Town of Fairfax, Vermont

HAZARD MITIGATION PLAN 2026*

Photo & Text courtesy Mike and Margie Caine

FEMA Approved Pending Adoption:_____
Approved by the Town of Fairfax, Selectboard: _____
FEMA Final Approval:_____

***The plan will be final following adoption by the Fairfax Selectboard and FEMA approval.**

RESOLUTION

TOWN OF FAIRFAX, VERMONT HAZARD MITIGATION PLAN.

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

WHEREAS the Town of Fairfax has prepared a multi-hazard plan, hereby known as the Town of Fairfax Hazard Mitigation Plan 2026 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 Fairfax Hazard Mitigation Plan 2026 identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Town of Fairfax from the impacts of future hazards and disasters; and

WHEREAS adoption by the Town of Fairfax Selectboard demonstrates its commitment to hazard mitigation and achieving the goals outlined in the Town of Fairfax Hazard Mitigation Plan 2026.

NOW THEREFORE, BE IT RESOLVED BY THE TOWN OF FAIRFAX SELECTBOARD, IN THE STATE OF VERMONT, THAT:

Section 1. In accordance with 24 VSA §872, the Town of Fairfax Selectboard adopts the Town of Fairfax Hazard Mitigation Plan 2026. While content related to the Town of Fairfax may require revisions to meet the plan approval requirements, changes occurring after adoption will not require the Town of Fairfax 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 _____, 2026.

By: _____

_____ (Signature)

_____ (print name)

ATTEST:

By: _____ (Signature)

_____ (print name)

APPROVED AS TO FORM:

By: _____(Signature)

_____ (print name)

Date: _____

Table of Contents

List of Figures

List of Tables

Appendices

Executive Summary

The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from natural hazards and their effects. The Town of Fairfax Hazard Mitigation Plan is a comprehensive strategy designed to reduce the risks posed by natural hazards and enhance the resilience of the community. Developed through a planning process involving a committee of key staff and stakeholders, the plan identifies natural hazards, assesses vulnerabilities, and outlines mitigation strategies to protect lives, property, and the environment in the town.

The legislative authority that provides the legal basis for mitigation is derived from the Stafford Act, as amended by the Disaster Mitigation Act of 2000. Section 322 of the Stafford Act specifically addresses mitigation planning. This establishes the requirement that state and local governments prepare hazard mitigation plans as a precondition for receiving FEMA mitigation project grants. More importantly, this plan and planning process lays out the strategy that will enable the town to become less vulnerable to future disaster losses. The process followed a methodology prescribed by FEMA.

The hazard identification and risk assessment process identified and examined a range of hazards with the potential to impact the community. It focuses on the specific hazards that were considered the greatest threat to the community including flooding, fluvial erosion, strong winds, and severe winter storms (ice storms). It includes the history of losses and analyzes future risks posed to the town. Analysis of historical data, modeling, and stakeholder input informed the identification of high-risk areas, critical infrastructure and vulnerable populations.

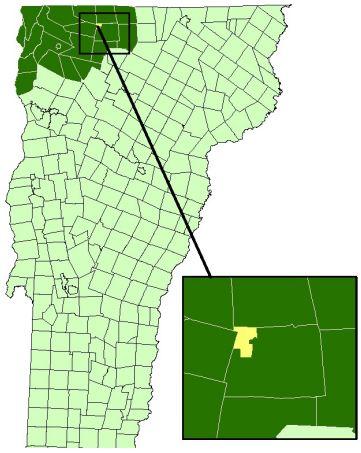
The plan identifies several mitigation strategies and actions that are based on the results of the risk assessment. They are aimed at reducing risk, enhancing preparedness, and promoting resilience across The Town of Fairfax. The actions are summarized into four types: local planning and regulations, structural and infrastructure projects, natural system protections and education and awareness programs. The plan also includes a review of the town's current capabilities to reduce hazard impacts.

This plan (has been /will be) formally adopted by The Town of Fairfax Selectboard. It is required to be updated at a minimum of every five years. Monitoring and evaluation mechanisms were established to track progress, assess effectiveness, and adapt strategies as needed to address changing conditions and emerging threats. By working together and implementing targeted mitigation measures, municipal leaders can protect lives, property and the environment, and ensure a safer and more sustainable future for all residents of the community.

1. INTRODUCTION

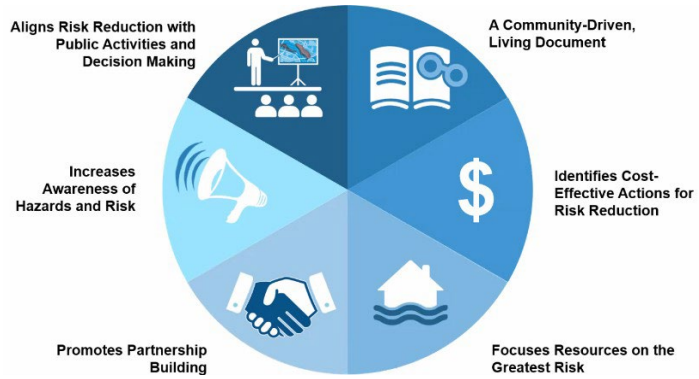
The impact of expected, but unpredictable natural and human-caused events can be reduced through community planning. The goal of this plan is to provide an all-hazards local mitigation strategy that makes the Town of Fairfax, Vermont more disaster resistant.

Figure 1: Town of Fairfax Location Map



Hazard mitigation is any sustained action that reduces or eliminates long-term risk to people and property from natural and human-caused hazards and their effects. Based on the results of previous efforts, FEMA and state agencies have come to recognize that it is less expensive to prevent disasters than to repeatedly repair damage after a disaster has struck. This plan recognizes that communities have opportunities to identify mitigation strategies.

The Benefits of Mitigation Planning



Source: FEMA LHMP Skill Share Workshop 2021

Hazards cannot be eliminated, but it is possible to determine what the hazards are, where the hazards are most severe and identify local actions that can be taken to reduce the severity of the hazard.

Hazard Mitigations Strategies and Measures **alter** the hazard by eliminating or reducing the frequency of occurrence, **avert** the hazard by redirecting the impact by means of a structure or land treatment, **adapt** to the hazard by modifying structures or standards or **avoid** the hazard by stopping or limiting development and could include projects such as:

- Flood-proofing structures
- Tying down propane/fuel tanks in flood-prone areas
- Elevating furnaces and water heaters
- Elevating structures or utilities above flood levels
- Identifying & upgrading undersized culverts
- Proactive land use planning for floodplains and other flood-prone areas
- Proper road maintenance and construction
- Ensuring critical facilities are safely located
- Buyout & relocation of structures in harm's way
- Public information and education

2. PURPOSE

The purpose of this Local Hazard Mitigation Plan is to assist the Town of Fairfax in recognizing hazards facing the community, ranking them according to local vulnerabilities, and developing strategies to reduce risk from those hazards. Once adopted, this plan is not legally binding; instead, it outlines goals and actions to prevent future loss of life and property.

Fairfax strives to be in accordance with the strategies, goals and objectives of the State Hazard Mitigation Plan.

3. PLANNING PROCESS

This is an update to the 2017 Town of Fairfax, Vermont Hazard Mitigation Plan which received FEMA approval on December 21, 2017. The town secured funding to update the plan through a Building Resilient Infrastructure and Communities grant. The Northwest Regional Planning Commission was hired to assist with the update following a competitive bid process.

Incorporation of Existing Plans, Studies, Reports and Technical Information

The 2026 Town of Fairfax Hazard Mitigation Plan development utilized plans, policies, studies, historical records, data and technical information as a foundation. Such information provided a comprehensive understanding of existing hazards, vulnerabilities and community needs. The information ensured that the plan is effective and tailored to the specific context of the community.
A complete list may be found in Table 1

Table 1: Reference Materials

Information Source	Review and Incorporation
Fairfax Municipal Plan - 2018	Existing land use, population, transportation and future land use, public facilities, public services, flood resilience. The plan was referenced throughout the process
Fairfax Local Emergency Management Plan – 2024	The plan was reviewed and referenced throughout the planning process
Fairfax Zoning Regulations – 2024	The sections reviewed including flood hazard areas, wetland regulations, road erosion and regulations for special flood hazard.
Northwest Regional Planning Commission Regional Plan – 2018 (amended 2026)	The physical region section was referenced during the risk assessment as well as various data references on population and transportation.
Northwest Regional Planning Commission Local Liaison Reports of Storm Damage	Referenced to develop the risk assessment section.
Lamoille River Basin Flood Resilience Plan 2026	Referenced to develop the risk assessment and mitigation actions sections.
Vermont Agency of Transportation Bridges and Culverts On-Line Database	The data was referenced during the risk assessment and mitigation action sections.
Vermont Agency of Transportation Resilience Planning Tool	Referenced to develop the risk profile and mitigation actions.

Fairfax Road Erosion Inventory (Municipal Roads General Permit)	Referenced to develop the risk assessment section and mitigation actions section.
Vermont Natural Resource Atlas	Tool was referenced throughout the process.
Vermont Dam Inventory	The tool was referenced during the risk assessment section and mitigation actions to address floods.
State of Vermont Climate Assessment	Referenced in development of risk assessment.
National Oceanic and Atmospheric (NOAA) Climatic Data Center's Storm Events Database	Data was referenced and incorporated in the hazard identification and risk assessment section of this plan.
FEMA Hazard Mitigation Assistance Program Policy Guide 2024	Used to ensure plan meets the Federal mitigation planning requirements including those address climate change.
FEMA Flood Insurance Study 1980. Fairfax, VT	The date was referenced for risk assessment section and used in capabilities section.
FEMA Flood Insurance Rate Maps 1980, Fairfax, VT	The date was referenced for risk assessment section and used in capabilities section.
FEMA NFIP Insurance Report 2021, Fairfax, VT	Used to determine how many structures are insured, number of repetitive loss properties and describe NFIP compliance.
American Community Survey Five Year Estimate 2022	Used to develop community profile section.
Vermont Climate Office Municipal Climate Change Vulnerability Index Tool	Tool used to understand municipal vulnerabilities to climate change across several social, economic, and environmental factors.
Municipal Climate Change Vulnerability Indicators Tool	Data was used throughout the plan. The Municipal Vulnerability Indicators Tool (MVI) is a mapping tool to help municipalities understand their vulnerabilities to climate change across several social, economic, and environmental factors. T
Vermont Department of Health website	Referenced during research of hazard identification and risk assessment section of plan/
Vermont Flood Ready Website	Data from the website was referenced throughout the planning process and used in various sections of the plan.
Vermont Transportation Resilience Planning Tool (TRPT)	Data was used throughout the plan. Web-based application identifies bridges, culverts, and road embankments that are vulnerable to damage from floods, estimates risk based on the vulnerability, and criticality of roadway segments, and identifies potential mitigation measures based on the factors driving the vulnerability.

Documentation of the Planning Process, Public Input and Input from Neighboring Communities

The Town Manager assembled a Hazard Mitigation Planning Team to participate in updating the Hazard Mitigation Plan. The town actively invited various stakeholders in the planning process including

residents, local businesses, local neighboring government agencies, regional emergency management committee, schools, and non-profits that work directly with or provide support to people with disabilities and functional access needs.

Planning Team Member: A planning team member is a designated individual who actively participates in the planning process. They may be responsible for specific tasks such as data analysis, strategy development, and drafting the plan. Planning team members are usually part of the formal planning structure and may have specific roles based on their expertise or position within an organization.

Stakeholder: While stakeholders are also involved in the process, they may not have a formal role or responsibility within the planning team. Their participation is often more about providing input, feedback, and support rather than executing the planning tasks. Stakeholders can influence the planning process through their contributions but are not necessarily tasked with specific planning duties.

The following table depicts the planning team:

Table 2: Planning Team

Name	Organization	Role
Mike Bishop	Town Manager	Planning Team Lead (Community Lead POC)
Shaun Coleman	Northwest Regional Planning Commission	Planning Team Member (Project Leader)
Micah Genzlinger	Chief - Fairfax Fire Department	Planning Team Member (Community EMD)
Cory Vanslette	Public Works Director	Planning Team Member (Community PW Lead)
Steve Bessette	Resident	Planning Team Member (Local elected official and former EMD)
Laurie Fisher	Fairfax Selectboard Chair	Planning Team Member (Local elected official and Chair)
Tim Burns	Fairfax Selectboard	Planning Team Member (Local elected official and emergency services member)
Linda Horner	Communications	Planning Team Member (Social media and municipal website manager)
Chris Santee	Fairfax Business Association	Stakeholder (Business community representative)
Michael Wheeler	Director Fairfax Rescue	Stakeholder (Ambulance Service)
Sheri Rainville	Fairfax Historical Society	Stakeholder (Historical and Cultural Resources)
Jonathan Henry	Green Mountain Power	Stakeholder (Electric Utility)
Cheryl LeTourneau	Georgia Town Clerk	Stakeholder (Neighboring Community Official)

Casey Toof	St. Albans Town Manager	Stakeholder (Neighboring Community Official)
Matt Gillilan	Fletcher Selectboard Chair, Town EMD	Stakeholder (Neighboring Community Official)
Dan St. Cyr	Cambridge EMD, Town Admin.	Stakeholder (Neighboring Community EM)
Jacqueline Kelley	EP, Vermont Department of Health, St. Albans District	Stakeholder (Community Health Including Disabilities and Individuals with Functional Access Needs)
Reginald Beliveau, Jr.	Interim Chair, Franklin County Regional Emergency Management Committee	Stakeholder (County EM services and first responders)
Jess Graff	Director, Champlain Valley Office of Economic Opportunity	Stakeholder (People with Disabilities and Functional Access Needs)
Rev. Elizabeth Griffin	Fairfax Food Shelf	Stakeholder (Food, Shelter)
Ashley Bartley	Visiting Nurses Association (*formerly Franklin County Home Health Agency)*	Stakeholder (Senior Healthcare, Hospice and Community Support Services)
Karen Heinlein-Grenier	Director, Turning Point of Franklin County	Stakeholder (Recovery Support and Services)
Keith Ellery	Northwest Medical Center Emergency Ops Manager	Stakeholder (Regional Hospital)
Joyce Benoit	Director, Northern Tier for Health Fairfax Health Center	Stakeholder (Community Health and Wellness)
John Tague	Director, BFA Fairfax / Supervisory Union	Stakeholder (Education)
Tim Smith	Director, Franklin County Industrial Development	Stakeholder (Business and Industry)

Stakeholder Engagement and Public Outreach

The mitigation committee and NRPC developed a stakeholder and public outreach plan to ensure the whole community were given opportunities to be involved in the plan's development process. Engagement and outreach are crucial for hazard mitigation planning for several reasons including fostering inclusive decision-making, strengthening community resilience through active participation, raising risk awareness and preparedness through education, transparency, and promoting consensus building. The plan may be found in Appendix G.

Plan Development Process

The Town of Fairfax held several planning meetings to discuss the update of the Hazard Mitigation Plan. All meetings were open to the public and some were held at regularly scheduled Selectboard meetings. Members of the public that were in attendance, either in person or virtually, were encouraged to participate. All meeting agendas were posted at 3 locations in the municipality in compliance with the

requirements of Vermont Open Meeting Law. Hard copies of drafts discussed at meetings were available to the public in attendance at meetings and upon request

August 5, 2024 – Town of Fairfax initial meeting with Village Manager and NRPC to discuss the mitigation planning process, assembly of planning team, stakeholder engagement and public outreach plan. This included a review of the Town's new Communication Plan & Policy.

September 6, 2024 - Survey and flyer was agreed to by the committee and finalized and released to the public. This was to solicit input from the whole community. The Town provided notice of the survey by posting at several locations throughout the community including the library, Town Office, Post Office, school, Community Center, and Steeple Market (local grocery store) and i. The flyer with QR code was also posted on Town Office web page, Front Porch Forum, Facebook page and NRPC's Town of Fairfax Mitigation Plan project web page.

September 20. 2024 – Kickoff Meeting at the Town Office with a virtual option to participate. The public meeting was warned following Vermont's Open Meeting Law requirements. Communications methods followed the stakeholder and public outreach plan to ensure the whole community had an opportunity to participate. NRPC staff facilitated the hybrid meeting that focused on past efforts, the FEMA mitigation planning process, plan update considerations, FEMA guidance, State Hazard Mitigation Plan review, roles and timeline. The group also agreed to utilize NRPC's website as the host site for the project website due to ease of administration.

September 24, 2024 – NRPC staff compiled and distributed meeting notes from the September 20 meeting.

October 4, 2024 – Hazard Risk Assessment Meeting at the Town Office with virtual option to participate. The public meeting was warned following Vermont's Open Meeting Law requirements. Communications methods followed the stakeholder and public outreach plan to ensure the whole community had an opportunity to participate. NRPC staff reviewed mitigation planning process, community outreach efforts, timeline, review of local hazards, state-wide hazards as identified in the mitigation plan, review of hazard data, update the risk assessment section based on participant feedback. A survey was discussed to solicit input from the whole community.

October 8, 2024 – NRPC staff compiled and distributed meeting notes from the October 4 meeting and reviewed town plans & policies as provided by Town Manager.

November 8, 2024 – Policies, Plans and Capabilities Meeting at the Town Office with virtual option to participate. The public meeting was warned following Vermont's Open Meeting Law requirements. Communications methods followed the stakeholder and public outreach plan to ensure the whole community had an opportunity to participate. The participants reviewed existing village resource capacity and capabilities, flood plain and river corridor bylaw regulations, ordinances, stormwater infrastructure and inventories, school safety plans, and survey.

November 12, 2024 - NRPC staff compiled and distributed meeting notes from the November 8 meeting.

November 15, 2024 – Mitigation Projects Meeting at the Town Office with virtual option to participate. The public meeting was warned following Vermont's Open Meeting Law requirements. Communications methods followed the stakeholder and public outreach plan to ensure the whole community had an opportunity to participate. The meeting centered on hazard mitigation strategies and confirmed goals

and discussed past and future mitigation projects for the Town. There was also a review of the survey results to date and a discussion on the survey.

November 19, 2024 – NRPC staff compiled and distributed meeting notes from the November 15 meeting.

January 6, 2025 – The Northern Vermont Economic Development District held a meeting on Lamoille River Basin Flood Recovery and Resiliency Plan and Lamoille River hydrologic model for communities along the main stem of the Lamoille River and key tributaries. Fairfax was included in the scope of this project. The meeting reviewed the framework for the Lamoille River hydrologic model being conducted by SLR consulting, the plan outline for communities within the basin and a review of public engagement. This project deliverables would enhance the hazard mitigation plan.

January 8. 2025 – The Town Manager and committee agreed to incorporate the finding (alternatives) of the Lamoille River hydrologic model into the Fairfax Mitigation Plan update. The science based information from the analysis would be beneficial to the plan.

March 30, 2025 – Draft sections were prepared and reveiwed by the committee and stakeholders.

April 4, 2025 - The Northern Vermont Economic Development District held a meeting on Lamoille River Basin Flood Recovery and Resiliency Plan and flood modeling. The meeting included updates on the Lamoille River flood model and outreach efforts by the District on farms and businesses regarding Continuity of Operations planning.

April 27, 2025 – Draft plan sections were presented at the Franklin County Regional Emergency Management Committee meeting. NRPC senior planner solicited input on the plan from committee members.

June 26, 2025 - The Northern Vermont Economic Development District held a meeting on Lamoille River Basin Flood Recovery and Resiliency Plan The meeting included updates on the Lamoille River hydrologic model and incorporation of key tributaries. Mill Brook and Stones Brook in Fairfax were identified. Information on areas of concern that were previously identified during the mitigation committee meetings presented for incorporation into the model.

September 11, 2025 – The draft alternatives of the Lamoille River hydrologic model for Fairfax and Georgia were presented by SLR consulting at the Transportation Advisory Committee meeting for NW Vermont. The committee discussed how the model could be used to help guide future development away from areas impacted by various flood scenarios beyond the SFHAs and offered input on details of areas of concern for each town.

November 13, 2025 – The Northern Vermont Economic Development District held a meeting on Lamoille River Basin Flood Recovery and Resiliency Plan The meeting included a presentation of the draft Lamoille River Flood Recovery and Resiliency Plan by staff from the Lamoille County Regional Planning Commission. SLR presented updates on the hydrologic model.

November 24, 2025 - The alternatives of the Lamoille River hydrologic model for Fairfax and Georgia were presented by SLR consulting at the Franklin County Regional Emergency Management Committee. The committee offered discussed how planners could use this information to help guide development away from areas that could be impacted by flooding outside of traditional SFHAs. There was a review of

mitigation measures in areas of concern, use of the model to enhance resilient transportation infrastructure design on selected bridge and scientific rationale that supported the identified areas of concern. The model also added two new floodplain restoration areas in Fairfax to mitigate flooding in flood prone areas.

February – May 2026: Additional inputs for the hydrologic model were identified by the District and incorporated. Planning Team completed work and review of final draft Town of Fairfax Hazard Mitigation Plan 2026. Final input from the survey and comments were incorporated.

June 19, 2026 - The final draft Town of Fairfax, Vermont Hazard Mitigation Plan 2026 was reviewed at a Selectboard Meeting. There was opportunity for public comment. Public comment period to open on June 19, 2026.

July 19, 2026 – Public comment period opens. Plan made available on Town website, NRPC website and social media. Hardcopies of the plan made available at town office and library. Postings included instructions to email comments to Shaun Coleman, Senior Planner at Northwest Regional Planning Commission. NRPC Senior Planner also directly emailed final draft plan to neighboring towns and stakeholders to seek input.

(July 9, 2026 – The public comment period closed. Final survey results and additional stakeholder input were incorporated into the final draft. The selectboard Chair requested the draft plan and toolkit be submitted to VEM and FEMA for review and approval pending adoption.).

(July 10, 2026 – The final draft LHMP and FEMA plan Review Toolkit submitted to VEM and FEMA for approval pending adoption.)

4. COMMUNITY PROFILE

The Town of Fairfax is located in the western foothills of the Green Mountains and characterized by open farmland and wooded slopes with panoramic views of Mt. Mansfield and the Lamoille River. It is the southernmost municipality in Franklin County. Fairfax is served by several State Routes that link the Town with St. Albans, the Interstate and communities to the east and south.

Figure 2: Flooding closes the Fanton Road

Photo courtesy of Henry Raymond

Demographics and Housing

The US Census estimates that the population of Fairfax was 5,372 in 2024 which an increase from 5,049 in 2015. Approximately 12.5% of the population is age 65 or older, while 24% is under 18 years of age and 7.2% is under the age of 5. Additionally, 7.6% of the population under age 65 has a disability. The median household income is $128,963, while 5.1% of the population are in poverty.

Fairfax has experienced some of the highest residential development rates in the region, with significant growth in the number of households over the last two decades. There are 1,845 housing units which is an increase from 1,683 in 2010. The median value of a home in the Town of Fairfax is $378,200 according to estimates from the 2020-2024 Census[1].

Figure 3: Forested Hills and Open Pasture Lands in Fairfax.

Photo courtesy Henry Raymond

Land Use

Agriculture and forestry continue to define the rural character and landscape of Fairfax. Agriculture has historically contributed to the local economy, culture, and scenic character of the Town, with dairy, hay, corn production, and smaller-scale agricultural operations such as niche farming, vegetable production, and landscape nurseries remaining important land uses. Approximately 43% of Fairfax is forested, consisting primarily of mixed broadleaf and conifer forests. These forests support small-scale forestry, recreation, and limited forest product opportunities due to varied land ownership patterns. The State's Current Use Program supports the conservation and sustainable management of agricultural and forest lands by taxing enrolled parcels based on their current use rather than market value.

Residential development in Fairfax is primarily concentrated in the Village area where municipal water and sewer infrastructure is available; however, recent decades have seen increased residential growth in rural areas. Continued growth pressures, including housing demand from nearby Chittenden County and challenges facing the agricultural economy, may contribute to further scattered development and changes to the rural landscape. Future planning efforts should encourage development patterns that preserve natural resources, agricultural lands, and community character through strategies such as clustered development and thoughtful subdivision design.

Economy

The economy of Fairfax is based on small businesses, services, and retail in the Village and Mixed-Use areas, along with a strong rural foundation in agriculture and home-based work. Although the town has a relatively high median household income, it functions largely as a bedroom community, with about 93% of residents commuting to jobs outside of town, primarily in Chittenden County. Preserving farmland and the rural character remains a priority despite declines in dairy farming and ongoing reliance on programs like Use Value Appraisal. However, future commercial growth within the Growth Center is limited by municipal water and wastewater capacity constraints.

Emergency Services

Emergency services are provided through a collaborative network of volunteer, subscription, and contracted entities that minimally meet current demands but face ongoing challenges with recruitment

[1] May not fully reflect current median home values. In the event of a hazard incident, a current home value data should be used to estimate losses.

and rigorous training requirements. Fire protection is managed by a largely volunteer municipal Fire Department that averages 176 calls annually, utilizes 33 hydrants alongside mapped emergency water sources, and maintains a stable equipment replacement fund. Emergency medical and ambulance care is handled by Fairfax Rescue, a subscription- and donation-based service that successfully upgraded to provide 24-hour, year-round paramedic-level care to Fairfax and surrounding towns. Law enforcement is primarily covered through a contract with the Franklin County Sheriff's Office alongside support from the Vermont State Police, though the town struggles to fill its local Constable position due to strict state training mandates. To sustain these vital operations as the population grows, the town plan prioritizes regular financial appropriations for rescue services, volunteer retention programs, and an ongoing evaluation of driveway and road regulations to ensure emergency vehicles can safely access all properties.

Water and Wastewater Facilities

Water and wastewater services in Fairfax are managed by the town's Public Works Department and primarily serve a centralized district within the village, while residents outside this zone rely on private wells and individual septic systems. The municipal water system manages approximately 299 connections, including the local school. It draws from the Wheezy Way Road well, which has a maximum capacity of 60,000 gallons per day. The municipal sewer system handles approximately 403 connections and possesses a total treatment capacity of 78,000 gallons of waste per day.

Transportation

The Fairfax roadway network consists of 61.5 miles of town highways, bridges, and culverts maintained by the Town Highway Department. The town is highly dependent on State Routes 104, 104A and 128 to link residents to employment centers in St. Albans, the interstate, and Chittenden County. Because 93% of the workforce commutes outside of town, managing vehicle traffic and maintaining infrastructure are continuous priorities.

The Highway Department institutes a regular maintenance program and an annual improvement budget. The town has adopted specific road and driveway standards to ensure proper public safety and accessibility for emergency vehicles. The Town updates its culvert and bridge inventory on a semi-annual basis, identifying locations and classifying conditions in accordance with Vermont Agency of Transportation bridge and culvert standards. Road management is tightly linked to water quality. The town actively works to comply with the state's Municipal Roads General Permit (MRGP) to optimize roadside drainage, direct runoff properly, and prevent road erosion. The Town will be conducting a municipal road stormwater erosion inventory update in 2027.

High vehicle speeds along Route 104 through the village are noted as an ongoing concern, prompting plans for gateway signage and wayfinding to help calm traffic. Additionally, there are safety concerns with the intersection of Routes 128 and 104 and McNall Road. The state is working with the Town for potential solutions.

5. RISK ASSESSMENT

Identifying and profiling hazards and assessing vulnerabilities

The risk assessment process is a critical component of hazard mitigation planning. It involves identifying potential hazards, assessing vulnerabilities, and evaluating the potential impacts of those hazards on the community. It measures the potential loss of life, personal injury, economic

impact, and property damage resulting from natural hazards by analyzing the vulnerability of people, the built environment, the economy and the natural environment.

Due to changes to the community profile, potential impacts of climate change, historical data and social and economic challenges, the hazard ranking varied from the 2017 Local Hazard Mitigation Plan. The Planning Team discussed how factors such as climate change, land use, and demographic shifts may increase the town's vulnerability to various hazards. Climate change is expected to intensify these risks by increasing the frequency and severity of extreme weather events and altering weather patterns. Additionally, demographic changes can significantly influence the town's level of risk. An aging population, higher population density, growing socioeconomic disparities, cultural and linguistic diversity, overall population growth and urbanization, the presence of transient and migrant groups, and a rising number of individuals with disabilities or access and functional needs all contribute to heightened vulnerability.

The Planning Team made decisions by majority consensus.

Table 3: Hazard Assessment Ranking Criteria

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

The Hazard Assessment for the Town derives a relative risk *Score* which is the average of the sum of *Potential Impacts* multiplied by the *Probability* for each hazard. See Table 4. The relative risk score is categorized as:

- Low Risk: 0 – 5
- Moderate Risk: 6 – 11
- High Risk: 12 – 16

All hazards identified in the state hazard mitigation plan were considered for incorporation into the Fairfax Local Hazard Mitigation Plan. The hazards with the highest risk scores are flooding, fluvial erosion and severe winter storm (ice storm) and strong winds (windstorm, thunderstorm, tornado, hurricane /tropical storm).

Table 4: Hazard Assessment

		Potential Impact				Average	Total Score*:
Hazard	**Probability**	**Infrastructure**	**Life**	**Economy**	**Environment**		
Flooding and Fluvial Erosion	4	4	3	3	4	3.5	14
Severe Winter Storm (Ice Storm)	4	3	3	2	1	2.25	9
Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm)	4	1	2	3	1	1.75	7
Extreme Heat and Drought	3	1	3	2	2	2	6
Structure Fire	4	1	2	2	1	1.5	6
Extreme Cold	3	1	3	2	2	2	6
Invasive Species	3	1	1	2	3	1.75	5.25
Infectious Disease Outbreak	3	1	2	3	1	1.75	5.25
Landslides	3	3	1	1	2	1.75	5.25
Chemical, Biological, Radiological, Nuclear (CBRN)	2	3	1	1	2	1.75	3.5
Hail	2	1	1	1	1	1	2
Wildland Fire	1	2	2	2	2	2	2
Dam Failure	1	2	2	2	2	2	2
Earthquake	1	2	2	2	2	2	2

Table 5: Hazard Risk Summary

Hazard Type	Probability	Impact / Magnitude	Risk	Vulnerability
Flooding and Fluvial Erosion	Highly Likely	Negligible to Major	High	Loss of road access, power loss, telecommunications loss. Roads, bridges, commercial and residential structures, homes located in SFHA. People with disabilities and functional access needs.
Severe Winter Storm / Ice Storm	Highly Likely	Negligible to Moderate	Moderate	Roads, commercial and residential structures, telecommunications, Town Office, Fire Station, Post Office and utilities. People with disabilities and functional access needs.

Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm)	Highly Likely	Negligible to Moderate	Moderate	Falling limbs and/or trees, power loss, telecommunications loss, structural damage to commercial and residential structures, roof damage, older mobile homes, barns, barn roofs. Business losses from telecom outages.
Extreme Heat and Drought	Likely	Negligible to Moderate	Moderate	Commercial structures, farms, livestock, private wells, public structures (water reservoir, water pumping station and wastewater treatment plant), residential and seasonal homes and vulnerable populations.
Structure Fire	Highly Likely	Minor	Moderate	All structure types, especially those lacking early detection systems. Barns.
Extreme Cold	Likely	Minor	Moderate	Power transformers, village water and sewer lines, residential and commercial structures, roads, culverts, Town Office, Fire and Rescue buildings, delivery services, livestock, pets, people with disabilities and functional access needs, HVAC workforce.
Invasive Species	Likely	Minor	Low	Town forests and trails, rivers and stream, commercial agriculture, farms, livestock, residential gardens. Local wildlife populations. Recreation and agricultural economies.
Infectious Disease Outbreak	Likely	Minor to Major	Low	All sectors of the community especially people with disabilities or functional access needs, health center, town operations, schools and businesses.
Landslides	Likely	Negligible to Minor	Low	Transportation infrastructure and residents along Goose Pond and River Roads. People with vulnerabilities or functional access needs. Water quality.
Chemical, Biological, Radiological, Nuclear (CBRN))	Occasionally	Negligible to Moderate	Low	Residential and seasonal homes, commercial structures, Town Office, Town Garage, Fire and Rescue Buildings, Post Office, places of worship, schools, utilities, and the environment. Transportation infrastructure along routes 104, 104A and 128.
Hail	Occasionally	Negligible to Minor	Low	All public and private structures particularly roofs, vehicles, utilities telecommunications, crops and gardens.
Wild Fire	Unlikely	Minor	Low	Residential homes, commercial structures, utility poles and lines, road closures, fires in rural areas lacking fire breaks. People with disabilities and functional access needs for evacuations or air quality issues.

