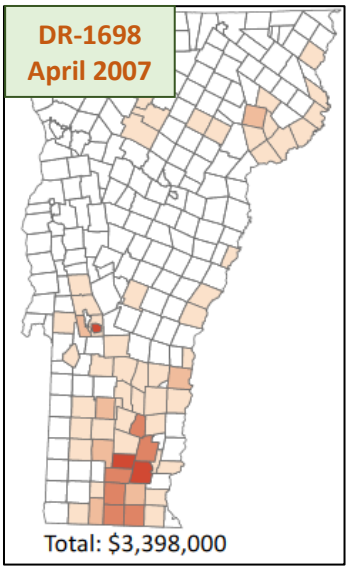
Power Failure is a common secondary hazard caused by high winds and occurs frequently within Windsor County. Power outages are most often isolated but can occur on a town-wide scale and are typically the result of power lines damaged by high winds, heavy snow, or ice storms, but may also result from disruptions in the New England or national power grid as occurred in the Northeast Blackout of 2003. Dead

or dying trees in proximity to power lines pose a particular threat for power failure, as these trees are often brought down by triggering events such as high winds during a thunderstorm or a Nor'easter.

Beaufort Wind Scale		
Classification #	**Wind Speed**	**Land Conditions**
6	25 to 31 mph	Large branches in motion; whistling in telephone wires
7	32 to 38 mph	Whole trees in motion; inconvenience felt walking against wind
8 to 9	39 to 54 mph	Branches can break off trees; wind generally impedes progress; slate blows of roof; slight structural damage
10 to 11	55 to 72 mph	Damage to chimneys and TV antennas; trees broken or uprooted; considerable widespread structural damage
12 to 13	73 to 112 mph Hurricane	Peels surfaces off roofs; windows broken; mobile homes overturned; moving cars pushed off road; devastation
14 to 15	113 to 157 mph	Roofs torn off homes; cars lifted off ground; widespread devastation

**For the purposes of the Hazard Mitigation Plan, the scale is only shown above wind force 5; Data from NOAA*

High Wind: History and Extent of Impact



Since 2000, there have been six (6) Federal Disaster Declarations for high wind events in Vermont, excluding those related to Tropical Storm Irene and Hurricane Sandy. One example of the extent of a **high wind** event in Vermont was the Nor'easter of April 2007 that resulted in a Federal Disaster Declaration, DR-1698. "High winds during this April storm resulted in many trees down and damage to some private homes and public infrastructure, primarily in Southern Vermont" (SHMP 2018). Total Public Assistance for this event was $3,398,000 with the costliest damages in neighboring Windham County.

Since 2000**,** NOAA National Centers for Environmental Information's Storm Events Database recorded 30 High/Strong Wind events and 103 Thunderstorm Wind events that impacted Windsor County causing tree damage and power outages. Three of the strong wind events were the result of Tropical Storm Irene in August 2011, Hurricane Sandy in October 2012, and remnants of Tropical Storm Isaias in August 2020. Most of the thunderstorm wind events recorded sustained winds of 40-45 mph with damaging wind gusts of 50-65 mph and isolated damage. Other High Wind events are more widespread causing power outages up to 25,000 countywide. Most of the wind reported damage is due to **thunderstorm** activity from June through September and winter storms with **heavy snow** and **ice**. Over the past 5 years from 2018-2022, the Windsor County region averaged close to 10 strong wind events a year causing, on average, $30,000 per event.

Reports of damage due to downed trees in Windsor County are common when wind gusts begin to exceed 40 mph. Damage is typically localized in the form of downed trees and powerlines and isolated structural damage to buildings and vehicles.

In August of 1968, a category F3 (max. wind speeds 158-206 mph) In July of 1962, a category F2 (max. wind speeds 113-157 mph) tornado 1.1 miles away from the town center caused between $5000 and $50,000 in damages (city-data.com).

High Wind: Trends and Vulnerability

Thunderstorms and associated hazards can occur anywhere in Vermont at any time of the year; however, spring and summer are the most common times for severe thunderstorms (SHMP 2018).

The frequency of high wind events has increased. It is anticipated that extreme weather conditions, due to climate change, will continue to impact the community in the form of high winds in Windsor County. This is supported by the NOAA data which shows that of the 98 reported Thunderstorm and High Wind events since 2000, 29, or 30%, have occurred over the past 5 years. The Town has noted however that the mountains in Okemo and Ascutney provide some protection from high wind damage.

Power failures often have only minimal impact to people and property; however, longer duration events may result in major disruptions and business losses. Outages in Weathersfield typically last only a few hours but can last for days if the outage is regional. The Town states that GMP is adequately responsive in making any needed repairs to bring the power back online. Potential loss estimates are difficult to predict as they are typically isolated in geographic areas and short in duration. Power outages in winter months may result in the loss of home heating, ruptured water pipes, and the resulting structural damage. The loss of home heating may be a contributing factor to the increase in structure fires during the winter months. Local data on historical occurrences, extent of outage and associated costs are not available.

Town assets are located in developed downtown areas with less trees and are not particularly vulnerable to this hazard. The expected magnitude for future high wind events will fall between around 40 and 50 mph, or Beaufort scale number 8-9, and will likely result in downed trees, power lines, and small damage. However, the possibility does remain for larger high wind events such as the 1998 F3 tornado on the Enhanced Fujita Scale and localized microbursts.

Heavily tree-lined roads can experience frequent outages. Clearing overhanging, leaning, and dying trees near power lines is part of annual town-wide maintenance to minimize impact from high winds. Green Mountain Power has worked well with Weathersfield in managing and removing trees that threaten lines utility lines.

5.2d Extreme Heat and Drought

Hazard Assessment Scores: Extreme Heat -- 7.5, Drought – 5.5

Extreme Heat and prolonged hot weather and resulting **Drought** have not been of concern to Vermonters, historically. Only recently have these potential hazards captured the concern of Windsor County communities.

Extremely high temperatures can occur when a high-pressure system (under which air is descending toward the Earth's surface) develops and intensifies. Under such conditions, the potential for a heat wave exists. A heat wave is a period of three or more consecutive days during which the maximum temperature meets or exceeds 90°F. Extreme hot temperatures can have significant effects on human

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health and commercial and agricultural businesses, as well as primary and secondary effects on infrastructure. Prolonged periods of above normal temperatures along with increases in average annual temperature, also have direct and indirect effects on other hazards such as drought, Wildland Fire, invasive species, and infectious disease (SHMP 2018).

What is considered "extreme heat" can vary around the world and across the country. Populations in warmer climates are more accustomed to higher temperatures and have acclimated to withstand higher temperature thresholds and developed ways to cope with heat and humidity as a way of life.

The Heat Index is a measure of how hot it actually feels when relative humidity is considered in with the actual air temperature. For example, if the air temperature is 88°F and the relative humidity is 70%, it will feel like 100°F. The National Weather Service heat related advisories are shown below.

National Weather Service Heat Advisories		
Classification	**Advisory**	**Expected Conditions**
Excessive Heat Outlook	Warning	A period of excessive heat is possible within next 3 to 5 days.
Heat Advisory	Take Action	The combination of hot temperatures and high humidity will create a situation in which heat related illnesses are possible. Heat Advisories are issued when heat indices are expected to reach at least 95°F.
Excessive Heat Watch	Warning	A prolonged period of dangerous excessive heat is possible within about 48 hrs.
Excessive Heat Warning	Take Action	A prolonged period of dangerous excessive heat is expected within about 24 hours. The combination of hot temperatures and high humidity will create a situation in which heat related illnesses are possible. Excessive Heat Warnings are issued when heat indices are expected to reach at least 105°F.

Drought can be defined as a shortage of water relative to need. Is a complex hazard in that it develops slowly during extended periods of low or no precipitation combined with extreme heat and high winds. It is typically widespread and can linger after normal precipitation returns. Although the surface waters may appear to have recovered from a period of drought following a return to normal precipitation, replenishing groundwater levels is a longer process.

The severity of a drought depends on the duration and extent of the water shortage, as well as the demands on the area's water supply. Drought classification categories range from 'D0' for abnormally dry conditions to 'D4' for widespread crop devastation and water emergencies. Vermont has experienced D2 drought conditions characterized by likely crop and pasture losses, common water shortages and imposed water restrictions.

Extended periods of drought during a Vermont growing season can be devastating for state agriculture and can result in loss of potable water when wells run dry. Drought conditions are also favorable for Wildland Fires while small town fire departments that rely on river water will have limited capacity for fighting fires.

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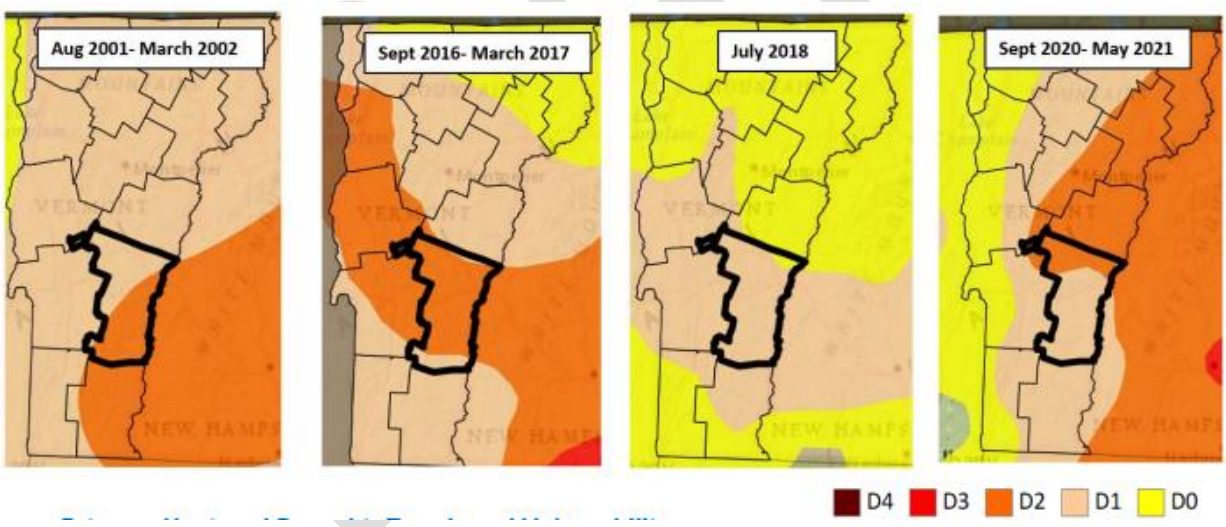
Extreme Heat and Drought: History and Extent of Impact

Potable water for the majority of the Town is from on-site wells, while sections of Ascutney Village along Route 5 are served by a municipal water system provided by the Ascutney Fire District #2. This system currently serves about 200 users located in the Country Estates mobile home park and in parts of the Village and extending out to the Irving Gas Station on VT Route 131.

This system is served by two wells located near the end of Cherry Lane and a 42,000- gallon storage tank located inside the water storage pump house. The Village of Perkinsville is served by all private wells and on-site septic systems, although there are several shared systems.

The Fire Departments rely heavily on surface water for use in fighting fires. The Town's ability to fight fires can be severely hampered during a prolonged period of extreme drought, particularly when the risk of brush and wildfires are high. The Town, like many rural towns in Vermont, also relies on private wells for potable water. Even during minor periods of drought some shallow wells have experienced reduced water supply. When dry spells occur, individual water wells are often affected, and agricultural producers experience the greatest impact.

In 2001-2002, drought which began in early winter and continued through July impacting nearly 100% of the state in at least Moderate Drought (D1). In 2016-2017, a Severe Drought (D2) from October through April, affected 29% of the State with 80% in at least Moderate Drought (D1). As of the writing of this plan, Moderate Drought (D1) which began in September 2020 continues through May 2021 but has ended by July 2021. Windsor County was affected by all of these recent droughts as shown below.



Source: U.S. Drought Monitor

The following notable **Extreme Heat events** were gleaned from the Vermont Hazard Mitigation Plan:

- Between 2000 and 2017, the number of recorded days per year with a daily temperature high greater than or equal to 85°F peaked during the 2016 summer at 45 days, closely followed by the summer of 2015 at 41 days in Burlington.
- August 2006, temperatures rose into the 90s but significantly more important were dewpoints that reached the middle to upper 70s to produce excessive heat index values of 100°F to 105°F, some of the highest values in nearly a decade.

- In July 2011, during a 4-day heat wave, temperatures across southern Vermont warmed into the 90s. With dew points in the 70s combined with the hot temperatures, heat indices reached 104°F. Heat index values reached 100°F to 108°F across the Champlain and Connecticut valleys as well as some interior valleys. One death is attributed to this event in Windsor County.
- In the summer of 2018, in Windsor County, high temperatures in the upper 80s to upper 90s with dewpoints in the 60s and 70s created dangerous heat indices in the 95-to-110-degree range between June 30th and July 5th. A substantial increase in hospitalizations occurred due to the excessive heat and duration and at least 3 deaths were contributed to the heat.
- In 2020, the 2nd longest heatwave in modern history occurred across portions VT from June 18th through June 23rd. Temperatures exceeded 90°F for up to 6 consecutive days in portions of the Champlain and Connecticut River valleys.

Table 5.2-7 below shows a record of hot weather days during 2022 in Weathersfield.

Table 5.2-7: Hot Days in Weathersfield (2022)

Month	# Days Over 80	# Days 90 and Over
April	0	0
May	11	2
June	14	3
July	27	6
August	28	10
September	6	0
Total	**86**	**21**
Notes: 80+ degree figure also includes 90-degree days. Thus, for May, there were 11 hot days, 2 of them 90 or higher. **Data provided by Emergency Management Director*		

Residents observe the impacts of heat across the entire planning area. Residents seeking relief from the heat can take advantage of the Weathersfield Proctor Library or the Stoughton Pond Recreation area (cooling sites identified by Vermont Department of Health).