Dam Failure	Unlikely	Moderate to Major	Low	Transportation infrastructure and residential and agricultural structures along Routes 104 and 104A, Silver Lake Road, and north end of Nichols Road. Utlilites in downstream areas. Rail line in neighboring Georgia.
Earthquake	Unlikely	Negligible to Major	Low	Infrastructure damage to transportation network. Structural damage to residences, commercial buildings, Town Office, Fire and Rescue buildings, Town Garage, Water and Waste Water Depts., and utilities. People with disabilities and functional access needs for evacuations or sheltering in place.

Major Disaster Declarations in Vermont

Refer to Appendix D for a list of active and previous disaster declarations.

2020 Pandemic

During the 2020 pandemic, the Town faced significant challenges such as limited local healthcare resources and economic disruptions, especially for small businesses. Social distancing measures led to the closure of local schools, restaurants, businesses, and shops, causing financial strain. The Town also saw shifts in community dynamics, with many residents relying more on neighbors and limited local services for support. The municipal offices adapted by finding ways to stay connected through continuity of operations planning that enabled staff to work remotely while still carrying out business operations, hold virtual governance committee meetings to conduct Town business, and implementing State protective guidelines for municipal departments to ensure all departments could continue to operate safely. The lessons learned from 2020 will serve the Town well should another pandemic occur.

Climate Change

Climate change is real. The impacts are witnessed today, with more frequent and intense extreme weather events like heavy downpours, shorter frost-free growing season and warmer nighttime temperatures. Although Fairfax contributes minimally to global climate change, it must address the local consequences by building resilience and capacity. These impacts pose challenges in terms of economic or infrastructure vulnerabilities, and for native species and habitats. While some effects of climate change may be positive, the negative impacts—such as threats to agricultural production, increased flooding, and reduced snow cover affecting winter recreation—are of serious concern for their economic, social, and environmental consequences.[2]. Table 6 summarizes the future effects of climate change for Fairfax.

Table 6: Future Effects of Climate Change by Hazard for Fairfax, VT

Hazard Event	Future Effects of Climate Change
Flooding & Fluvial Erosion	An increase in annual precipitation rates due to climate change could potentially exacerbate inundation flooding and fluvial erosion events in the future. Since the 1960s, the state of Vermont has seen a 6" increase in average annual precipitation, attributed to the warming of the atmosphere and subsequent increased evaporation rates [3]. Such changes will impact road infrastructure and the storm water infrastructure and wastewater treatment. More residents could experience flooding on their properties where minor drainage issues now may exist. Buildings and home

[2] Vermont Climate Assessment, (2021) University of Vermont, Gund Institute for Environment.

[3] https://climatechange.vermont.gov/vermont-today

	located near the river and tributaries may be a greater risk as frequency of flooding and fluvial erosion increase.
Severe Winter Storm (Ice Storm)	Winter in Vermont has been reported to be warming 2.5 times faster than the global average annual temperatures since 1960, affecting the snow conditions for many sectors of the local economy. Severe winter storms may bring more rain than snow, high winds, and flooding conditions due to decreased ground frost. Warming winters will have a significant effect on maple sugar production that relies on temperatures at or below 0°C / 32°F at night and above freezing during the day for sap to run. For the tourism sector, reduced snow packs will impact nearby Smugglers Notch Ski Resort with less skiers traveling through the Town and frequenting local businesses.
Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/ Tropical Storm)	According to the NOAA, as the world warms, the jet stream is expected to get faster, with the fastest winds increasing by about 2% for every degree Celsius (1.8° Fahrenheit) of warming. This could lead to greater increase of high wind events and include record-breaking winds that could cause increased damages notably to rural roads in forested areas, electric utility infrastructure, tree damage, residential roof and siding damage particularly mobile homes, and flying debris.
Extreme Heat and Drought	Extreme, prolonged heat will impact the public health sector by placing those with functional access needs at risk; it will impact first response services and local health offices during long spells of heat. The Town will have to continue to monitor local capacities for their predefined cooling sites and first responder resources. Extreme heat can stress the electrical grid as more air conditioners will be put into use. Warmer temperatures over prolonged periods without precipitation will lead to drought conditions. Warmer winters that lead to reduced snowpack would mean water sources are not getting recharged. This will impact those who rely on wells and impact the Town's water supply and distribution system. Drought conditions could also lead to increased wildfire risks which will impact the fire department resources and put private and public properties at risk. Climate change may intensify mud season by causing earlier snowmelt and increased spring rainfall, leading to softer, more waterlogged soils that can severely damage unpaved roads and make them difficult and at times impassable to navigate for residents.
Structure Fire	Rising global temperatures, prolonged droughts, and more frequent and intense heatwaves can increase the likelihood of wildfires spreading into developed areas, igniting structures at the wildland-urban interface. Additionally, increased use of cooling systems during heatwaves can strain electrical infrastructure, potentially leading to faults or overloads that spark fires. In some regions, the drying of vegetation around homes and buildings, combined with higher wind speeds, may also accelerate the ignition and spread of structure fires.
Extreme Cold	With the climate change trend being towards warmer temperatures, future extreme cold periods beyond the norm are unlikely.
Invasive Species	Rising average annual temperatures will have potential impacts on forests and the ag sector of the local economy. Stress will occur on native species as the climate becomes more favorable for southern species. Local impacts will be on the forest products, agriculture, and tourism industry. Particularly concerning are pests like the

	Asian longhorned beetle (not yet found in Vermont), emerald ash borer, and hemlock woolly adelgid, which have already killed millions of trees across North America. Vulnerability: Agricultural losses, private property (crops, greenhouses, orchards, flower gardens, community trees). Overgrowth can impact powerlines and culverts.
Infectious Disease Outbreak	The Vermont Department of Health defines an infectious disease as one that is caused by micro-organisms, such as bacteria, viruses, or parasites. A vector-borne disease is an infectious disease that is transmitted to humans by blood-feeding arthropods, including ticks, mosquitoes, and fleas, or in some cases by mammals (e.g. rabies). Rising temperatures will enable more diseases and their carriers to spread further north, where harsh winter conditions previously limited their expansion. All sectors and populations of the community including essential services, ambulance service and local health offices. public health sector, people with disabilities and functional access needs including elderly.
Landslides	Increased rainfall, particularly intense or prolonged storms, can saturate soil and destabilize slopes, while rapid snowmelt and ground frost thaw further contribute to ground instability. Additionally, clear cut practices that strip large areas of vegetation from hillsides, reducing soil cohesion and increasing landslide risk during subsequent rains. These changes may lead to more frequent, widespread, and severe landslides, posing growing threats to infrastructure, ecosystems, and human safety, especially in mountainous areas.
Chemical, Biological, Radiological, Nuclear (CBRN	May increase the likelihood of hazardous materials incidents by causing more frequent and intense flooding, severe storms, and erosion that can damage storage facilities, transportation routes, and utility infrastructure. Floodwaters can spread contaminants over larger areas, increasing risks to public health, drinking water supplies, and natural resources. Above ground fuel storage tanks could become dislodged by rising waters. Higher temperatures may also increase the volatility of certain chemicals and place additional stress on storage and containment systems.
Hail	Greater increase in hailstorm activity would increase damages to public infrastructure such as the public works vehicles, public building roofs, and private property.
Wildfire	Warming temperatures coupled with drought and greater frequency of wind could create a greater frequency of wildfires occurring. While much of the Town areas are developed, the likelihood of wildfire affecting them is very low. However, as has occurred in some suburban settings in Colorado in recent years, wildfire fueled by high winds could cause damage to residential areas in the Town areas. This would impact the fire department and Vermont Electric Co-op infrastructure. The tourist economy could be impacted due to wildfire smoke. Segments of the population that have functional access needs, particularly those with respiratory issues, would be impacted creating increased demands on ambulatory and health care services.
Dam Failure	Climate change may increase the potential impacts of a dam failure by contributing to more frequent and intense precipitation events, increased runoff, and flooding that can place additional stress on dam structures and downstream infrastructure. Changes in precipitation patterns, extreme weather, and more frequent freeze-thaw cycles may accelerate erosion, structural deterioration, and maintenance challenges. A dam failure during a future extreme weather event could result in greater downstream flooding, property damage, infrastructure impacts, environmental degradation, and increased risks to public safety.
Earthquake	No known impacts from climate change.

Flooding and Fluvial Erosion – *Moderate Risk*

Description: Flooding is the most widespread and destructive hazard in the United States. Flooding has also been the most common and costly hazard to affect Fairfax. Flooding can occur anytime of the year because of heavy rains, thunderstorms, rapid snowmelt, tropical storms from hurricanes or Nor'easters. It can result from the overflow of major rivers and their smaller tributaries or inadequate local drainage. Historically, floods have been a factor in over 80% of all federally declared disasters. People living near bodies of water such as rivers, lakes, and streams are at greater risk from flooding than those not living in the floodplain.

The types of flooding that occur in Fairfax include:

- **Inundation/Surface Water Flooding:** Occurs when heavy rain saturates the ground, causing water to pool in low-lying areas, especially in urban centers like Montpelier.
- **Flash Flooding:** Rapid, dangerous flooding that occurs within six hours of heavy rain, often transforming small, dry streams into torrents.
- **River (Fluvial) Flooding:** Occurs when rivers overflow their banks, common during spring melt or following intense, widespread rainfall.
- **Ice Jams:** Common in late winter/early spring, when thawing rivers break up ice, causing it to block narrow channels and force water into surrounding areas.

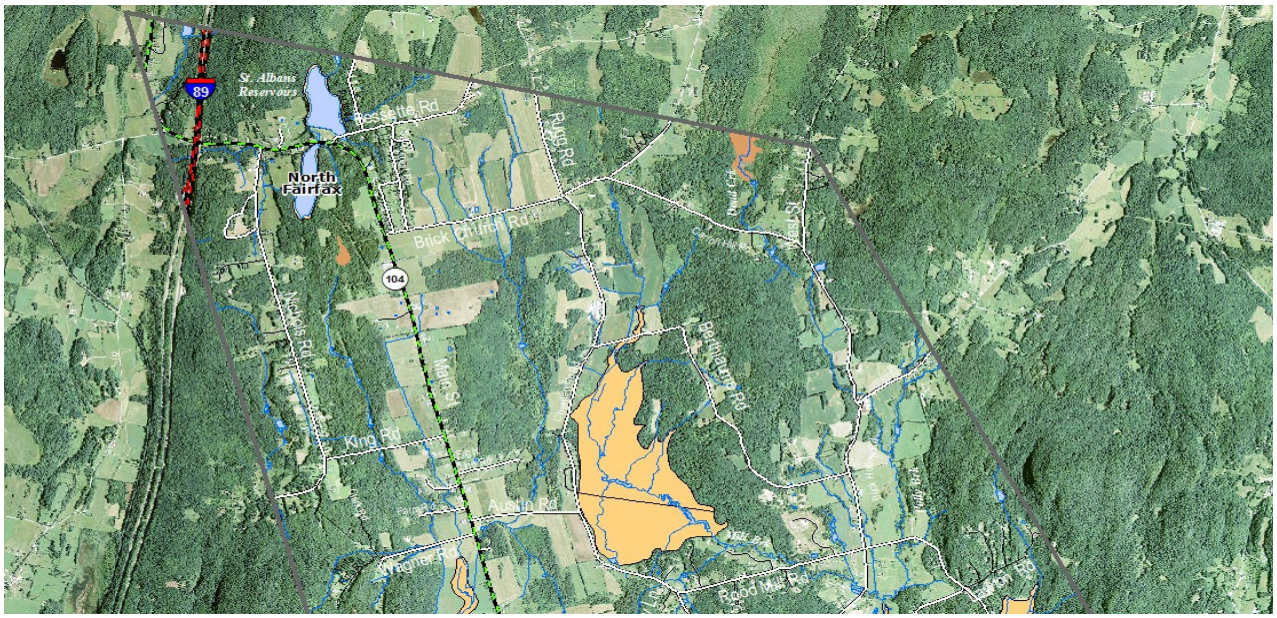
Fluvial erosion is the erosion and collapse of riverbanks caused by the natural movement and adjustment of rivers and streams. It typically occurs when a stream becomes unstable and has more energy than is needed to carry its sediment load, often due to channel alterations or runoff events that increase water velocity. Factors contributing to fluvial erosion risk in Fairfax include intense rainfall events, saturated soils, snowmelt, and channel constrictions at bridges or culverts. Land use practices, agricultural activities, and loss of riparian vegetation can further reduce bank stability.

The Vermont State Hazard Mitigation Plan notes that greater than 75% of flood damages in the state, measured in dollars, is associated with fluvial erosion rather than inundation flooding.

Location: The following maps depicting FEMA's Special Flood Hazard Areas (SFHAs) for Fairfax were created using the Vermont Agency of Natural Resources (ANR) *Natural Resources Atlas* which is an online mapping tool. The SFHAs are depicted in light orange (A zone) and brown (B zone). It should be noted that the current map effective date (as of this plan writing) for the Flood Insurance Rate Maps (FIRMs) for Fairfax is January 20, 1982. New FIRMs should be in effect in early 2027 according to FEMA.

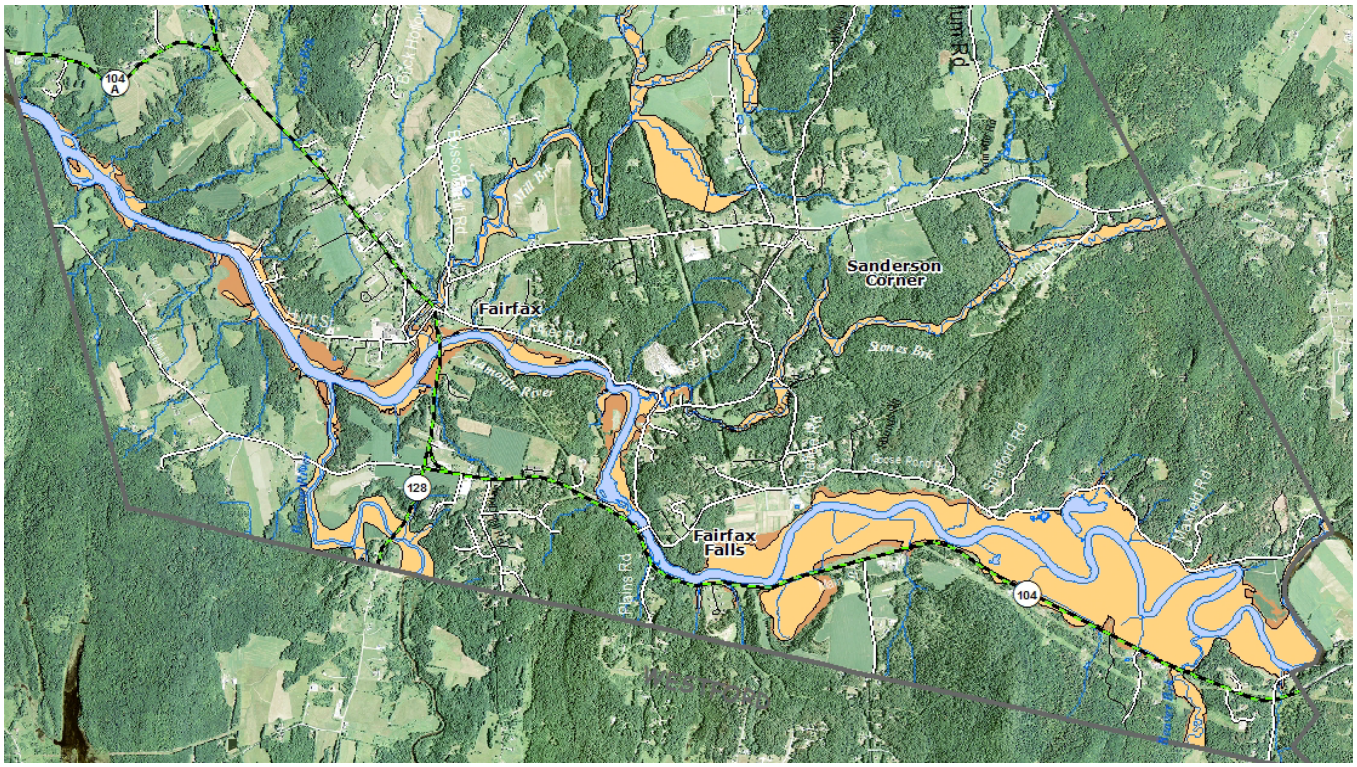
The map below depicts flood zones in northern Fairfax. In the central part of the map, the SFHA of Mill Brook extends over a wide forested area bordered by Rood Mill Road, Cherriereville Road and Berthieume Road. SFHAs accommodate standing floodwaters. The northeast portion of town drains to Black Creek while the northwest portion drains to Mill River.

Figure 4: Special Flood Hazard Areas in Northern Fairfax



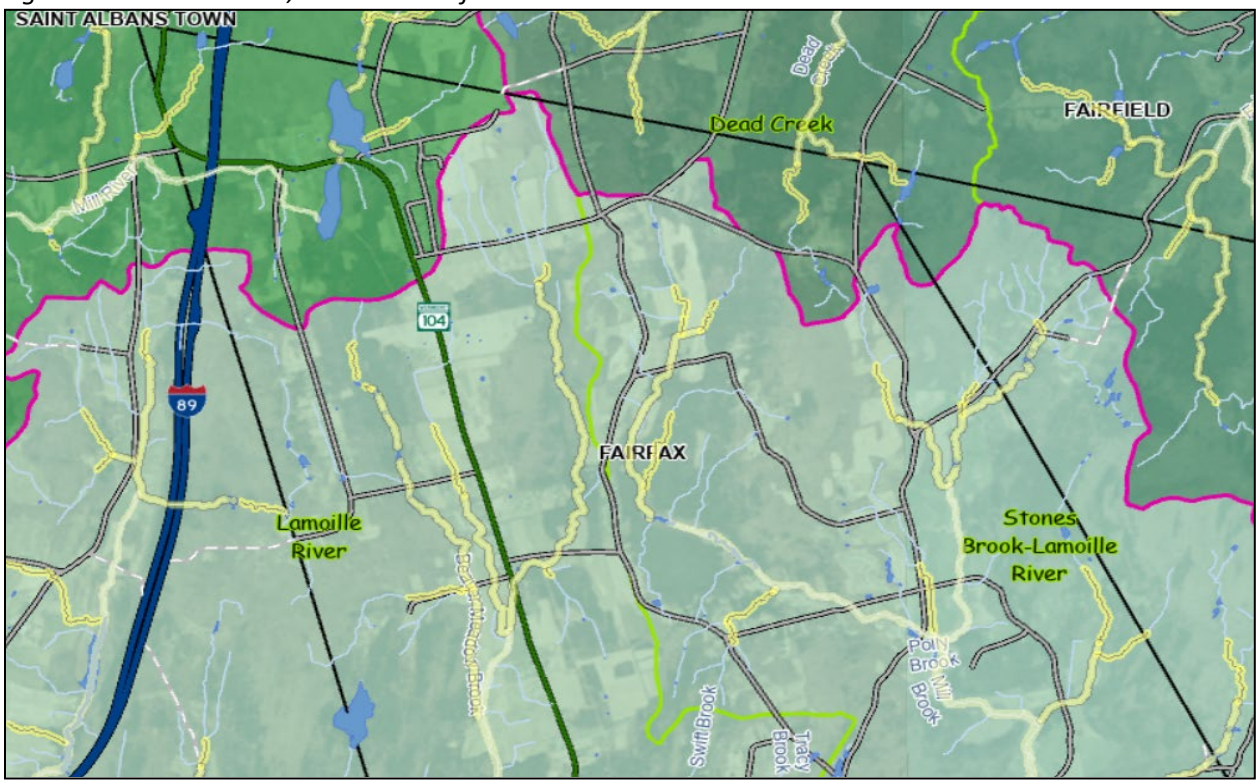
The map below depicts flood zones in the southern part of Fairfax. The Lamoille River is fed in the east from Browns River and Stones Brook. It flows west through the village picking up drainage from Mill River in the village area then continues along to Arrowhead Mountain reservoir in the town of Georgia before continuing to Lake Champlain. Low lying Goose Pond Road and River Road, east of the Village, are primarily made up of single-family residences and are subject to some inundation flooding from the Lamoille River. The Town has upgraded several culverts and upgraded ditching to address flooding issues in these areas.

Figure 5: Special Flood Hazard Areas in Southern Fairfax



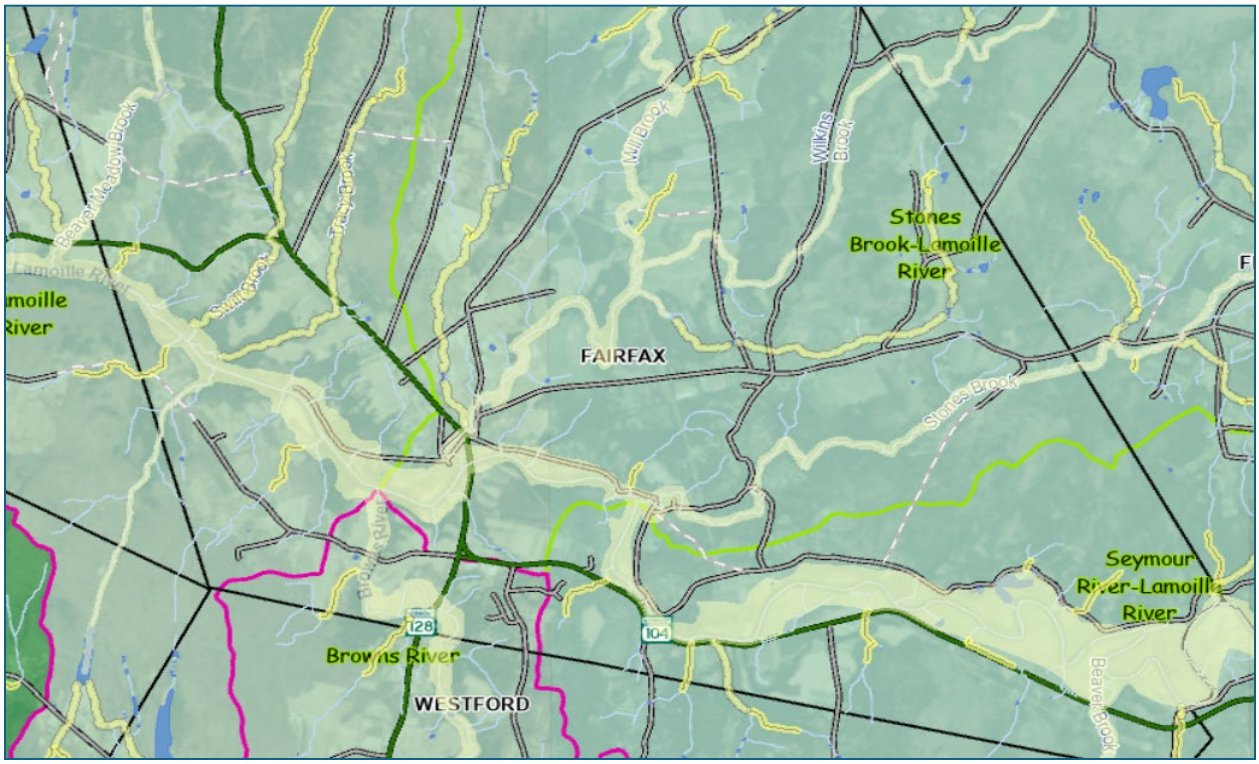
The following maps of fluvial erosion and river corridors were created using Vermont Agency of Natural Resources (ANR) Natural Resources Atlas' which is an online mapping tool. This mapping assists municipalities in developing bylaws and effective mitigation strategies to regulate development within river corridor zones. The maps depict the river corridors (in yellow) that VT ANR has designated and watershed boundaries in purple.

Figure 6: River Corridors, Northern Fairfax



The river corridors (shaded) span more stream length than the SFHAs. River corridors are only mapped for streams with watershed of two or more square miles, but they do also apply to the area within fifty feet of top of bank for all mapped streams in the Vermont Hydrography Dataset. Currently, there is 50' stream corridor buffer requirement written in the regulations for any development near a stream. Areas within mapped river corridors are being considered for incorporation into the Fairfax floodplain bylaw. Areas within mapped river corridors are subject to be regulated by ANR on January 1, 2028 per the Flood Safety Act (Act 121).

Figure 7: River Corridors in Southern Fairfax



According to NOAA, when the Lamoille River flood stage reaches 11.5', flooding is possible along Hunt Street in Fairfax Village, Goose Pond Road and River Road in the South East of Town. A few residences may have flooding along lawns and driveways. Route 104A along the Lamoille River between Fairfax and East Georgia may become inundated by water. There will be widespread field and lowland flooding from Fairfax downstream through Georgia.

Flood inundation is an annual threat to the residents of Fairfax and is the most probable cause of emergencies or disasters. Spring thaws and ice breakups may cause lowland flooding along the Lamoille River. Summer or fall storms are more likely to be responsible for major flooding. Localized semi-annual flooding may cause roads to close, and limits access to certain areas of Town such as Goose Pond Road, River Road and Lamoille Street.

Flash flooding typically occurs in high elevation drainage areas as a result of summer thunderstorm activity. Transportation infrastructure along higher elevation streams and drainage areas are more susceptible to damage from flash flooding and fluvial erosion. Areas in Fairfax that are particularly susceptible include Stones Brook in the southeastern part of Town along Chaffee Road and nearby Shepherdson Hollow Road. In the East Central part of Town, Beaver Meadow Brook floods during severe thunderstorms but this is primarily field flooding and not a threat to public safety.

Ice jams only occur on the Lamoille River typically during late winter and early spring. Flooding from ice jams can occur along Hunt Street and more rarely along Goose Pond and River Road. Fairfax has no mapped ice jams and ice jams are not considered a risk to the community Vermont Agency of Transportation monitors ices jams along State Route 104A west of the village.

According to FEMA's National Flood Insurance Program, as of April 1, 2024, the Town of Fairfax has six policies in force with $1,958,000 in insurance in-force and $82,591 written premium in force. These residential structures, built prior to the Town enacting flood hazard ordinances, are located in low density residential areas.

Figure 8: Lamoille River Gauge, East Georgia

Flood Categories (in feet)
Action Stage: 10

Historic Crests
(1) 21.64 ft on 03/06/1979
(2) 20.00 ft on 11/04/1927
(3) 19.40 ft on 02/21/1981
(4) 18.81 ft on 04/03/1959
(5) 18.14 ft on 02/28/2000

Recent Crests
(1) 10.66 ft on 07/12/2024
(2) 12.90 ft on 12/19/2023
(3) 13.87 ft on 07/12/2023
(4) 12.28 ft on 04/16/2014
(5) 13.10 ft on 04/27/2011

Probability: Plan participants agreed that there is a *high probability* of flooding and fluvial erosion to occur annually. Flooding and fluvial erosion may occur multiple times during the year and can occur in any month, but the severity of flooding and fluvial erosion varies. Flooding and fluvial erosion from ice jams is considered rare.

The town contains numerous streams and the Lamoille River that are susceptible to channel migration, bank instability, and erosion during periods of heavy rainfall, rapid snowmelt, and flooding. Given projections for more frequent and intense storm events in the Northeast, Fairfax is likely to continue experiencing recurring fluvial erosion that threatens transportation infrastructure, agricultural land, utilities, and development located near stream corridors.

Extent: There have been 14 flood events in Fairfax between 1996 and 2025. Flooding typically occurs during summer when a large thunderstorm or a series of rainstorms result in high volumes of rain over a short period of time. Higher-elevation drainage areas and streams are particularly susceptible to flash floods. Flash floods are likely in Fairfax, and potential damage to Routes 104 and 104A could limit access to town, as they are major transportation corridors to the community.

Figure 9: Lamoille River Gauge, Jeffersonville

Flood Categories (in feet)
Action Stage: 447

Historic Crests
(1) 456.12 ft on 07-11-2023
(2) 454.50 ft on 11-01-2019
(3) 454.21 ft on 04-27-2011
(4) 453.76 ft on 08-29-2011
(5) 453.65 ft on 12-19-2023

Recent Crests
(1) 453.40 ft on 07/11/2024
(2) 449.16 ft on 03/07/2024
(3) 453.65 ft on 12/19/2023
(4) 456.12 ft on 07/11/2023
(5) 454.50 ft on 11/01/2019

There are two stream gauges on the Lamoille River east and west of town. The closest gauge is upstream in Jeffersonville (NWSLI: JVLV1) which is a relatively new gauge with limited historical data. The highest recorded measurement was 456.12 feet, which on July 11, 2023. Another gauge (NWSLI: GEOVI) located downriver west of town in East Georgia. The highest recorded measurement was 21.64 feet on March 6, 1979. The average height for the river in this reach is approximately 6.51 feet.

Spring flooding is routine but not always documented. There have been several Presidentially Declared Disasters in recent years for Franklin County which have included severe thunderstorms and associated flooding. The extent of damages have included flooded residential basements and driveway washouts along the SFHAs. Goose Pond Road, River Road and Lamoille Street are typically closed due to river flooding. Some of the worst damages occurred during the Halloween Storm in 2019 that destroyed Stones Brook Road bridge and caused the Fletcher Road to slump above Mill Brook plus other minor road washouts. The majority of damages were repaired in less than a week.

Figure 10: *Flooding at Confluence of Stones Brook and Lamoille River, December 2023. (Courtesy: SLR)*

Fluvial erosion in Fairfax is characterized by targeted damage to transportation infrastructure and river-adjacent properties, with long-term implications for land stability and on-going municipal maintenance costs. Stream bank failure can undercut roads, culverts and bridges, leading to washouts or costly emergency repairs especially where roads closely follow the Lamoille River, Mill Brook and Stones Brook. Erosion can remove portions of yards and agricultural land and threaten or undermine building foundations located near waterways. There are no known buried utilities that would become exposed or damaged as banks erode, however, private septic systems along stream and river corridors may become exposed or damaged. Downstream areas are typically impacted by sediment deposition which can plug culvert and ditches.

Impact: The Committee classified the impact of flooding and fluvial erosion as *negligible* to *major.* Flooding and fluvial erosion primarily impacts transportation infrastructure, residential basements and driveways. The southern portion of Fairfax, including the Village area, receives more impacts from flooding and fluvial erosion along Mill Brook, Stones Brook and the Lamoille River according to plan participants. On rare occasions, River Road, Goose Pond Road, Maple Street, and Hunt Street have been temporarily closed due to flooding and residents experience some flooding in their basements. When closures occur, they are brief from a few hours to a few days depending on the flood event. Much of the damage from flooding in Fairfax is due to fluvial erosion rather than inundation flooding, which is the type of flooding targeted through the NFIP.

A GIS based overlay analysis was conducted using FIRM data with the Vermont E-911 site data of structure locations. The results found that there are twenty –nine (29) sites within the 100- or 500-year flood plain in Fairfax. Twenty-two (22) are single family dwellings, one (1) is a multi-family dwelling, three (3) are mobile homes, one (1) is a commercial unit, one (1) is classified as industrial and one (1) is a substation

operated by Green Mountain Power. This represents less than 2% of structures within the community. The commercial site is Steeple Market which is a small grocery, deli and gas station located within the village. The industrial site is the Green Mountain Power hydroelectric plant located at Fairfax Falls on the Lamoille River in East Fairfax.

Town Vulnerability

- **People:** Residents in low-lying areas near the Lamoille River along Goose Pond Road, River Road, Hunt Street and Lamoille Street and tributary streams are vulnerable to property damage, displacement, transportation disruptions, and potential safety risks during major flood events. Residents could be isolated during a severe flood event. Properties located along these areas vulnerable to stream bank failure from fluvial erosion. Older residents and people with disabilities and functional access needs, such as lack of transportation options, may have difficulty evacuating. These events can cause injuries or fatalities to people who do not evacuate in time. Delayed evacuation can be caused by flash flood events, or by individuals who are hesitant to leave their houses. The elderly and residents with other special needs may potentially be impacted more than other residents due to mobility issue. This can cause added strain to volunteer first response agencies within the town.
  Built Environment: Refer to Appendix C for list of specific details on vulnerable areas to flooding and fluvial erosion. Flood events can cause damage to town and private property, including roads (i.e., Routes 104, 104A. and 128), culverts, driveways, bridges, wells, water and wastewater facilities, private septic systems, and buildings. These impacts could cause disruption of the transportation systems to and from the community and county.

  Roads, bridges, culverts, utilities, and buildings located within river corridors are susceptible to undermining, washouts, and structural damage caused by channel migration and streambank erosion. Town roads subject to fluvial erosion events along the road shoulder or near culvert inlets during periods of high precipitation and rapid run-off within proximity of the Lamoille River and its tributaries include Goose Pond Road, River Road; Swamp Road and Shepardson Hollow Road along Stones Brook; Wilkins Road along Wilkins Brook; Fletcher Road, Boissoneault Road and Woodward Road along Mill Brook. Hunt Street, Goose Pond and River Roads along the Lamoille River are areas that are greatly impacted by fluvial erosion.

  There are river embankments along the road that are susceptible to erosion whenever the river rises and residential structures located along these areas are vulnerable to damages from stream bank erosion and related failure. The road shoulder in several areas along River Road and Goose Pond Road show evidence of erosion during high water. Structures could be damaged and the town would need to temporarily close the road which would cut off access to at least twenty homes.
  Natural Environment: Flooding and fluvial erosion can destabilize streambanks, increase sediment transport, degrade aquatic habitats, and impact water quality in the Lamoille River watershed.
  Economy: Flooding and fluvial erosion can impose significant costs on the Town of Fairfax through costly infrastructure repairs, property and agricultural land losses, emergency streambank stabilization and recovery measures, long-term maintenance expenses, and business interruptions. Road washouts may make it difficult for residents to commute to and from work and could disrupt fuel deliveries and the movement of goods and services into and out of the community, reducing economic activity during recovery periods.

Potential Future Impacts

Climate Change: Climate change is expected to increase the frequency and intensity of heavy precipitation, producing more frequent high-flow events that can increase flooding, stream velocities, bank erosion, and channel migration. The 2019 Halloween storm caused more than $6 million in infrastructure damage after producing 3–5 inches of rain in a single day in northwestern Vermont, demonstrating the potential impacts of intense storms. More frequent severe storms and saturated soils may damage roads, wastewater and stormwater infrastructure, while residences, farms, and other properties near rivers and streams may experience flooding or land loss for the first time. Agricultural businesses may also be affected by saturated soils and loss of productive farmland. Increased erosion can contribute sediment and nutrients to waterways, degrading water quality and disrupting riparian ecosystems. Overall, the Town can expect increased infrastructure damage, costly repairs, property relocations, and potentially more property buyouts.

Changes in Land Use / Development: By establishing the Flood Hazard District within Fairfax's Subdivision and Zoning Bylaws, the Town qualified for FEMA's National Flood Insurance Program (NFIP), allowing property owners in high-risk zones to purchase flood insurance while promoting community safety and minimizing public and private losses. Additionally, river corridor regulations expand flood plain protections by accounting for changes in stream and river channels. Fairfax remains committed to enforcing these regulations to maintain NFIP eligibility and protect residents, property, and infrastructure. This strict oversight limits development in vulnerable areas, offsetting the risks of road and driveway expansions which may alter drainage patterns, increase runoff, and constrain natural channel movement.

Changes in Demographics: Fairfax has experienced steady population growth and remains attractive to families because of its location near the Chittenden County employment market. Repeated flood events and increasing flood-related costs could discourage development in high-risk areas, shift growth toward higher ground, and place financial burdens on homeowners, renters, and businesses. Like much of Vermont, Fairfax is likely to see an aging population over time. Older residents can be disproportionately affected by flooding because evacuation, recovery, and home repairs may be more difficult. Repeated flood events could encourage some seniors to move closer to services outside of town into less vulnerable communities. Older adults, lower-income households, and residents with limited resources may face greater challenges recovering from flood damages.

History: See Appendix G.

Severe Winter Storms (Ice Storm) – *Moderate Risk*

Description: Severe winter storms with snow, ice and freezing temperatures in various combinations are fairly common in Fairfax. Such storms are accompanied by strong winds creating blizzard conditions with blinding wind-driven snow, severe drifting, and dangerous wind chill. Strong winds with these intense storms and cold fronts can knock down trees, utility poles, and power lines. Winter storms can cause roofs to collapse and limit access to areas and buildings around Town. Extreme cold often accompanies a severe winter storm or is left in its' wake. Prolonged exposure to the cold can cause frostbite or hypothermia and become life-threatening.

A **Nor'easter** is a large coastal storm that forms along the Atlantic coast and produces strong northeasterly winds, heavy precipitation, and prolonged impacts such as snow accumulation, ice storms, high winds,

and flooding. In Vermont, Nor'easters are a major source of winter weather hazards and can affect entire communities through power outages, hazardous travel conditions, and damage to infrastructure.

The National Weather service defines a **blizzard** as "a storm which contains large amounts of snow or blowing snow, with winds in excess of 35 mph and visibilities of less than 1/4 mile for an extended period (at least 3 hours).

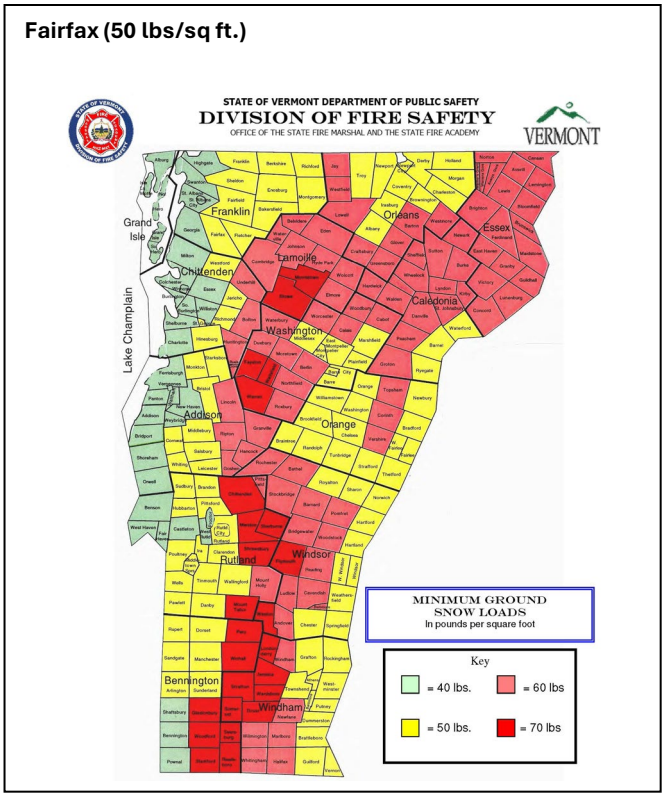
An **ice storm** is a winter weather hazard characterized by the accumulation of freezing rain that forms a layer of ice on surfaces.

Construction standards for snow load (see map) indicate that structures in Fairfax should be built to withstand loads of 50 pounds per square foot. This would indicate an average depth of snow of 40 inches or 10 inches of ice on a square foot of roof surface. At that point, design standards would be exceeded, and the structure runs the risk of collapse. Given this standard, a snowstorm which dumped 40 inches of snow or 10 inches of ice would likely result in a few collapsed roofs, especially on structures which are not built to these standards.

Location: A winter storm has the potential to affect all areas of Fairfax, making it a town-wide hazard rather than one confined to a specific location. Heavy snow, ice accumulation, freezing rain, strong winds, and extreme cold can impact residential neighborhoods, village areas, roads, agricultural lands, public facilities, and utilities throughout the community. Higher-elevation and more remote areas may experience greater snow accumulations and more difficult travel conditions especially in eastern areas of Town. Widespread power outages can occur from downed trees and utility lines. Because these storms affect the entire town simultaneously, all residents, businesses, and public assets in Fairfax are considered exposed to this hazard.

Figure 11: Minimum Snow Loads for Construction

Probability: The probability of severe winter storm (ice storm) is considered *highly likely* by the committee. Severe winter storms (ice storms) occur annually in Fairfax, typically in the form of a Nor'easter. Nor'easters are more common and occur most often in the winter and early spring, but also sometimes during the fall. Blizzards occur less frequently.



Extent: The extent of a severe winter storm (ice storm) typically includes the disruption of transportation networks, school closings and telecommunications and power outages. Travel is often hazardous with decreased visibilities and slippery roads. Heavy wet snows occurring during early fall and late spring and ice storms in the winter months are the cause of most power failures. Cold temperatures coupled with power outages place residents at risk especially those who don't have secondary heating sources independent of the electricity such as wood or pellet stoves. Vulnerable populations such as the elderly, those dependent on medical equipment and specialized health or physical care are at risk to severe winter storms (ice storms) . Also at risk are farms and associated structures and livestock. Barns can collapse due to heavy snow loads. Dairy cattle are susceptible to mastitis if they are unable to be milked.

Nor'easters can leave inches of rain or several feet of snow, and sometimes last for several days.

Blizzards can cause hazardous travel conditions, road closures, power outages, damage to infrastructure, and disruptions to emergency services, affecting entire communities Even less common but potentially more damaging are ice storms which can negatively affect the entire community by creating dangerous travel conditions, damaging trees and utility infrastructure, disrupting essential services, and causing prolonged power outages during cold weather.

Figure 12: Record Snow Falls, Burlington, Vermont (September-November)

September - November					
Highest			**Lowest**		
Rank	Snowfall	Year(s)	Rank	Snowfall	Year(s)
1	24.0"	1900	1	0	2009/1948/1937/1915
2	23.0"	1921	2	0.1"	2004
3	21.9"	1906	3	0.4"	2010/1953/1930
4	20.4"	2002	4	0.5"	2003/1946/1941/1934/1918
5	19.4"	1910	5	0.7"	1999/1960/1894
6	19.2"	1971	6	0.8"	1982
7	18.8"	1968	7	0.9"	1988/1929
8	16.1"	1997	8	1.0"	1931

9	16.0”	1977	9	1.3”	1964
10	15.6”	1969	10	1.4”	1939
Source: National Oceanic and Atmospheric Administration					

Figure 13: Record Snow Falls, Burlington, Vermont (Mar-May)

March - May					
Highest			**Lowest**		
Rank	Snowfall	Year(s)	Rank	Snowfall	Year(s)
1	52.7”	1933	1	0.1”	1945
2	47.8”	2001	2	1.0”	1903
3	45.7”	1971	3	2.0”	1910
4	37.7”	1974	4	2.7”	1927
5	36.4”	1916	5	3.1”	1934
6	36.1”	1997	6	3.2”	1991
7	34.4”	1994	7	3.9”	1946
8	33.9”	1983	8	4.0”	1905
9	31.0”	2007/1972	9	4.1”	1915
10	30.1”	2011	10	4.2”	1921
Source: National Oceanic and Atmospheric Administration					

The town can keep the roads open and treated for most storms and any loss of power is usually limited to hours, except during the Ice Storm of 1998 when most of the town was without power for three to four days.

Some of the worst historical winter storms in Fairfax have left snow depths of 14” (March 2001), wind speeds up to 40 mph (January 1998), and ice accumulations of 2-4” (January 1998 and December 2013).

Impact: The impact of severe winter storm (ice storm) is considered *negligible* to *major* by the committee based on history. Severe winter storms (ice storm) in Fairfax, typically cause power outages, light property damage, and travel disruptions. Heavy accumulations of ice and dense, wet snow weigh down trees and utility lines across leading to snapped limbs, downed power lines, and structural damage to homes, vehicles, and barns. Debris from fallen trees frequently blocks local roadways, creating hazardous travel conditions and hindering emergency response and utility restoration efforts. During major historic icing events, residents in Fairfax have experienced prolonged power loss lasting several days while utility crews worked on repairs.

Fairfax’ recent history has not recorded any loss of life due to severe winter storms (ice storms). The Town public works department is equipped to handle most winter emergencies, including maintaining road accessibility through various snow and debris removal equipment. The town has emergency backup power at the Town Office, Fire Station, Rescue Station and Highway Department. The utility companies now manage tree and vegetation removal along power line corridors greatly reducing the duration of power interruptions.

Town Vulnerability:

People: Severe winter weather and ice storms events can cause injuries or fatalities to people who cannot or do not shelter-in-place, or who do not have adequate shelter. Delayed sheltering-in-place can be caused by no-notice events, or by individuals who do not heed the warning. The elderly, the unhoused, residents with special needs and those without proper transportation may potentially be impacted more than other residents.

Built environment: Severe winter storms (ice storms) can cause damage to public and private property, including buildings (roof collapse), blocked egress routes, frozen pipes, downed powerlines, and road infrastructure (i.e., Routes 104, 104A and 128). Drifting snow can be problematic in some areas of town along Fletcher Road, Huntsville Road and Wind Top Road. Impacts from severe winter storms could cause disruption of the transportation system to and from the community and county.

Natural environment: Severe winter weather and ice storms events can cause damage to the environment with downed trees. Areas in town that may be more vulnerable are those areas where the utility company hasn't maintained utility corridor along Buck Hollow Road, Wilkins Road, Sam Webb Road and Shepardson Hollow Road.

Economy: Severe winter weather and ice storms events can cause economic impacts to town assets, residents and businesses. Impacts include disruption or closure of impacted businesses, town office and departments, and response and recovery costs, including employee overtime, time and equipment spent clearing roads, sanding roads, fuel costs and maintaining equipment. Commuters may be unable to get to and from work. Schools and businesses may be closed. Delivery of fuels and goods to and from town may be interrupted. Power could be disrupted causing disruptions in financial transactions for stores and restaurants.

Potential Future Impacts:

Climate Change: Winter in Vermont has been reported to be warming 2.5 times faster than the global average annual temperatures since 1960[4]. Typical winter weather conditions will be impacted including river ice reductio and shifting agricultural production times. Warmer winters will also mean that ground freezing will likely be impacted, and rain precipitation could saturate soils causing more flooding. Warmer winters will affect crucial Vermont industries like maple sugaring. Maple sugaring relies on a specific temperature range for sap to flow, typically occurring when nighttime temperatures drop below freezing (0°C / 32°F) and daytime temperatures rise above freezing. Warming winters will also impact the tourist industry for those traveling through town to Jay Peak Resort and for local business that receive winter snowmobile users on the Missisquoi Valley Rail Trail.

Changes in Land Use/Development: As Fairfax continues to grow there will be an increase in the number of people, structures, and critical facilities exposed to severe winter weather. New development may place additional demands on transportation networks, utility systems, and emergency services. Conversely, resilient development practices, redundant energy systems, scheduled equipment maintenance, capital planning and land-use planning can reduce Fairfax's vulnerability by improving access, minimizing power disruptions, and enhancing the community's ability to withstand and recover from winter storm impacts.

Changes in Demographics: As Fairfax's population continues to grow, there will be greater demands on road maintenance, emergency response, sheltering, utility restoration, and public safety services during snowstorms, ice storms, and blizzards. An aging population may increase the demand for emergency assistance, medical services, and accessible transportation during severe storms, while population growth can place additional pressure on infrastructure and

[4] Vermont Climate Assessment (2021), University of Vermont, Gund Institute for Environment.

emergency response resources. Increases in populations with disabilities and functional access needs, such as individuals with limited mobility, may also increase the challenges associated with preparedness, response, and recovery from winter storm events.

History: See Appendix G.

Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm) – *Moderate Risk*

Description: FEMA's National Risk Index defines severe winds as damaging winds that exceed 58 mph. Locally, wind caused damages have occurred with sustained winds greater than 30 mph with gusts greater than 40 mph. Strong winds pose a threat to lives, property, and vital utilities primarily because of flying debris or downed trees and power lines.

Strong wind can be the result of the following:

- **Wind Storm:** high wind event without precipitation.
- **Thunderstorm:** high wind event with the potential for compounding impacts due to precipitation (i.e. flood inundation, fluvial erosion, lightning, and/or hail.
- **Tornado**: a violent rotating column of air extending from a thunderstorm, not common in Vermont.
- **Hurricane/Tropical Storm:** the most significant impacts from hurricanes/tropical storms in Vermont are inundation flooding and fluvial erosion. Wind implications of hurricanes/tropical storms are addressed below.

Wind Storm: The National Weather Service (NWS) issues a Wind Advisory when winds are sustained at 31 to 39 mph for at least one hour or any gusts from 46 to 57 mph. The NWS will issue a High Wind Warning for wind speeds that are 58 mph or higher. Additionally, the NWS also has classifications for Tropical Storm Wind Warning and Hurricane.

Thunderstorm: Thunderstorms vary in size and type, each posing unique hazards. They can produce powerful downburst winds known as microbursts and macrobursts, which radiate outward from the base of a storm and can exceed 80 mph, with microbursts being particularly dangerous to aircraft due to their concentrated impact area. Ordinary cell thunderstorms consist of a single updraft and downdraft, bringing strong winds, rain, lightning, and hail. In contrast, multicell cluster thunderstorms contain multiple ordinary cells and are especially prone to flash flooding. Squall line thunderstorms form long, narrow bands—sometimes over 100 miles—with their strongest winds and rains concentrated at the leading edge. The most intense and destructive type is the supercell thunderstorm, which can last the longest and is responsible for nearly all tornado formation, along with producing lightning, hail, and flash flooding. (see: Hail and Flooding & Fluvial Erosion).

In Fairfax, high winds typically occur alongside severe thunderstorms, with straight-line winds often causing the majority of thunderstorm-related wind damage. These winds can be mistaken for tornadoes due to the comparable wind speeds and damage patterns, but unlike tornadoes, they do not involve rotating air. While thunderstorms and their associated hazards can happen at any time of year, they are most common during the spring and summer months.

Tornado: A tornado is a rapidly rotating column of air that extends from a thunderstorm to the ground, capable of causing extreme destruction. The most intense tornadoes can produce wind speeds exceeding 250 mph, leaving damaged paths that may span over a mile in width and stretch up to 50 miles in length.

Tornado intensity is measured using the Enhanced Fujita Scale, which rates wind speeds on a scale from EF0 to EF5.

Hurricane/Tropical Storm: A hurricane is a tropical cyclone with sustained winds that have reached speeds of 74 mph or higher. A storm reaches hurricane status only after strengthening over a period of days or even weeks. A tropical storm has a maximum sustained wind speed of 39 to 73 mph and typically forms over warm ocean waters. As a hurricane moves to coastal areas, wind speeds decrease, and the hurricane may be downgraded to a tropical storm. This is the case in many of the tropical storms that have reached Vermont. The Atlantic Ocean hurricane season occurs approximately from June 1 through November 30, with most of the hurricane activity occurring between mid-August through October.

Location: Strong wind (windstorm and thunderstorms) is common in Fairfax and can occur anytime during the year. The entire town can be affected as pressure gradients move through the area. Southerly and westerly winds tend to be stronger as they move through the Champlain Valley or across Lake Champlain. The town has experienced a variety of high wind events from storm systems that track from eastern New York and Ontario, and across Lake Champlain as well as Quebec from the north. There are no confirmed tornado events or hurricanes in Fairfax. The town is far inland from the Atlantic Ocean and is unlikely to receive a direct hit from a hurricane, however the remnants of tropical storms with accompanying thunderstorms, winds, rain and less often, hail as an accompanying hazard have occurred.

Probability: The probability of a strong wind event in Fairfax is considered *high likely* based on history. NOAA's National Climatic Data Center records indicate that Franklin County has experienced 141 high wind, strong wind or thunderstorm wind events over the past 58 years resulting in over $4,700,000 in cumulative property damage. Of those, 77 are classified as severe thunderstorms with wind speeds of 50 kts or greater. Participants estimate that strong wind events occur at least once per month, in the form of thunderstorms and windstorms typically between May and September and less common as Tropical Storms between mid August and October and as severe winter storms (Nor'Easter and blizzard) from November 1 through March 30th.

Those hail events that do occur tend to be highly localized and limited to a small area. Hail is profiled later in this section.

Tornadoes can occur under the right conditions but in Vermont they occur typically between March and August. In Fairfax, there was one unconfirmed tornado event in 1973 per the historical society records.

Tropical Storms and Hurricanes typically occur during the official Atlantic Hurricane Season from June 1 through November 30. Activity typically peaks between mid-August and late October,

Extent: NOAA storm event reporting defines wind categories as follows:

High Wind: Sustained non-convective winds of 40 mph (35 knots) or greater lasting for 1 hour or more, or wind gusts of 58 mph (50 knots) or greater. These winds are not directly associated with thunderstorms.

Strong Wind: Non-convective winds below High Wind criteria but still capable of causing damage or disruption. Typically includes sustained winds or gusts between 40 and 57 mph that result in impacts.

Thunderstorm Wind: Convective wind produced by a thunderstorm with measured or estimated gusts of 50 knots (58 mph) or greater, or winds causing damage consistent with those speeds. Thunderstorm Wind is one of NOAA's primary severe weather event categories.

The **Beaufort Wind Scale** is a standardized system used to estimate wind speed based on the observable effects of wind on land and water. It is commonly used in weather forecasting, marine navigation, and emergency management to communicate wind intensity.

Figure 14: Beaufort Wind Scale (Source: NOAA)

Force	Wind (Knots)	WMO Classification	On the Water	On Land
0	Less than 1	Calm	Sea surface smooth and mirror-like	Calm, Smoke rises vertically.
1	1-3	Light air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-6	Light breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	Gentle breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate breeze	Small waves 1-4 ft. becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh breeze	Moderate waves 4-8 ft taking longer form, may whitecaps, some spray	Small trees in leaf begin to sway
6	22-27	Strong breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	28-33	Near Gale	Sea heaps up, waves 13-19 ft, white foam streaks off breakers	Whole trees moving, resistance felt walking against wind
8	34-40	Gale	Moderately high (18-25 ft) waves of greater length, edges of crests beginning to break into spindrift, foam blown in streaks	Twigs breaking off trees, generally impedes progress
9	41-47	Strong Gale	High waves (23-32 ft), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs.
10	48-55	Storm	Very high waves (29-41 ft) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, “considerable structural damage”
11	56-63	Violent Storm	Exceptionally high (37-52 ft) waves, foam patches cover sea, visibility reduced	Widespread structural damage.
12	64+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	Widespread structural damage.

Strong wind events often accompany thunderstorms. Lightning strikes in Franklin County average between 4-6 strikes per square mile each year based on data collected by NASA ‘s Earth information System. Within Fairfax, the low estimate is 160 strikes per year, and the high estimate is 240 strikes per year. NOAA’s severe weather data inventory lists 156 strikes in Fairfax and the immediate area from 2019-2024.

The **Enhanced Fujita (EF) Scale** is used to rate the intensity of tornadoes based on the damage they cause to buildings, trees, and other structures. I

Figure 15: Enhanced Fujita Scale

Scale	Wind Speed		Types of Damages Due to Hurricane Winds
	mph	km/h	
EF0	65-85	105-137	*Minor or no damage.* Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported dam (i.e., those that remain in open fields) are always rated EF0.
EF1	86-110	138-177	*Moderate damage.* Roofs severely stripped; mobile homes overturned or badly damaged; loss exterior doors; windows and other glass broken.
EF2	111-135	178-217	*Considerable damage.* Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object mis generated; cars lifted off ground.
EF3	136-165	218-266	*Severe damage.* Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the gr and thrown; structures with weak foundations are badly damaged.
EF4	166-200	267-322	*Devastating damage.* Well-constructed and whole frame houses completely leveled; cars and o large objects thrown and small missiles generated.
EF5	>200	>322	*Extreme damage.* Strong-framed, well-built houses leveled off foundations are swept away; ste reinforced concrete structures are critically damaged; tall buildings collapse or have severe stru deformations; some cars, trucks, and train cars can be thrown approximately 1 mile (1.6 km).

(*Source NOAA)*

According to the State Hazard Mitigation Plan, Vermont has experienced 49 tornadoes, 14 of which were magnitude F2 (significant) and 19 magnitude F1 (moderate) on the Enhanced Fujita Scale. F2 tornadoes have maximum wind speeds of 111 to 135 mph, while F1 tornadoes range from 86 to 110 mph.

While tornados are a rare occurrence in the state, microbursts and straight line winds have occurred more often. According to NOAA, a microburst is a downdraft (sinking air) in a thunderstorm that is less than 2.5 miles in scale. Straight-line winds are powerful wind gusts produced by a thunderstorm's downdraft that move horizontally across the ground in a single direction without any rotational motion. They occur when rain-cooled, dense air sinks rapidly within a thunderstorm, hits the ground, and bursts outward.

Some microbursts and straight line winds can pose a threat to life and property. They are not widely recognized as tornadoes, but they can cause comparable, and in some cases, worse damage than some tornadoes produce. In fact, microburst wind speeds as high as 150 mph are possible in extreme microburst cases which is the equivalent of an EF3 tornado. Straight line winds can reach 100 mph causing damage equivalent to an EF0 or EF1 tornado.

Hailstorms usually occur in Vermont during the summer months and accompany thunderstorms and strong wind events. There have been 33 recorded hail events in Franklin County between 1998 and 2024. Hail is considered an infrequent occurrence and is profiled later in this section.

The **Saffir-Simpson Hurricane Wind Scale** is a 1 to 5 rating based only on a hurricane's maximum sustained wind speed. *This scale does not consider other potentially deadly hazards such as flooding, and tornados.*

Figure 16: Saffir-Simpson Hurricane Wind Scale

Tropical Depression: ≤ 38 mph, ≤ 33 knots, ≤ 62 km/h		**Tropical Storm: 39-73 mph, 34-63 knots, 63-118 km/h**
Category	**Sustained Winds**	**Types of Damage Due to Hurricane Winds**

1	74-95 mph 64-82 kt 119-153 km/h	**Very dangerous winds will produce some damage:** Well-constructed frame homes could have damage to roof, shingles, vinyl siding and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph 83-95 kt 154-177 km/h	**Extremely dangerous winds will cause extensive damage:** Well-constructed frame homes could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (Major	111-129 mph 96-112 kt 178-208 km/h	**Devastating damage will occur:** Well-built framed homes may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130-156 mph 113-136 kt 209-251 km/h	**Catastrophic damage will occur:** Well-built framed homes can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher 137 kt or higher 252 km/h or higher	**Catastrophic damage will occur:** A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Source: (NOAA)

Hurricanes have never occurred in Vermont due to the state's location far from the Atlantic coastline. In general, severe hurricanes are considered highly unlikely, nor do they pose a recurring threat for Fairfax or the state in general. Fairfax has experienced five tropical storms and their remnant since 2004, with varying degrees of impact with the worst being in 2017 where multiple broken poles and downed lines that caused power disruptions for several days.

Impact: The impact of strong winds in Fairfax is considered *negligible to moderate* by the committee depending on wind type, strength, duration and local conditions. The most common impacts from strong wind events include downed trees and limbs, power outages, roof and siding damage, blocked roads, and damage to agricultural buildings.

Most wind events experienced in the community are associated with severe thunderstorms, winter storms, or strong pressure-gradient wind events rather than hurricanes. While tornadoes, microbursts, straight line winds and the remnants of tropical storms are relatively rare, they have the potential to produce localized areas of severe or catastrophic damage.

Green Mountain Power utility lines and infrastructure are in process of being reinforced due to damaging winds and are vulnerable to toppling trees. A right-of-way vegetation management plan is in place for the utility corridors to help mitigate damages. Strong wind events with associated power outages can have a short-term impact on the local economy due to business closures.

Commercial and residential structures, seasonal homes, public buildings (Town Office, Public Safety Building, Public Works, Historic Society, BFA Fairfax Schools), barns, livestock, churches, and utilities could all be damaged by strong wind events. The committee determined that utility lines are the most at risk from strong wind as trees and branch can fall on the utility corridor and disrupt power throughout town.

.A "cyclone" touched down in Fairfax on August 7, 1907 damaging several barns and destroying cattle.

On June 11, 1973, the locally known *Fairfax Tornado* event occurred. High winds caused widespread damage throughout the Town. Barns were swept away or damaged beyond repair including a 353-foot poultry farm. Roofs were torn off homes and downed trees littered the roadside.

There is power surge equipment installed for electronic equipment at the Fairfax Fire Station, Public Works, Town Office, School/library buildings. The Public Works Department is equipped with associated debris removal equipment. Emergency generators are located at the Fire Station, Public Works Building, Town Office and School which serves as the community's primary shelter.

Figure 17: "Cyclone" event in Fairfax, August 7, 1907.

Cyclones are not frequent in Vermont, but they occasionally strike as they did in Fairfax on August 7, 1907. This pile of rubble was all that was left of the Ryan's large barn after the cyclone departed. Forty-five cattle died when the barn collapsed.

Courtesy of Mike & Margie Cain

Town Vulnerability:

People: Strong Wind events can cause injuries or fatalities to people who do not shelter-in-place in time, or who do not have adequate shelter. Delayed sheltering-in-place can be caused by no-notice events, or by individuals who do not heed the warning. The elderly, the homeless, residents with special needs and those without proper transportation may potentially be impacted more than others.

Communication systems are vulnerable, as the loss of phone service poses challenges for residents—particularly vulnerable populations. With landline networks now relying on fiber lines that share poles with electrical service, phone access depends on short-lived battery backups during outages. Cell service is commonly used but often unreliable in certain areas, complicating efforts to reach emergency services.

Built environment: Strong wind events can cause widespread power outages that disrupt businesses and threaten public safety. Damages from lightning could come in the form of destroyed electrical appliances, transformers, capacitors, structure fires, or tree strikes that could cause wildland fires. Private properties in Fairfax have experienced lightning strikes. High elevations in foothills of the Green Mountain Range and areas around bodies of water such as rivers and ponds are more susceptible. Mobile homes can be vulnerable due to their light weight and unanchored foundations. Older mobile homes, built before 1994, may be especially susceptible to more severe winds according to data from the Urban Institute. There are 90 mobile

homes dispersed widely throughout Town with no density in any particular area. There are no mobile home parks in town.

Natural environment: Wind events can cause damage to the environment with downed trees, and uprooted trees and plants. Corn and other crops could be damaged or destroyed by wind events.

Economy: Strong wind event can cause disruption or closure of public offices, businesses, recovery costs, including employee overtime, and time and equipment spent on repairs. Commuters may be unable to get to and from work. The school may be closed, impacting families whose parent, parents or legal guardians work during school hours. Delivery of fuels and goods to and from town may be interrupted. Power could be disrupted causing disruptions in financial transactions for stores and restaurants. Agriculture based businesses could have crops destroyed by high winds.