Extreme Heat and Drought: Trends and Vulnerability

Heat-related events are, historically, less likely to occur compared to other areas of the country. However, taking a more regional view, they are beginning to occur in much greater frequency. Both state annual minimum and maximum averages show a steady increase from 1960 (**Figure 5.2-8**), with a greater rise in the minimum average rate, or winter temperatures. The **Northeast region warmed** more than any other **region** in the lower-48 over the last five decades, according to data from NOAA, and is projected to warm at a rate 50% greater than the global rate by some analysis (USGS).

Data from Climate Explorer, in **Figure 5.2-9**, compares historical to projected temperatures in the divided image above. According to this source, average daily maximum summer temperatures are projected to rise above 90°F by the 2090's for Windsor County with higher emissions compared to observed historical maximum averages of 78.6°F. If emissions are lower, the maximum will reach 85.9°F.

Figure 5.2-8: Vermont Average Annual Temperature

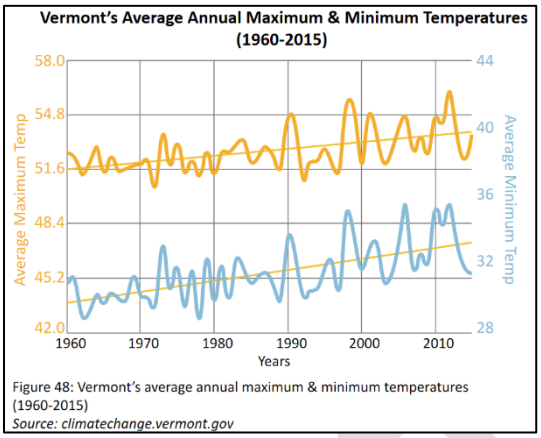
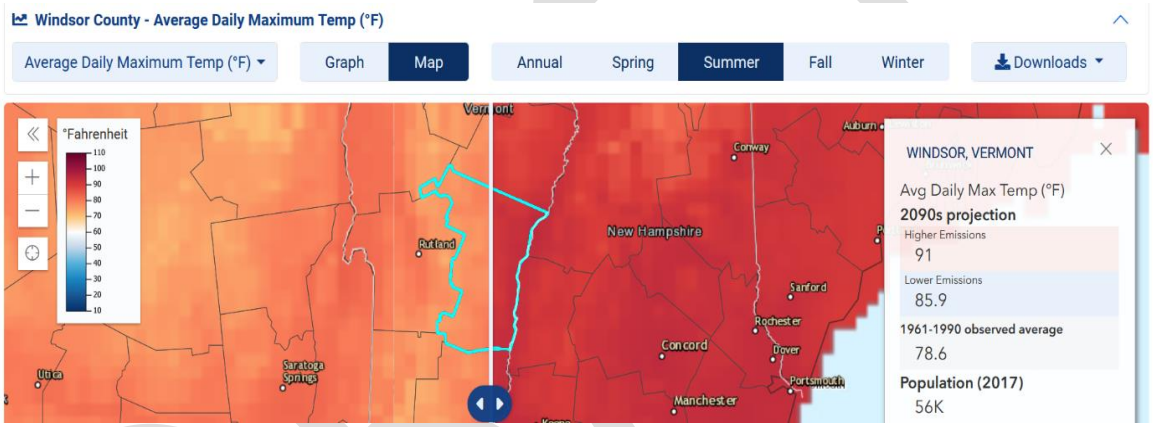


Figure 48: Vermont's average annual maximum & minimum temperatures (1960-2015)
Source: climatechange.vermont.gov

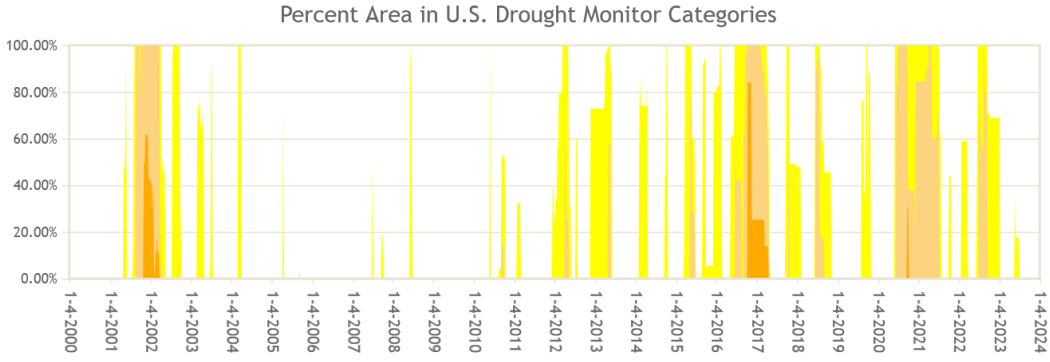
Figure 5.2-9 Projected Average Daily Maximum Summer Temperatures for Windsor County



Source: Climate Explorer, accessed 8/22/2023.

Periods of drought for Vermont and Windsor County are also expected to occur with more frequency as can be surmised from the timeline below in **Figure 5.2-10** which plots the percent of area in Windsor County, VT, within the indicated drought level or category.

Figure 5.2-9: Drought Monitor for Windsor



Category	None	D0	D1	D2	D3	D4
Description	Normal or wet conditions	Abnormally Dry	Moderate Drought	Severe Drought	Extreme Drought	Exceptional Drought

Source: US Drought Monitor, accessed 8/22/2023.

The primary impact of extreme heat or prolonged periods of hot weather is on human life, especially when combined with high humidity. Exposure to hot conditions can lead to heat exhaustion or heat stroke which require medical attention and can be fatal. Older adults, children, and people with chronic medical conditions, such as asthma, are at greater risk for serious heat-related illnesses. Studies by the Vermont Department of Health suggest that the heat threshold in which hospitals in the State see a rise in heat-related emergency room visits is 87°F (SHMP 2018).

Warmer conditions also favor insect populations that cause Lyme, West Nile and Eastern equine encephalitis and other vector-borne diseases which have become more prevalent earlier in the spring and later in the fall. Much of Vermont recreational and agricultural economies rely on outdoor activities and are at greater risk of tick and mosquito borne illnesses.

Some types of cyanobacteria proliferate in warmer waters and can release natural toxins into the water. Swimming or wading in these waters can cause minor rashes and stomach problems or more serious health problems. Children and pets are at higher risk of exposure because they are more likely to play and drink water while swimming.

Critical Vermont economic sectors such as logging, farming, maple sugaring, and dairy farming can be disrupted by impacts from a warming climate. Weathersfield has experienced only isolated issues with extreme heat and drought, with recent data provided in **Table 5.2-7**.

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6. Mitigation Program

The following sections detail the mitigation goals and potential mitigation strategies identified by the Town and compiled and organized by the HMPT to reduce the impact of the hazards assessed in this plan. The implementation schedule that follows in **Table 6.2-1: 2021-2027 Mitigation/Preparedness Strategies and Actions** is a comprehensive list of actions that the town has targeted for implementation during the five-year cycle of this plan.

6.1 Mitigation Goals and Objectives

Following the Hazard Analysis and Hazard Profile and review process as described in **Section 4**, the HMPT then agreed upon the following overarching goals and associated objectives below. Note that the numbers do not indicate goal priority but are used to identify actions that support it.

Hazard Mitigation Goals and Objectives

1. Provide protection and reduce risk to the community from the Impact of Hazard Events.
    a. Implement action items that reduce the risk of potential loss of life, injuries, negative health impact, and property damage.
    b. Implement action items to minimize financial losses due to hazard events incurred by the community including residents and business owners.
    c. Implement action items to improve resiliency of our built and natural environment including public infrastructure, and recreational, cultural, and historic assets.
    d. Maintain, enhance, and raise awareness of the Local Emergency Management Plan and Local Hazard Mitigation Plan.
2. Raise community awareness of the Hazard Risks, Resiliency Resources and Mitigation Planning.
    a. Encourage hazard mitigation planning to be incorporated into other municipal and community planning efforts.
    b. Review progress on implementation of the hazard mitigation plan during publicly noticed meetings (Selectboard, Planning Commission).
    c. Improve and enhance efforts to increase public knowledge of hazards and resources.
3. Improve effectiveness of future Hazard Mitigation Planning efforts.
    a. Develop a process for tracking plan implementation over the plan period and incorporate phased planning for large or complex projects.
    b. Be proactive in seeking funding opportunities for hazard mitigation projects.
    c. Improve local engagement in reporting vulnerabilities and hazard events.

6.2 Hazard Mitigation/Preparedness Strategies and Actions

Throughout the planning process, efforts were made to identify actions that would address the Town's vulnerabilities and achieve the goals and objectives outlined above.

These mitigation actions have been chosen by the Team as the most effective and feasible actions to be taken during this plan period to lessen the impacts of the hazards identified in **Section 5**. Some of the actions from the previous plan have been carried over or modified either because they have been expanded or because of their on-going cyclical nature. Compared to the previous Hazard Mitigation Plan, below are changes in the selection of hazards addressed and changes in the approach on formulating goals and actions:

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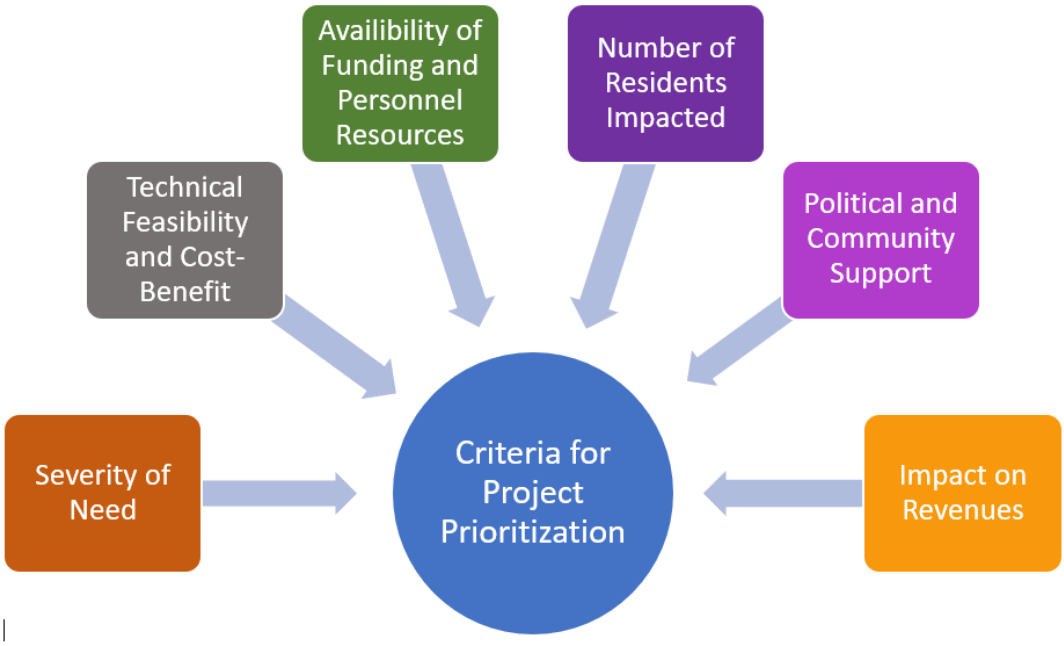
6.2a Changes from Prior Plan

- The Town's **method of hazard assessment** was modified to resemble that used by the State. The hazard impact assessment was expanded to differentiate between the probability of a weather hazard event and the probability of the hazard impact which can be common to other weather events. Community impact was broken down into four categories (life, economy, infrastructure, and environment) and assessed individually.
- **Flooding and Fluvial Erosion** have become of greater concern than in the previous plan with a current major flood event during the writing of this plan.
- **Extreme Heat** is profiled for the first time as a hazard to be addressed. This is, in part, a result of the way the hazards are now scored, but there is also greater concern about the higher probability of occurrence of extreme heat given recent and trending climate extremes in wind, temperature and precipitation events. Extreme Heat as a notable hazard is, in part, due to the growth in the number of residents over 65 years of age who are most vulnerable.
- **Infectious Disease** and **Invasive Species** are new hazards to be recognized in the assessment exercises with recent experiences from the COVID Pandemic and tree infestations.
- **More local hazard data** has been obtained and presented.
- Changes were made with the development of **specific mitigation goals and objectives** and in **methodology for prioritizing actions** to be sure they address these goals to improve plan effectiveness.
- A formalized process for **plan monitoring** was developed to improve plan effectiveness and an effort was made to better **correlate mitigation actions** to the Town Plan goals and recommendations.

6.2b Prioritization of Strategies and Actions



For this update, the Team selected a method for prioritization of strategies and actions based on three categories – High, Moderate, and Low compared to a more ad-hoc basis in the prior plan. It was decided that this methodology would improve overall progress on implementation with a focus on higher priority actions. Compared to a specific scoring process, this methodology for prioritization offers the following benefits:

- Provides needed flexibility as priorities can change over time.
- Allows the Town to take advantage of all funding opportunities as they arise.
- Implies that several actions can progress simultaneously.
- Works well for larger or complex phased projects.
- Encourages the Town to keep all proposed actions in mind.

To assign action priority, a number of criteria were taken together, in addition to the Hazard Analysis Score in **Section 5.1** but weighted subjectively. These criteria are depicted above and listed below.