Figure 18: Windstorm in Village Aug. 2007 (Courtesy Henry Raymond)

Potential Future Impacts:

Climate Change: According to NOAA, future impacts of wind events are varied. Warming temperature are predicted to increase the severity of wind speeds. Strong winds can damage roofs, windows, and siding, and can cause structural damage to roofs at 55–63 mph. Homes with siding are particularly vulnerable to wind damage, and stucco can also be damaged by water. For mobile homes winds can cause serious damage to anchored mobile homes at speeds over 80 mph and can destroy poorly constructed or unsecured mobile homes at speeds of 60 – 73mph. Older barns can be toppled.

Changes in Land Use/Development: As residential, commercial, and industrial development expands, more structures may be vulnerable to roof damage, fallen trees, power outages, and debris-related hazards during wind events. Development in previously undeveloped areas may also increase the need for utility and transportation infrastructure that can be affected by high winds. However, proper vegetation management can help reduce future wind-related damages.

Changes in Demographics: Population growth may result in more homes, businesses, and municipal facilities that could be affected by downed trees, power outages, and structural damage. An aging population, individuals with disabilities and functional access needs may face greater challenges during prolonged power outages or recovery efforts. As Fairfax's population grows and changes, demand for emergency response, sheltering, utility restoration, and public assistance following high wind events may also increase.

History: See Appendix G.

Extreme Heat and Drought – *Moderate Risk*

Description: Extreme heat refers to prolonged periods of excessively hot weather, often accompanied by high humidity, which can pose serious health, safety, and infrastructure risks. In Fairfax, extreme heat typically occurs during the summer months when daytime temperatures rise well above average—often exceeding 90°F (32°C)—and nighttime temperatures remain elevated, preventing cooling. These events can strain power systems, damage crops, worsen air quality, and increase the risk of heat-related illnesses, particularly among vulnerable populations such as the elderly, children, and individuals with preexisting health conditions.

Drought is a prolonged period of abnormally dry weather characterized by a deficiency in precipitation, resulting in water scarcity and environmental stress. Droughts can have significant impacts on agriculture, water resources, ecosystems, and socio-economic systems. Droughts manifest gradually and can vary in duration, intensity, and spatial extent. They may be triggered by natural climate variability, such as atmospheric circulation patterns, or exacerbated by human activities, such as land use changes and water management practices.

Location: All areas of Fairfax are susceptible to drought and extreme heat events.

Probability: The probability of drought and extreme heat events in Fairfax is considered *likely* by the committee. While historically rare in northern Vermont, climate change is contributing to more frequent and intense heat waves in the region. The number of days with temperatures exceeding 90°F (32°C) is projected to rise over the coming decades. These events are becoming more common during the summer months, particularly in July and August, and may also begin occurring earlier and later in the season.

Extent: The severity of these events can vary based on humidity levels, wind conditions, and the persistence of high-pressure systems. During more intense heat waves, the heat index—a measure that combines temperature and humidity—can reach dangerous levels, significantly increasing health risks and stressing energy and public health systems. Heat advisories, watches, and warnings are issued by the National Weather Service and local authorities to alert residents to the risks of impending heatwaves. Fairfax may experience a heat advisory, watch of warning, or heat advisory. Places with limited tree cover and ventilation may experience more intense local effects, known as the urban heat island effect, though this is less pronounced in rural communities like Fairfax.

Figure 19: Top 10 Daily Max Temps (1947-2025)

Rank	Temperature	Date(s)
1	111.4	8/26/1948
2	110.4	7/2/2002
3	108.6	6/23/2025, 7/27/1949
4	107.4	6/19/1995
5	107.3	8/1/2006
6	106.9	7/21/1994, 8/25/1948
7	106.5	7/20/1977
8	106.0	8/1/1975, 7/29/1947
9	105.8	8/1/2006
10	105.7	7/28/1949

Source: NOAA

Droughts can affect large geographic regions, including urban and rural areas, agricultural lands, forests, and waterways. Drought severity is often categorized based on indicators such as precipitation deficits, soil moisture levels, streamflow, and water storage reservoir levels. Severe droughts can lead to significant water shortages, ecological disturbances, and socio-economic impacts. Severe droughts can result in reduced water availability for drinking, irrigation, and industrial uses, leading to economic losses, environmental degradation, and social disruption.

Impact: The impacts of extreme heat and drought in Fairfax were determined by the committee to be *minor to moderate*.

The Vermont Department of Health's Heat Vulnerability Index (HVI) references Fairfax Town. The Town's HVI is average (-0.5 to 0.5) compared to the rest of the state with an average of 5 days per year with maximum temperatures of at least 87°F.

Extreme heat events typically last several days up to a week, with daytime temperatures exceeding 90°F and limited overnight cooling. Prolonged high temperatures can lead to heat-related illnesses such as heat exhaustion and heat stroke, especially among at-risk populations. Healthcare services may see increased demand, and public safety services may be strained. Extreme heat can also cause infrastructure stress, including power outages due to high energy demand for cooling systems.

Figure 20: Palmer Drought Severity Index

Palmer Drought Severity Index	
≥4	Extremely Wet
3.-3.99	Very Wet
2-2.99	Moderately Wet
1-1.99	Slightly Wet
.5-.99	Incipient Wet Spell
.49 -.49	Near Normal
-.5-.99	Incipient Dry Spell
-1 -1.99	Mild Drought
-2 -2.99	Moderate Drought
-3 -3.99	Severe Drought
≤-4	Extreme Drought

Agricultural impacts may include crop damage, heat stress in livestock and reduced productivity. Additionally, local events and outdoor activities may be canceled or scaled back, and economic losses may occur in sectors like farming, recreation, and tourism.

Town Vulnerability:

People: Heat events can cause injuries or fatalities to people who do not heed heat advisories. People with disabilities or functional access needs may be more susceptible to heat related illnesses or injuries such as heat stroke. Droughts can cause issues to private and public water supply system, which can lead to compromised drinking water which could result in health issues.

Built Environment: Heat events can cause a strain on the town's electrical system, leading to brown or blackout events. Extreme heat can also cause thermal expansion of concrete and steel and swelling on connection bridges. Droughts are not likely to cause any impacts to the built environment; however, dried wells may cause the need to dig a new well or replace well parts which is costly.

Natural Environment: Heat events can increase the occurrences of droughts and wildfires. Droughts can cause minor to catastrophic issues for the natural environment. Local wild plants and crops may be lost during a prolonged drought event. Additionally, a drought can lead to streams and groundwater being depleted, which impacts wild and domesticated animals.

Economy: Heat events can cause economic impacts to the town. Impacts include disruption or closure of impacted businesses and the costs to operate a cooling shelter. Droughts can impact the tourism industry, with depleted streams or areas for water activity. Additionally, droughts may impact the autumn foliage tourist economy.

Potential Future Impacts:

Climate Change: Climate change has the potential to increase extreme heat occurrences, therefore there is an increased likelihood of future drought events, both in frequency and magnitude. Refer to the State Hazard Mitigation Plan (pp 107-109) for discussion on impacts to the economy and the environment.

Changes in Land Use/Development: No significant large-scale developments are planned in Town. New housing development will increase the demand for water resources and place greater

stress on water supplies, especially during prolonged dry periods. Creation of impervious surfaces such as paved parking lots, new paved roads and paved driveways could contribute to a heat island effect, however, there are no significant developments being proposed in town at this time. **Changes in Demographics:** Fairfax's population is expected to continue to grow in the next five years. Residents outside the village area rely on private wells and smaller community water systems, which face heightened risks of running dry as rising demand intersects with prolonged drought. Population growth will drive gradual residential development in rural parts of town, expanding impervious surfaces like rooftops and paved driveways that diminish the natural groundwater recharge within the Lamoille River basin. As summers warm, a larger population will spike localized electricity demand for air conditioning, straining power grids and disproportionately threatening vulnerable populations such as the elderly and others who lack adequate cooling infrastructure.

History: According to the State Hazard Mitigation Plan, the following extreme heat events have occurred:

August 1-2, 2006: A heat ridge moved into Vermont during the early morning of August 1. Temperatures soared 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 which were some of the highest values in nearly a decade.

July 21, 2011: Temperatures across most of southern Vermont warmed into the 90s with dew points in the 70s, combined with the hot temperatures and resulted in heat indices of 100°F to 104°F. This was the 2nd day of a 3 to 4-day heat wave across a large portion of Vermont with heat index values of 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.

March 17, 2012: During the winter of 2011-12, temperatures averaged 4-5°F above normal and snowfall was 40-60% of normal. This combination accounted for snowpack across the region to be below normal or even non-existent by mid-March. Temperatures climbed into the low-80s on March 19-22. Record heat was recorded across all the state with maximum temperatures 30-40°F above normal and some daily records were broken by 10°F or more. This event caused an estimated reduction of 30% of maple sugar production, causing $10 million reduction in the maple economy. In addition, there was a significant loss of ski industry revenue due to a 25-50% reduction in snow loading.

July 1, 2018: High temperatures affected zones in all 14 of Vermont's counties through Independence Day. Temperatures reached the mid-90s, and heat indices were recorded within the range of 95 -110 degrees. The heat wave continued for 6 consecutive days, and Burlington, VT saw the warmest 5 day stretch since 1892. It is important to note that the all-time minimum temperature also broke a previous record of 78 degrees, on July 2nd, 2018, at 80 degrees. Four deaths were attributed to this event, one recorded in Washington County and three in Chittenden County, all related to excessive indoor residential temperatures. Nearly 100 heat-related emergency department visits occurred state-wide during this heat wave, and more than 10 percent of Emergency Medical Service calls on July 1st were heat related.

June 18, 2020: Areas of Vermont and New York experienced the 2nd longest heatwave duration with temperatures in the 90s for six days straight in northwestern Vermont. Burlington recorded the highest temperature in its history on June 22nd and 23rd with a reading of 96 degrees. Zones in 8 of Vermont's counties recorded high temperatures during this period. One death in Orleans County was associated with this heat wave.

July 7 - 10, 2020: Excessive heat in the Champlain Valley on what has already been a very warm early summer. High temperatures surpassed the upper 80s from July 7-10th with a daily high of 95 degrees on July 9th and 10th. These temperatures combined with high dewpoints in the upper 60s to lower 70s created heat index values in the mid 90s to around 100 degrees on July 9th and 10th. High temperatures in the upper 80s to lower 90s with dew points in the 60s to lower 70s created heat index values in the mid-90s to around 100 degrees.

June 17-19, 2024: Areas of Vermont and other states in New England experienced a heatwave with temperatures in the 90s for three days.

June 23 – 24, 2025: A short period of extreme heat developed across Vermont and northern New York as an upper level high built across the eastern half of the United States. Dry air aloft suppressed thunderstorm activity, especially on June 23rd, which provided an opportunity for very efficient heating while high dewpoints produced heat indices over 110 °F.

According to the State Hazard Mitigation Plan, "The droughts in the mid-1960s were the most severe in Vermont. Every county in the state experienced Exceptional Drought (D4) conditions in May of 1965. Since the 1960s Vermont has experienced several less severe periods of drought. There were two declared statewide droughts in June and July 1995. The drought persisted through the summer of 1995, and a third, more severe drought affected Southern Vermont in August of that year. In 2001-2002, Vermont was affected by a Severe Drought (D2), which peaked at over 14% of the State at the D2 level between November and December of 2001 and nearly 100% of the State in at least Moderate Drought (D1). Portions of Vermont were in Severe Drought (D2) from October 2016 through April 2017, peaking at 29.15% of Vermont in October and November 2016 and 80% of the State was in at least Moderate Drought (D1). Moderate Drought conditions returned in October of 2017 and again in June 2018. From September to November of 2018 the State experienced another Severe Drought. Then from June 2020 to October 2021 much of the State was under Moderate Drought to Abnormally Dry conditions. From September to October of 2020, 29.4% of the State was under Severe Drought conditions."

Summer of 2025: The state experienced moderate to severe drought impacts. Northwestern Vermont was in Moderate Drought (D1) conditions. The Vermont Drought Task Force was activated to monitor conditions statewide, and the Agency of Natural Resources created on-line reporting tools and resources for the public.

Structure Fire – *Highly Likely*

Description: A structure fire is any fire that occurs within or involves a building or other constructed property, including residential, commercial, agricultural, or public structures. These incidents typically involve burning of the building's structural components or contents and may pose significant risks to life safety, property, and the environment. Structure fires in Fairfax are responded to by the local volunteer fire department and mutual aid partners, with efforts focused on fire suppression, rescue operations, and prevention of fire spread to adjacent structures or wildland areas.

Location: Structure fires can occur anywhere. There are wood frame buildings susceptible to structure fire scattered throughout the Town of Fairfax. The highest concentration of public buildings is in the traditional village center. This area contains single family residential, multifamily residential and commercial and would pose the highest risk of damage to the public and private sector. Most of these

buildings were built before modern fire-resistant construction materials and methods were developed. Many new multifamily units (Old Academy Road, School Street and Hunt Street) have been built to state fire code standards. The risk of general property damage due to structure fire is highest at agricultural businesses with farm buildings often built close by each other and susceptible to fire passing from one structure to another.

Probability: The probability of a structure fire occurring in Fairfax is considered *highly likely* by the committee, as residential heating systems, wood stoves, and chimneys are common sources of ignition. The risk increases during the winter months when heating equipment is in frequent use, especially electrical space heaters, kerosene heaters and wood stoves. Additional causes may include electrical malfunctions, cooking accidents, and lightning strikes.

Extent: The extent of a structure fire can range from minor smoke or localized damage to the total loss of a building, depending on detection time, proximity to fire department, hydrants and other available water supplies. In remote areas with longer response times or limited access, fires are more likely to result in extensive structural damage or complete destruction.

Impact: Impacts of structure fires may include loss of homes, barns, or businesses; displacement of residents; injury or loss of life; and economic hardship for property owners. Secondary impacts can include damage to neighboring properties, release of hazardous materials, and strain on local emergency response resources. In rural areas without nearby hydrants, water supply limitations can further challenge firefighting efforts and increase the potential for fire spread.
The Fairfax Fire Department responds to approximately 150 calls per year, ranging from auto crashes, carbon monoxide alarms, hazardous materials, hazardous conditions, automatic fire alarms, public event standbys, and fires of all types. Approximately 20 calls per year are specifically for structure fires. The typical annual property loss from buildings (not counting contents) may have averaged around $450,000/year in earlier years, though this likely changed with inflation, changing building values, and number/severity of fires. The Fire Department also aids other Towns through a Mutual Aid Agreement.

The Town of Fairfax has an ISO rating of 6 within 1,000 feet of a municipal fire hydrant, and a rating of 9 for all other areas outside the municipal system. Water supply for fire protection is provided by hydrants within the municipal water system and a combination of dry hydrants, ponds, and rivers throughout the rest of Town. There are 30 fire hydrants in Fairfax, which are for immediate response to fires and not for extended use due to capacity limitations. The Fire Department has a map of other water sources available in the case of a fire, including two fire ponds.

Many of the structure fire calls are typically for chimney fires for residences who use woodstoves as primary heat source during the heating season (late fall through early spring). Most chimney fires are extinguished before significant damages occur. Also, fires from kitchen stoves and ovens, portable electric heating sources and electrical fires are the more common sources of structure fires. The Fire Department actively upgrades its equipment through federal grant programs.

Town Vulnerability:

People: Structure fires pose risks of injury, death, displacement, and emotional trauma to residents, occupants, and emergency responders.

Built Environment: Homes, businesses, public buildings, utilities, and critical infrastructure can sustain severe damage or complete loss from structure fires. In rural areas without nearby hydrants, water supply limitations can further challenge firefighting efforts and increase the

potential for fire spread. The risk of multi-structure fires is higher in the village where structures are closer together. Older buildings without modern fire alarms/sprinklers are especially vulnerable.

Natural Environment: Structure fires can release smoke, hazardous materials, and contaminated runoff that affect local air quality, soils, and nearby water resources.

Economy: Structure fires can result in property losses, business interruptions, emergency response costs, increased insurance expenses, and reduced local economic activity during recovery.

Potential Future Impacts:

Climate Change: Climate change is likely to increase the risk and severity of structure fires in Fairfax. Rising temperatures and more frequent heat waves can stress electrical and mechanical systems, while prolonged droughts and low humidity make surrounding vegetation more flammable, increasing the risk of wildfire spreading to buildings. Severe storms, high winds, and ice events may damage structures and power lines, potentially igniting fires, while increased energy demand during extreme weather can overload circuits. Warmer, drier conditions may also extend the fire season and shifts in development patterns could place more structures in vulnerable locations, overall heightening the probability, potential extent, and complexity of fire incidents.

Changes in Land Use/Development: There are no planned large developments for Fairfax in the immediate future. Expansion of residential or commercial areas without sufficient fire protection infrastructure, such as hydrants, could strain local fire response and increase property losses. Development in or near forested areas may add fuel loads, raising the risk of fire spread. New construction previously undeveloped areas must follow updated Vermont Fire and Building Codes, including fire-resistant materials, sprinklers, and defensible space, to reduce vulnerability. Ensuring that land use planning aligns with these safety standards will be essential for protecting lives and limiting property damage.

Changes in Demographics: As Fairfax's population grows, the potential impacts of structure fires may increase due to a greater number of homes, businesses, and occupants exposed to fire hazards. Additional development can increase demand for fire protection services, emergency response resources, and water supply infrastructure needed for firefighting. Population growth may also increase the potential for property damage costs, displacement of residents, and economic losses resulting from structure fires. At the same time, recruiting and retaining volunteer firefighters to meet the population growth may be challenging, potentially affecting response capacity and placing additional demands on existing personnel and mutual aid resources.

History: An interview with fire department members found that Fairfax has 20 structure fire calls on average per year. The fires have been primarily residential structure fires. Not all fire calls are complete structural losses. Significant historic structure fires that have occurred include:

August 26, 1898: A fire in the village area destroyed two stores and three houses. It was estimated that the loss was $15,000. There were no reports of injuries or deaths.

January 17, 1941: Bellows Free Academy of Fairfax was destroyed by an evening fire. There were no reports of injuries or deaths. The cause of the fire may have been a concentration of coal gas in the ventilating system. The building was originally built in 1902 at a cost of $50,000.

December 24, 2008: A fire destroyed Steeple Market in the village driven by a stiff wind. The building dated from the 19th century. The steeple for which the market was named collapsed as the rest of the building became an inferno. Fortunately, no one was injured. Fairfax firefighters, with help at the scene from the neighboring communities of Saint Albans Town and City, Georgia, Milton and Cambridge, prevented the fire from spreading to nearby residential structures.

Extreme Cold – *Moderate Risk*

Description: In Fairfax, the summers are comfortable, wet, and partly cloudy and the winters are freezing, snowy, and mostly cloudy. Over the course of the year, the temperature typically varies from 7°F to 76°F and is rarely below -11°F or above 83°F.

Extreme cold events commonly occur during the winter months and may be intensified by wind chill, which increases the rate of heat loss from the human body and can lead to frostbite or hypothermia within minutes.

Figure 21: Average Monthly Temperatures for Fairfax, VT

Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	26° F	28°F	38°F	51°F	65°F	73°F	79°F	77°F	70°F	57°F	43°F	32°F
Low	13° F	14°F	23°F	34°F	46°F	55°F	61°F	60°F	53°F	43°F	31°F	22°F

Location: All areas of Fairfax are susceptible to extreme cold events.

Probability: The committee determined the probability of a extreme cold events to be *highly likely* but duration varies from less than 12 hours to several days. Fairfax sits in a northern location and inland setting making it prone to Arctic air masses, which regularly bring extreme cold. According to NOAA, extreme cold temperatures are a recurring winter hazard in northern Vermont. The region typically experiences multiple periods of subzero temperatures each winter.

Extent: The National Weather Service typically defines extreme cold conditions through wind chill advisories and warnings. In the context of hazard mitigation, extreme cold is considered a recurring natural hazard with the potential for widespread impacts.[5]

- **Wind Chill Warning:** Dangerously cold wind chill values are expected or occurring.
- **Wind Chill Watch:** Dangerously cold wind chill values are possible.
- **Wind Chill Advisory:** Seasonably cold wind chill values but not extremely cold values are expected or occurring.
- **Hard Freeze Warning:** Temperatures are expected to drop below 28°F for an extended period of time, killing most types of commercial crops and residential plants.
- **Freeze Warning:** Temperatures are forecasted to go below 32°F for a long period of time, killing some types of commercial crops and residential plants.

[5] [5] https://www.weather.gov/safety/cold-wind-chill-warning

- **Freeze Watch:** Potential for significant, widespread freezing temperatures within the next 24-36 hours.

Figure 22: Wind Chill Temperature Index

Wind (mph)	Temperature (°F)																	
	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-58	-63
10	34	27	21	15	11	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-38	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-83	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-52	-60	-67	-74	-81	-88	-95
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98
Frostbite times	None		>2 hours				≤30 minutes		≤10 minutes		≤5 minutes							

The extent of extreme cold in can be severe, with temperatures often dropping well below freezing and sometimes reaching as low as -20°F to -30°F during winter months. This extreme cold, coupled with wind chills that can plunge even lower, poses significant risks to public health and infrastructure. Prolonged periods of subzero temperatures can lead to deep soil freezing, particularly during extended cold spells from late fall through early spring. Frozen soil can hinder agricultural activities by preventing the absorption of water and nutrients, which impacts crop growth and planting schedules.

Extended periods of extreme cold increases the risk of hypothermia, frostbite, and other cold-related illnesses, particularly among vulnerable populations such as older adults, young children, and those without adequate heating.

Cold weather can also cause water pipes to freeze and burst and fire hydrants to freeze impairing a response to structure fires. It can strain heating and electrical systems and increase the likelihood of power outages. Transportation routes may be disrupted by icy roads. There are also higher costs for heating, home and vehicle maintenance. These impacts can affect the entire community and become more severe when extreme cold occurs for an extended period or coincides with other winter weather events.

Impact: The impact of extreme cold in Fairfax was determined by the committee to be *minor to major*. Extreme cold temperatures are anticipated annually, and the town is proactive in addressing operational issues associated with cold spells such as ensuring fuel delivery for heating of municipal buildings, maintaining public works equipment for extreme cold operations, having emergency backup power at the fire station, rescue station, highway and town office. Having a shelter plan for day and overnight shelters. School closures have occurred from extreme cold to protect children from exposure while waiting at bus stops.

Prolonged periods of extreme cold can impact public health and safety, transportation infrastructure, public utilities, water infrastructure, heating systems, agriculture, and the local economy.

Town Vulnerability:

People: Extreme cold can cause hypothermia, frostbite, and other cold-related illnesses, particularly among people with disabilities and functional access needs such as older adults, young children, the unhoused and those without adequate heating.

Built Environment: Prolonged cold temperatures can damage buildings, freeze water and sewer lines, increase energy demand, and strain utility infrastructure. It also complicates construction and infrastructure projects, as frozen ground makes it difficult to dig or lay foundations, repair utilities, or manage drainage systems. Frozen soil can lead to frost heaves, where the expansion and contraction of frozen ground causes damage to road infrastructure, driveways, and foundations. It can lead to frozen water mains, and frozen water lines. Water and heating systems are vulnerable to freezing during subzero events, especially in older home s or uninsulated areas. The cold also puts a strain on the local energy grid due to the increased demand for heating.

Natural Environment: Extreme cold can stress wildlife, alter ecosystem processes, and affect the health and survival of sensitive plant and animal species.

Economy: Extreme cold can increase heating and maintenance costs, disrupt transportation and outdoor work, reduce productivity, and create financial burdens for households, businesses, and municipal services.

Potential Future Impacts:

Climate Change: Although extreme cold events may occur less frequently and with shorter duration, they are likely to become more unpredictable due to changes in the jet stream influenced by Arctic warming. As winters warm, more frequent freeze-thaw cycles are expected, with temperatures regularly rising above and falling below freezing. These cycles can significantly impact transportation infrastructure, causing potholes, frost heaves, and damage to roads, bridges, and building foundations. Additionally, extreme temperature fluctuations during winter months can create unstable river ice conditions causing ice jams and localized flooding. Warming temperatures and reduced extreme cold may increase pest survival and expand habitats for disease-carrying species like ticks, posing greater risks to agriculture, forests, and public health.

Change in Land Use/Development: As extreme cold events become less frequent, future land use and development may shift to accommodate longer growing seasons and reduced heating demands. However, sudden cold snaps could still pose risks to infrastructure, agriculture, and natural systems unaccustomed to variable winter conditions. Development plans may need to account for these fluctuations by incorporating resilient building designs and land management practices.

Changes in Demographics: Fairfax's population is expected to continue to grow over the next five years. Population growth can place additional demands on heating systems, electrical infrastructure, emergency services, and public shelters during prolonged cold periods. Increased development may also expand the amount of infrastructure vulnerable to frozen pipes, utility disruptions, and transportation challenges. Vulnerable populations, including older adults, young children, and lower-income households, may require additional assistance during extreme cold events. As a result, future population growth could increase both the number of people affected and the resources needed to prepare for, respond to, and recover from extreme cold conditions.

History:

January 27-29, 2022: An arctic air mass from Ontario brought Bitterly cold wind chills ranging from -20°F to -30 °F occurred late Wednesday night into midday Saturday. Actual temperatures dropped to -15°F to -25°F on the morning of the 27th and -5°F to -10°F below on the morning of the 29th.

January 20-22, 2022: An Arctic air mass settled over the region Thursday night and remained through Saturday. In Franklin County, wind chills dropped to a bitterly cold -20°F to 30°F overnight Thursday into Friday morning. Actual temperatures fell to -10°F to -20°F below zero early Friday morning, and -15°F to -30°F, by Saturday morning.

January 11-15, 2022: On the morning of the 11th (Tuesday), low temperatures ranged from 0 to -10°F, with wind chills between -15°F and -25°F. Daytime highs only reached the single digits above zero, with wind chills remaining below zero. That night, temps briefly dropped below zero before rising, but south winds of 10–20 mph still produced wind chills of -10°F to -20°F. Numerous school districts closed school and after school activities due to the cold and COVID related complications according to local media.

January 5-7, 2018: A surge of cold Arctic air brought an extended stretch of extreme cold. The most severe wind chills occurred on the mornings of January 6 and 7, when frigid temperatures combined with westerly wind gusts of 30 to 40 mph, producing widespread wind chills between -20°F and -40°F. In response to the dangerous cold, numerous warming shelters were opened throughout Vermont.

February 1–28, 2015: From late January to early March, a persistent deep cold trough dominated the Northeast, resulting in the coldest February on record for much of Vermont and nearby areas. Temperatures averaged 13–17°F below normal. Many locations stayed below freezing for 25–45 straight days. February saw 15–20+ days with temperatures below 0°F, and wind chills reaching -30°F or lower on several occasions. According to the National Weather Service, it was the coldest month since December 1989 or January 1994. Several communities set record cold temperatures.

December 8, 2008: An Arctic front swept across northern NY and New England, bringing the season's first Arctic air mass. By the morning of Dec. 8, temps ranged from 5°F above to -10°F, with NW winds at 10–20 mph and higher gusts. Wind chills reached -15°F to -25°F across northern Vermont during the early to mid-morning hours.

February 27, 2006: During the early morning hours of the 27th, an Arctic air mass settled over Vermont. A strong pressure gradient between high pressure in central Canada and low pressure over Labrador generated brisk winds. These winds, combined with frigid temperatures, resulted in wind chills ranging from -15°F to -30°F.

January 13-16, 2004: An arctic front moved through the area Tuesday, January 13th. Wind chills during Tuesday night, Jan 13th through noon on Wednesday, January 14th were generally -25°F and -45°F. Arctic high pressure then settled across the area on the 14th.

January 17-19, 1997: An outbreak of arctic air resulted in extreme wind chills across much of Vermont. These wind chills frequently ranged from -30°F to -60°F.

Invasive Species – *Moderate Risk*

Description: Invasive species are non-native plants, animals, or pathogens that spread rapidly in an ecosystem, causing harm to the environment, local economies, or public health. These species can

outcompete native species, disrupt ecosystems, and cause significant ecological and economic damage. Invasive species can be plants, animals, fungi, or microorganisms. They often have high reproductive rates, few natural predators in their new environment, and the ability to thrive in a wide range of conditions.

Location: All ecosystems in Fairfax are susceptible to invasive species from the Lamoille River to the Village with streets that are lined with trees, neighborhood backyards that contain residential vegetable and flower gardens and properties, to farms and fields to town forests.

Figure 23: Emerald Ash Borer, (ANR)

Probability: The probability of invasive species introduction and spread in Fairfax is considered *highly likely* by the committee. The Town and Village's location near active agricultural lands, forests, and waterways increases the likelihood of exposure to new invasives.

Extent: The extent of invasive species can range from localized infestations (e.g., roadside patches of wild parsnip) to widespread ecological disruption in forests. The severity of impact depends on the species involved, the size of the infestation, and how quickly it is detected and managed. Invasives can affect forest health, agricultural production, recreational access to rivers and trails, and even public safety in the case of toxic plants. Invasive species may cause overgrowth or damage to various built environments, such as powerlines and culverts. The damage can be minor to catastrophic. Over time, the cumulative effects can lead to long-term ecological changes and economic losses.

Impact: The impact was ranked as *minor to major* in Fairfax according to the committee due to the type and locations of damage that would occur. According to Vermont Fish and Wildlife, garlic mustard, Japanese knotweed, buckthorn, barberry, honeysuckle, and others are common along woodland edges, trails, fence rows, and roadsides. The emerald ash borer was first identified by County Forester in Fairfax in 2024 and is the only known invasive forest species in Fairfax. For Fairfax, invasive plants such as wild parsnip, poison hemlock, and Japanese knotweed can spread into hayfields, pastures, and field edges, reducing quality, and outcompeting crops and native plants thereby increasing agricultural management costs. Invasive insects can also damage crops and fruit trees. Timber harvesting is managed to ensure limiting the spread of emerald ash borer. Several invasive species are already present in the region, indicating a continued and persistent threat.

Forest pests such as the Emerald Ash Borer threaten ash trees throughout Vermont, leading to widespread tree mortality, loss of wildlife habitat, increased safety hazards from dead trees, and higher costs for tree removal and forest management. Town owned forests and recreational areas could be impacted. Local timber companies could face increase management costs to properly deal with infected trees.

Town Vulnerability:

People: Health and safety risks from toxic or harmful plants such as wild parsnip or giant hogweed include severe skin burns or rashes when touched, particularly during outdoor activities like mowing, hiking, or farming. Invasive insects, such as ticks, can increase the risk of vector-borne diseases like Lyme disease.

Built Environment: The emerald ash borer threatens ash trees near roads, utility lines, and buildings. Dead or weakened trees pose a risk of falling and damaging power lines, homes, or roads, increasing maintenance and emergency response costs. Invasive roots, such as those from Japanese knotweed, can damage foundations, pavement, and drainage systems. Invasives growing in stormwater systems such as tile drains or ditches can clog drainage pipes and culverts or block flow, worsening local flooding or erosion.

Natural Environment: Invasive plants like Japanese knotweed, honeysuckle, or wild parsnip can outcompete native vegetation, leading to the decline of native plants that local wildlife depends on for food and habitat. Forests are particularly at risk from pests like the emerald ash borer, which can cause widespread tree mortality, reduce forest canopy cover, and disrupt wildlife corridors.

Economy: Timber and forestry impacts from species like emerald ash borer can reduce income from woodlots and lead to costly tree removal near homes, roads and utility corridor. Landowners and farmers may face rising costs related to invasive species control, lost productivity, or degraded soil and pasture conditions. Long-term impacts may include reduced timber value, increased infrastructure maintenance costs, and diminished recreational and tourism opportunities.

Potential Future Impacts:

Climate Change: According to the Department of Health, deep cold spells can play a crucial role in controlling insect pests by limiting overwinter survival, reducing the number of generations, and slowing the spread of invasive species and insect-borne plant diseases. A decline in extreme cold due to climate change may lead to increased pest resistance, greater risks to agriculture and forests, and a wider spread of harmful species like ticks with Lyme disease, which are typically limited by colder climates. As northern and high-elevation areas of Vermont warm, they may become more suitable habitats for ticks and their hosts, such as mice. Reduced snowpack from warming winters could still expose these hosts to freezing during sudden cold snaps.

Change in Land Use/Development: Increased urbanization, agriculture, or deforestation can disturb native ecosystems, making them more vulnerable to invasive species. Development often creates fragmented landscapes and edge habitats that favor fast-growing, opportunistic invaders over native species. Additionally, increased human activity and infrastructure (e.g., roads, landscaping, water management) can unintentionally introduce and spread invasive species into new areas.

Change in Demographics: As Fairfax's population grows as new people move to town, land clearing for housing and infrastructure can disturb native habitats, making it easier for invasive plants like Japanese knotweed or wild parsnip to establish. Landscaping with non-native ornamental plants may inadvertently introduce invasive species that spread into natural areas.

History: The emerald ash borer was first identified by County Forester in Fairfax in 2024 and is the only known forest invasive species in Fairfax.

Infectious Disease Outbreak – *Moderate Risk*

Description: An infectious disease outbreak is the occurrence of cases of a disease caused by bacteria, viruses, parasites, or fungi that exceed normal expectations within a specific area or population. These outbreaks can spread quickly and unpredictably, posing significant threats to public health, healthcare systems, and local economies.

Location: An infectious disease outbreak can affect the entire geographic area of Fairfax, including residential neighborhoods, schools, healthcare facilities, public buildings, and workplaces. Due to the Town's small size and interconnected nature, diseases can spread rapidly through person-to-person contact in shared spaces such as the municipal offices, library, convenience stores and community events. Regional travel, commuting patterns, and school attendance can also contribute to the introduction and transmission of disease from surrounding towns and counties.

Probability: The probability of future infectious disease outbreaks in Fairfax is considered *likely* by the committee. Seasonal illnesses like influenza and tick-borne diseases such as Lyme disease are regularly reported according to Northern Tier Center for Health. The risk of larger outbreaks—such as COVID-19 or other emerging infectious diseases—remains elevated due to factors like proximity to Canada, travel, climate change, and population movement. Public health trends and past events suggest that the community will continue to face infectious disease threats in the foreseeable future.

Extent: Outbreaks may persist from a few days to several years, depending on factors such as the type of pathogen, the effectiveness of the public health response, and the level of immunity within the population. Certain diseases also follow seasonal trends, such as influenza peaking in winter and vector-borne illnesses becoming more prevalent in warmer months. Rarely a larger scale virus outbreak, such as the global Covid-19 in 2020, can gradually spread and overwhelm health care institutions, facilities, systems, resources, and supply chains at the local, state, federal and international levels.

People with disabilities and those with access and functional needs may be especially vulnerable during a disease outbreak, although anyone can be affected. Outbreaks can strain local healthcare facilities, sometimes requiring temporary modifications to public spaces, such as converting schools into triage centers. The natural environment may also play a role in the origin or spread of disease, necessitating measures like water treatment to prevent further transmission. Economically, outbreaks can disrupt or shut down businesses and lead to additional costs for public health responses, such as running immunization clinics.

Impact: The committee categorized the impact as *negligible to moderate*. An outbreak has the potential to be widespread and disruptive. Public health may be significantly affected, especially among vulnerable populations like seniors, children, and individuals with preexisting conditions. Healthcare facilities and services may become overwhelmed, and essential services such as schools, emergency response, and municipal operations may be interrupted. Prolonged outbreaks or pandemics can result in business closures, economic losses, mental health challenges, and long-term community strain. Quarantine measures, supply chain disruptions, and public health mandates may further impact daily life and local resilience.

Town Vulnerability:

People: Infectious disease outbreaks can result in illness, hospitalization, and death, particularly among people with disabilities and functional access needs such as older adults, young children, and individuals with underlying health conditions. Widespread outbreaks can also affect mental health and disrupt daily activities, education, and access to essential services. BFA Fairfax K-12 schools are highly vulnerable to infectious diseases due to high concentrations of individuals in enclosed spaces, close person-to-person contact, and shared supplies. Furthermore, developing immune systems, suboptimal hygiene practices, and inadequate ventilation in older buildings can accelerate transmission rates among students and staff.

People who recreate in the town's 100 acre wood or along the recreation path may be exposed to ticks, mosquitoes and other biting and stinging insects.

Built Environment: Infectious diseases can disrupt the operation of BFA Fairfax schools, daycares, municipal facilities (town office, public works departments, water treatment plant), healthcare systems, and critical infrastructure by reducing staff availability and increasing demands on public services. The Town Office and BFA Fairfax buildings may require enhanced sanitation measures, temporary closures, or operational modifications to reduce disease transmission.

Natural Environment: Infectious diseases generally have limited direct impacts on the natural environment, but increased use of medical supplies, disinfectants, and waste disposal can create localized environmental pressures. Some diseases may also affect wildlife populations.

Economy: Disease outbreaks can lead to workforce shortages, reduced business activity, increased healthcare costs, and disruptions to local commerce and tourism. Long-term economic impacts may include lost productivity, increased public expenditures, and financial strain on households, businesses, and the town and state government.

Potential Future Impacts:

Climate Change: Climate change has the potential to increase the frequency and intensity of disease outbreak events through various mechanisms. Temperature changes may increase vector-borne disease and pathogen survival. Extreme weather events can disrupt infrastructure, leading to breakdowns in sanitation, clean water supply, and healthcare services. Climate-induced displacement and migration can lead to overcrowded living conditions, which can facilitate the spread of infectious diseases.

Changes in Land Use/Development: No asset impacts related to infectious disease outbreak events were identified as being affected by changes in development or land use.

Changes in Demographics: Population growth may increase opportunities for disease transmission through greater interaction in schools, workplaces, public facilities, and community events. An aging population may be more susceptible to severe illness and may place greater demands on healthcare and support services during an outbreak. Additionally, vulnerable populations, including individuals with underlying health conditions, limited access to healthcare, or economic constraints, may face greater challenges in preventing infection and recovering from illness, potentially increasing the overall impact on the community.

History: According to the State Hazard Mitigation Plan, the following Per the State Hazard Mitigation Plan, the following disease outbreak events have occurred in Vermont:

- 1918, 1957, 1968: Pandemic Influenza.
- 2009: H1N1 strain.
- 2015: Sika virus.
- 2020 - 2021: COVID-19.

Landslides – *Moderate Risk*

Description: A landslide is the downward movement of rock, soil, or debris on a slope due to gravity. Landslides can be triggered by factors such as heavy rainfall, rapid snowmelt, earthquakes, or human activity (like construction or deforestation.

Common Landslide Failure Types (USGS, ANR, VGS):

- **Translational Slides:** Common on slopes underlain by dense till or sandy-to-clayey deposits.

- **Rotational Slumps:** Typically found in sandy or clayey lacustrine deposits where the material has enough internal cohesion to slide as a unit.
- **Gullies:** Deeply incised channels that often have active landslides at their heads or along their sidewalls.

According to the VT Geological Survey and VT Agency of Natural Resources, there are several natural and human caused factors of landslide susceptibility including:

- Soil Composition: The presence of unconsolidated glacial lakebed deposits, which lose strength when saturated.
- Stream Erosion: The Lamoille River naturally undercuts its banks, over-steepening them and triggering failures.
- Precipitation: Intense rainfall events or rapid snowmelt saturate the soil, increasing pore-water pressure and reducing slope stability.
- Changes to Land Use: Adding excess loads to slopes or altering drainage patterns, can exacerbate natural instabilities.

Location: In Fairfax, landslides often occur on steep hillsides or river banks, especially where the soil is saturated or disturbed. They frequently concentrated along the Lamoille River and its tributaries. These areas often feature steep banks composed of unstable glaciolacustrine (glacial lake) deposits, which are highly susceptible to erosion and subsequent failure. They can pose risks to public safety by damaging structures and infrastructure. The statewide landslide inventory lists only four documented sites specifically within Fairfax. There are two along Browns River and two along Goose Pond Road. On Goose Pond Road, one small area of hill side is slumping near the Fletcher Town Line. No structures are threatened.

Probability: The probability of small-scale landslide occurring in Fairfax is considered *likely* by the committee. USGS and FEMA maps indicate that Fairfax has low incidence of reported landslides along the Lamoille and associated tributaries. The town contains steep slopes, streambanks, and areas with erosion prone soils that can become unstable during periods of heavy rainfall, flooding, rapid snowmelt or prolonged soil saturation.

Extent: Heavy rainfall, rapid snowmelt, flooding, or fluvial erosion can destabilize slopes and cause soil, rock, and debris to move downhill, damaging roads, driveways, utilities, agricultural land, and nearby structures. Landslides may also block transportation routes, disrupt access for emergency services, damage residential foundations and contribute sediment and debris to streams and drainage systems.

Impact: The impact of landslides is *negligible* to *minor* according to the committee based on previous occurrences. Landslides that have occurred in Fairfax were small and localized but potentially damaging. They occurred on steep slopes, stream banks, and areas experiencing erosion or saturated soils. Although large landslides are uncommon in Fairfax, smaller slope failures and bank collapses can result in costly repairs to public roads and private properties and pose risks to public safety and infrastructure.

Town Vulnerability:

Figure 24: Active Slide Goose Pond Road, 2026.

People: Landslides can threaten public safety by causing injuries, fatalities, property damage, and isolation when roads or access routes are blocked. Individuals living, working, or traveling near steep slopes are particularly vulnerable during periods of intense rainfall or rapid snowmelt. Repairs can be costly. Several residences along Goose Pond Road which parallels the Lamoille River are vulnerable to landslides. One high embankment above the road approximately 1,300 feet east from Spafford Road is slumping and is threatening a single-family residence located on top of the slope. Another single-family residence located approximately 700' west from Barnett Road is experiencing bank failure that threatening the property.

Built Environment: Landslides can damage or destroy roads, bridges, utilities, buildings, and other infrastructure through slope failure, soil movement, and debris deposition. Transportation corridors and infrastructure located on or below unstable slopes are especially susceptible to disruption and costly repairs. Areas along Goose Pond Road and River Road have experienced small scale landslides and bank slumping which can be costly to stabilize and/or repair. Goose Pond Road and River Road could be impacted by bank failure from Spafford Road to the Town line with Fletcher.

Natural Environment: Landslides can alter landscapes, remove vegetation, increase sediment delivery waterways in the Lamoille River watershed, and degrade water quality and aquatic habitats. While landslides are a natural geomorphic process, large or frequent events can significantly affect ecosystem stability and watershed function.

Economy: Landslides can result in substantial costs related to emergency response, infrastructure repair, slope stabilization, and property damage. Economic impacts may also include transportation disruptions, reduced access to businesses and services, commuting workers, and long-term maintenance expenses for affected areas.

Potential Future Impacts:

Climate Change: Expected to increase the frequency and intensity of heavy rainfall, which will raise the risk of landslides by saturating soils and destabilizing steep slopes. Landslides could increasingly damage roads, culverts, and utilities, disrupt emergency access, and threaten homes located near hillsides, streambanks, or road cuts similar to Goose Pond and River Roads. Secondary impacts may include increased sediment in streams, reduced water quality, and long-term erosion that further weakens slopes and increases future hazard risk.

Changes in Land Use/Development: Increased construction on or near steep slopes, road construction, and vegetation removal can destabilize soils and increase landslide risk, especially during heavy rain events. Expanded impervious surfaces and altered drainage patterns can concentrate runoff which would accelerate erosion and cause slope failures. Over time, development in marginal or unstable areas may increase damage to infrastructure and raise long-term maintenance and costs for the town.

Changes in Demographics: Population growth, aging residents, or increased housing demand could place more people in areas vulnerable to landslides, especially along hillsides, road

embankments, or near streams and rivers. An aging population or households with limited mobility may face greater safety risks and recovery challenges during landslide events and evacuations.

History

December 17, 2007: A mass failure occurred at two locations above Browns River on the east and west side of Browns River Road. The road was not at risk. The landslides were approximately 25 ft. in length each. There were no reported damages.

November 1, 2019: Several slopes slumped along Goose Pond Road. The slumps threatened Goose Pond Road but damages were limited. Road crews stabilized the road shoulder.

December 18, 2023: Flooding and saturated soils from summer flooding likely contributed to a slope failure on Fletcher Road before the intersection with Boissoneault Road. Mill Brook undercut the bank and caused the road to slump. The road was reduced to one lane for several weeks while repairs were made to stabilize the slope.

Chemical, Biological, Radiological, Nuclear (CBRN) - *Low Risk*

Description: CBRN stands for Chemical, Biological, Radiological, and Nuclear. It refers to hazardous materials and weapons that can cause significant harm to people, the environment, and infrastructure. These threats can arise from accidents, natural events, or intentional acts such as terrorism. CBRN incidents require specialized response strategies due to their complex and potentially large-scale impacts.

Location: There are 9 sites in Town that have sufficient types and/or quantities of hazardous materials that require reporting through 20 VSA, Chapter 1, and Public Law 99-499, 42 USC 9601 "Superfund Amendments and Reauthorization Act of 1986, Title III Emergency Planning and Community Right to Know".

There are no large fixed-site storage facilities in town other than for gasoline, kerosene, diesel fuel in underground storage tanks at gas stations (Steeple Market, Nan's Mobile and Maplefields). There are above ground storage tanks for diesel and oil at the town garage and schools and a propane filling station at Steeple Market in the village and several farms. Incidents at those locations are unlikely due to state safety inspections and regulations.

The following table lists permitted underground storage tanks as reported to the Vermont Agency of Natural Resources[6]. These tanks have not been taken out of service.

Table 7: Underground Storage Tanks in Fairfax

Facility Name	Address	Permit Holder	Gallons	Contents
BFA Fairfax	75 Hunt St	Town of Fairfax School District	3,000	Diesel

[6] Tanks containing heating oil used exclusively for the purpose of heating an on-premises building are exempted from these requirements, as are tanks smaller than 1100 gallons containing motor fuels at farms or private residences.

Fairfax Steeple Market	1098 Main St.	Sandalwood Development, Inc.	8,000 8,000	Gasoline Gasoline
Maplefields	874 Main St	Maplefields	4,000 8,000 8,000 2,000	Diesel Gasoline Gasoline Kerosene
Nan's Mobil	1301 Main St	R L Vallee, Inc.	10,000 8,000 3,000	Gasoline Gasoline Diesel / Kerosene

Probability: The committee determined the probability of a CBRN incident is *likely* given the large number of residences that receive delivery of home heating fuels such as fuel oil, propane and kerosene.

Extent: An incident could result in localized damage, particularly from the transport, storage, or accidental release of flammable or combustible liquids such as heating and automotive fuels. Radiological and nuclear incidents, considered extremely rare, would be the result of an accident during the transport of materials through town. There are no nuclear power plants in Vermont.

Fairfax Volunteer Fire Department members have received HazMat awareness and technical training. The Vermont HazMat response team would assist in responding to a HazMat incident. The nearest HazMat response vehicle is located 16 miles away in Essex, and decontamination trailers are stationed 22 miles away in Swanton Village and 24 miles away in Colchester.

Impact: The impact of a CBRN incident would be *limited*. Major incidents occurring on State Routes 128, 104 or 104A could disrupt traffic and essential services until corrective action has been completed. These corridors are identified as the most probable location of a major incident. Residences, commercial, and public facilities along the state routes could be impacted but the impact would be limited to the immediate area. At-risk sites include the Fairfax Fire and Rescue stations, the Town Office, the Catholic Church, the Baptist Church, the Methodist Church and the Historical Society.

The Town is concerned about the vulnerability of the intersection of VT 104 and TH2 (Fletcher Road) which is a sharp curve at the bottom of a hill. Trucks can have difficultly the intersection. A worst-case spill (1,000 feet) at the intersection would affect all of TH 49 (School Street), TH35 (Maple Street) and parts of TH36 (Hunt Street) as well as access to the village from TH2 (Fletcher Road), TH51 (River Road) and VT 104. Access along TH36 (Hunt Street) to and from BFA Fairfax Elementary, Middle and High Schools, the Town Hall, Mountain View Elderly Housing and the Sewer Plant would lead through the worst-case spill zone. Disruptions to commerce and public safety in the village area would also occur.

There are two Tier II Sites in proximity to the SFHA: Steeple Market and the VELCO substation. Steeple Market contains an above ground fuel storage tank that may be at risk during a flood event.

The Town has identified an emergency village bypass along TH2 (Fletcher Road), TH24 (Boissoneault Road), and TH25 (Huntville Road) in case traffic is disrupted. However, Bridge 23 over Mill Brook on TH24 (Boissoneault Road) would need to be redesigned to safely accommodate tractor trailers. The Town has a strong desire to upgrade Bridge 23 to secure a village bypass.

Town Vulnerability:

People: Chemical, Biological, Radiological, and Nuclear (CBRN) incidents can cause serious injuries, illness, long-term health effects, or fatalities, depending on the type and magnitude of the release. Such events may also require evacuation, shelter-in-place orders, and extensive public health response efforts.

Built Environment: CBRN incidents can contaminate buildings, transportation infrastructure, water supplies, and critical facilities, potentially rendering them unusable until decontamination is completed. Response and recovery operations may require facility closures, specialized cleanup, and long-term monitoring. Incidents occurring on State Routes 128, 104 or 104A could disrupt traffic and essential services until corrective action has been completed. These corridors are identified as the most probable location of a major incident. Residences, commercial, and public facilities along the state routes could be impacted but the impact would be limited to the immediate area. At-risk sites include the Fairfax Fire and Rescue stations, the Town Office, the Catholic Church, the Baptist Church, the Methodist Church and the Historical Society.

Natural Environment: Hazardous substances released during a CBRN incident can contaminate soil, groundwater, surface waters, vegetation, and wildlife habitats, causing both immediate and long-term environmental impacts. The severity of environmental damage depends on the type of material released, exposure pathways, and duration of contamination. The Vermont Agency of Natural Resources is responsible for ensuring remediation plans are in place for contaminated areas.

Economy: CBRN incidents can generate significant costs associated with emergency response, evacuation, decontamination, healthcare, environmental remediation, and infrastructure restoration. Long-term economic impacts may include business interruptions, reduced property values, loss of public confidence, and ongoing monitoring and recovery expenses.

Potential Future Impacts:

- **Climate Change:** Climate change is not expected to directly increase the impact of a Chemical, Biological, Radiological, or Nuclear (CBRN) incident in Fairfax; however, it may increase the severity of impacts from such events. Increased flooding or extreme weather could exacerbate the spread of hazardous materials during a CBRN incident, especially near waterways, farms, or storage facilities. Warming temperatures may increase the volatility or persistence of certain chemicals or biological agents in the environment. Stressed ecosystems may have less resilience to recover from contamination.

  Changes in Land Use/Development: This may increase the number of people, structures, and critical facilities located near transportation corridors, utility infrastructure, or facilities that store, use, or transport hazardous materials. There are no planned commercial or industrial developments in the community. Any increase in housing developments will increase the risk of HazMat incident involving home heating fuels.

  Changes in Demographics: The potential impacts of a CBRN incident increases with a growing population by increasing the number of people exposed to a hazardous release and create greater demands on emergency response resources. Growth in vulnerable populations, including older adults, children, individuals with disabilities, and those with limited access to transportation, may further increase the challenges associated with protecting public health and safety during a CBRN incident.

History

February 2025: Residential above ground storage tank leaked ~125 gallons of Kerosene on Goose Pond Road.

February 2023: Tank corrosion leaked ~100 gallons of Kerosene at a residence on Wells Road.

December 12, 2021: Vermont Electric Co-op reported a transformer was downed during a winter storm spilling 30 gallons of oil. The oil travelled along a gravel drive and onto lawn. No ditches/waters involved.

June 2019: Residential above ground storage tank leaked ~50 gallons of #2 Fuel Oil on Huntville Road.

July 7, 2016: VT Electric Co-op reported a transformer was damaged during a high wind event spilling ~10 gallons of oil. Approximately 5 tons of impacted soil was disposed of by an environmental engineering firm.

November 2013: Residential above ground storage leaked 100-150 gallons on Brown's River Road.

January 2012: A tractor trailer accident caused 50 gallons of diesel to spill from a saddle tank.

June 7, 2007: A 2,000-gallon diesel fuel spill occurred on TH25 (Huntville Road). The spill was caused by a faulty tank dispenser at Hillcrest Foods. The Vermont Department of Environmental Conservation monitored cleanup efforts and tested neighboring wells.

February 2001: A milk truck overturned releasing 6,200 gallons of milk on VT104 n

February 2000: A 250 gallon kerosene spill occurred at a Maple Street residence from falling ice that broke a fuel line.

September 1995: A gas spill of ~4,600 gallons occurred when a tanker truck overturned on VT104A near McNall Road.

Hail – *Low Risk*

Description:

Hail is a form of precipitation composed of spherical lumps of ice. Known as hailstones, these ice balls typically range from 50 mm in diameter on average, with much larger hailstones forming in severe thunderstorms. The size of hailstones is a direct function of the severity and size of the thunderstorm that produces it.

Location: Hailstorms are random in nature and can impact any area or structure within the town.

Probability: The committee considered hail event probability to occur *occasionally* based on history. Hailstorms typically accompany thunderstorms between June and September. There are no major hail events that have occurred in Fairfax.

Extent: Hail is elatively infrequent, highly localized, and typically cause limited damage due to the generally small hail size—less than 1 inch in most cases. However, when larger hail does occur, such as the 2-inch hail recorded in 2009, it can result in significant damage to crops, property, and structures. The extent of damage is difficult to predict and quantify, as hailstorms are random in nature and can impact any area or structure within the town.

For TORRO Scale (hailstorm intensity), please refer to the State Hazard Mitigation Plan.

Figure 25: NWS Guide for Determining Hail Size

less than 0.50" Pea
0.50" - Marble/Mothball
0.75" - Dime/Penny
0.88" - Nickel
1.00" - Quarter
1.25" - Half Dollar
1.50" - Walnut/Ping Pong
1.75" - Golf Ball
2.00" - Hen Egg
2.50" - Tennis Ball
2.75" - Baseball
3.00" - Tea Cup
4.00" - Grapefruit

Impact: The committee rated the impact of hail as *limited*. Hailstones can damage crops, vehicles, roofs, and siding. Even small hailstones can harm sensitive crops such as corn and hay, leading to financial losses for farmers.

Town Vulnerability

People: Hailstorms can cause injuries from falling ice, particularly to individuals outdoors, and may create hazardous travel conditions that increase the risk of vehicle accidents. Severe hail events can also disrupt daily activities and emergency response operations.

Built Environment: Hail can damage roofs, siding, windows, vehicles, agricultural structures, and other exposed infrastructure, resulting in costly repairs and maintenance. Critical facilities and utility systems may also experience localized damage during severe storms.

Natural Environment: Hail can damage crops, gardens, forests, and other vegetation by stripping leaves, breaking branches, and reducing plant productivity. Repeated or severe hail events can negatively affect agricultural yields and ecosystem health.

Economy: Hailstorms can lead to substantial economic losses through property damage, vehicle repairs, crop losses, insurance claims, and business interruptions. Recovery and repair costs can place financial burdens on property owners, agricultural producers, and local governments.

Potential Future Impacts

Climate Change: Climate change can influence hailstorms in complex ways. Warmer temperatures increase atmospheric moisture and energy, which can lead to more intense thunderstorms—potentially making hailstorms more severe. However, higher temperatures near the surface may also melt smaller hailstones before they reach the ground, possibly reducing the frequency of smaller hail events.

Changes in Land Use/Development: Increased residential development in rural areas and farmland conversion could heighten vulnerability to hail-related damages.

Changes in Demographics: Fairfax's population will continue to grow in the next five years, which will mean a greater number of homes, vehicles, businesses, and public facilities will be exposed to damage. Such growth could mean greater economic losses and increased demand for first response services from severe hailstorms.

History

June 28, 2011: A cold front moved across northern Vermont producing strong thunderstorms. Dime sized hail was reported by some residents in Fairfax. No damages were reported.

May 26, 2011: A large mass of unstable air travelled through the area in the evening. There were numerous reports of damaging winds and hail up to 2.5 inches in diameter. Some 25,000+ customers in the state lost power during these storms. No damage estimates were reported.

July 16, 2009: Numerous thunderstorms moved across Vermont during the afternoon and evening. In addition, there were a few super-cell thunderstorms that produced very large hail, up to 3.3 inches in diameter in nearby Westford (Chittenden County) with numerous reports of damage to vehicles, homes, crop and livestock. Golf ball to ping-pong size hail reported at Riverberry Farm on River Road in Fairfax. Hail caused significant damage to berry and other crops. There was an estimated $20,000 in crop damages related to the storm.

July 10, 2001: A strong thunderstorm with gusty winds produced large hail that fell throughout North Fairfax during the afternoon and early evening. No damages were reported.

June 29, 1988: A cold front moved through the area during the afternoon and early evening. One weather observer in town recorded 0.75" sized hail. No damages were reported.

Wildfire – *Low Risk*

Description: Wildfire is an uncontrolled fire that burns in forests, grasslands, brush, or other natural areas, often fueled by dry vegetation, wind, and weather conditions. Wildfires can spread rapidly and pose serious threats to public safety, property, infrastructure, and natural resources. According to the US Forest Service wildfires can be caused by a variety of natural and human-related factors:

1. Lightning Strikes – One of the most common natural causes, especially during dry conditions, lightning can ignite trees or brush and lead to rapidly spreading fires.
2. Campfires and Outdoor Burning – Unattended or improperly extinguished campfires, burn piles, or fire pits can easily ignite nearby vegetation.
3. Discarded Cigarettes – Lit cigarettes thrown from vehicles or dropped on dry ground can start fires, especially during hot, windy weather.
4. Equipment Use and Malfunctions – Sparks from chainsaws, lawnmowers, or power lines can ignite fires in dry conditions.
5. Arson – Intentionally set fires remain a leading cause of wildfires in some regions and are particularly dangerous due to their unpredictability.
6. Agricultural and Debris Burning – Improperly managed burns on farmland or residential properties can escape control and ignite wildfires.
7. Drought and Climate Conditions – While not direct ignition sources, prolonged drought and warmer temperatures create extremely dry vegetation, increasing the likelihood and severity of wildfires when ignition does occur.

Location: In Fairfax, wildfire risk is generally concentrated in forests, fields, and undeveloped land outside of the village area where residential properties border wooded or brush-filled zones. Much of Fairfax's landscape is wooded with a mixture of hardwood and softwood types. Although the village is at a lower risk, wildfires can still threaten structures, utilities, and transportation routes, especially where development meets natural vegetation—commonly referred to as the wildland-urban interface (WUI).

Probability: The committee rated the probability as *rare*, however the fuel potential for large fires exists. The town remains vulnerable during dry periods, particularly in spring and late summer when vegetation is highly flammable.

Extent: Wildfires pose a risk of injury or death to individuals who are unable to evacuate promptly. Delays in evacuation may result from sudden onset fires or from individuals who ignore warnings. Vulnerable populations—such as the elderly, people experiencing homelessness, residents with disabilities and functional access needs, are likely to face greater risk. Also, there is public health risk from smoke that reduces air quality, especially for people of all ages with respiratory issues such as asthma.

Structures in forested areas without adequate fire breaks or are difficult to access due to their remote nature, are more susceptible than others. Residential homes, barns, milk parlors, silos and other structures could be destroyed by grassfire. Livestock and crops could be destroyed. Utility services including fire and cable networks could be interrupted.

Wildfires can lead to significant environmental damage by destroying vegetation, altering wildlife habitats, and contributing to soil erosion. They also release large amounts of pollutants and greenhouse gases into the atmosphere, reducing air quality and impacting overall ecosystem health.

Wildfires can have substantial economic impacts, including the cost of firefighting efforts, property damage, and the disruption of local businesses and tourism. They may also lead to long-term financial burdens through loss of timber resources, decreased land value, and increased insurance premiums.

Impact: For Fairfax, the committee rated the impact of wildfire as *negligibl*e to *mino*r. The fire chief noted wildfires generally come in the form of grass fires of less than 5 acres in size. The potential extent of damage could be significant due to the large areas of forested land and limited wildfire protection from the on-call Fire Department. Major wildfire events have not occurred in Fairfax and data on past damages is limited.
There have been no large wildfires in Fairfax, but if a wildfire were to occur, it could pose significant risks to public safety, property, and the environment especially in the wooded areas. Impacts may include the destruction of homes.

Town Vulnerability

People: Wildfires can threaten lives through direct exposure to flames, smoke inhalation, and rapidly changing fire conditions that can force evacuations with little warning. They also impact public health over a broader area by degrading air quality and increasing respiratory and cardiovascular risks. People with disabilities or functional access needs (i.e. the elderly, those without housing, those without proper transportation) may potentially be impacted more than other residents.

Built Environment: Wildfires can destroy or severely damage homes, businesses, utilities, transportation corridors (i.e., Routes 104, 104A, 128) and critical infrastructure (town garage, power infrastructure), especially in wildland–urban interface areas. Post-fire conditions can also increase risks to structures from debris flows and reduced slope stability.

Natural Environment: Wildfires can dramatically alter ecosystems by burning vegetation, changing soil structure, increasing erosion, and temporarily reducing habitat quality. While fire is a natural ecological process, high-intensity or frequent fires can degrade forests and reduce biodiversity.

Economy: Wildfires can cause major economic losses through property damage, firefighting and emergency response costs, business interruption, and impacts on tourism, forestry, and agriculture. Long-term recovery may also require significant investment in rebuilding and landscape restoration.

Potential Future Impacts

Climate Change: Climate change has the potential to increase the frequency and intensity of wildfires due to rising temperatures and changing precipitation patterns.

Change in Land Use/Development: Increased residential development in rural areas, particularly through subdivisions and large lot estates, increases wildfire risks due to land clearing and proximity to forested areas. Increased development leads to greater human activity and infrastructure needs that could increase risk.

Change in Demographics: Fairfax's population demographics are expected to increase moderately in the next five years and could increase the risk and impact of wildfires as more development encroaches on forested areas, creating a larger wildland-urban interface. This expansion may strain emergency services, increase the number of people and properties at risk, and elevate the potential for human-caused ignitions. Additionally, greater demand for land and resources could lead to increased fuel loads and reduced natural buffers.

History:-

The fire department does not keep detailed records for wildfires, so no details of past wildfires are available other than what was recorded in the State Fire Marshal's Report.

July 5 – 7, 2002: Smoke, from many forest fires across the Nemiscau region of northern Quebec, carried into Vermont from the evening hours of July 5 to the late evening of July 7. Advisories were issued warning people with respiratory problems to remain indoors and all individuals to curb outside activity. No major problems were reported to the National Weather Service because of this smoke.

June 5 – 8, 2023: An air quality alert was issued for the entire state due to wildfires in Canada.

Dam Failure – *Low Risk*

Description: Dam failure can take several forms, including structural collapse or a breach. While most dams store too little water to cause major consequences if they fail, failures of larger dams can cause significant downstream flooding. Dam failure can take several forms, including a collapse or breach in the structure. While most dams have storage volumes small enough that failures have few or no repercussions, dams storing large amounts can cause significant flooding downstream.