- Severity or immediacy of need. This subjective assessment would consider the potential extent of risk in terms of structural damage repair costs, level of safety risk to residents, and probability of occurrence.
- Number of residents impacted that would benefit from mitigation.
- Availability of funding and personnel resources to implement the project. Availability of town, state or federal funds, and availability of town personnel and MARC staff.
- Strong community support and little or no political opposition or reduction in revenue.
- Project feasibility and cost-benefit. Note that Weathersfield is a small town and does not currently have the capacity to determine the cost/benefit of each proposed action. However, prior to pursuing any mitigation project, the Town would consider the costs and benefits of the project using FEMA methodology. In considering costs, the Town prioritized based on the following for projects: low $0-$1000, medium $1,000-$10,000, and high $10,000+

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Table 6.2-1: 2023-2028 Mitigation/Preparedness Strategies and Actions

High Priority
Moderate Priority
Low Priority

MITIGATION ACTION OR STRATEGY	TYPE[1]	HAZARD ADDRESSED	RESPONSIBLE PARTY[2]	TIME FRAME	Cost	FUNDING SOURCE[3]
Carried Over from Prior Plan:						
Seek funding for an independent power supply for schools/government buildings to include highway garage and 1879 Schoolhouse.	M	All	**Town Manager**, Selectboard, School Board, MARC.	2023-2024	H	Town Budget, VEM Grant, School Budget.
Work with MARC to conduct annual culvert inspection program, as part of the Town's annual maintenance plan.	M	Flood, Fluvial Erosion	**Highway Department**, MARC.	2023-2028	M	Town Budget, MARC assistance, VTrans.
Complete study of critical facilities to identify deficiencies prior to use as Emergency Operations Center (e.g., Town Garage and 1879 Schoolhouse).	M	All	**EMD**, MARC, Town Manager.	2024	M	Town Budget, HMGP
Carry out identified retrofits outlined in the critical facilities study to ensure long-term stability of critical facilities.	M	All	**Selectboard**, Town Manager.	2025-2027	H	Town Budget, HMGP
Conduct annual outreach to schools regarding fire safety information and emergency preparedness. Coordinate with Town Parks & Recreation to host annual educational Field Day to provide residents information about fire prevention and safety.	M	Wildfire	Fire Depts have packets for each grade level Funding – Firefighter Assistance Grant – federal, 3 funding types to incl. prevention,	2024-2028	M	Town Budget

			equipment, recruitment – Town could apply; funds could assist with outreach. EMPG grants.*			
Identify residents that require assistance within 24-72 hours and assist them with CARE program enrollment; provide application in the Annual Town Report.	M	All	**EMD,** Town Manager.	Set up: 2023-2024 Implement annually	L	Town Budget
Review engineering study to assess feasibility for hydrant system for Ascutney and water/sewer system upgrades for both villages. (see **Appendix A: Map 3 – Hydrants**)	M	Extreme Heat, Drought	**Fire Departments,** Town Manager, Town Utilities.	2024	M	Town Budget
Install stone line ditches at Amsden Hollow Road. This segment is no longer identified as "hydrologically-connected."	M	Flood, Fluvial Erosion	**Highway Dept.**	2024-2028	H	Town Budget
Research funding opportunities for additional WWVFD station repairs; consider evaluating a new location for the station.	M	All	**Fire Departments**, MARC.	2024-2025	M	Town Budget
Incorporate new MRGP Standards in identifying and prioritizing vulnerable hydrologically-connected roadways and implement required practices to meet standards *as funding becomes available* (Highway Superintendent has a 5-year plan).	M	Flood, Fluvial Erosion	**Highway Dept.,** MARC.	2023-2028	H	VTrans, Better Roads, GIA.
Provide NFIP materials to Town residents by including information in the Annual Town Report.	M	Flood, Fluvial Erosion	**Zoning Administrator,** Town Clerk.	2023-2028	L	Town Budget

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The Town will participate in annual Firewise program including "Communities Compatible with Nature."	M	Wildfire, Extreme Heat.	**Fire Departments**	2023-2028	M	Town Budget
From Town Plan Recommendations:						
Secure funding to improve the town's highway garage, to include installing an emergency generator, providing a potable water system, and installing a highway garage floor drain wastewater system.	P	All	**Highway Dept.,** Selectboard.	2024-2028	H	Town budget, VEM Grant.
Consider and adopt shoreline protection and encourage retention of riverbank vegetation for its role in limiting boat wake erosion and protecting water quality on the CT River and limiting erosion due to flooding on the Black River.	M	Fluvial Erosion	**Planning Commission,** Zoning Administrator, Selectboard.	2024-2025	M	Town Budget.
Regularly review and update town plans and policies to maintain State and Federal compliance - particularly when meeting these regulations qualifies the town for additional grants or preferential funding match rates.	M	All	**Planning Commission,** Zoning Administrator, Selectboard.	Q4 Annually	M	Town Budget, MARC assistance.
Fully integrate flood resiliency and fluvial erosion planning and State/Federal flood hazard regulations into the Weathersfield Zoning bylaws; for example, the Town shall evaluate flood risks for all new driveway permits and require driveways to be located outside of flood prone areas.	M	Flood, Fluvial Erosion	**Planning Commission,** Zoning Administrator, Selectboard.	2024-2025	M	Town Budget, MARC assistance.
Publish an online map that is viewable to the public, that identifies local information about river corridors, fluvial erosion hazard areas, and flood plain access areas.	M	Flood, Fluvial Erosion	**MARC**, Town Clerk.	2024	M	Town Budget, MARC assistance.
Require Town officials to receive certification training in local road and flood plain management.	M	Flood, Fluvial Erosion, Ice, Heavy Snow	**Town Manager**, Selectboard.	2023-2028	M	Town Budget

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More actively educate residents and landowners about local, regional, and state land use policy changes for development within river corridors and flood prone areas.	M	Flood, Fluvial Erosion	**Planning Commission**, Town Clerk.	Set up program 2023-2024 Implement Annually	M	Town Budget
From Town Input, Survey, MARC Recommendations, and Technical Document Review						
Contract Environmental Professional services to review past Stream Geomorphic Studies of the Black River Watershed and project listed in the DEC Watershed Project Database and recommend high priority mitigation projects that will provide the greatest flood resiliency benefits to the Town.	M	Flood, Fluvial Erosion	**Town Manager**	2024-2026	M	Town Budget, VEM Grant, ANR Grant.
Evaluate 1879 Schoolhouse's ability to serve as a local shelter site; pursue funding to install a generator and cooling system to provide relief from extreme weather.	M	Extreme Heat, Extreme Cold	**EMD**, Town Manager.	2023-2024	M	Town Budget, VEM Grant.
Proactively reach out to GMP with identified trees that are susceptible to causing downed power lines and trees that are susceptible to or infested by emerald ash borer.	M	Heavy Wind, Ice, Heavy Snow	**Highway Dept.**, Town Manager.	2023-2028	M	Town Budget
Upgrade wooden bridge at Lavigne Road to sustain higher weights to allow emergency vehicle access. (Town received grant to redesign the bridge in 2023).	M	Flood, Fluvial Erosion	**Highway Dept.**	2024-2026	H	Town Budget, BGS.
Stabilize Upper Falls Covered Bridge; replace stone armoring to protect abutments from future erosion.	M	Flood, Fluvial Erosion	**Highway Dept.**	2024-2026	H	Town Budget, VTrans.
Replace Ascutney Basin Bridge to allow access for emergency services and improve bankful width (Contractor completed redesign proposal in 2023).	M	Flood, Fluvial Erosion	**Highway Dept.**	2024-2026	H	Town Budget, BGS.

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Repair bridge abutments on Little Ascutney Road using FEMA Public Assistance funding.	M	Flood, Fluvial Erosion	**Highway Dept.**	2024-2026	H	FEMA
Inform residents via Town website and Town Report of local shelter sites (**Table 4.3.-2**) and informational resources prior to anticipated severe weather and extreme temperature events, with a focus on vulnerable populations.	P	Extreme Heat, Extreme Cold, Drought	**EMD,** Town Clerk.	2023-2028	M	Town Budget

[1] M – Mitigation, P – Preparedness

[2] Responsible Party: Responsible Party is shown in **Bold** and others listed are support entities

HMPT- Hazard Mitigation Planning Team
MARC- Mount Ascutney Regional Commission
EMD- Town Emergency Management Director

[3] Funding Sources:

Town Funding
TOB - Town Operating Budget
TCB – Town Capital Budget

FEMA and Vermont State Department of Emergency Management (VEM)
HMA - Hazard Mitigation Assistance Grant Program (VT State Department of Emergency Management)
HMGP – Hazard Mitigation Grant Program (acquisition, infrastructure, planning, outreach)
BRIC – Building Resilient Infrastructure and Communities Grant Program
FMA - FEMA Flood Mitigation Assistance Program
EMPG – Emergency Management Performance Grant (VT State Department of Emergency Management)
FPSG – FEMA Fire Prevention & Safety Grant

Vermont Agency of Natural Resources (ANR)
ERGP - Ecosystem Restoration Grant Program
DIBG – Design/Implementation (Clean Water) Block Grant Program

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RCCEG – River Corridor Conservation Easement Grant (ERPG)

Vermont Agency of Commerce and Community Development (ACCD)
CDBG – VT ACCD Community Development Block Program
HPG – Historic Preservation Grant Programs

Vermont Department of Fire Safety Programs (VDFS)

Vermont Transportation Agency (VTrans)
MRGIA – Municipal Roads Grants-In-Aid Program
BRGP – Better Roads Grant Program
THSGP – Town Highway Structures Grant Program
THC2RP – Town Highway Class 2 Road Program
MHSMP – Municipal Highway Stormwater Mitigation Program
TAP – Transportation Alternatives Program

Conservation Programs (CP)
VMG – Vermont Watershed Grant
VLT – Vermont Land Trust
CRC – Connecticut River Conservancy
VRC – Vermont River Conservancy

American Rescue Plan Act (ARPA) - Coronavirus State and Local Fiscal Recovery Funds & related future funding opportunities

MARC Brownfields Reuse Program Grants (MBRP) – EPA Brownfields Grants through MARC

Vermont Urban & Community Forestry (UCF)
EABG - Emerald Ash Borer Grant Program
CCFC-Community Caring for Canopy Grants

Other
VCF-Vermont Community Foundation

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VCC-Vermont Conservation Commission
SGSG- Vermont Natural Resources Council Small Grants for Smart Growth
BGS – Building and General Services
New England Grass Roots Environmental Fund

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6.3 Plan Monitoring and Maintenance Process

Plan Monitoring Process

With the Town Manager as lead responsible party, the HMPT will be monitoring this plan as outlined below, to ensure that progress is made and identified mitigation actions are implemented as resources or opportunities become available. The Town will work with its regional partners, including MARC, to identify funding opportunities and for assistance with funding applications.

New to this plan update is an effort to formalize a method for monitoring and evaluating the Town's progress on action items and to improve local hazard data collection and public awareness and participation. The monitoring process has been identified as an action item to be implemented annually (at a minimum) over the plan period and will include a noticed annual meeting of the Hazard Mitigation Planning Team, to review and track the following:

- progress on **Mitigation/Preparedness Strategies and Actions** listed in **Table 6.2-1**;
- changes or improvements in effectiveness of **Capabilities and Resources** in **Table 4.3-2**;
- updates to local, regional, or State hazard data occurrences and extent;
- changes in prioritization of identified hazards;
- consistency with other Town Plan goals, policies, and recommendations, and
- whether stated goals and objectives are being met

This new method for monitoring plan progress will be implemented gradually over the plan period. Once fully established, it will include an annual review to be conducted by the HMPT prior to the Town's annual budgeting process each fall with the completion of **Hazard Mitigation Plan Monitoring Form** in **Appendix E.** Monitoring forms will be completed identifying any progress made for each action and plans for the coming year. Completed forms will become part of this plan and distributed to the appropriate boards and commissions and made available for public viewing on the Town website. Following the review meeting by the Team, an update on plan progress is to be reported once each year at a scheduled Selectboard meeting which is publicly noticed with an agenda.

For these scheduled public meetings, representatives of the Planning Commission, Emergency Management, Fire and Highway Departments, and interested members of the public will be encouraged to attend. Participants will be asked during these review periods to express their concerns and experiences with natural hazards, identify new vulnerabilities and suggest additional mitigating measures. All public input during the annual plan monitoring process will be noted.

During the monitoring process, the Town will consider and incorporate appropriate hazard mitigation actions from **Table 6.2-1** as part of the budgeting process each year in the fall and as part of the planning process for updates to the Town Plan, Flood Hazard Area Regulations, Access Permits, and any other related planning, as well as for future community development projects, as appropriate. The HMPT will also be responsible for ensuring proposed mitigation actions remain in line with current town goals, strategies, and policies.

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Plan Maintenance Process

The Town will apply for grant funding to update the LHMP in 2025 and reconvene the Hazard Mitigation Planning Team at the direction of the Town Manager by the 2nd quarter of 2026 to kick-off the update process and secure consultant services for assistance in the planning process. The Town Manager will again reach out to the community for additional volunteers to participate as members of the Hazard Mitigation Planning Team for the new plan period.

The Town will review the prior plan progress and monitoring forms. The Team will conduct the planning activities as outlined in the Process Flow Chart **(Appendix B**) and incorporate the plan monitoring information gathered during the annual reviews, updated hazard data, town and regional plans, and new relevant reports and studies. All public meetings will be warned following town protocols.

A preliminary draft plan will be made available for public comment on the town and regional websites, on the Weathersfield Community Facebook page and hard copies will be available at the town office. A second publicly warned meeting will be held in the 3rd quarter of 2027, during which any substantial revisions gathered during the public input period will be discussed. All final edits and revisions will be made, and a final draft will be provided to the Hazard Mitigation Planning Team for final review by the end of 2027.

Subsequently, the plan will be sent to Vermont Emergency Management for review, approval, and referral to FEMA for Approval Pending Adoption (APA) to be completed by the 2nd quarter 2028. Following the receipt of APA, the Weathersfield Town Selectboard may then adopt the updated Local Hazard Mitigation Plan and forward a copy of the adoption resolution to FEMA to complete the plan approval and adoption process before this plan expires at the end of 2028.