Location: There are three dams and two dikes located in Fairfax that are registered with the Agency of Natural Resources. In North Fairfax, St. Albans North and South Reservoirs are earth fill dams located in the upper Mill River watershed. The reservoirs contain the water supply for City of St. Albans located approximately 3.5 miles away. They are owned by the City of St. Albans. State Route 104 runs between the reservoirs. A treatment plant is located next to the north reservoir.

The North Reservoir was constructed in 1895 and reconditioned in 1995 to meet state and federal dam safety standards. The dam is 1,200 feet in length and 30 feet in height. The lake area is 35 acres with a mean depth of 13 feet and volume of 448-acre feet. The South Reservoir was constructed in 1873 with an embankment of approximately 26 feet in height. The South Reservoir has a lake area of 1,346 acres with

a mean depth of 13 feet and volume of 346-acre feet. The South Reservoir is not used during normal operation. Access to the north reservoir is limited to water department personnel.

Silver Lake is located on Beaver Meadow Brook approximately 4.5 miles to the south of the St. Albans Reservoirs on the Town border with Georgia. It contains one earthen dam and two dikes that were constructed by the City of St. Albans in 1912. The lake area is 27 acres with a volume approximately of 390-acre feet. Silver Lake is used as a supplemental water source for the City of St. Albans. A 16-inch clay pipe connects Silver Lake to the South Reservoir.

Probability: The committee classified the probability of a dam failure as *unlikely* at any of the sites due to risk assessments that were conducted, regular monitoring and recent upgrades at each of the sites.

Extent: The extent of damages would depend on reservoir levels, the size of the breach, and river conditions at the time of failure. A risk assessment of the reservoirs was conducted by the City of St. Albans and is the best available data. The assessment includes summaries of the consequences to both road infrastructure and residential structures during a "sunny day" failure and "overtopping" conditions for each reservoir. Discharge would occur in a westerly direction along VT104 with the most reasonable flood conditions would include culvert and road washout along Route 104, Nichols Road and into the Town of Georgia where a railbed and embankment erosion would occur on Conger Road in Georgia, and damages to private structures downslope of the reservoirs. A GIS analysis of the area within Fairfax found 26 structures that are at-risk of being damaged. The sites include 17 residential homes, 2 mobile homes, 1 commercial site, 6 accessory buildings and 1 cemetery. This represents 1% of structures within the Town. Roads that would be damaged include VT104 and the intersections of TH10 (Nichols Road) and TH3 (Conger Road).

While both dams are regularly inspected and maintained, extreme precipitation, flooding, structural deterioration, or operational failures could increase the risk of a breach. Because both dams are classified as High Hazard Potential structures, a failure could result in loss of life, significant damage to infrastructure and property, and severe flooding downstream in Fairfax and Georgia. The City of St. Albans maintains an Emergency Action Plan for the reservoirs and Silver Lake including emergency notification for nearby residents should a breech be imminent or occur.

The extent of damages from the Green Mountain Power dam failure or breech at Fairfax Falls would be sudden but brief in duration increase in river levels and some bank erosion with no threat to life, public or private property according to Green Mountain Power's risk assessment conducted on the site.

Impact: Impacts from the failure of either of the earthen dams at Silver Lake or the St. Albans Reservoirs would cause a rapid release of water that could result in flash flooding, erosion, and damage to downstream roads (Route 104A and 104), culverts, utilities, agricultural lands, and private property. The event could threaten public safety, disrupt transportation and emergency response, and cause environmental impacts such as streambank erosion, sedimentation, and degradation of aquatic habitat.

The Fairfax Falls Dam in the southern part of town on the Lamoille River is owned by Green Mountain Power (GMP). It is a gravity concrete structure with a concrete spillway consisting of two sections of irregular height, built on a rock outcropping on the Lamoille River. The dam generates hydroelectricity. It was constructed in 1919. The original concrete dam (ca. 1870) is inundated upstream of the existing dam. It is the upstream dam of the four dams that comprise the Lamoille River Project, licensed by the Federal Energy Regulatory Commission.

Impacts from the failure of the Fairfax Falls dam would be minimal per a dam breech analysis conducted on the dam. There is no significant hazard to life or property. The Army Corps of Engineers' *Inventory of Dams in the United States* lists the dam's downstream hazard classification as "3", which is a low hazard classification.

Town Vulnerability

People: Dam failures can cause serious injuries or fatalities, depending on the type and magnitude. Such events may also require evacuations, and temporary isolation of neighborhoods due to damaged transportation routes.

Built Environment: Floodwaters resulting from a dam failure could damage or destroy roads (Route 104 or 104A, Nichols Road, Silver Lake Road, Conger Road), culverts, utilities, telecommunications and structures located downstream, disrupting transportation, emergency response, and public services. Residential homes and driveways could be damaged.

Natural Environment: A dam breach could cause significant impacts in the Lamoille River and Mill River watersheds including streambank erosion, sediment deposition, channel instability, and degradation of water quality. Damage to aquatic habitats, wetlands, and riparian areas downstream areas could occur.

Economy: The community could experience substantial economic losses from infrastructure repairs, property damage, emergency response costs, business interruptions, agricultural impacts, and reduced access to transportation networks during recovery efforts. There could be greater commute times for workers and delays in delivery of goods and services. There is the potential for loss of power and telecommunications that would impact all sectors of the local economy.

Potential Future Impacts

- **Climate Change:** Climate change is expected to increase the frequency and intensity of heavy rainfall events, which may place greater stress on dams, increase reservoir inflows, and elevate the risk of overtopping, erosion, or structural failure. More frequent extreme weather events could also increase downstream flood damages if a dam breach were to occur.

  Changes in Land Use/Development: There are no known developments planned in downstream areas of dams. However, additional residential, commercial, or infrastructure development downstream of dams could increase the number of people and assets exposed to dam-failure flooding. Expansion of impervious surfaces may also increase stormwater runoff, contributing to higher peak flows and greater pressure on dam infrastructure during major storm events.

  Changes in Demographics: As Fairfax's population continues to grow, an aging population may increase the number of residents requiring assistance during emergency evacuations and recovery efforts following a dam failure. Population growth or increased seasonal visitation could also increase the number of people exposed to flooding and complicate emergency response and evacuation operations.

History: There is no record of dam failure occurring within the Town. The Fairfax Falls dam survived record flows during the Great Flood of 1927.

Earthquake – *Low Risk*

Description: According to the USGS, an earthquake occurs when two blocks of the Earth suddenly slip past one another. The surface where they slip is called the fault or fault plane. The location below the Earth's

surface where the earthquake starts is called the hypocenter, and the location directly above it on the surface of the Earth is called the epicenter.

Figure 5. 1: *Earthquake Epicenters in Northeast (USGS)*

Location: While earthquakes occur on fault lines, the entire Town of Fairfax is susceptible to an earthquake. Fairfax, as well as all of Vermont, is classified as an area with a low to moderate seismic activity. This can be compared to the west coast of the U.S., which is classified as "very high" and the north-central states classified as "very low." Earthquakes have been felt in Fairfax and remain a geologic possibility.

Probability

The committee considered Earthquakes as an *unlikely* event for the town and region based on history.

Extent

HAZUS model results from the Vermont Geologic Survey for the region are summarized below. A 6.8 magnitude earthquake in Montreal and a 5.7 magnitude earthquake in Swanton—both considered once-in-500-year events—could result in moderate damage. In contrast, a 6.6 magnitude event in Goodnow, NY may produce minimal shaking near the threshold for building damage, while a 6.2 magnitude earthquake in Tamworth, NH is unlikely to cause any damage in the area. Only the Swanton and Montreal scenarios include detailed loss data.

Swanton Scenario

Building damage – In both Franklin and Grand Isle Counties, HAZUS estimates:

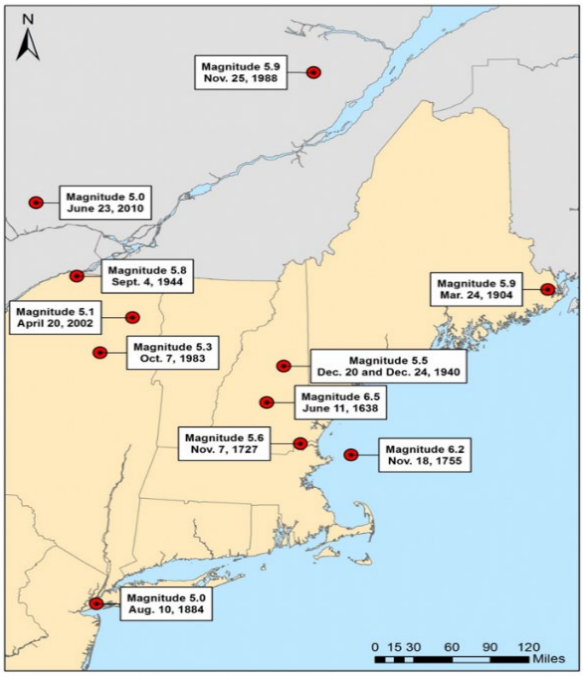
- 2,773 buildings will receive at least moderate damage. This is a little more than 14% of the total number of buildings in the region.
- 40 building in the region will be destroyed.
- All essential facilities (hospital, schools, police stations and fire stations will likely be functional on day one of the earthquake.
- 266 household are predicted to be displaced. Of these 63 people will need temporary shelter.

Transportation & utility systems - HAZUS estimates minimal disruption of the transportation and utility systems with >50% functionality returning after day 1. However, over 6,000 households in the region are expected to be without electrical power for up to three days.

Casualties - Minimal casualties are also expected with less than sixty requiring medical attention and less than 15 needing hospitalizations with non-life-threatening injuries.

Economic loss – The total regional economic loss for the earthquake is $3294.19 million which includes $222.46 million in building related losses; 8% of the estimated losses were related to the business interruption of the region. By far the largest loss would be sustained by the residential occupancies which make up over 73% of the total loss. HAZUS estimates that although there would be minimal damage to the transportation system the economic loss would still be close to $16 million. Approximately $0.07 million would be needed to repair damaged communications systems.

Figure 5. 2: Significant Earthquakes in NE US and Canada (Source: NESEC)



Montreal Scenario:
Building damage – In both Franklin and Grand Isle Counties, HAZUS estimates:

- 1,154 buildings will receive at least moderate damage. This is a little more than 6% of the total number of buildings in the region.
- 10 building in the region will be destroyed.
- All essential facilities will likely be functional on day one of the earthquake.
- 44 households are predicted to be displaced.

Transportation & utility systems - HAZUS estimates minimal disruption of the transportation and utility systems with >50% functionality returning after day 1. No households are expected to lose electric power and water service in the region.

Casualties - Minimal casualties are also expected with less than twenty requiring medical attention.

Economic loss – The total regional economic loss for the earthquake is $74.26 million which includes $50.63 million in building related losses; 12% of the estimated losses were related to the business interruption of the region. By far the largest loss would be sustained by the residential occupancies which make up over 70% of the total loss. HAZUS estimates that although there would be minimal damage to the transportation system the economic loss would still be close to $5 million.

Impact: The committee rated earthquake impacts as *negligible* to *major.* Earthquakes can vary in size and intensity, and they may cause ground shaking, surface rupture, and secondary effects like landslides, tsunamis, or structural damage.

Town Vulnerability

Earthquakes in Vermont are typically small tremors so the possibility of a threat to the following is low.

People: Earthquakes can cause injuries or fatalities from collapsing structures, falling objects, and secondary hazards, while also disrupting access to emergency services, healthcare, and essential resources.

Built Environment: Ground shaking can damage buildings, roads (Routes 104, 104A and 128) bridges (State bridges 10 and 27), utilities, and critical facilities, resulting in structural failures, service interruptions, and costly repairs.

Natural Environment: Earthquakes can trigger secondary hazards such as landslides, alter stream channels, increase erosion, and affect groundwater systems, leading to changes in local ecosystems and landscape stability**.**

Economy: Earthquakes can generate significant economic losses through property damage, infrastructure repairs, business disruptions, emergency response costs, and long-term recovery efforts.

Potential Future Impacts

Climate Change: Climate change primarily affects atmospheric and oceanic processes, but there is emerging evidence suggesting that it can indirectly influence seismic activity, including earthquakes. It is not currently possible to predict when or where an earthquake may occur.

Changes in Land Use/Development: No large residential or commercial developments are expected to occur in next 5 years. Any increase in the number of residential homes, residential and commercial developments and infrastructure would cause greater potential for property damage, service disruptions, and economic losses if an earthquake were to occur.

Changes in Demographics: Fairfax's population demographics are expected to increase in the next five years which could increase the potential impacts of an earthquake due to a greater number of residents, homes, businesses, and critical facilities exposed to ground shaking and related hazards. Population growth may also increase demands on emergency response, healthcare services, and recovery resources potentially resulting in greater economic losses and disruption to community services following an earthquake.

History: According to the VT Geologic Survey, the two strongest recorded quakes measured in Vermont were of a magnitude 4.1 on the Richter scale. One was centered in Swanton and occurred in 1943, and the second occurred in 1962 at Middlebury. The Swanton quake caused little damage, but the Middlebury quake did result in broken windows, cracked masonry and falling objects around the Middlebury area.

Earthquakes centered outside of the state have also affected Vermont. Two quakes of magnitude 5.5 occurred in New Hampshire in 1940. In 1988, an earthquake with a magnitude 6.2 was centered in Saguenay, Quebec and caused shaking in the northern two thirds of Vermont. On June 23, 2010, a magnitude 5.2 earthquake in Ottawa was felt in the area. No damage was reported.

6. COMMUNITY CAPABILITIES

A hazard mitigation capabilities assessment evaluates a community's ability to reduce and manage risks associated with natural hazards. This assessment involves analyzing existing policies, programs, and resources to identify strengths and areas for improvement in mitigating hazards. The four key types of mitigation capabilities include planning and regulatory, administrative, and technical, financial and education and outreach. Below are the definitions of each key type:

- **Planning and regulatory:** Planning and regulatory capabilities are the codes, ordinances, policies, laws, plans and programs that guide growth and development.
- **Administrative and Technical:** Administrative and technical capabilities are the participant's staff, skills, and tools. These capabilities can be used for mitigation planning and to conduct specific mitigation actions.
- **Financial:** Financial capabilities are the resources to fund mitigation actions.
- **Education and Outreach:** Education and outreach capabilities are programs and methods that can communicate about and encourage risk reduction.

How This Plan Will Improve Existing Capabilities

Fairfax's mitigation capabilities that reduce hazard impacts or that could be used to implement hazard mitigation activities. As Fairfax goes through the update process for the planning mechanisms outlined in Table 8, the Town will look to the Hazard Mitigation Plan to help guide land use district decisions, and guide goals and policies for those districts.

Updates to each of the planning mechanisms outlined in Table 8 are handled by the identified responsible party. There is no timeframe for updating the referenced plans and regulations to better incorporate hazard mitigation, however, as each document is updated, the Hazard Mitigation Plan will be reviewed for incorporation. For example, The Local Emergency Management Plan is updated after Town Meeting each year, including updates to vulnerable geographic locations, as well as locations of residents and businesses who may be in harm's way. This information will be used to update the Local Hazard Mitigation Plan.

The goals of this Hazard Mitigation Plan will be incorporated in the upcoming Municipal Plan update to ensure that emergency preparedness and mitigation planning efforts are included, with particular attention to the identified mitigation actions. Additionally, the Hazard Mitigation Plan will be used to help prioritize high risk areas and target priority projects through Vermont's Municipal Roads General Permit Program and related funding. This will ensure this plan is utilized and project follow-through occurs.

Table 8: Planning and Regulatory Capabilities

Existing Protection	**Description / Responsible Party**	**Effectiveness/Enforcement/Hazard That Is Addressed**	**Gaps in Existing Protection / Improvements Needed**
Planning and Regulatory Capabilities			
Town of Fairfax Town Plan 2018 -2026	Policies and vison for future land use. Adopted 2018. Planning Committee Chair	Policies that provide protection and limited development in wellhead protection areas, wetlands, steep slopes, and shallow soils. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail	The plan would benefit from list specific infrastructure projects (e.g. culvert and bridge upgrades, river corridor setbacks, relocation of vulnerable roads) with prioritization, estimated costs, funding sources and schedule.
Development Regulations	Land Use Regulations. Adopted May 2024	Restrictions on development in potentially hazardous areas such as	Will need updating to

		steep slopes, floodplains, and water resource areas. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold, Landslides, CBRN, Hail	address new FEMA flood mapping estimated to be released in 2027. Does not include river corridor regulations.
Building Inspection, Code Enforcement & Fire Safety Ordinance	Enacted in accordance with Vermont State Statutes, it establishes a Cooperative Inspection Agreement with the State of Vermont, authorizing the Fairfax Fire Department to conduct building inspections and enforce the Vermont Fire & Building Safety Code. Its primary goal is to reduce safety hazards for people and property within the town. Fire Chief	To ensure high effectiveness, the town's Fire Safety Inspector must be an approved employee of the Fairfax Fire Department holding at least an NFPA Certified Fire Inspector 1 certification. The ordinance promotes public safety and risk reduction by establishing a Cooperative Inspection Agreement with the state, employing a certified Fire Safety Inspector, mandating equipment standardizations, and implementing mandatory registries and compliance checks for solar installations and rental properties. Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold	Potential gaps in existing protections include the grandfathering of legacy systems and a largely complaint-driven inspection model that leaves owner-occupied single-family homes unregulated. The ordinance could be updated to establish a proactive, cyclical inspection schedule rather than relying on reactive complaints.
Local Emergency Management Plan (LEMP)	Summary of emergency response and emergency notification procedures. Adopted 2025. EMD	Updated annually. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail,	Conduct annual training on plan. Does not include continuity of operations annex.

		Wildland Fire, Dam Failure, Earthquake	
Public Works Specifications Ordinance	This document establishes the minimum quality standards, technical specifications, and legal regulations for building or reconstructing public and private infrastructure. Adopted: July 15, 2024 Public Works Operations Manager	It details precise engineering requirements for road design, private driveways, stormwater management, and erosion control systems. Additionally, it sets forth administrative processes regarding compliance waivers, construction performance bonds, excavation permits, and enforcement penalties for violations Addresses Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Cold	Incorporate climate change projections into stormwater and drainage designs to account for increased rainfall intensity.
Water Use Ordinance	Establishes regulations, design values, administrative procedures, and fees for the management of the municipal public water supply system. Public Works Director	Provides legal and operational framework details regarding water infrastructure, user responsibilities, billing guidelines, and penalties for non-compliance. Addresses: Extreme Heat and Drought, Extreme Cold, Severe Winter Storm (Ice Storm), Structural Fire, Wildfire, CBRN.	Lacks clear emergency priorities. The ordinance does not clearly outline who receives structural priority or how water is strictly rationed among critical facilities, residential areas, and commercial properties during severe droughts or system-wide contamination events.
Road Erosion Inventory	Identifying location and severity of road erosion on 100 meter road segments that are within 1,000 feet of surface waters. Survey updated 2026.	Road Erosion Inventory completed in 2022. Town applies for state funding annually to address road erosion issues. Highly effective in addressing Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado,	Does not include private roads.

	Public Works Operations Manager	Hurricane/Tropical Storm), Extreme Cold, Landslides,	
Administrative and Technical Capabilities			
Local Officials Roles	**Responsibilities**	**Staffing**	**Improvements Needed.**
Selectboard	Locally elected governing body responsible for decision making.	5 members	Filling multiple roles. Volunteer position. Dedicated time on hazard mitigation may be limited.
Town Manager	Professional administrator hired by the Selectboard to oversee the daily operations of municipal government, implement policies, manage staff and budgets, and coordinate the delivery of local services in accordance with Vermont law and local ordinances.	1 Town Manager	Challenges related to competing municipal priorities, and constrained funding for implementing hazard mitigation projects and maintaining emergency preparedness programs.
Finance Manager	Oversees budgeting, accounting, audit coordination, grants, payroll, and financial reporting for both the General Fund and enterprise operations, including water and wastewater utilities.	1 Financial Manager	Increase integration of mitigation and resilience considerations into long-term capital improvement and financial planning processes.
Zoning Administrator	Enforces development regulations and supports land use planning.	1 part-time	Limited hours. Dedicated time on hazard mitigation may be limited. Increase coordination with emergency management

			and attend substantial damage determination training.
Public Works Director	Manages public works operation. Oversees water/waste water and town highway system.	1 full-time	Consider staff in FEMA preliminary damage assessments and documentation coordination.
Fire Chief	Lead and manage the fire department, directing emergency response operations, overseeing fire prevention and public safety programs, and coordinating preparedness, response, and recovery efforts for hazards and disasters within the community.	1 full time	Challenges related to limited daytime response availability for volunteer department, volunteer recruitment and retention, training capacity, and administrative workload.
Town Clerk & Treasurer	The Town Clerk is Presiding Officer responsible for the administration and conduct of all town and general elections. The Treasurer oversees the collection of taxes and processes utility payments.	1 full-time Town Clerk 1 full-time Treasurer 1 part-time Assistant Clerk and 1 part-time Assistant Treasurer	Challenges related to competing municipal priorities. Limited time for hazard mitigation.
Financial Capabilities			
Existing Protection	**Description / Responsible Party**	**Effectiveness / Enforcement / Hazard That Is Addressed**	**Gaps in Existing Protections / Improvements Needed**
Capital Budget and Program	Outlines the town's legal framework, funding sources, and prioritized financial plans for municipal facilities, vehicles, and	The capital budget and program should be reviewed, revised, and readopted by the Selectboard each year, prior to developing the municipal budget. The planning commission provides oversight for	Ehile the text notes that the Planning Commission ensures conformance

	infrastructure projects over a six-year period. Selectboard Chair	adherence to conformance with municipal plan. The town explicitly factors in the use of Federal Emergency Management Agency (FEMA) public assistance funds to address capital facility repairs and replacements resulting from disasters. The plan notes that emergency grant programs like FEMA's require a non-state or non-federal local financial match from the municipality. It specifically accounts for the risk that FEMA funds only repay up to 75% of eligible community disaster expenses Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail, Wildland Fire, Dam Failure, EarthquakeAll hazards.	with the broader *Municipal Plan*, the document completely fails to mention or cross-reference the town's stand-alone *Hazard Mitigation Plan*. Capital projects are not explicitly tied to identified high-risk vulnerabilities (such as repetitive flooding zones or severe winter weather exposures).
Annual Town Budget	Approved by residents in March and is primarily funded through property taxes with additional support from state aid, grants and other local revenue sources. Selectboard Chair	Ensures services are funded to meet the public safety needs of the community. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail, Wildland Fire, Dam Failure, Earthquake	Consider creating specific line item for hazard mitigation planning and implementation.
In Kind Services	Donations and volunteer support from residents.	Volunteers can assist with everything from event planning, municipal	Need system for tracking donations

	Town Manager	governance and emergency response support by increasing community capacity. Volunteers leverage local skills, labor, and resources without adding financial strain. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail, Wildland Fire, Dam Failure, Earthquake	and volunteer time for in-kind match. Identify volunteer coordinator for community.
Emergency Relief and Assistance Fund (ERAF)	The Emergency Relief Assistance Fund (ERAF) provides State funding to match Federal Public Assistance after federally declared disasters. Selectboard Chair	Ensures communities have planned for emergencies and incentivizes additional resiliency measures (stream corridor protections) for additional match reduction. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail, Wildland Fire, Dam Failure, Earthquake	Ensure highest possible protection. Missing FEMA approved mitigation plan.
Purchasing Policy	Guidelines to secure high-quality goods and services at competitive prices while maintaining ethical conduct, public confidence, and local purchasing preferences. Selectboard Chair	It defines explicit spending thresholds for town employees, mandating competitive quotes for purchases over $1,000 and a formal sealed bidding process for any expenditures reaching $25,000 or more. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought,	It does not establish a specific dollar threshold for emergency spending. Instead, it addresses emergency situations through a process-based waiver system.

		Structure Fire, Extreme Cold, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail, Wildland Fire, Dam Failure, Earthquake	
Education and Outreach			
Existing Protection	**Description / Responsible Party**	**Effectiveness / Enforcement / Hazard That Is Addressed**	**Gaps in Existing Protections / Improvements Needed**
Communication Plan & Policy	Guidance for effectively communicating with citizens, staff, elected, and appointed officials Adopted: 2024 Selectboard Chair	The Town administers community surveys at least once a quarter on current topics. Internal communication health is tracked annually through an employee engagement survey and an anonymous comment box monitored by an HR consultant. Monthly collaboration with staff to develop communication priorities and a weekly publication schedule. Conforms with Vermont's Open Meeting Law and declares all published town content subject to the Access to Public Records Law. Restricts officials on official speaking roles regarding quasi-judicial town matters. Restrictions on expressing personal views on town social media content. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail, Wildland Fire, Dam Failure, Earthquake	While rapid response communications are mentioned, the document could benefit from a more detailed emergency communication plan, including specific steps for coordination during natural disasters, public health crises, or other emergencies. While accessibility is emphasized for general communication, the document could specify how emergency communications will be made accessible to those with disabilities or limited internet access.
Integrated Library and	The Fairfax Community Library serves a unique, dual purpose as both the	Acts as an informational pipeline for regional stewardship, providing community resources on the	Recommend an expansion of programs that

Literacy Program	town's public library and the school library for BFA-Fairfax. It acts as a primary hub for community outreach and education. Head Librarian	Pollinator Pathway initiative, invasive species monitoring, and master gardener educational resources. Invasive Species	incorporate individual and family preparedness education and planning.
Free Community Coffee & Social Hour	Designed to provide a welcoming physical meeting space and build direct connections between residents and local government. Held every Thursday morning at the town office. No RSVP required. Town Manager	Municipal leaders—including the Town Manager, Parks & Recreation Director, Fire Chief, and Town Clerk—sit right at the tables with residents. Brings together residents of all generations and types. In an era heavily dominated by social media rumors, the coffee hour serves as a transparent "direct line" to town hall so residents can get factual answers directly from the source. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail, Wildland Fire, Dam Failure, Earthquake	Recommend topics on hazard mitigation and emergency preparedness.
Social Media Emergency Preparedness Messaging	Provides residents with timely information about hazards, preparedness actions and available resources before, during, and after emergencies. Town Manager	Aids dissemination of official municipal updates quickly, reduces misinformation, and improves public awareness and community resilience. Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Strong Winds (Windstorm, Thunderstorm, Tornado, Hurricane/Tropical Storm), Extreme Heat and Drought, Structure Fire, Extreme Cold, Invasive Species, Infectious Disease Outbreak, Landslides, CBRN, Hail, Wildland Fire, Dam Failure, Earthquake	Can be limited by inconsistent staffing, outdated contact information, and the inability to reach residents who do not use social media or lack internet access.

Fire Safety Messaging	Educates residents about fire prevention, smoke alarm maintenance, home escape planning, safe heating practices, burn restrictions, and wildfire risk reduction.	These outreach efforts help increase public awareness, reduce fire-related incidents, and improve community preparedness and response during emergencies. Structure Fire, Wildfire, CBRN	May not consistently reach all residents, particularly seasonal residents, vulnerable populations, or those without access to digital communications.

Administrative and Technical

The Town is governed by a volunteer Selectboard. Paid staff includes a Town Manager, a Town Clerk / Treasurer, Financial Manager, Assistant Clerk/Treasurer, one full-time, one full-time Recreation Department Director, one full-time road foreman, and two full-time road crew members.

The Town has a Planning Committee and Development Review Committee comprised of volunteers and supported by one part-time Zoning Administrator. The Zoning Administrator is responsible for the floodplain management program and continued compliance. Land use development projects that require permits are reviewed for compliance with Town's Land Use Regulations which include Flood Hazard District with support from the State Agency of Natural Resources and include site visits and permitting as applicable. Any permits for conditional uses within the district such as substantial improvements to existing structures, new construction, recreation or open-air markets, etc. are allowed only by approval of the Town's Development Review Board.

There is one full-time Public Works Operations Manager and a three-person highway crew who are responsible for maintaining 66.54 miles of highway. The highway crew is constantly maintaining roads during the winter months limiting their availability for other projects. The water and wastewater system is operated by Larimee Water/Wastewater Services from an office at the wastewater treatment plant on Hunt Street.

The Fire Department has a combination career/paid-per-call membership consisting of one full-time Chief and an average of 30 volunteers. The department can meet the needs of the communities and can activate mutual aid with neighboring departments if circumstances warrant.

The Town offers a lower tax rate that is more affordable for property owners than communities in nearby Chittenden County. This, coupled with its easy access to Interstate 89, makes it attractive to new residents who work in Chittenden County but choose to live in more affordable communities such as Fairfax. This will help build the tax base.

Municipal Funds

The Town has a general fund that has line items for funding public safety and education. The funding is itemized with the town's fire department. These funds are budgeted and voted on annually by Town residents. The Town's public works department has lines items for a general highway budget. These funds include a highway account that is for emergency storm repair as well as preventative maintenance.

Capital projects are reviewed annually and budgeted on as needed basis. Along with capital planning, the town applies regularly for grants for transportation infrastructure upgrades, water/wastewater projects, stormwater projects, recreation and energy efficiency projects. Capital projects are usually financed and / or grants are written to help fund capital projects. The budget is set and approved by voters.

Grand List

The grand list in Vermont is a list of all real property in a municipality, including the property owner's name, address, location, size, and assessed value. The assessed value is the basis for property taxes, and the grand list is used to calculate municipal taxes. The Town Selectboard uses the grand list to determine the tax rate for the year's budget. Each municipality in Vermont is required to maintain a grand list, which is set every year as of April 1. Elected listers in each town are responsible for preparing and maintaining the grand list. Table 6.2 is a summary of the Grand List for Fairfax.

Table 9: Grant List Summary for Fairfax, VT (2025)

Grand List Summary for Fairfax, VT (2025)		
Type	**Number**	**Value Including Land**
Residential I Homes (R1)	1,239	408,143,000
Residential II Homes (R2)	425	175,563,300
Seasonal 2 Home (S2)	1	255,100
Mobile Homes - Unlanded	4	377,800
Mobile Homes - Landed	55	9,785,200
Farms	30	21,473,600
Commercial	28	14,442,900
Commercial Apts	7	7,532,200
Utilities	4	24,597,600
Other	111	27,048,500
Telecom	10	6,570,400,
Misc.	117	13,963,700
Total Listed		709,753,300

National Flood Insurance Program (NFIP)

The National Flood Insurance Program (NFIP) is a voluntary program organized by the Federal Emergency Management Agency (FEMA) that includes participation from 20,000 communities nationwide and 247 Vermont towns and cities. Combined with floodplain mapping and floodplain management at the municipal level, the NFIP participation makes affordable flood insurance available to all homeowners, renters, and businesses, regardless of whether they are located in a floodplain.

NFIP Participation and Adoption of NFIP Standards

The federal government makes flood insurance available to the citizens of the community because the town has adopted flood plain regulations. FEMA originally published a flood hazard study and Flood Insurance Rate Maps for Fairfax in 1982. Fairfax is a member in good standing with the NFIP (CID 500052). The adopted 2024 Fairfax Land Use Regulations regulate development in the NFIP floodplain as delineated in the Flood Insurance Rate Maps. The town is committed to enforcing floodplain regulations and ordinances to be eligible to participate in the NFIP program and protect the people and property of Fairfax by restricting development in flood prone areas.

At the time of this writing, FEMA is in process of updating the FIRMs for the region which are due to be

released in 2027.