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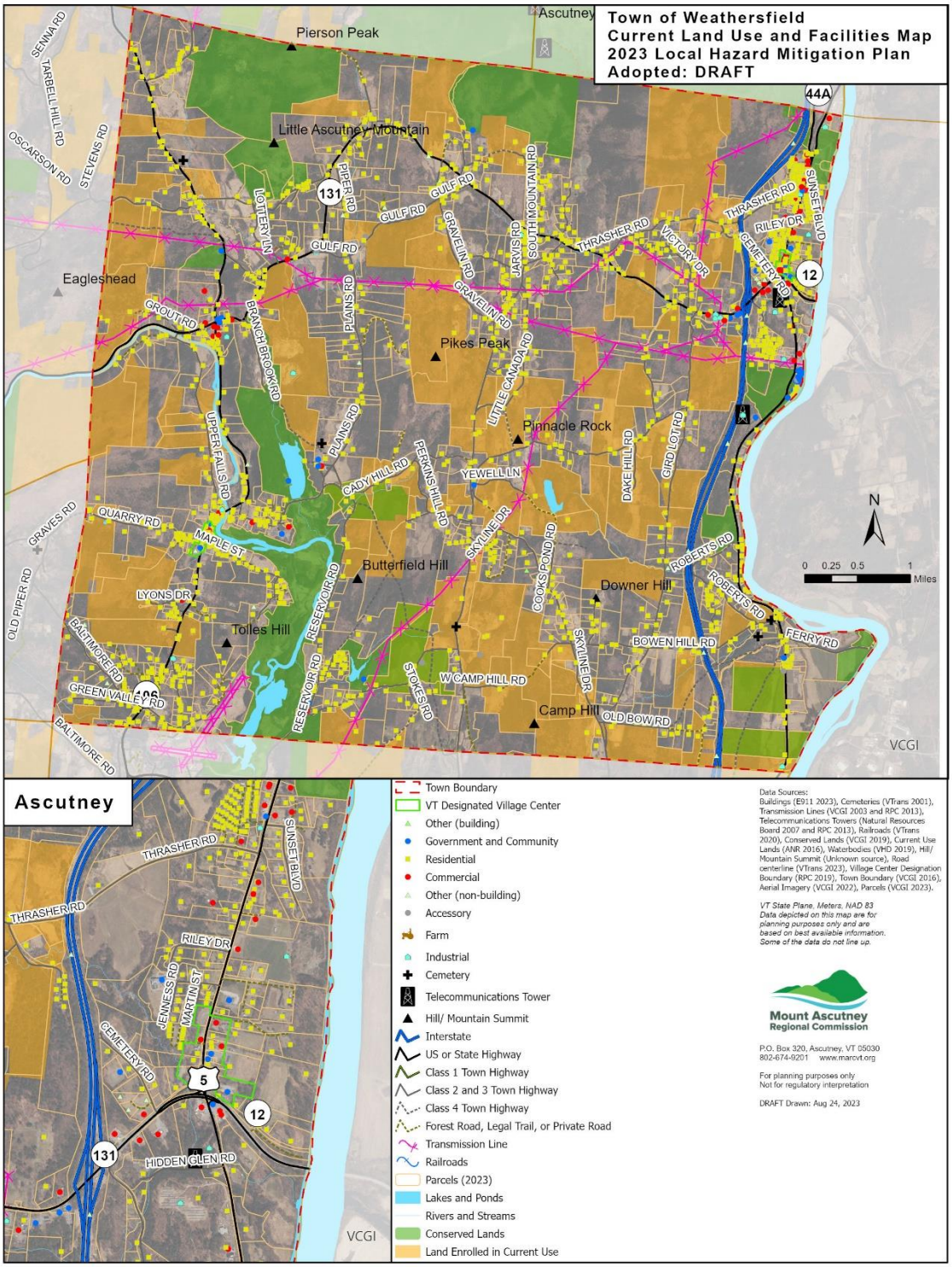
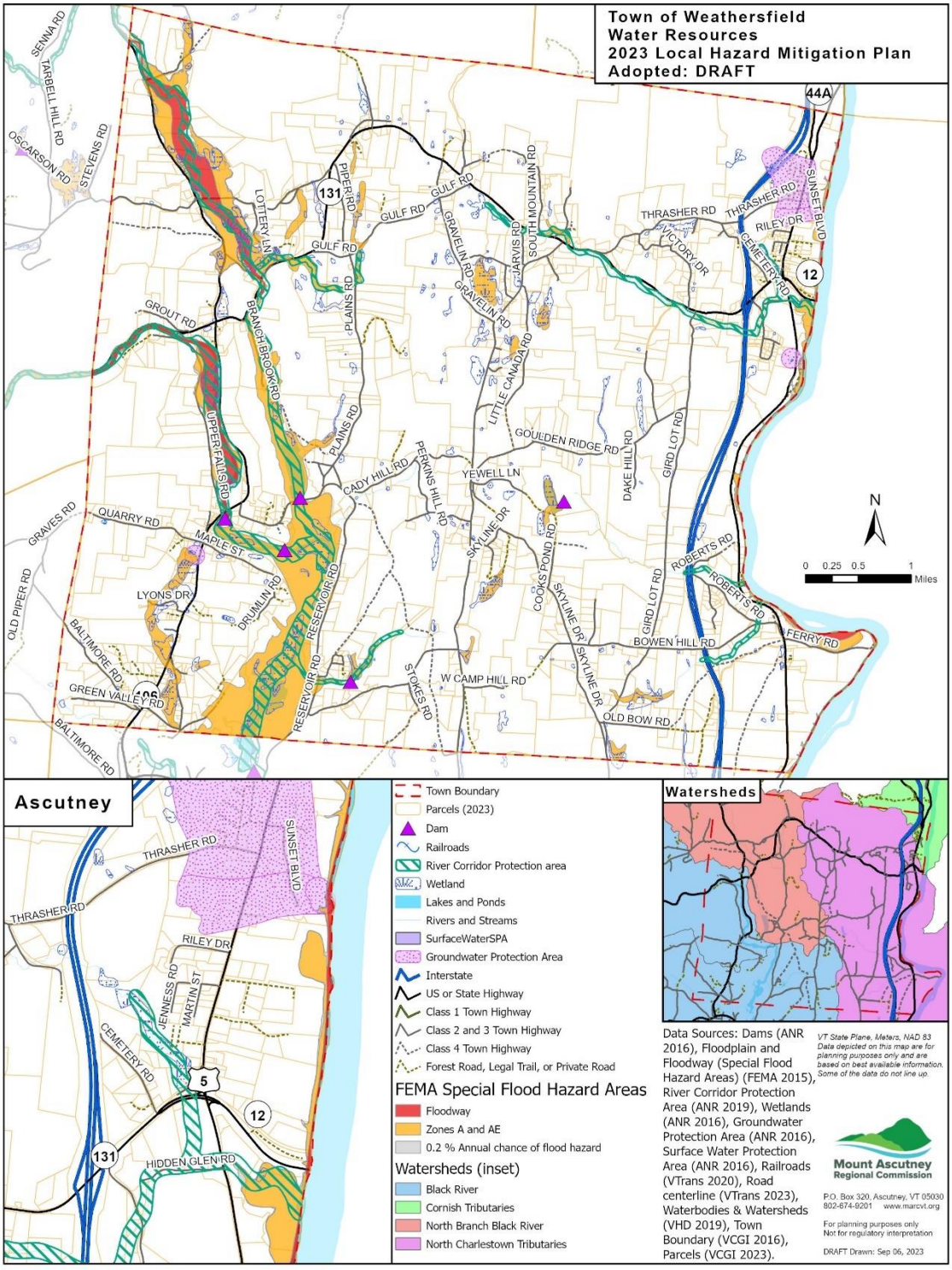
Appendix A: Maps