Staffing, Enforcement and Continued Compliance in the NFIP

The Zoning Administrator enforces existing flood plain regulations and reviews future development proposals. If the Zoning Administrator is unavailable, the Selectboard may designate an alternate official to perform these duties to ensure regulatory continuity. Appeals of decisions made by the Zoning Administrator are handled by the Development Review Board (DRB), the community's designated Appropriate Municipal Panel under 24 V.S.A. § 4461. The Town works with the elected officials, the Northwest Regional Commission, VT Agency of Natural Resources and FEMA to correct and prevent any compliance issues.

River Corridor Bylaws

Fairfax does not have a River Corridor Bylaw that protects areas along rivers and streams that are prone to erosion and flooding. However, the town's Development Regulations contain stream buffer and corridor protection rules. The regulations establish a mandatory vegetated buffer strip measured horizontally from the top of the bank of all streams, rivers, and designated watercourses. A minimum 50-foot naturally vegetated buffer is required from the top of the bank of all streams and rivers. The buffer width may be expanded by the Development Review Board (DRB) if the adjacent land features steep slopes (>15%), unstable soils, or critical wetlands, in order to ensure adequate filtration and bank stability. The Zoning Administrator is responsible for monitoring compliance.

Substantial Damage and Substantial Improvement

A permit and conditional use approval is required for substantial improvement of existing buildings. It is issued by the zoning administrator following review by the development review board. Prior to issuing a permit, a copy of the application and supporting documentation shall be submitted by the administrative officer to the State National Floodplain Insurance Program Coordinator at the Vermont Agency of Natural Resources, Department of Environmental Conservation, River Management Section. Substantial improvement includes any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure before the start of the construction of the improvement. This term includes structures which have incurred substantial damage. Substantial damage includes damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged conditions would equal or exceed 50% of the mark value of the structure before the damage occurred.

Repetitive Loss

The definition of severe repetitive loss as applied to this program was established in section 1361A of the National Flood Insurance Act, as amended, 42 U.S.C. 4102a. An SRL property is defined as a residential property that is covered under an NFIP flood insurance policy and:

> (a) That has at least four NFIP claim payments (including building and contents) over $5,000 each, and the cumulative amount of such claims payments exceeds $20,000; or
>
> (b) For which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.

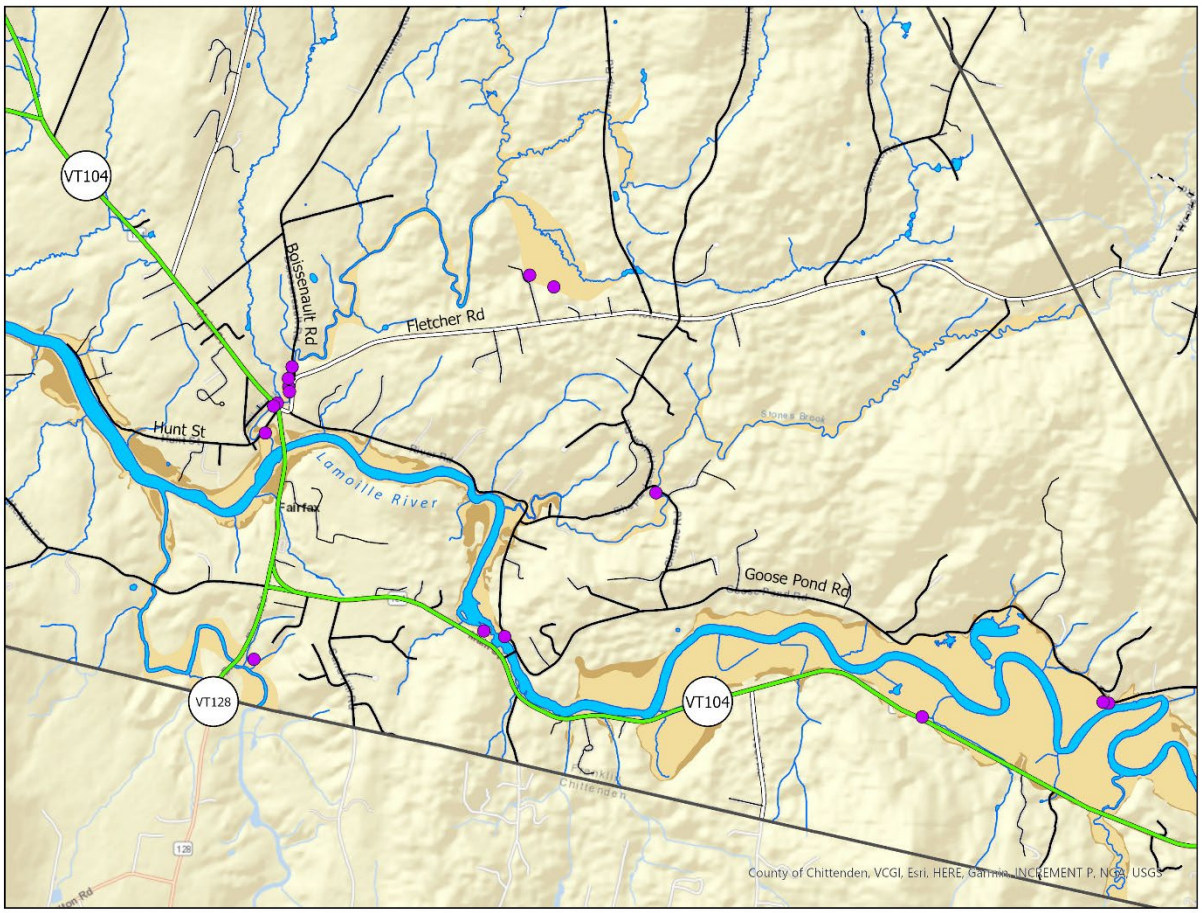
For both (a) and (b) above, at least two of the referenced claims must have occurred within any ten-year period and must be greater than 10 days apart.

According to FEMA repetitive losses / BCX claims that there are 6 active NFIP policies in Fairfax. There have been 4 claims since 1978 totaling $82,591. There are no repetitive loss properties in Fairfax.

Structures in the Special Flood Hazard Areas and River Corridor Hazard Area

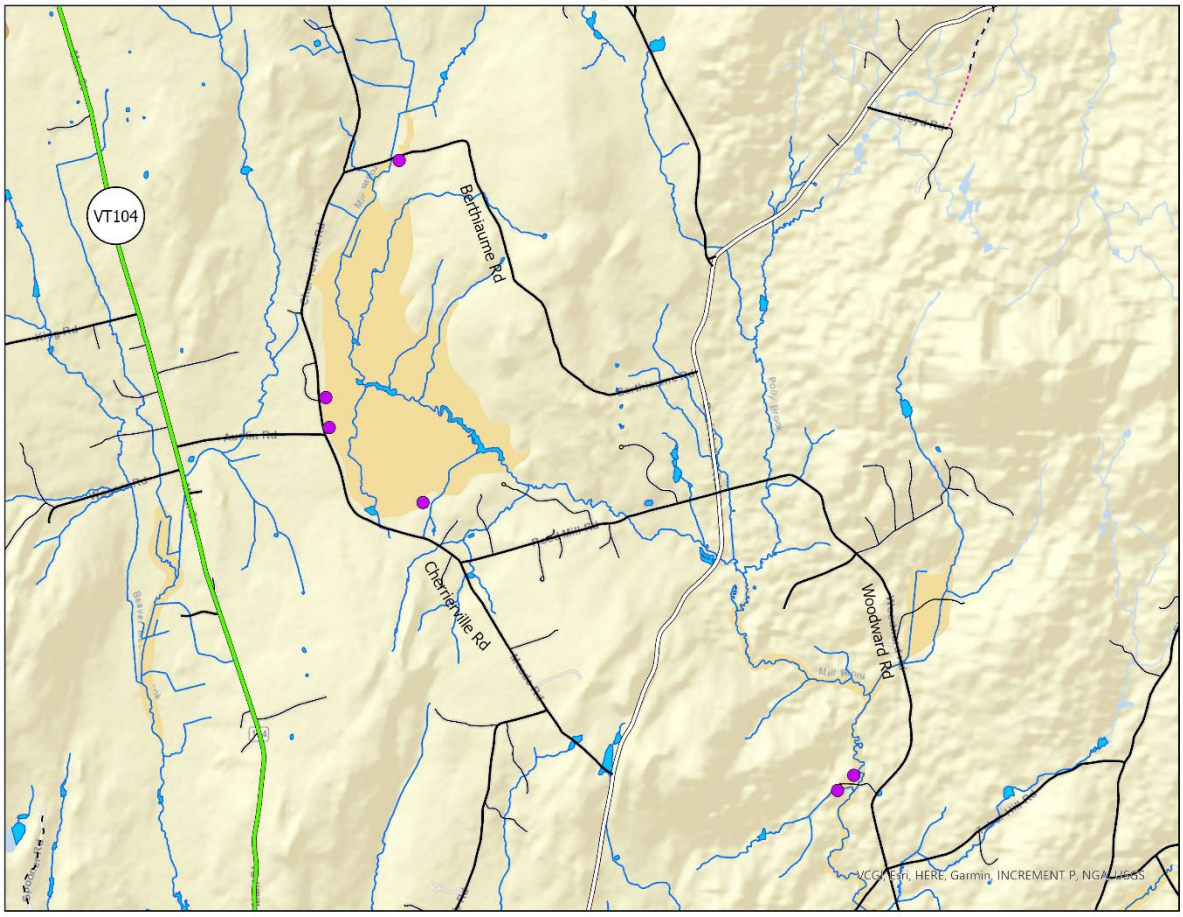
There are approximately 23 structures within FEMA designated Special Flood Hazard Areas (SFHA). The map below shows structures (purple) located with the SFHA in southern Fairfax along the Lamoille River.
Of the 17 structures depicted in the map below, 8 are single family residences, 1 multi-family residence, 2 are mobile homes, 4 are accessory buildings and 1 each of public water supply, commercial site, and communications box.

Figure 26: *Structures in the SFHA, Southern Fairfax*



The map below shows structures (purple) located with the SFHA in northern Fairfax in the Lamoille River watershed. Of the 6 structures depicted in the map below, 5 are single family residences and 1 is a mobile home.

Figure 27: *Structures in the SFHA, Northern Fairfax*



Critical Facilities

A critical facility is defined as a facility in either the public or private sector that provides essential products and services to the general public, is otherwise necessary to preserve the welfare and quality of life in the appropriate jurisdictions, or fulfills important public safety, emergency response and/or disaster recovery functions.

Vermont's Emergency Relief Fund (ERAF)

ERAF provides state funding to match FEMA Public Assistance after federally declared disasters. Eligible public costs are generally reimbursed by FEMA at 75% with a 7.5% State match. The state will increase its match to 12.5% or 17.5% if communities take steps to reduce flood risk as described below:
To receive the 12.5% state match rate, communities must have the following:

1) NFIP Participation
2) Municipal Road and Bridge Standards
3) Local Emergency Management Plan
4) FEMA approved Local Hazard Mitigation Plan

To receive the 17.5% state match rate, communities participate in FEMA's Community Rating System or adopt fluvial erosion hazard or adopt river corridor protection bylaw that meets or exceeds the Vermont Agency of Natural Resources regulations.

Fairfax's ERAF rate currently is 7.5%. Upon adoption of the 2026 Fairfax Hazard Mitigation Plan, the ERAF rate will increase to 17.5%.

7. MITIGATION STRATEGY

The following Mitigation Goals were developed by the Committee.

General Mitigation Goals

- Prevent / reduce the loss of life and injury resulting from all-hazards events.
- Prevent / reduce the financial losses and infrastructure damage incurred by municipal, residential, agricultural and commercial establishments due to disasters.
- Include hazard mitigation planning in the municipal planning process including the Town Plan.
- Capital Improvement Plan and Local Emergency Operations Plan.
- Increase hazard mitigation public education and outreach
- Ensure the general public is part of the hazard mitigation planning process.

Identified Hazard Mitigation Actions, Programs and Activities

A mitigation action is a measure, project, plan or activity proposed to reduce or eliminate current and future vulnerabilities described in the risk assessment. Mitigation actions help achieve the plan's mission and goals. The actions to reduce vulnerability to threats and hazards form the core of the plan and are a key outcome of the planning process. FEMA's mitigation action handbook identified actions within the following four categories that need to be considered:

Local Planning and Regulations: These actions include government authorities, policies or codes that influence the way land and buildings are developed and built.

Structure and Infrastructure Projects: These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.

Natural Systems Protections: This type of action can include green infrastructure and low impact development, nature-based solutions, and bioengineering to incorporate natural features or processes into the built environment.

Education and Awareness Programs: These types of actions keep residents informed about potential natural disasters. Educational outreach can help minimize these risks. Many of these types of actions are eligible for funding through the FEMA HMA program.

Prioritizing Mitigation Actions

Mitigation actions are listed in terms of mitigating threat or risk to public health and safety, reduction of hazard to community assets, adherence to the Town plan and local ordinances, cost, and feasibility. Actions are classified as either short - term or long - term activities. Short –term action items are activities which the municipality may be capable of implementing within one to two years. Long-term action items may require new or additional resources, funding or authorities. On-going action items occur at least once per year. Mitigation actions and their associated scores are listed in priority order, below.

Criteria for Analysis

The following criteria were used establishing an order of project priorities. Each of the following criteria was rated according to a numeric score of "1" (indicating Poor), "2" (indicating Average) and "3" (indicating Good). The highest possible score is 36. The full scoring matrix used is in Appendix B.

1) Does the action reduce damage?
2) Does the action contribute to community objectives?
3) Does the action meet existing regulations?
4) Does the action protect historic structures or structures critical to municipal operations?
5) Can the action be implemented quickly?
6) Is the action socially acceptable?
7) Is the action technically feasible?
8) Is the action administratively possible?
9) Is the action politically acceptable?
10) Is the action legal?
11) Does the action offer reasonable benefits compared to its cost of implementation?
12) Is the action environmentally sound?

Projects are classified as either short – term, medium–term or long - term activities.

- Short –term action items are activities which the municipality may be capable of implementing within six months to one year.
- Medium-term action items may be capable of being implemented in one to five years.
- Long-term action items may require 5 to 10 years, new or additional resources, funding, or authorities.

Cost – Benefit Review

Each project will incorporate a full benefit-cost analysis (BCA) following FEMA's BCA methodology and latest software to ensure cost effectiveness and maximize savings. There was a rough cost/benefit analysis performed using criteria in Table 10 with results listed in the Mitigation Actions Table 12.

Table 10: Cost - Benefit Review

Cost Estimate	
High	More than $100,000
Medium	Equals $50,000 - $100,000
Low	Less than $50,000
Benefit Estimates	
High	Public Safety
Medium	Infrastructure / Functionality
Low	Aesthetics / General Maintenance

Note: At the time of applying for FEMA's mitigation grant programs, each action listed in Table 13 will undergo the full benefit-cost analysis methodology (BCA version 4.8 and higher) to maximize savings.

2017 Mitigation Action Updates

Table 11: 2017 Mitigation Actions Update

Hazard Mitigation Action	Hazard Addressed	Responsible Party	Priority	Status
Conduct Inventory of Stormwater Erosion for Town Roads	Flooding / Fluvial Erosion	Public Works Director	High	Completed. Needs to be redone by 2027.
Upgrade Bridge 23 – TH24 (Boissoneault Road)	Flooding / Fluvial Erosion, HAZMAT	Public Works Director	High	Carry over to 2026 actions. Identified on priorities list.
Community Education & Outreach: How to Prepare for Winter Conditions	Severe Winter Storm (Ice Storm)	Fire Chief	High	Ongoing and included in Communication Plan & Policy
Clear Vegetation from Power Line Corridor	Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Severe Thunderstorm, High Winds	Green Mountain Power / VELCO	High	On-going.
Intersection Improvement TH22 (Rocky Ridge Road) and VT104 Intersection	Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Severe Thunderstorm, High Winds, HAZMAT	Selectboard Chair	Medium	Signage installed by State Agency of Transportation. It is within State's jurisdiction. State said it cannot be done.
Intersection Improvement at intersection of TH28 (Swamp Road) and TH2 (Fletcher Road)	Flooding, Fluvial Erosion, Severe Winter Storm (Ice Storm), Severe Thunderstorm, High Winds, HAZMAT	Public Works Director	Medium	Completed 2018
Intersection improvement	Flooding, Fluvial Erosion, Severe	Public Works Director	Medium	Completed in 2020.

at TH29 (Wilkins Road) and TH2 (Fletcher Road)	Winter Storm (Ice Storm), Severe Thunderstorm, High Winds, HAZMAT			

2026 Mitigation Actions

Table 12: 2026 Mitigation Actions

Hazard Mitigation Action	Hazard Addressed	Hazard Mitigation Action Category	Responsible Party (bolded text = primary POC)	Estimated Timeline for Completion	Funding Source	Action Prioritization and Cost / Benefit
Remove Properties Prone to Flooding Through Voluntary Buyouts	Flooding, Fluvial Erosion, Landslide	Structure and Infrastructure	**Selectboard,** Town Manager	August 2026 – November 2029	Hazard Mitigation Grant Program (HMGP), Building Resistance Communities and Infrastructure Grant (BRIC), and Local Match	High High / High
Remove Properties Threatened by Landslides Through Voluntary Buyouts	Flooding, Fluvial Erosion, Landslide	Structure and Infrastructure	**Selectboard,** Town Manager	August 2026 – November 2029	Hazard Mitigation Grant Program (HMGP), Building Resistance Communities and Infrastructure Grant (BRIC), and Local Match	High High / High
Assess and Stabilize Riverbanks along Goose Pond Road and River Road that are threatening Residential Properties	Flooding, Fluvial Erosion, Landslide	Structure and Infrastructure	**DPW Operations Manager** Town Manager, Selectboard	August 2026 – November 2029	Hazard Mitigation Grant Program (HMGP), Building Resistance Communities and	High High / High

Hazard Mitigation Action	Hazard Addressed	Hazard Mitigation Action Category	Responsible Party (bolded text = primary POC)	Estimated Timeline for Completion	Funding Source	Action Prioritization and Cost / Benefit
					Infrastructure Grant (BRIC), Better Roads Grant and Local Match	
Upgrade Bridge 23 – TH24 (Boissoneault Road)	Flooding, Fluvial Erosion	Structure and Infrastructure	**DPW Operations Manager** Town Manager, Selectboard	November 2028	General Funds	High High / High
Update Road Erosion Inventory	Flooding, Fluvial Erosion	Structure and Infrastructure	**DPW Operations Manager,** Town Manager, Selectboard	June 2027 – August 2027	State Better Roads Category A REI Reassessment Grant	Medium Low / High
Buck Hollow Road Bridge 1 Upgrade	Flooding, Fluvial Erosion	Structure and Infrastructure	**DPW Operations Manager** Town Manager, Selectboard	May 2027 – June 2028	General Funds	High High / High
Stormwater Improvement on King Road	Flooding, Fluvial Erosion	Structure and Infrastructure	**Selectboard** Town Manager, DPW Operations Manager	May 2027 – June 2028	General Funds	Medium High / High
Nichols Road Culvert Upgrade on Mill River	Flooding, Fluvial Erosion	Structure and Infrastructure	**DPW Operations Manager** Town Manager, Selectboard	May 2027 – June 2028	General Funds	Medium High / High
Swamp Road Culvert upgrade (Culvert ID# SP-6), Mill Brook	Flooding, Fluvial Erosion	Structure and Infrastructure	**DPW Operations Manager** Town Manager, Selectboard	FY28 into FY29	General Fund, Better Roads, HMGP	High / High
Hunt St Bank Stabilization on Mill Brook (parking area	Flooding, Fluvial Erosion	Structure and Infrastructure	**DPW Operations Manager**	November 2026 – November 2029	ANR's Clean Water Service Provider	Medium High / High

Hazard Mitigation Action	Hazard Addressed	Hazard Mitigation Action Category	Responsible Party (bolded text = primary POC)	Estimated Timeline for Completion	Funding Source	Action Prioritization and Cost / Benefit
across from old gym)			Town Manager, Selectboard			
Maple Street Covered Bridge Dry Culvert, Mill Brook	Flooding, Fluvial Erosion	Structure and Infrastructure	**Selectboard** PW Director	November 2026 – November 2029	ANR's Clean Water Service Provider	Medium High / High
Hunt Street Floodplain Restoration	Flooding, Fluvial Erosion	Natural Systems Protection	**Town Manager,** Selectboard, **Operations** Manager	May 2028 – October 2028	ANR's Clean Water Service Provider	Low High / High
Main Street Floodplain Restoration, Confluence of Mill River and Lamoille River	Flooding, Fluvial Erosion	Natural Systems Protection	**Town Manager,** Selectboard, **Operations** Manager	May 20299 – October 202	ANR's Clean Water Service Provider	Low High / High
River Road Floodplain Restoration, Confluence of Stones Brook and Lamoille River	Flooding, Fluvial Erosion	Natural Systems Protection	**Town Manager,** Selectboard, DPW Operations Manager	May 2028 – October 2028	ANR's Clean Water Service Provider	Low High / High
Update Flood Bylaws to Reflect Changes in FEMA Flood Insurance Rate Maps.	Flooding, fluvial erosion	Local Planning and Regulations	**Zoning Administrator** Development Review Board	December 2027	General Fund	High Low/High
Conduct Emergency Power Backup Plan for Critical Facilities (incl. Procure and Install Stationary Generators at Fire Station, Water and WW facility and Town Garage).	Flooding, Fluvial Erosion, Strong Wind, Winter Storm (Ice Storm), Wildfire, Infectious Disease Outbreak Landslide, Hail, Heat/Drought, Structure Fire, Dam Failure,	Local Plans and Regulations	**DPW Operations Manager,** Town Manager, Selectboard	January 2027 – December 2030	Town General Fund; Municipal Energy Resilience Program	Low Medium / High

Hazard Mitigation Action	Hazard Addressed	Hazard Mitigation Action Category	Responsible Party (bolded text = primary POC)	Estimated Timeline for Completion	Funding Source	Action Prioritization and Cost / Benefit
	CBRN, Earthquake					
Upgrade Portable / Mobile Communications System for Fire Department	Flooding, Fluvial Erosion, Strong Wind, Winter Storm (Ice Storm), Infectious Disease Outbreak Hail, Heat/Drought, Landslide, Dam Failure, Wildfire, Structure Fire, CBRN, Earthquake	Structure and Infrastructure	**Fire Chief**	January 2027 – December 2030	Assistance to Firefighters Grant Program	Medium High/High
Enhance Public Awareness of home fire risks (smoke alarms, carbon monoxide, fire extinguishers)	Structure Fire, CBRN, Winter Storm (Ice Storm), High Winds, Severe Thunderstorms,	Education and Awareness Programs	**Fire Chief**	December 2026 – December 2030	Town General Fund	High Low / High
Community Education Messaging: How to Prepare for Winter Conditions and Severe Winter Weather	Severe Winter Storm (Ice Storm), High Winds, Hail, Cold	Education and Awareness Programs	**Emergency Management Director** Health Officer	November 2026 – December 2030	Town General Fund	High Low / High
Disease Vector Control Training for Municipal Officials	Infectious Disease Outbreak	Education and Awareness Programs	**Emergency Management Director** Health Officer, VDH	January 2027 – December 2030	Town General Fund	High Low / High
Infectious Disease Education and Awareness Programs for for Public	Infectious Disease Outbreak,	Education and Awareness Programs	**Emergency Management Director** Health Officer, VDH	January 2027 – December 2030	Town General Fund	High Low/High

Hazard Mitigation Action	Hazard Addressed	Hazard Mitigation Action Category	Responsible Party (bolded text = primary POC)	Estimated Timeline for Completion	Funding Source	Action Prioritization and Cost / Benefit
Work with Vermont Woodlands Association to provide educational tools, webinars, and field guides to help identify invasive species threats	Invasive Species	Education and Awareness Programs	**Town Manager** Recreation Director	January 2027 – December 2030	Town General Fund	High Low/High

Mitigation Action Changes in Priorities

Mitigation actions changed priorities for several reasons, reflecting the evolving nature of risks, community needs and resource availability. Key factors that drove changes in mitigation actions and priorities may include:

- **Evolving Risk Landscape:**
  - Climate Change: As the impacts of climate change become more pronounced, priorities may shift towards addressing related risks like sea-level rise, increased frequency of extreme weather events, and changing precipitation patterns
- **Updated Hazard Data**:
  - Improved Understanding: Advances in science and technology provide better data and modeling, leading to new insights about hazard risks and vulnerabilities.
  - Recent Disasters: Experiences from recent disasters can highlight previously underestimated risks and lead to a re-evaluation of priorities.
- **Community and Stakeholder Input**:
  - Public Concerns: Community feedback and concerns can bring attention to specific vulnerabilities or areas in need of mitigation.
  - Stakeholder Engagement: Involvement of local businesses, non-profits, and other stakeholders can influence which mitigation actions are prioritized based on their expertise and needs.
- **Changes in Resources:**
  - Funding Availability: New funding opportunities or changes in budget allocations can shift which projects are feasible and prioritized.
  - Technological Advances: New technologies can provide more effective or cost-efficient mitigation solutions, altering priority actions.
- **Policy and Regulatory Changes:**
  - New Legislation: Changes in local, state, or federal regulations can necessitate updates to mitigation priorities to ensure compliance.
  - Policy Shifts: Shifts in government policy focus, such as increased emphasis on sustainability or climate resilience, can change priorities.

- **Demographic and Economic Changes**:
  - Population Growth: Increased population density in certain areas can raise the priority of mitigating risks in those regions.
  - Economic Development: As areas develop economically, there may be a higher priority placed on protecting new infrastructure and investments.
- **Critical Infrastructure Needs:**
  - Infrastructure Vulnerabilities: Identification of weaknesses in critical infrastructure (e.g., utilities, transportation networks) can lead to a prioritization of actions to fortify these systems.
  - Lifeline Services: Ensuring the resilience of essential services like water, power, and healthcare can become a higher priority in mitigation planning.
- **Previous Hazard Mitigation Projects:**
  - Project Completion: The completion of previous hazard mitigation projects may have resolved a hazard in a particular area that was of previous concern.

Integration Into Existing Plans and Procedures

For Fairfax to succeed in reducing long-term risk, information from this Plan should be integrated throughout town operations. Integration actions include:

- The mitigation goals and risk assessment information can be incorporated into the next Town Plan update and into future flood hazard area regulations and river corridor bylaws
- Funding mitigation actions can be prioritized in the annual budget process
- Funding mitigation actions can be prioritized in grant research
- The risk assessment information can be incorporated into future training plans and budgets
- The hazard mitigation risk assessment and actions can be embedded into the LEMP

The following hazard mitigation information was captured in the 2018 Town Plan and should be captured in the Town Plan rewrite:

Facilities Utilities & Services:

- To provide for the physical safety of Fairfax residents through quality fire, emergency response, and law enforcement services.
- To improve stormwater management by the implementation of best management practices to reduce stormwater runoff and control erosion.
- To maintain a public water and public wastewater system that meets state and federal standards... [and] to assess when improvements or expansions... will be needed (e.g., securing a secondary backup water source in case of contamination or emergency).

Infrastructure: Transportation and Energy

- Review and evaluate Road and Driveway Standards to ensure they meet public safety standards (ensuring accessibility for emergency vehicles).
- Ensure firefighters receive proper training to handle structures that have roof-mounted solar.
- Review and maintain the Building Inspection, Code Enforcement, and Fire Safety Ordinance to incorporate safe rooftop solar installation methods and standards.

Natural & Cultural Resources (Flood Resilience & Land Use)

- Strengthen regulations in the flood hazard areas beyond National Flood Insurance Policy (NFIP) minimums and consider adoption of the state river corridors to protect floodplain and stream resources, supporting public health and safety.
- Participate in the Agency of Natural Resources' Tactical Basin Plan process to protect and improve water quality.
- To focus future development toward areas most suitable for that purpose, and to promote planned development which does not exceed the physical capability of the land to support it (preventing development in high-risk or ecologically sensitive zones).

Education and Awareness

- Foster a community environment that stimulates lifelong learning and safety awareness.
- Actively promote readily available educational materials and programs from regional and state partners designed to teach residents and local businesses individual steps they can take to minimize runoff and improve water quality.
- Provide public outreach and clear information to building permit applicants regarding residential and commercial building energy standards, ensuring safer structures.
- Encourage the shared use of both public and private municipal facilities to offer cross-generational educational opportunities, which can serve as a venue for public health, safety education, and risk screenings.

8. PLAN MAINTENANCE

This Plan is dynamic. To ensure it remains current and relevant, it will be evaluated, monitored and updated every five years in accordance with FEMA guidelines in effect at the time.

Annual Monitoring and Evaluation

Within 12 months of FEMA Final Approval, the Plan will be annually evaluated and monitored as follows:

1. Three months prior to the anniversary of the FEMA Final Approval date, the Town Manager and Selectboard Chair will evaluate the effectiveness of the Plan in meeting the stated goals. Items to be considered during this evaluation:
    - What disasters have the town or region experienced?
    - Should the list of highest risk natural hazard impacts be modified?
    - Are new data sources, maps, plans, or reports available? If so, what have they revealed, and should the information be incorporated into the plan?
    - Has development in the town or region occurred and could it create or reduce risk?
    - Has the town adopted new policies or regulations that could be incorporated into this plan?
    - Have elements of the plan been incorporated into new plans, reports, policies or regulations?
    - Are there different or additional community capabilities available for mitigation implementation?

2. Next, the Town Manager and Selectboard Chair will monitor mitigation action progress. Items to consider:
    - Is the mitigation strategy being implemented or anticipated?
    - Were the cost and timeline estimate accurate?

- Should new mitigation actions be added?
- Should proposed actions be revised or removed?
- Are there new funding sources to consider?

The status (e.g. in progress, complete) of each action should be recorded in Table 8.1. If the status is "in progress" note whether the action is on schedule. If not, describe any problems, delays, or adverse conditions that will impair the ability to complete the action.

3. The public will have an opportunity to review the plan and provide updates a month prior to the Selectboard meeting during the month of the annual anniversary date of FEMA Final Approval. The Town Manager will post hard copies at the Town office and post materials on the Town website and Facebook page for the public. Items to consider for public engagement:
    - Are there any new stakeholders to include?
    - Were there changes in population patterns (migration, density or makeup of socially vulnerable populations?
    - Were there any changes in land use and development?
    - What public outreach activities have occurred? At minimum, the town will publicly post notice of meeting when the plan is being evaluated.
    - How can the public involvement be improved?

4. Based on input received, the mitigation strategy and/or actions will be modified, if needed. The plan status and public input will be reviewed at Trustees meeting during the month of the annual anniversary date of FEMA Final Approval. A report (or public record in the form of meeting minutes) of the annual evaluation and monitoring will be made available to the public on the Town website and captured in the plan.