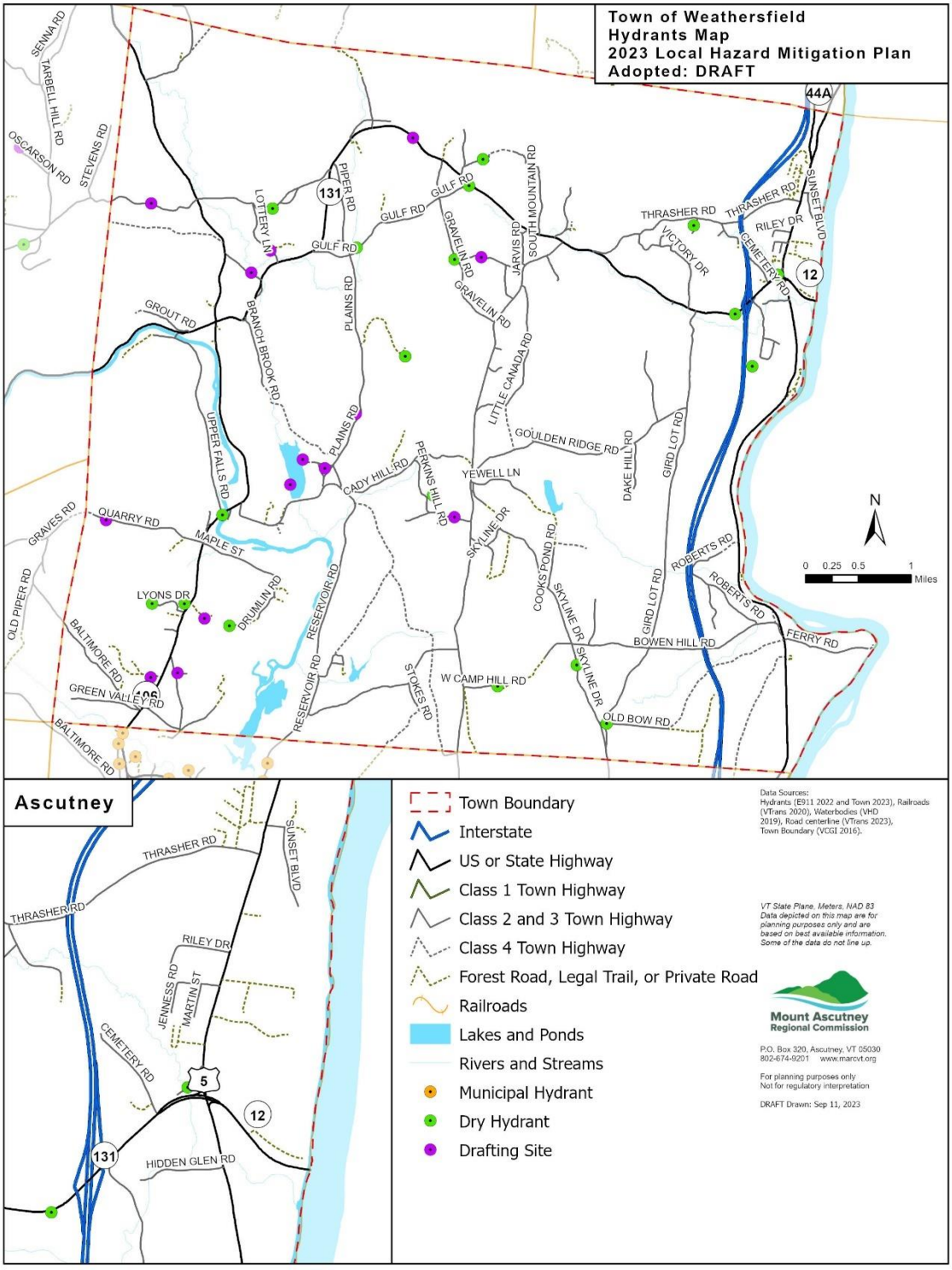
Map 1 – Current Land Use



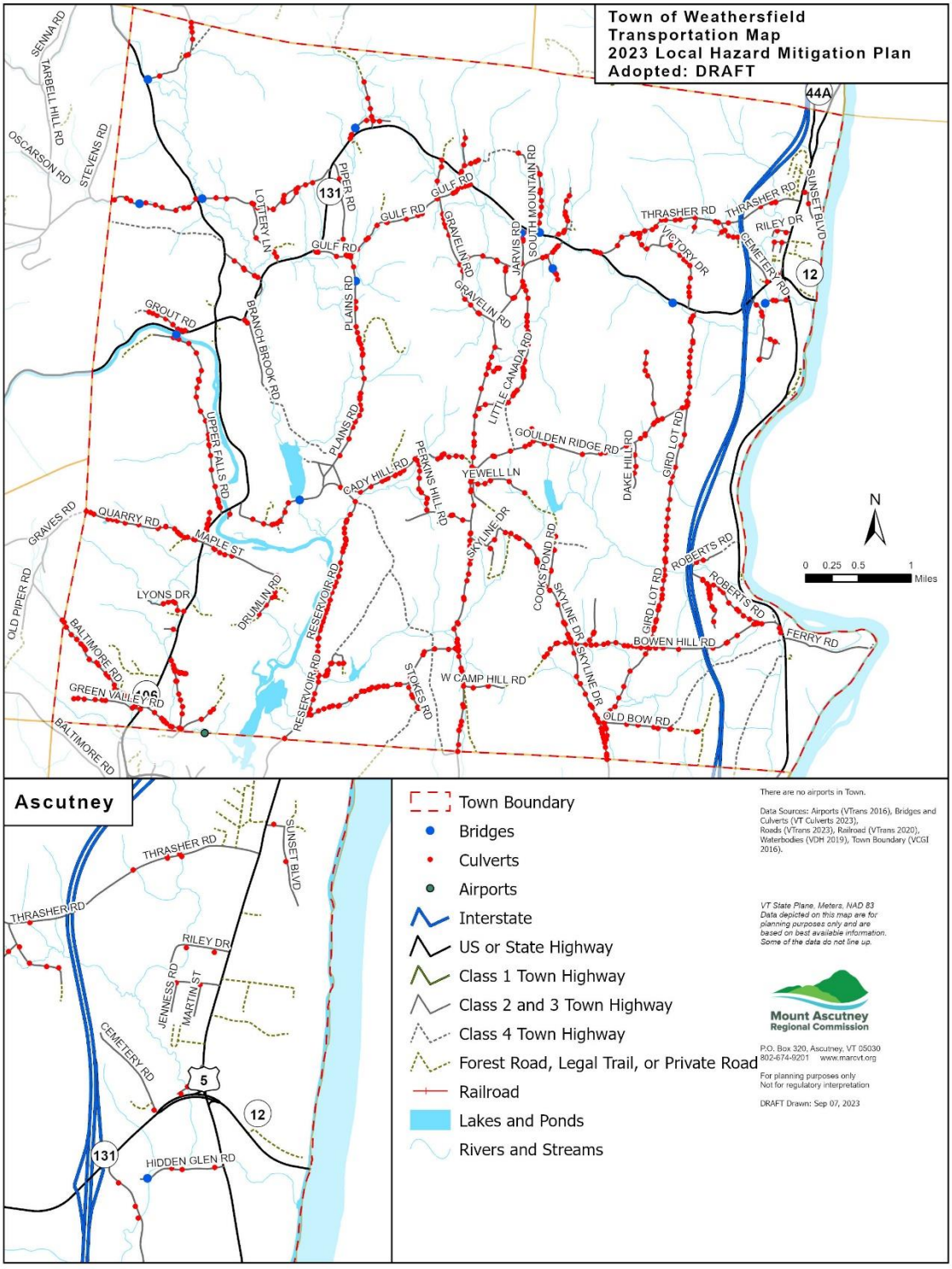
Map 2 – Water Resources



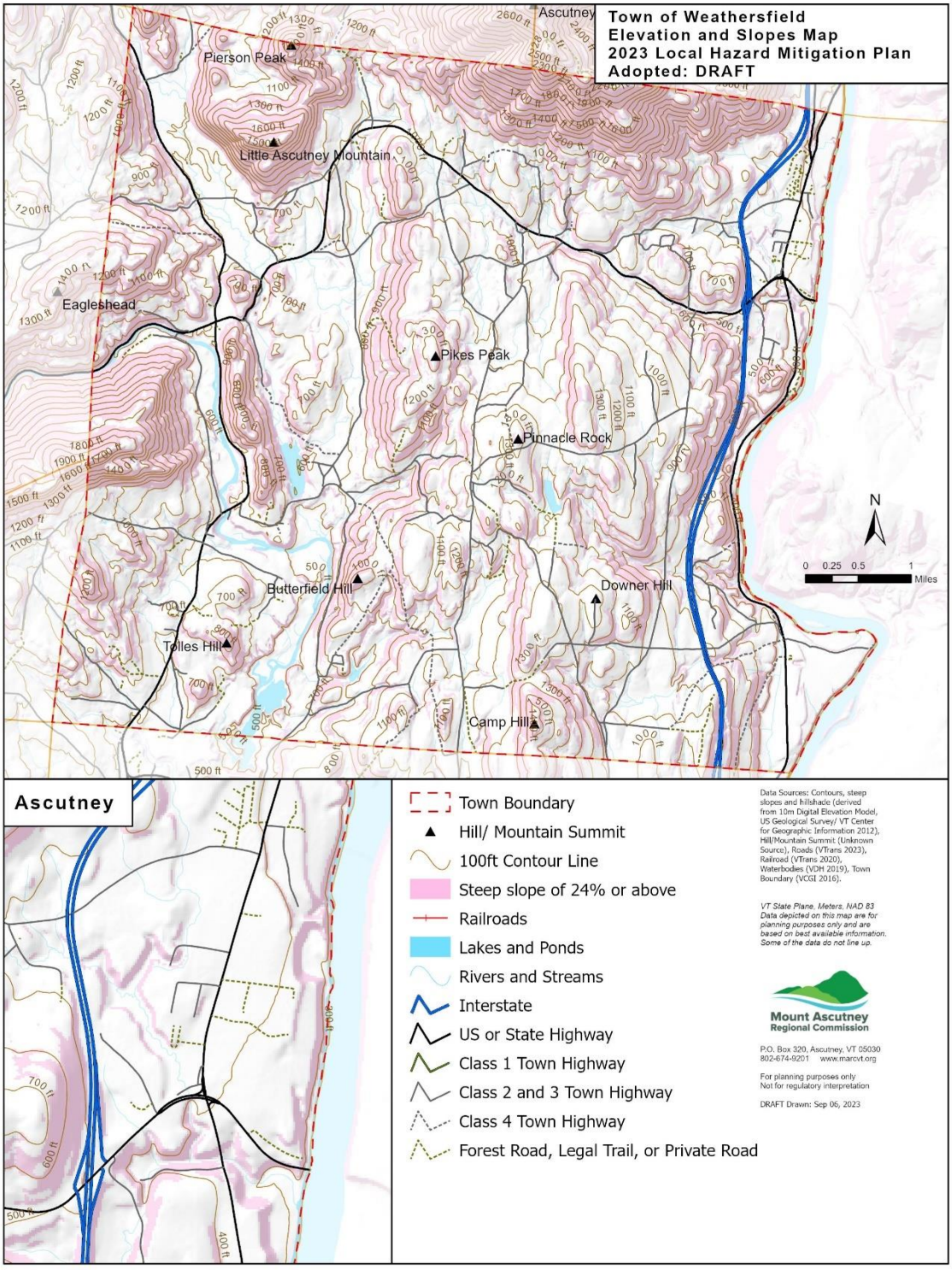
Map 3 – Hydrants



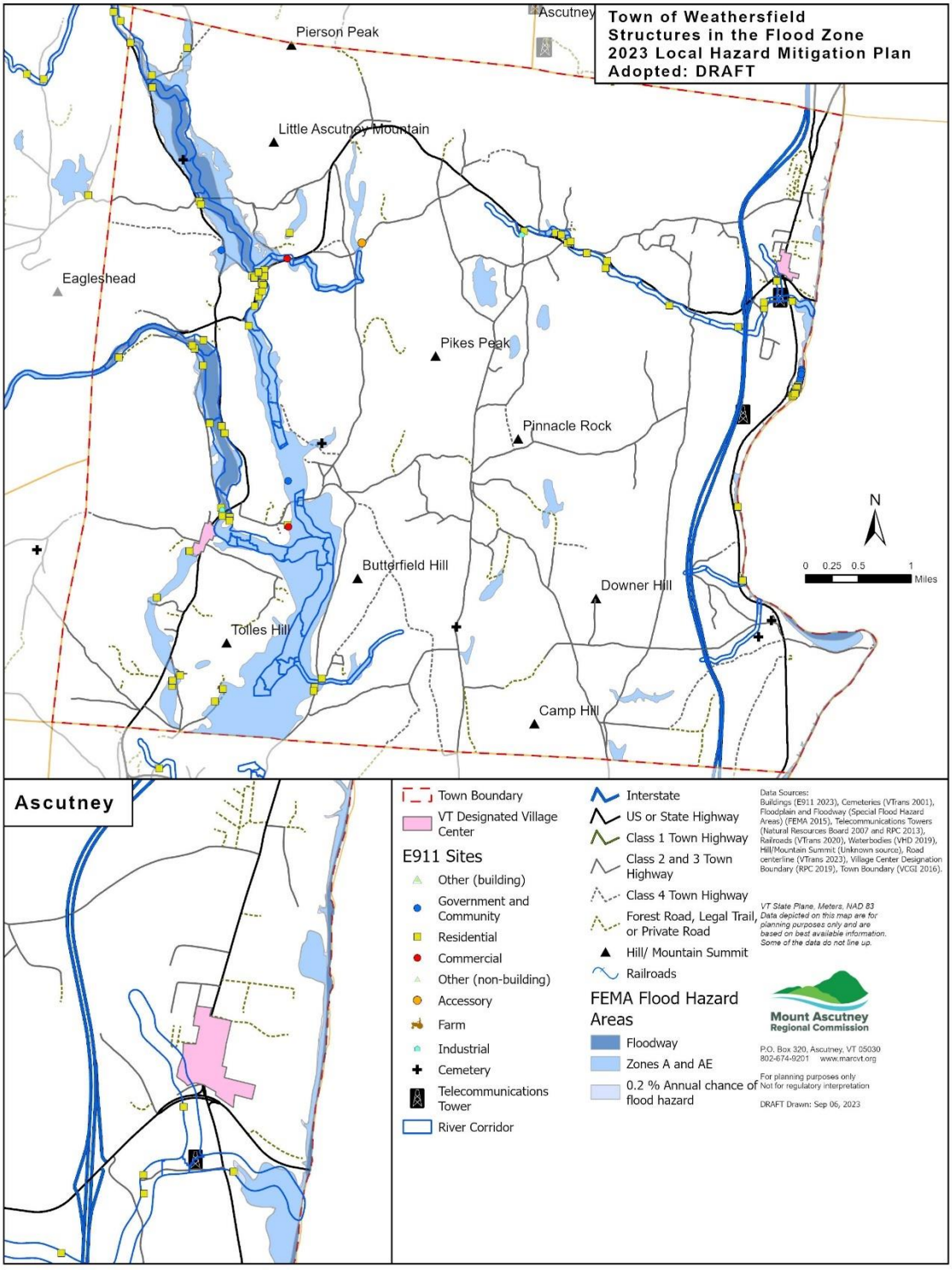
Map 4 – Transportation



Map 5 – Elevation and Slopes

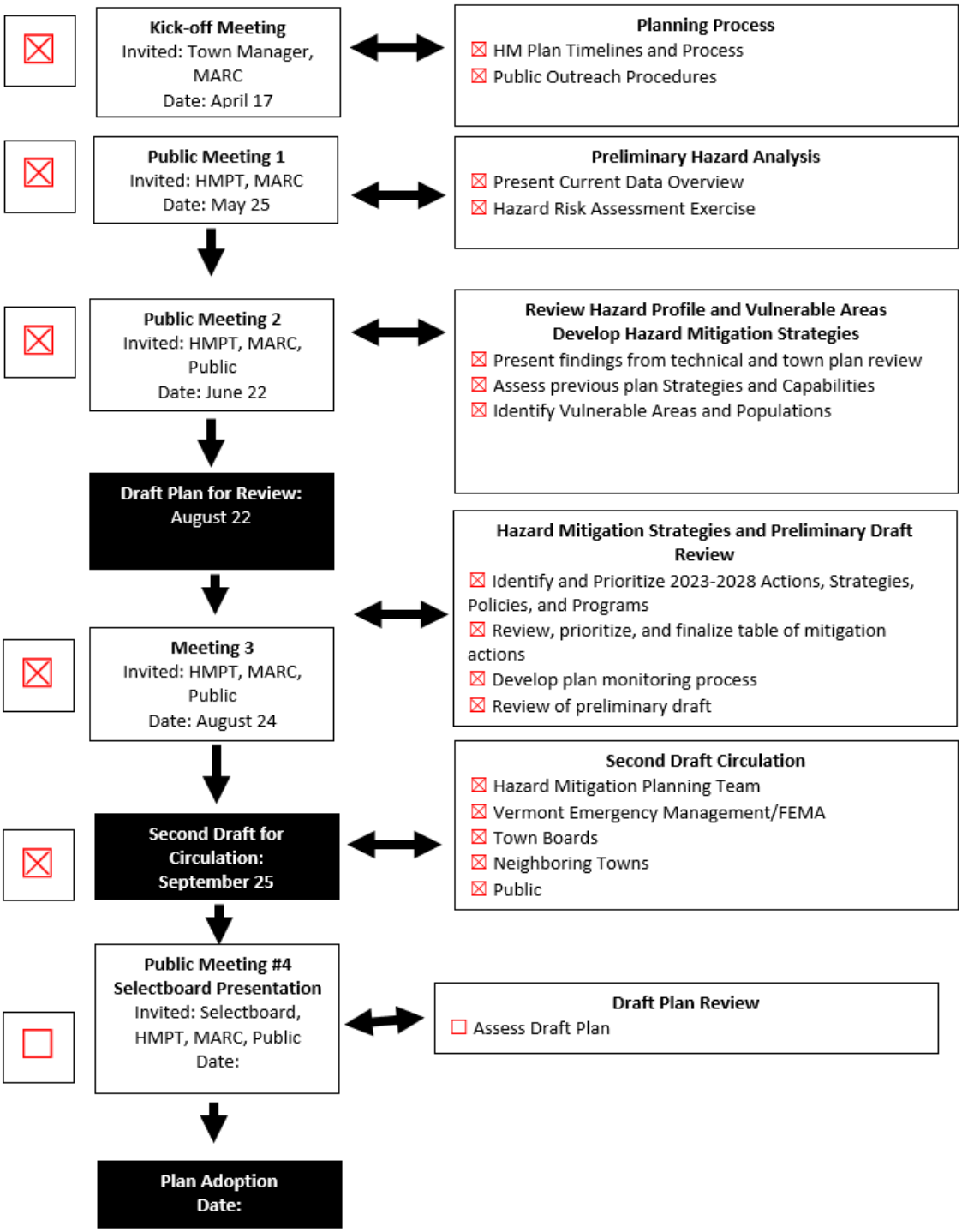


Map 6 – Structures in the Flood Zone



Appendix B: Process Flow Chart

[Update for final adoption]



Appendix C: Public Involvement Documents

Meeting 1 – May 25, 2023

TOWN OF WEATHERSFIELD

(802)674-2626 P.O. BOX 550 ASCUTNEY, VT 05030

Town of Weathersfield
Notice of Public Information Meeting

LOCAL HAZARD MITIGATION PLAN UPDATE
1879 Schoolhouse
1862 VT Rt 106, Perkinsville, VT
Thursday, May 25th, 2023
6:30pm to 8:00pm

Concerned about the impact of Climate Change and Natural Disasters in Weathersfield?
Voice your concerns during the Local Hazard Mitigation Plan update.

The Town of Weathersfield is updating its Local Hazard Mitigation Plan. The purpose of this planning effort is to protect life, property, economy, quality of life, and environment of the Weathersfield Community from naturally occurring hazards and disasters. We are requesting input from the local community regarding experiences and concerns about weather related events and the potential risks and vulnerabilities to hazards, such as flooding, erosion, extreme temperatures, winter storms and drought.

The Town's Hazard Mitigation Planning Team will be holding a series of public meetings over the next few months during this planning process. The first meeting will be held at the 1879 Schoolhouse in Perkinsville on May 25th from 6:30pm to 8:00pm and conducted by the Mount Ascutney Regional Commission (MARC). The public is encouraged to attend and share their thoughts.

If you are interested but unable to attend there are a number of ways to participate and provide input.

- You can participate in scheduled meetings via a virtual ZOOM link below: https://us02web.zoom.us/j/89062786676
- You can find meeting agendas; planning materials and fillable templates on the Town website (http://weathersfieldvt.org) or on a webpage entitled **Weathersfield Local Hazard Mitigation Planning Update Process** on MARC's website.
- You can complete this brief **Climate Change in Weathersfield survey** which can also be found on the Town website
- You can always provide your concerns, comments, and questions regarding this planning effort via email to Malia Cordero at mcordero@marcvt.org.

Meeting 1 – May 25, 2023

Mount Ascutney
Regional Commission

Town of Weathersfield
LOCAL HAZARD MITIGATION PLAN UPDATE
Hazard Mitigation Planning Team Meeting

1879 Schoolhouse
1862 VT Rt 106, Perkinsville, VT
Thursday, May 25th, 2023
6:30pm to 8:00pm
A hybrid option is available via Zoom: https://us02web.zoom.us/j/89062786676

AGENDA

1. Introduction if Public is Present
2. Overview of Planning Process and Timeline
3. Presentation from MARC: Current Hazard Data Overview
4. Identify and Score Hazard Risk Events & Impacts
5. Identify Hazard Occurrences Over Past 5 Years
6. Next Steps for June Meeting
7. Adjournment

Next Meeting: Thursday, June 22nd 6:30pm at 1879 Schoolhouse

P.O. Box 320
38 Ascutney Park Road
Ascutney, VT 05030
802.674.9201
www.marcvt.org

Meeting 1 – May 25, 2023

VOLUNTEER FORM TO DOCUMENT IN-KIND SERVICES - MATCH INFORMATION - 2023

PROGRAM:	**Weathersfield LHMP Update**
DATE OF MEETING:	Thurs, May 25, 2023
MEETING LOCATION:	1879 Schoolhouse & Zoom
TOPIC:	Public Meeting 1 with Planning Team
MEETING TIME:	6:30pm-8:00pm

VOLUNTEER ATTENDEES - CLAIMED

No.	NAME	AFFILIATION	MILEAGE ROUND TRIP	MEETING HOURS	TOTAL MILEAGE 0.655	TOTAL TIME $31.80
1	Rick Bates	Town EMD	4	1.5	2.62	47.70
2	Brandon Gulnick	Town Manager	15	1.5	9.83	47.70
3					-	-
4					-	-
5					-	-
6					-	-
7					-	-
8					-	-
9					-	-
10					-	-
11					-	-
12					-	-
13					-	-
14					-	-
15					-	-
16					-	-
17					-	-
18					-	-
19					-	-
20					-	-
21					-	-
22					-	-
23					-	-
24					-	-
25					-	-
26					-	-
27					-	-
28					-	-
29					-	-
30					-	-
		Sub Total	19.00	3.00	12.45	95.40

TOTAL MATCH	107.85

23/05 One Meeting Form

Meeting 2 – July 18, 2023

TOWN OF WEATHERSFIELD

(802)674-2626 P.O. BOX 550 ASCUTNEY, VT 05030

Town of Weathersfield
Notice of Public Information Meeting

LOCAL HAZARD MITIGATION PLAN UPDATE
Martin Memorial Hall
5259 US Route 5, Ascutney, VT
Tuesday, July 18th
6:30pm to 8:00pm
A hybrid option is available via Zoom: https://us02web.zoom.us/j/82215308084

Concerned about the impact of Climate Change and Natural Disasters in Weathersfield?
Voice your concerns during the Local Hazard Mitigation Plan update.

The Town of Weathersfield is updating its Local Hazard Mitigation Plan. The purpose of this planning effort is to protect life, property, economy, quality of life, and environment of the Weathersfield Community from naturally occurring hazards and disasters. We are requesting input from the local community regarding experiences and concerns about weather related events and the potential risks and vulnerabilities to hazards, such as flooding, erosion, extreme temperatures, winter storms and drought.

The Town's Hazard Mitigation Planning Team will be holding a series of public meetings over the next few months during this planning process. The second meeting will be held at Martin Memorial Hall and via Zoom from 6:30pm to 8:00pm and conducted by the Mount Ascutney Regional Commission (MARC). The public is encouraged to attend and share their thoughts.

If you are interested but unable to attend there are a number of ways to participate and provide input.

- You can participate in scheduled meetings via a virtual ZOOM link below:
  - https://us02web.zoom.us/j/82215308084
- You can find meeting agendas; planning materials and fillable templates on the Town website (http://weathersfieldvt.org) or on a webpage entitled **Weathersfield Local Hazard Mitigation Planning Update Process** on MARC's website.
- You can complete this brief **Climate Change in Weathersfield survey** which can also be found on the Town website
- You can always provide your concerns, comments, and questions regarding this planning effort via email to Malia Cordero at mcordero@marcvt.org.

Meeting 2 – July 18, 2023

Mount Ascutney Regional Commission

Town of Weathersfield
LOCAL HAZARD MITIGATION PLAN UPDATE
Hazard Mitigation Planning Team Meeting

Martin Memorial Hall
5259 US Route 5, Ascutney, VT
Tuesday, July 18th
6:30pm to 8:00pm
A hybrid option is available via Zoom: https://us02web.zoom.us/j/82215308084

AGENDA

1. Introduction if Public is Present
2. Presentation from MARC: Technical Review Findings
3. Assess previous plan Strategies and Capabilities

   Link to previous plan: https://marcvt.org/wp-content/uploads/2022/11/Weathersfield-and-Perkinsville-2018-LHMP.pdf
4. Identify Vulnerable Areas and Populations
5. Identify Potential New 2023-2028 Mitigation Actions, Strategies, Policies, and Programs
6. Adjournment

P.O. Box 320
38 Ascutney Park Road
Ascutney, VT 05030
802.674.9201
www.marcvt.org

Meeting 2 – July 18, 2023

VOLUNTEER FORM TO DOCUMENT IN-KIND SERVICES - MATCH INFORMATION - 2023

PROGRAM: Weathersfield LHMP Update
DATE OF MEETING: Tues, July 18, 2023
MEETING LOCATION: Martin Memorial Hall & Zoom
TOPIC: Public Meeting 2 with Planning Team
MEETING TIME: 6:30pm-8:00pm

VOLUNTEER ATTENDEES - CLAIMED

No.	NAME	AFFILIATION	MILEAGE ROUND TRIP	MEETING HOURS	TOTAL MILEAGE	TOTAL TIME
					0.655	$31.80
1	Rick Bates	Town EMD	24	1.5	15.72	47.70
2	Olivia Savage	Town Clerk	24	1.5	15.72	47.70
3	Travis Compo	West Weathersfield Fire Dept.	12	1.5	7.86	47.70
4					-	-
5					-	-
6					-	-
7					-	-
8					-	-
9					-	-
10					-	-
11					-	-
12					-	-
13					-	-
14					-	-
15					-	-
16					-	-
17					-	-
18					-	-
19					-	-
20					-	-
21					-	-
22					-	-
23					-	-
24					-	-
25					-	-
26					-	-
27					-	-
28					-	-
29					-	-
30					-	-
		Sub Total	60.00	4.50	39.30	143.10

TOTAL MATCH	182.40

Meeting 3 – August 24, 2023

TOWN OF WEATHERSFIELD

(802)674-2626 P.O. BOX 550 ASCUTNEY, VT 05030

Town of Weathersfield
Notice of Public Information Meeting

LOCAL HAZARD MITIGATION PLAN UPDATE
Martin Memorial Hall
5259 US Route 5, Ascutney, VT
Thursday, August 24th
6:30pm to 8:00pm
A hybrid option is available via Zoom: https://us02web.zoom.us/j/82769736992

Concerned about the impact of Climate Change and Natural Disasters in Weathersfield?
Voice your concerns during the Local Hazard Mitigation Plan update.

The Town of Weathersfield is updating its Local Hazard Mitigation Plan. The purpose of this planning effort is to protect life, property, economy, quality of life, and environment of the Weathersfield Community from naturally occurring hazards and disasters. We are requesting input from the local community regarding experiences and concerns about weather related events and the potential risks and vulnerabilities to hazards, such as flooding, erosion, extreme temperatures, winter storms and drought.

The Town's Hazard Mitigation Planning Team will be holding a series of public meetings over the next few months during this planning process. The third meeting will be held at Martin Memorial Hall and via Zoom from 6:30pm to 8:00pm and conducted by the Mount Ascutney Regional Commission (MARC). The public is encouraged to attend and share their thoughts.

If you are interested but unable to attend there are a number of ways to participate and provide input.

- You can participate in scheduled meetings via a virtual ZOOM link below:
  - https://us02web.zoom.us/j/82769736992
- You can find meeting agendas; planning materials and fillable templates on the Town website (http://weathersfieldvt.org) or on a webpage entitled **Weathersfield Local Hazard Mitigation Planning Update Process** on MARC's website.
- You can complete this brief **Climate Change in Weathersfield survey** which can also be found on the Town website
- You can always provide your concerns, comments, and questions regarding this planning effort via email to Malia Cordero at mcordero@marcvt.org.

Meeting 3 – August 24, 2023

Mount Ascutney
Regional Commission

Town of Weathersfield
LOCAL HAZARD MITIGATION PLAN UPDATE
Hazard Mitigation Planning Team Meeting

Martin Memorial Hall
5259 US Route 5, Ascutney, VT
Thursday, August 24th
6:30pm to 8:00pm
A hybrid option is available via Zoom: https://us02web.zoom.us/j/82769736992

AGENDA

1. Introduction if Public is Present
2. Discussion of Plan Goals
3. Identify Potential New 2023-2028 Mitigation Actions, Strategies, Policies, and Programs
4. Discussion of Plan Monitoring Process
5. Adjournment

P.O. Box 320
38 Ascutney Park Road
Ascutney, VT 05030
802.674.9201
www.marcvt.org

Meeting 3 – August 24, 2023

VOLUNTEER FORM TO DOCUMENT IN-KIND SERVICES - MATCH INFORMATION - 2023

PROGRAM:	**Weathersfield LHMP Update**
DATE OF MEETING:	Thursday Oct 24, 2023
MEETING LOCATION:	Martin Memorial Hall & Zoom
TOPIC:	Public Meeting 3 with Planning Team
MEETING TIME:	6:30pm-8:00pm

VOLUNTEER ATTENDEES - CLAIMED

No.	NAME	AFFILIATION	MILEAGE ROUND TRIP	MEETING HOURS	TOTAL MILEAGE	TOTAL TIME
					0.655	$31.80
1	Rick Bates	Town EMD	24	1.5	15.72	47.70
2	Olivia Savage	Town Clerk	24	1.5	15.72	47.70
3	Ray Stapleton	Highway Superintendant		1.5	-	47.70
4	Josh Dauphin	West Weathersfield Fire Dept.		1.5	-	47.70
5	Nancy Nutile-McMenemy	Resident		1.5	-	47.70
6					-	-
7					-	-
8					-	-
9					-	-
10					-	-
11					-	-
12					-	-
13					-	-
14					-	-
15					-	-
16					-	-
17					-	-
18					-	-
19					-	-
20					-	-
21					-	-
22					-	-
23					-	-
24					-	-
25					-	-
26					-	-
27					-	-
28					-	-
29					-	-
30					-	-
		Sub Total	**48.00**	**7.50**	**31.44**	**238.50**
		TOTAL MATCH				**269.94**

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Stakeholder Involvement

Municipal Representatives / Hazard Mitigation Planning Team Participants
Emergency Management Director
Town Manager
Town Clerk
Highway Superintendent
Fire Chief

Other local Stakeholders engaged in the process:
Mount Ascutney Regional Commission, Assistant Planner
Mount Ascutney Regional Commission, Planner
Planning and Zoning Administrator

Distribution of Plan Draft and Invitation to Participate in Draft Plan Review:
Weathersfield School, Principal
Green Mountain High School, Principal
Green Mountain Power
CARE VT
VNA
SEVCA
Senior Solutions
The Moover

Neighboring Towns:

Town of Baltimore
- Town Clerk
- Selectboard, Chair
- Planning Commission, Chair
- Planning and Zoning Administrator
- Emergency Management Director
- **No Town Manager*

Town of Cavendish
- Town Clerk
- Town Manager
- Selectboard, Chair
- Planning Commission, Chair
- Emergency Management Director
- **No Zoning*

Town of Chester
- Town Clerk
- Town Manager
- Selectboard, Chair
- Planning Commission, Chair
- Planning Commission, Vice Chair
- Planning and Zoning Administrator
- Emergency Management Director

Town of Springfield
- Town Clerk
- Town Manager
- Selectboard, Chair
- Planning Commission, Chair
- Planning and Zoning Administrator
- Emergency Management Director

Town of Reading
- Town Clerk
- Selectboard, Chair
- Planning Commission, Chair
- Planning and Zoning Administrator
- Emergency Management Director
- **No Town Manager*

Town of West Windsor
- Town Clerk
- Town Administrator
- Selectboard, Chair
- Planning Commission, Chair
- Planning and Zoning Administrator
- Emergency Management Director

Town of Windsor
- Town Clerk
- Town Manager
- Selectboard, Chair
- Planning Commission, Chair
- Planning and Zoning Administrator
- Emergency Management Director

Appendix D: Town Plan Review

Recommendations Related to Hazard Mitigation

The 2017 Weathersfield Town Plan identifies the following recommendations which support hazard mitigation:

- Improve the town's highway garage, including energy upgrades, heating system upgrades, installing an emergency generator, and providing a potable water system; and installing a highway garage floor drain wastewater system.
- Flood proofing the transfer station and removing it from the special flood plain;
- Establishing fire-fighting water supply to supplement the fire pond in Weathersfield Bow;
- Establishing fire-fighting water supply for the village of Ascutney;
- Inventory fire-fighting water supplies for the Town and develop a plan for needed additional dry hydrants.
- Other facility improvements as identified in the Weathersfield All-Hazard Mitigation Plan.
- Identify and develop an emergency operations center for the Town.
- Develop a public disaster plan which includes energy related emergencies, e.g. what to do in case of power outage or a fuel outage.
- The town shall evaluate flood risks for all new driveway permits and require driveways to be located outside of flood prone areas.
- Fully integrate flood resiliency planning and state/federal flood hazard regulations into the Weathersfield Zoning Bylaws.
- Encourage Town officials to receive certification training in local road and flood plain management.
- Develop a capital improvements plan that includes projects that implement flood resilience strategies for priority town highways and structures.
- More actively educate residents and land owners about local, regional, and state land use policy changes for development within river corridors and flood prone areas.
- The town will consider obtaining ambulance coverage based in Springfield for the western part of the town.
- Adopt NFIP standards to regulate development that is proposed for flood-prone areas so that damages from inundation can be minimized and so that property owners are eligible for flood insurance.
- Create or repair vegetative buffers on rivers and streams
- Consider and adopt shoreline protection and encourage retention of riverbank vegetation for its role in limiting boat wake erosion and protecting water quality.
- Encourage landowners along rivers and streams to retain and enhance buffers of vegetation on their banks to help bind soil together.
- Support agencies and organizations sponsoring major buffer restoration.
- Develop a public disaster plan which includes energy related emergencies, e.g. what to do in case of power outage or a fuel outage.

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- The Town will develop fluvial erosion hazard mitigation strategies to: Regulate development that is proposed in areas prone to damage from fluvial erosion;
- Manage bridge and culvert data through the Agency of Transportation "Vermont Online Bridge and Culvert Inventory" (VOBCIT). Update and re-adopt this data at least every five years so as to obtain state and federal funding and to be able to reduce the match required by state and federal grants from 20% to 10%
- Use VOBCIT and RSMS to identify and rank needed road improvements and to enable cost-effective decisions

11.6 Flood Resiliency Goals

11.6.1 Direct all new public and private investments away from flood prone areas.

11.6.2 Place emphasis on mitigating disasters and alleviating that known cycle of damage-rebuild- damage.

11.6.3 Town planning should focus on improving the identification of river corridor and fluvial erosion hazard areas and flood plain access areas. The town shall continue to establish land use standards that promote avoidance in erosion prone areas. The town will also use land use standards to preserve a waterway's access to flood plain areas.

11.7 Flood Resiliency Recommendations

11.7.1 Regularly review and update town plans and policies to maintain State and Federal compliance - particularly when meeting these regulations qualifies the town for additional grants or preferential funding match rates.

11.7.2 The town shall evaluate flood risks for all new driveway permits and require driveways to be located outside of flood prone areas.

11.7.3 Fully integrate flood resiliency planning and state/federal flood hazard regulations into the Weathersfield Zoning Bylaws.

11.7.4 Update the zoning bylaws on riparian buffers so it does not prohibit the proper management of bankside vegetation with the goal of replacing invasive with native plant species.

11.7.5 Encourage Town officials to receive certification training in local road and flood plain management.

11.7.6 Develop a capital improvements plan that includes projects that implement flood resilience strategies for priority town highways and structures.

11.7.7 More actively educate residents and landowners about local, regional, and state land use policy changes for development within river corridors and flood prone areas.

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Appendix E: Plan Monitoring Form

Town of Weathersfield 2023-2028 Local Hazard Mitigation Plan

Period Covered:
Date:

Adopted on _____, Approved by FEMA on _____

Annual Monitoring Form

Progress on Mitigation Strategies and Actions

High Priority
Moderate Priority
Low Priority

*Edit Cell Color in table below to reflect changes in Priority of Mitigation Actions/Strategies

Mitigation Action/Strategy	Progress Made	Funding Sought	Next Steps	Responsible Party	Time Frame	Notes
Seek funding for an independent power supply for schools/government buildings to include highway garage and 1879 Schoolhouse.						
Work with MARC to conduct annual culvert inspection program, as part of the Town's annual maintenance plan.						
Complete study of critical facilities to identify deficiencies prior to use as Emergency Operations Center (e.g., Town Garage and 1879 Schoolhouse).						
Carry out identified retrofits outlined in the critical facilities						

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study to ensure long-term stability of critical facilities.						
Conduct annual outreach to schools regarding fire safety information and emergency preparedness. Coordinate with Town Parks & Recreation to host annual educational Field Day to provide residents information about fire prevention and safety.						
Identify residents that require assistance within 24-72 hours and assist them with CARE program enrollment; provide application in the Annual Town Report.						
Review engineering study to assess feasibility for hydrant system for Ascutney and water/sewer system upgrades for both villages. (see **Appendix A: Map 3 – Hydrants**) Install stone line ditches at Amsden Hollow Road. This segment is no longer identified as "hydrologically-connected."						
Research funding opportunities for additional WWVFD station repairs; consider evaluating a new location for the station.						
Incorporate new MRGP Standards in identifying and prioritizing vulnerable hydrologically-connected roadways and						

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implement required practices to meet standards *as funding becomes available* (Highway Superintendent has a 5-year plan).						
Provide NFIP materials to Town residents by including information in the Annual Town Report.						
The Town will participate in annual Firewise program including "Communities Compatible with Nature."						
Secure funding to improve the town's highway garage, to include installing an emergency generator, providing a potable water system, and installing a highway garage floor drain wastewater system.						
Consider and adopt shoreline protection and encourage retention of riverbank vegetation for its role in limiting boat wake erosion and protecting water quality on the CT River and limiting erosion due to flooding on the Black River.						
Regularly review and update town plans and policies to maintain State and Federal compliance - particularly when						

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meeting these regulations qualifies the town for additional grants or preferential funding match rates.						
Fully integrate flood resiliency and fluvial erosion planning and State/Federal flood hazard regulations into the Weathersfield Zoning bylaws; for example, the Town shall evaluate flood risks for all new driveway permits and require driveways to be located outside of flood prone areas.						
Publish an online map that is viewable to the public, that identifies local information about river corridors, fluvial erosion hazard areas, and flood plain access areas.						
Require Town officials to receive certification training in local road and flood plain management.						
More actively educate residents and landowners about local, regional, and state land use policy changes for development within river corridors and flood prone areas.						
Contract Environmental Professional services to review past Stream Geomorphic Studies						

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of the Black River Watershed and project listed in the DEC Watershed Project Database and recommend high priority mitigation projects that will provide the greatest flood resiliency benefits to the Town.						
Evaluate 1879 Schoolhouse's ability to serve as a local shelter site; pursue funding to install a generator and cooling system to provide relief from extreme weather.						
Proactively reach out to GMP with identified trees that are susceptible to causing downed power lines and trees that are susceptible to or infested by emerald ash borer.						
Upgrade wooden bridge at Levine Road to sustain higher weights to allow emergency vehicle access. (Town received grant to redesign the bridge in 2023).						
Stabilize Upper Falls Covered Bridge; replace stone armoring to protect abutments from future erosion.						
Replace Ascutney Basin Bridge to allow access for emergency services and improve bankful						

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width (Contractor completed redesign proposal in 2023).						
Repair bridge abutments on Little Ascutney Road using FEMA Public Assistance funding.						
Inform residents via Town website and Town Report of local shelter sites (**Table 4.3.-2**) and informational resources prior to anticipated severe weather and extreme temperature events, with a focus on vulnerable populations.						

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Appendix F: Survey Results

See attached.

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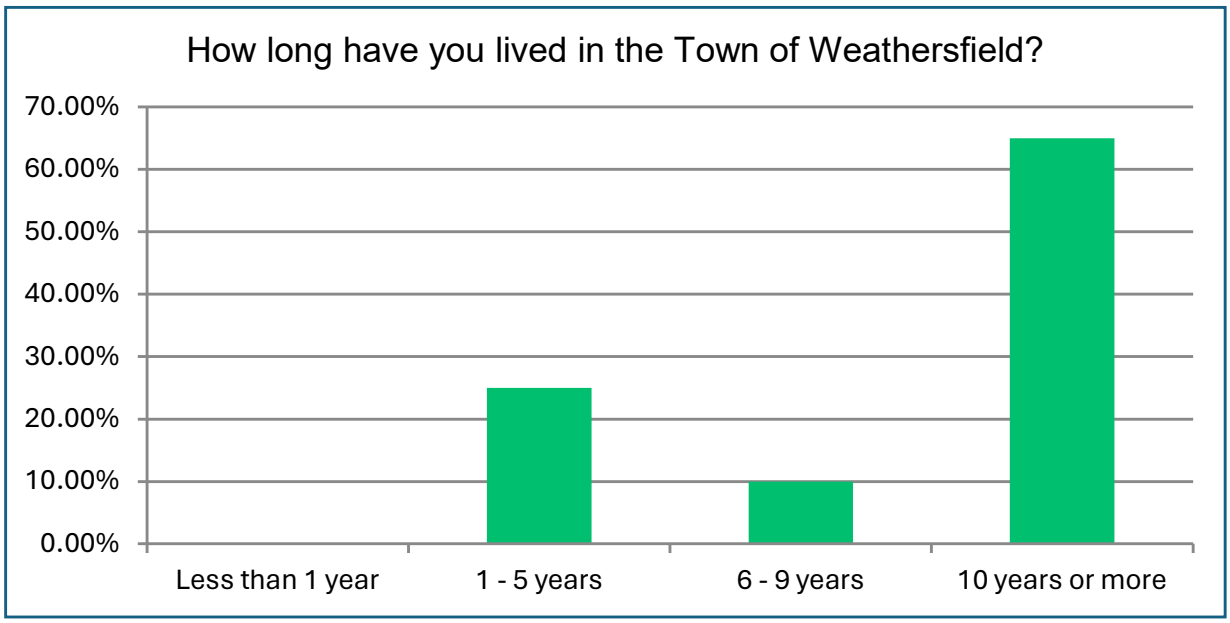
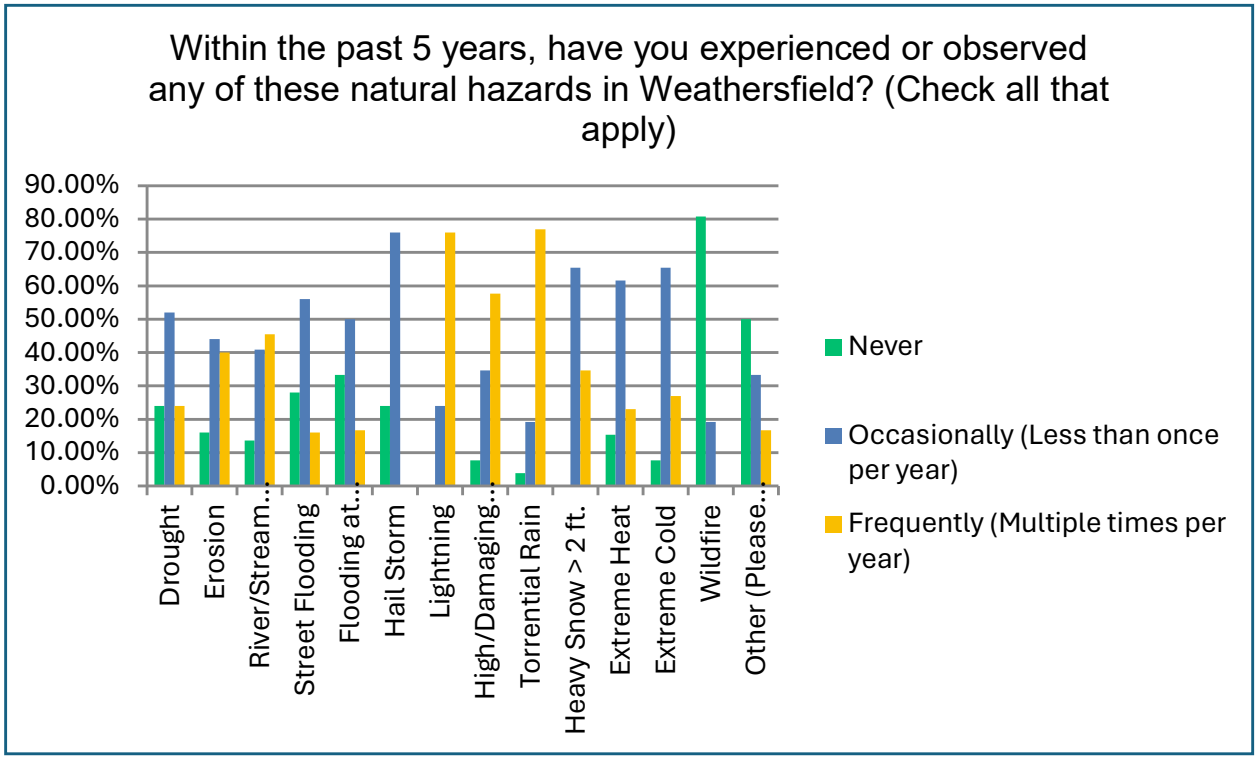
Weathersfield Climate Impact Survey Results

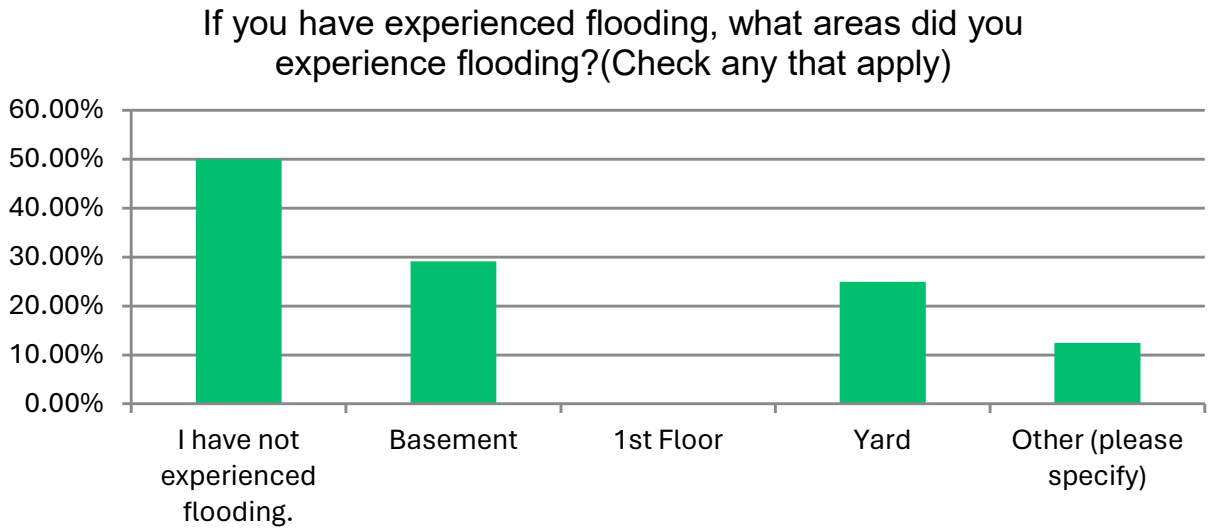
Total # of Responses: 40



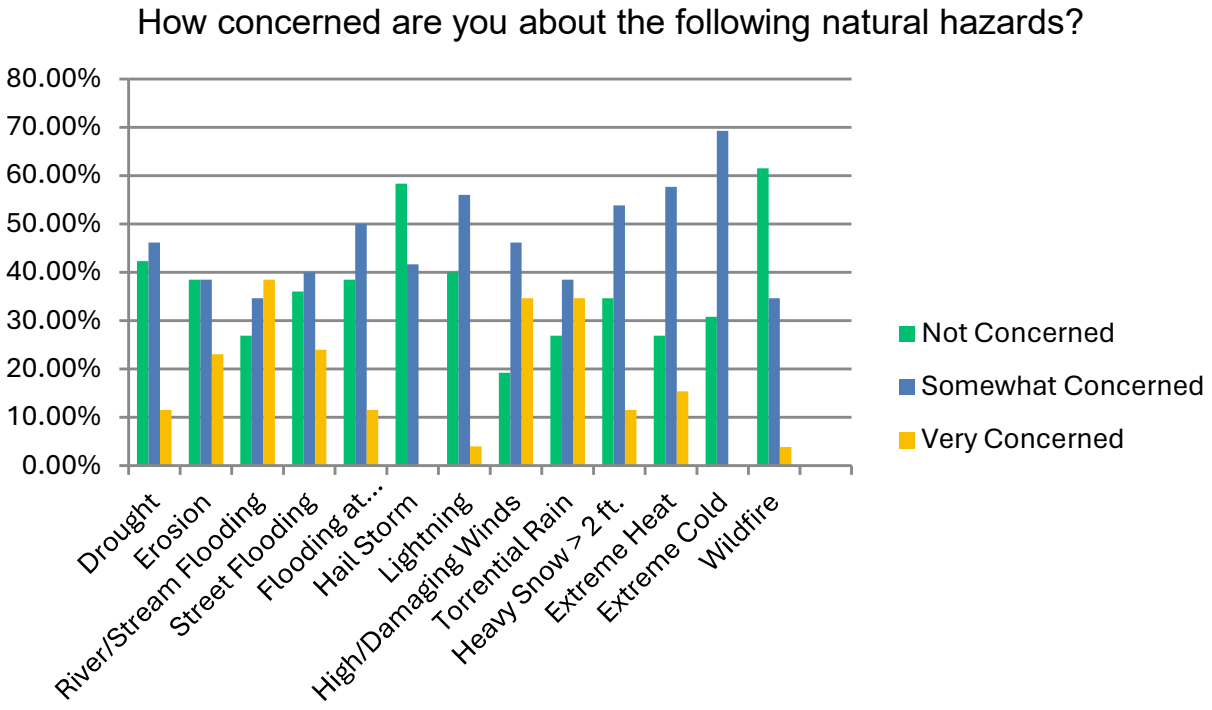


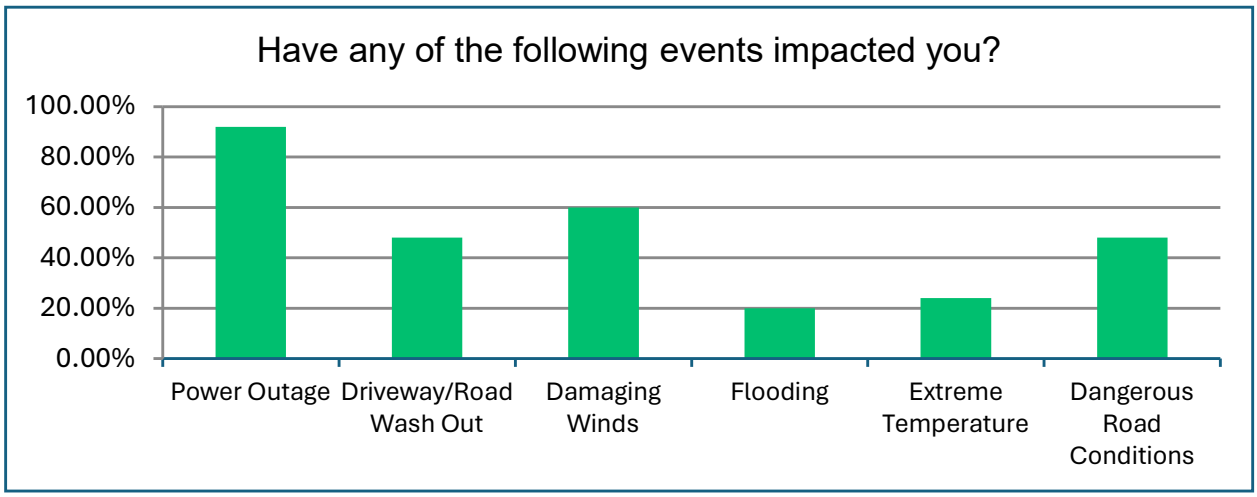
What other natural hazards have you experienced or observed in Weathersfield?

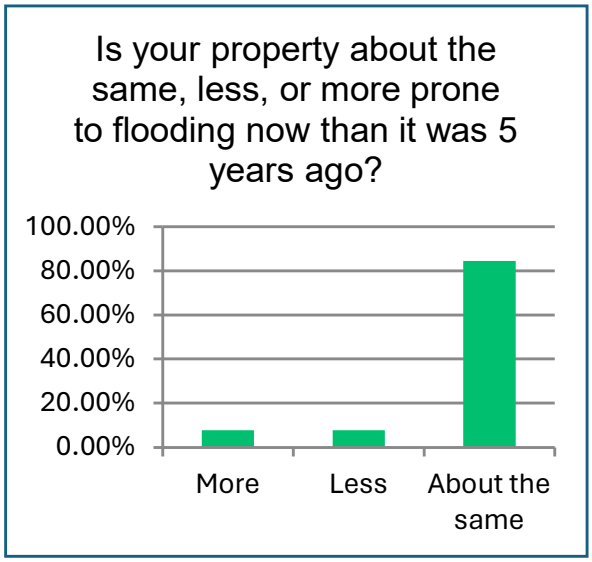
- Power outages
- Insect outbreaks (Emerald ash borer, gypsy moth)
- Invasive plants
- Hazardous trees
- Rabid animals

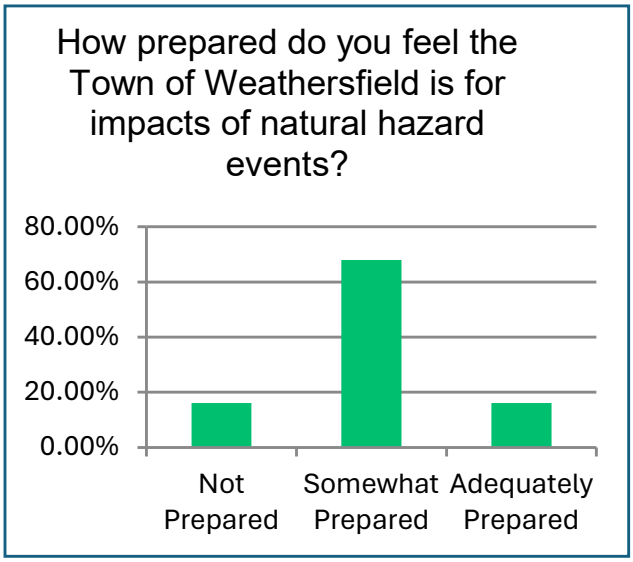


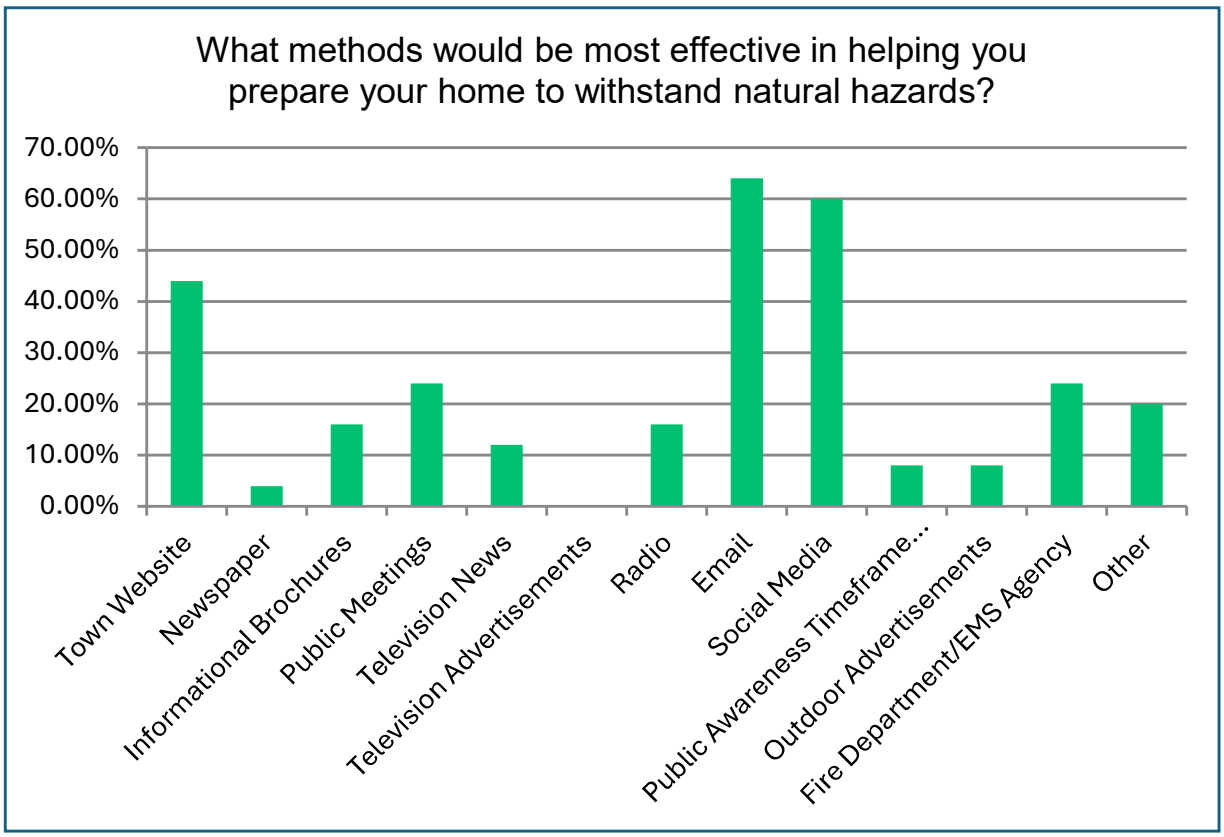
Other Responses: Hay fields, Crop fields, Road washouts, Gully erosion, River




Have any of the following events impacted you?
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
Power Outage
Driveway/Road Wash Out
Damaging Winds
Flooding
Extreme Temperature
Dangerous Road Conditions


Is your property about the same, less, or more prone to flooding now than it was 5 years ago?
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
More
Less
About the same


How prepared do you feel the Town of Weathersfield is for impacts of natural hazard events?
80.00%
60.00%
40.00%
20.00%
0.00%
Not Prepared
Somewhat Prepared
Adequately Prepared


What methods would be most effective in helping you prepare your home to withstand natural hazards?
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Town Website
Newspaper
Informational Brochures
Public Meetings
Television News
Television Advertisements
Radio
Email
Social Media
Public Awareness Timeframe...
Outdoor Advertisements
Fire Department/EMS Agency
Other

What methods would be most effective in helping you prepare your home to withstand natural hazards?

"Other" Responses: Reverse 911, Nancy's Blog, Email, Text, TikTok, School flyers

In your opinion, what are some steps your local government could take to reduce or eliminate the risk of future hazard damages in your neighborhood?

- Local officials could encourage everyone to do their part in the fight against climate change
- Cooperation by joining other towns in regional efforts
- Improve road drainage/roadway stormwater improvements, ditching
- Public education
- Upgrade/upsize bridges and culverts
- Discourage new development in high risk areas
- Bury powerlines
- Dirt road maintenance
- Tree clean up
- Complete repairs from Irene damage

Are there any other issues regarding the reduction of risk and loss associated with hazards or disasters in the community that you think are important?

- Zoning and local enforcement
- Forest stewardship
- Communication
- Broadband coverage
- Hazardous road side trees
- Invasive plants and animals
- Pay for EMS and firefighters
- Bridge and culvert assessments
- Emergency preparedness/public education
- Communication systems to identify community needs
- Discount for people reducing future hazard impacts or improving drainage
- Funding