Table 13: Mitigation Action Status

Mitigation Action Status					
Mitigation Action	**2026**	**2027**	**2028**	**2029**	**2030**
Local Plans & Regulations					
Update Flood Bylaws to Reflect Changes in FEMA Flood Insurance Rate Maps.					
Conduct Emergency Power Backup Plan for Critical Facilities (incl. Procure and Install Stationary Generators at Fire Station, Water and WW facility and Town Garage).					
Structure & Infrastructure Projects					
Remove Flood-Prone Properties Through Voluntary Buyouts.					
Remove Properties Threatened by Landslides Through Voluntary Buyouts					
Assess and Stabilize Riverbanks along Goose Pond Road and River Road that are threatening Residential Properties					
Upgrade Bridge 23 – TH24 (Boissoneault Road)					
Update Road Erosion Inventory					
Buck Hollow Road Bridge 1 Upgrade					
Stormwater Improvement on King Road					
Nichols Road Culvert Upgrade on Mill River					

Swamp Road Culvert upgrade (culvert ID# SP-6), Mill Brook					
Hunt St Bank Stabilization, Mill Brook (parking area across from old gym)					
Maple Street Covered Bridge Dry Culvert. Mill Brook					
Upgrade Portable / Mobile Communications System for Fire Department					
Natural Systems Protection					
Hunt St. Floodplain Restoration					
Main St Floodplain Restoration Confluence of Mill River and Lamoille River					
River Road Floodplain Restoration, Confluence of Stones Brook and Lamoille River					
Outreach & Education Programs					
Enhance Public Awareness of home fire risks (smoke alarms, carbon monoxide, fire extinguishers)					
Community Education Messaging: How to Prepare for Winter Conditions and Severe Winter Weather					
Hot and Cold Weather Shelter Planning for Local Officials and Volunteers					
Disease Vector Control Training for Municipal Officials (ticks, mosquitos, fleas, lice, etc.)					
Infectious Disease Education and Awareness Programs for Public					
Work with Vermont Woodlands Association to provide educational tools, webinars, and field guides to help identify terrestrial threats like buckthorn, honeysuckle, and the emerald ash bore					

Plan Updating

This plan will be updated at a minimum every five (5) years as follows:

1. Initiate Plan Update – The Town Manager should contact Vermont Emergency Management (VEM) to apply for funding approximately 2 years prior to the plan expiration date. It is assumed that the Town Manager will serve as the primary point of contact for the Plan update.

   Once funding is secured and the grant agreement between the Town and State is in place, the Town Manager can issue a request for proposals (RFP) to procure planning services in accordance with the grant agreement. The RFP should be issued approximately 14 months before the plan expires.

   Once a consultant is procured, the Plan update process can begin with a kick-off meeting including the consultant and local hazard mitigation planning team. The kick-off meeting should be scheduled approximately 12 months before the plan expires. The Town should allot approximately 8 months for the plan update process.

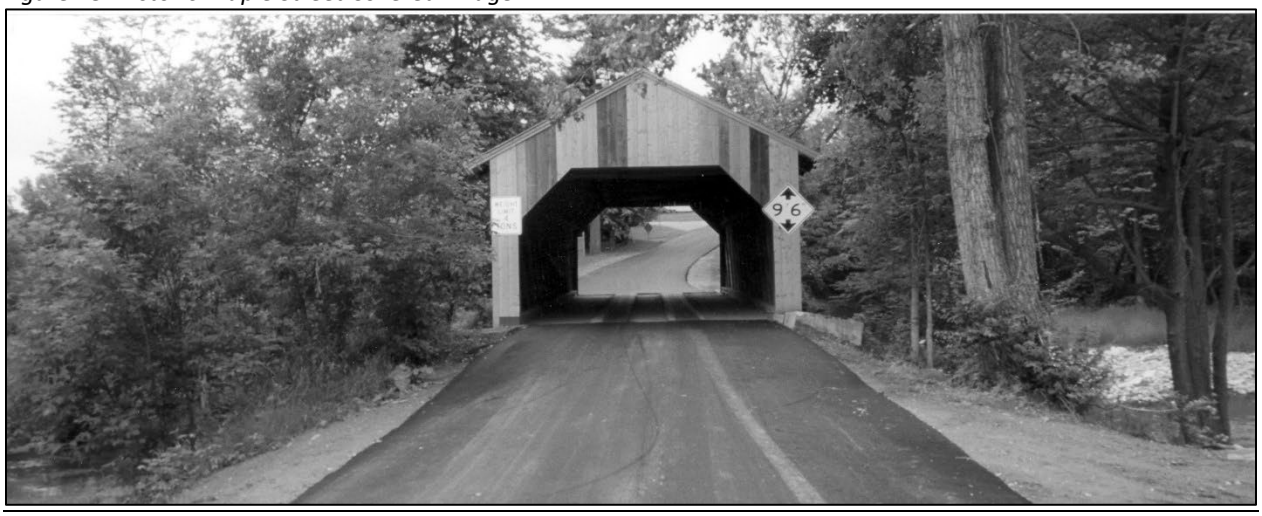
2. The Stakeholder Public Outreach Plan for LHMP should be reviewed and updated. Opportunities for whole community involvement throughout the Plan update process must be factored into the schedule. Whole community involvement must include the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and

changes in land use and development. These opportunities may include a community survey, planning workshop, and public meetings at critical milestones agreed to at the project kick-off meeting.

3. Once the local hazard mitigation planning team has prepared a final draft following a public comment period, they can seek authorization from the Trustees to submit the Plan for VEM/FEMA approval. Plan approval is accomplished in two steps. The first step is receiving "Approval Pending Adoption" from the VEM/FEMA review. The Town should submit for "Approval Pending Adoption" approximately 4 months before the plan expires to allow for time to respond to any review comments received by VEM/FEMA. The second step is adopting the plan. Once the Town receives "Approval Pending Adoption", the Town Selectboard should adopt the plan by signing the resolution as soon as their next regular meeting.

4. Once adopted, the Town can submit the Plan and the signed resolution to VEM/FEMA. FEMA will issue the Town a letter with the date of "Final Approval". That date starts the clock on the 5-year cycle.

Figure 28: Historic Maple Street Covered Bridge



Appendix A: RESOLUTION

A RESOLUTION OF THE TOWN OF FAIRFAX SELECTBOARD ADOPTING THE 2026 TOWN OF FAIRFAX HAZARD MITIGATION PLAN.

WHEREAS the Town of Fairfax recognizes the threat that natural hazards pose to people and property within The Town of Fairfax; and

WHEREAS The Town of Fairfax has prepared a multi-hazard plan, hereby known as the 2026 Town of Fairfax 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 2026 Town of Fairfax Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in The Town of Fairfax from the impacts of future hazards and disasters; and

WHEREAS adoption by The Town of Fairfax Selectboard demonstrates its commitment to hazard mitigation and achieving the goals outlined in the 2026 Town of Fairfax Hazard Mitigation Plan.

NOW THEREFORE, BE IT RESOLVED BY THE TOWN OF FAIRFAX SELECTBOARD, IN THE STATE OF VERMONT, THAT:

Section 1. In accordance with 24 VSA §872, The Town of Fairfax Selectboard adopts the 2026 Town of Fairfax Hazard Mitigation Plan. While content related to The Town of Fairfax may require revisions to meet the plan approval requirements, changes occurring after adoption will not require The Town of Fairfax 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 _____, 2026.

By: _____ (Signature)

_____ (print name)

Appendix B: Mitigation Action Scoring Table

Mitigation Action	Criteria												Total Score
	1	2	3	4	5	6	7	8	9	10	11	12	
Remove Problematic Beaver Dams Throughout Town.	3	3	3	3	2	3	3	3	3	3	3	3	35
Remove Properties Prone to Flooding Through Voluntary Buyouts.	3	3	3	3	2	3	3	3	3	3	3	3	35
Assess and Stabilize Riverbanks along Goose Pond Road and River Road that are threatening Residential Properties	3	3	3	3	2	3	3	3	3	3	3	3	35
Remove Properties Threatened by Landslides Through Voluntary Buyouts	3	3	3	3	2	3	3	3	3	3	3	3	35
Upgrade Bridge 23 – TH24 (Boissoneault Road)	3	3	3	3	3	3	3	3	3	3	3	3	36
Update Road Erosion Inventory	3	3	3	3	3	3	3	3	3	3	3	3	36
Update Flood Bylaws to Reflect Changes in FEMA Flood Insurance Rate Maps.	3	3	3	3	3	3	3	3	3	3	3	3	36
Buck Hollow Road Bridge 1 Upgrade	3	3	3	3	3	3	3	3	3	3	3	3	36
Stormwater Improvement on King Road	3	3	3	2	2	3	3	3	3	3	3	3	34
Nichols Road Culvert Upgrade on Mill River	3	3	3	2	2	3	3	3	3	3	3	3	34
Swamp Road Culvert upgrade (Culvert ID# SP-6), Mill Brook	3	3	3	3	2	3	3	3	3	3	3	3	35
Hunt St Bank Stabilization, Mill Brook (parking area across from old gym)	3	3	3	3	2	3	3	3	3	3	3	3	35
Maple Street Covered Bridge Dry Culvert, Mill Brook	3	3	3	3	2	3	3	3	3	3	3	3	35
Hunt Street Floodplain Restoration	3	3	3	2	2	3	3	3	3	3	3	3	34
Main Street Floodplain Restoration, Confluence of Mill River and Lamoille River	3	3	3	2	2	3	3	3	3	3	3	3	34
River Road Floodplain Restoration, Confluence of Stones Brook and Lamoille River	3	3	3	2	2	3	3	3	3	3	3	3	34

Conduct Emergency Power Backup Plan for Critical Facilities (incl. Procure and Install Stationary Generators at Fire Station, Water and WW facility and Town Garage).	3	3	3	3	2	3	3	3	3	3	3	3	35
Upgrade Portable / Mobile Communications System for Fire Department	3	3	3	3	2	3	3	3	3	3	3	3	35
Enhance Public Awareness of home fire risks (smoke alarms, carbon monoxide, fire extinguishers)	3	3	3	3	2	3	3	3	3	3	3	3	35
Community Education Messaging: How to Prepare for Winter Conditions and Severe Winter Weather	3	3	3	2	3	3	3	3	3	3	3	3	35
Hot and Cold Weather Shelter Planning for Local Officials and Volunteers	3	3	2	2	3	3	3	3	3	3	3	3	34
Disease Vector Control Training for Municipal Officials	3	3	2	2	3	3	3	3	3	3	3	3	34
Infectious Disease and Invasive Species Awareness	3	3	2	2	3	3	3	3	3	3	3	3	34

Appendix C: Lamoille River Modeling

Lamoille River Modeling & Alternative Analysis Summary for Fairfax, 2025 *(updated 2026)*
Source: SLR Consulting.

Hunt Street Floodplain Restoration

- *Area of Concern:* Hunt Street floods frequently due to a river constriction in a location where the slope changes, causing water to back up onto the road embankment.
- *Proposed Alternative:* Lowering the elevation of the agricultural field across the river to create more floodplain reconnection and storage.
- *Projected Impact:* Drops large flood levels by 1.3 feet at Hunt Street, 2.6 feet at the wastewater treatment plant, and extends benefits further upstream into the village and onto Mill Brook.

Main St Floodplain Restoration Confluence of Mill River and Lamoille River

- *Area of Concern*: High flood depths around the local recreation fields, a residential lot, and near the Steeple Market.
- *Proposed Alternative:* Excavating a residential lot by about 3 feet and removing an existing building near the confluence to expand the river's capacity.
- *Projected Impact:* Lowers medium flood water surfaces near the market by up to 1.7 feet.

Maple St. Covered Bridge Dry Culvert, Mill Brook

- *Area of Concern:* The historic covered bridge structure significantly restricts water flow, forcing water surfaces to bump up multiple feet upstream during heavy floods.
- *Proposed Alternative:* Keeping the covered bridge completely intact but adding a bypass alternative—specifically punching a large 20 ft x 6 ft overflow box culvert through the nearby road embankment.
- *Projected Impact:* Results in a 1.5-foot flood reduction upstream, removing nearly a foot of water from the Maple Street road surface and mitigating damage to nearby homes.

Main Street Bridge (Route 104) (Note: State owned bridge and right-of-way)

- *Area of Concern*: A highly constricted 30-foot bridge width in the middle of town that causes major backwatering, threatening multi-family housing and businesses like Stones Throw Pizza.
- *Proposed Alternative:* Widening the bridge opening from 30 feet to 50 feet .
- *Projected Impact:* Drastically drops large flood levels upstream by 5.7 feet, keeping the surrounding commercial parking lots and buildings completely dry.

Fletcher Road Bank Stabilization (Velocity Concern)

- *Area of Concern:* Extreme stream velocities along a steep bank section that caused a severe road embankment blowout/slumping during the 2023 flood.
- *Proposed Solution:* Utilize the model's velocity heat mapping to determine optimal sizing for rip-rap (boulders/rock sizing) to build highly resilient armoring along the curve.

Boissoneault Road Bridge

- *Area of Concern:* The current 20-foot wide bridge features an undersized, triangular opening due to an intrusive abutment sitting directly in the channel.
- *Proposed Alternative:* Doubling the width to a 40-foot bridge that spans the entire valley bottom.

- *Projected Impact:* Provides massive localized relief, reducing large flood backwater elevations by 6.4 feet and preventing the river from overtopping the bridge deck.

Stones Brook & River Road Confluence – (Near Fairfax Salvage)

- *Area of Concern:* Severe backwatering from the main stem of the Lamoille River blocks River Road with debris and floods homes along the brook.
- Proposed Alternatives:
    - Enlarging the River Road Bridge.
    - An aggressive floodplain restoration project that involves digging out a nearby field by 6 feet to create dynamic relief.
- *Projected Impact:* While the bridge expansion yields benefits mostly for mid-level floods, digging out the field drops water surfaces along the main Lamoille stem by up to 6 feet all the way up to the Fairfax Falls Dam.

Shepherdson Hollow Road Bridge (Note: This was installed following the Halloween Storm 2019 which destroyed the previous bridge)

- *Area of Concern:* Even though this is a newer arch bridge, it remains a restriction that leaves nearby residents facing nearly 5 feet of deep water across the road in severe scenarios.
- *Proposed Alternative:* Nearly doubling the arch width from 25 feet to a much wider span.
- *Projected Impact:* Safely pulls the flood profile down by roughly 5 feet, keeping water off the road surface.

Combined Scenario Effect

When the model simulated implementing the most impactful options together (Hunt Street floodplain, Main Street floodplain, River Road floodplain, and key bridges), it showed an incredibly dramatic contraction of the regional floodplain, effectively dropping water surfaces by up to 4.2 feet along the Lamoille River and mitigating flooding entirely for several village landmarks.

Appendix D: Major Disaster Declarations (Source: FEMA.gov)

Disaster Date(s)	Declaration Date	Hazard (Disaster Declaration)	Franklin County Declaration? (Yes/No)
Aug 11 – 24, 2024	September 11, 2024	Severe Storms and Flooding (DR-4816)	No
Jul 29-31, 2024	September 26, 2024	Severe Storms, Flooding, Landslides and Mudslides (DR-4826)	No
July 9 – 11, 2024	August 20, 2025	Severe Storms, Flooding, Landslides, Mudslides (DR-3609, DR-4810)	No
Jan 9 – 13, 2024	April 19, 2024	Severe Winter Storm (DR-4770)	Yes
Dec 18 - 19, 2023	March 2, 2024	Severe Storms and Flooding (DR-4762)	No
Aug 3 – 5, 2023	October 6, 2023	Severe Storms and Flooding (DR-4744)	No
July 10 - 14. 2023	July 14, 2023	Severe Storms, Flooding Landslides, and Mudslides (4720)	Yes
July 10 - 14, 2023	July 10, 2023	Severe Storm and Flooding (DR-3595)	Yes
Dec 22-24, 2022	March 20, 2023	Severe Storms (Wind) and Flooding (DR-4695)	Yes
Jul 29-30. 2021	September 29, 2021	Severe Storm and Flooding (DR-4621)	No
January 20 – May 11, 2023	April 8, 2020	COVID-19 (DR-4532)	Yes
October 31 – November 1, 2019	January 17, 2020	Severe Storm (Wind) and Flooding (DR-4474)	Yes
April 15, 2019	April 15, 2019	Severe Storms and Flooding (DR-4445)	No
May 4 – 5, 2018	July 30, 2018	Severe Storm and Flooding (DR-4380)	Yes
October 29 - 30, 2017	January 2, 2018	Severe Storm and Flooding (DR-4356)	Yes
June 29 – July 1, 2017	August 16, 2017	Severe Storms and Flooding (DR-4330)	No
June 9, 2015	July 29, 2015	Severe Storm and Flooding (DR-4232)	No
December 9 – 12, 2014	February 3, 2015	Severe Winter Storm (DR-4207)	No
April 15 - 18, 2014	June 11, 2014	Severe Storm and Flooding (DR-4178)	Yes
December 20 - 26, 2013	January 29, 2014	Severe Winter Storm (DR-4163)	Yes
June 25 – July 11, 2013	August 2, 2013	Severe Storms and Flooding (DR-4140)	No
May 22 – 26, 2013	June 13, 2013	Severe Storms and Flooding (DR-4120)	No
May 29, 2012	June 22, 2012	Severe Storm, Tornado, and Flooding (DR-4066)	No

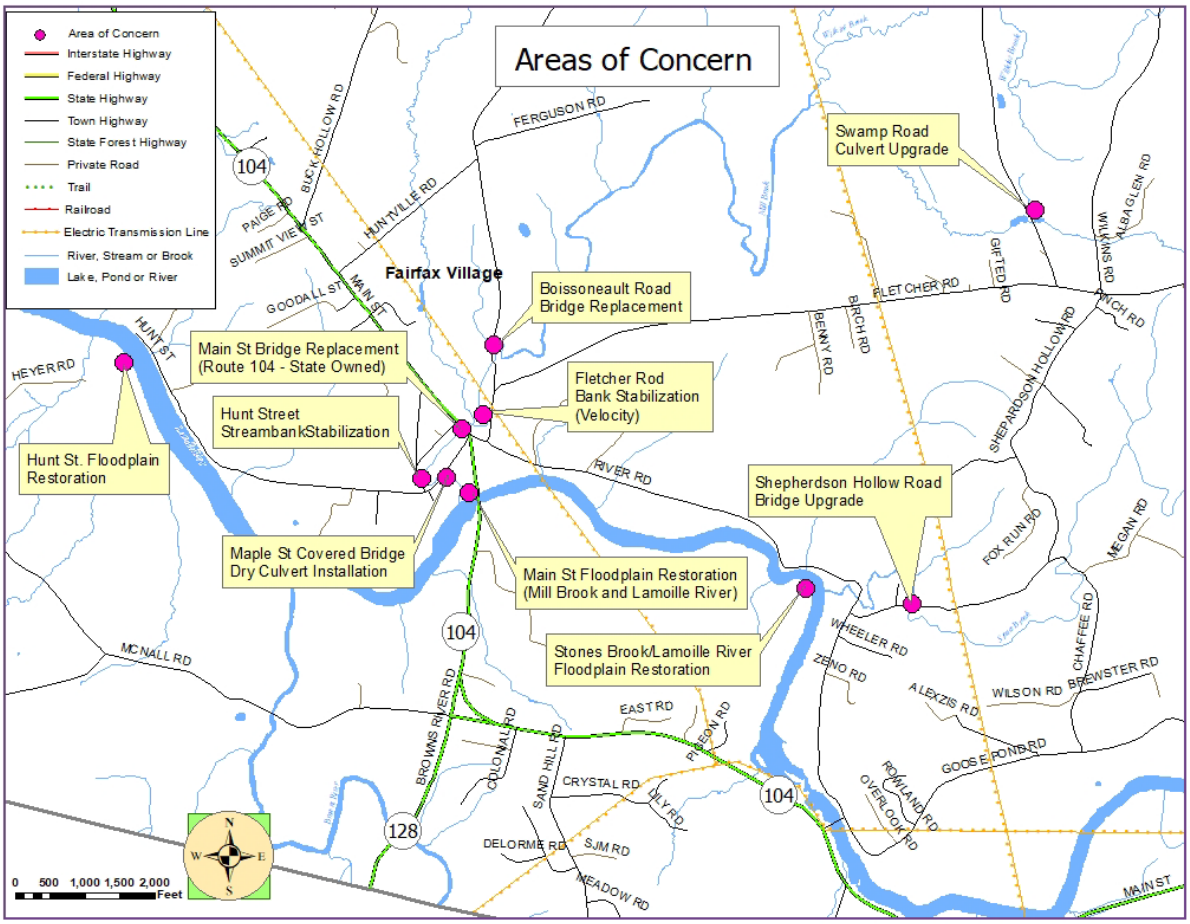
August 8, 2011	August 29, 2011	Tropical Storm Irene (DR-4022)	No
April 2011	June 15, 2011	Severe Storms and Flooding (DR-1995)	Yes
May 2011	November 8, 2011	Severe Storms and Flooding (DR-4043)	Yes
December 1, 2010	December 22, 2010	Severe Storms (Wind) (DR-1951)	Yes
December 11 – 18, 2008	January 14, 2009	Severe Winter Storm (DR-1816)	No
July 21 – August 12, 2008	September 12, 2008	Severe Storms and Flooding (DR-1790)	No
July 18, 2008	August 15, 2008	Severe Storms, a Tornado and Flooding (DR-1784)	Yes
June 14 - 17, 2008	June 14, 2008	Severe Storms and Flooding (DR-1778)	Yes
September 23, 2004	September 3, 2004	Severe Storms and Flooding (DR-1559)	Yes
June 5, 2002	June 15, 2002	Severe Storms and Flooding, Severe Wind (DR-1428)	No
June 17 – August 17, 1998	June 30, 1998	Severe Storms and Flooding, Rainfall (DR-1228)	Yes
January 6 - 16, 1998	January 15, 1998	Ice Storms (DR-1201)	Yes
July 14 - 17, 1997	July 25, 1997	Excessive Rainfall, High Winds and Flooding (DR-1184)	Yes
June 12 – 14, 1996	June 27, 1996	Flooding (DR-1124)	No
January 19 – February 2, 1996	February 13, 1996	Storms and Flooding (DR-1101)	Yes
August 4 – 6, 1995	August 16, 1995	Heavy Rain, Flooding (DR-1063)	No
April 24 - May 26, 1993	May 12, 1993	Heavy Rain, Snowmelt & Flooding (DR-990)	Yes
March 11, 1992	March 18, 1992	Flooding, Heavy Rain, Ice Jams (DR-938)	No
July 4 – 23, 1990	July 25, 1990	Flooding, Severe Storm (DR-875)	Yes
August 4 – 5, 1989	September 11, 1989	Severe Storms, Flooding (DR-840)	No
June 6 – 8, 1984	June 18, 1984	Severe Storms, Flooding (DR-712)	Yes
August 5, 1976	August 5, 1976	Severe Storms, High Winds & Flooding (DR-518)	Yes
June 28 - 30, 1973	July 6, 1973	Severe Storm, Flooding, & Landslides (DR-397)	Yes

Appendix E: Extremely Hazardous Sites (EHS) and Critical Facilities, Fairfax, VT

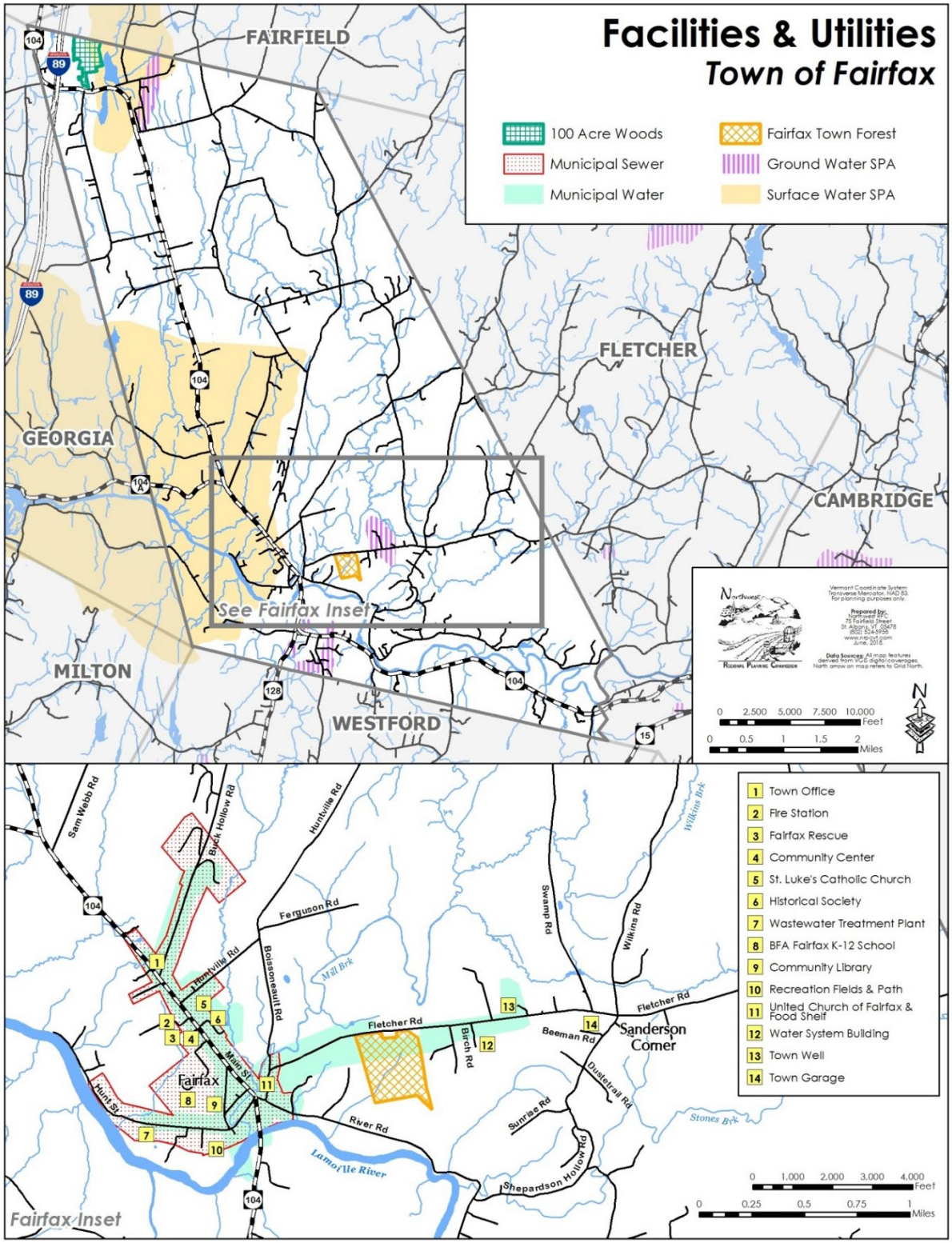
Hazardous Sites: Facilities required to report to federal, state, and local governments under the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 for chemical emergencies. Sites listed are those that store, and/or use hazardous substances. Critical Facilities: A facility that provides services and functions essential to a community, especially during and after a. disaster.	
Large Employer	Runamok Maple 293 Fletcher Rd.
Hazardous Material Storage Area/Tier II Site	Bellows Free Academy Fairfax 75 Hunt St.
Hazardous Material Storage Area/Tier II Site	Fairfax Co-op Water System Sandhill Heights
Hazardous Material Storage Area/Tier II Site	Fairfax Falls Substation and Hydroelectric Station 781 Main St.
Hazardous Material Storage Area/Tier II Site	Fire District #1 (Windtop Development) 52 Snowcrest Rd.
Hazardous Material Storage Area/Tier II Site	Abba Fuels, Inc. VT Route 104
Hazardous Material Storage Area/Tier II Site	Maplefields 874 Main St.
Hazardous Material Storage Area/Tier II Site	Nan's Mobil 1301 Main St.
Hazardous Material Storage Area/Tier II Site	Saint Albans City Fairfax Water Plant Saint Albans City Public Works 2679 Main St.
Hazardous Material Storage Area/Tier II Site	Saint Albans North & South Reservoirs Saint Albans City Public Works 2679 Main St.
Hazardous Material Storage Area/Tier II Site	Steeple Market 1098 Main St.
Hazardous Material Storage Area/Tier II Site	Vermont Electric Power Company (VELCO) East Fairfax Substation 25 Fisher Rd.
Critical Facility	Fairfax Fire Station 15 Goodall St.
Critical Facility	Fairfax Rescue 14 Goodall St.
Critical Facility	Fairfax Town Garage 317 Fletcher Rd.
Critical Facility	Fairfax Town Office 12 Buck Hollow Rd.
Critical Facility	Fairfax Wastewater Treatment Plan 142 Hunt St.
Critical Facility	US Post Office 997 Main St.

Appendix F: Maps

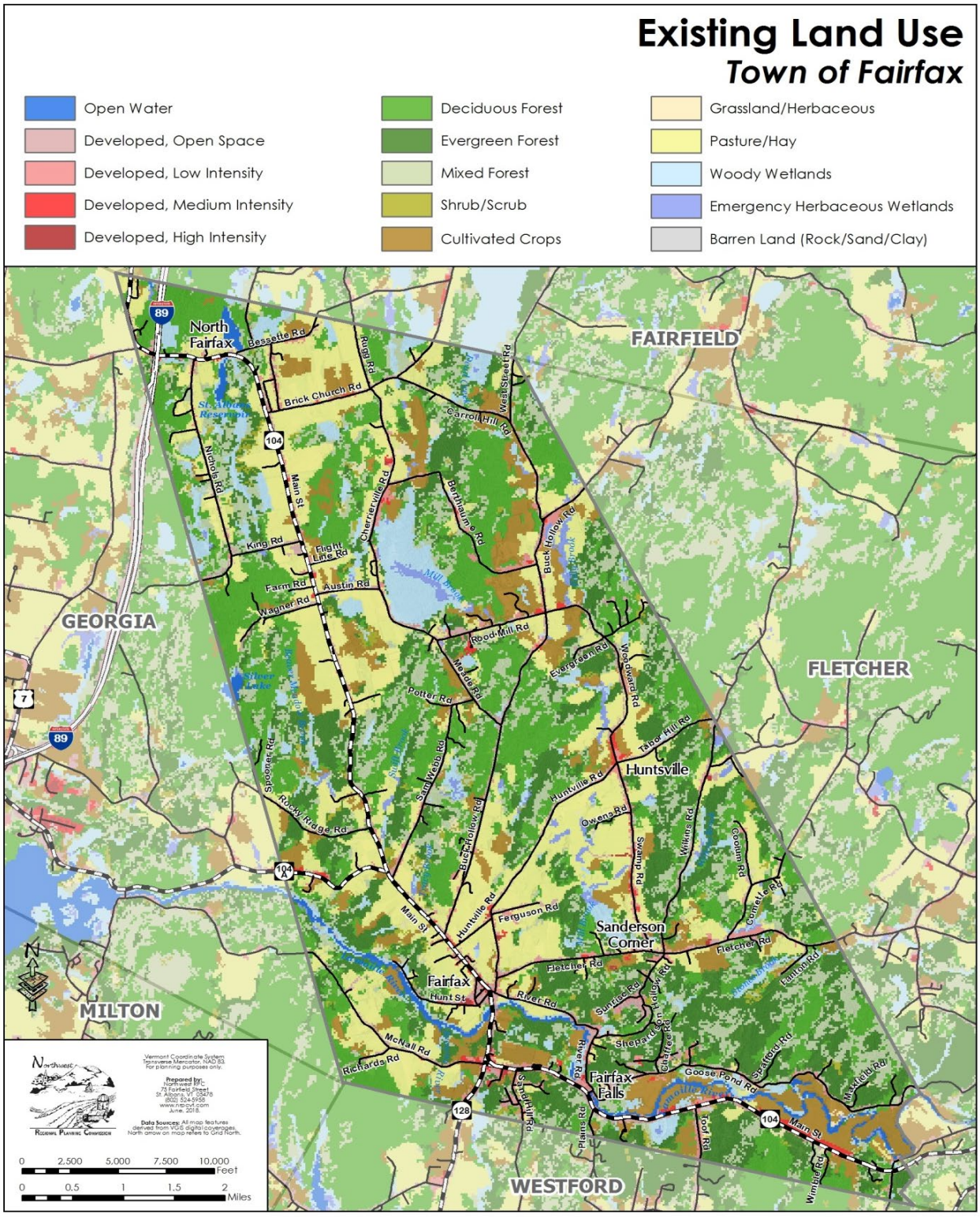
Areas of Concern Map



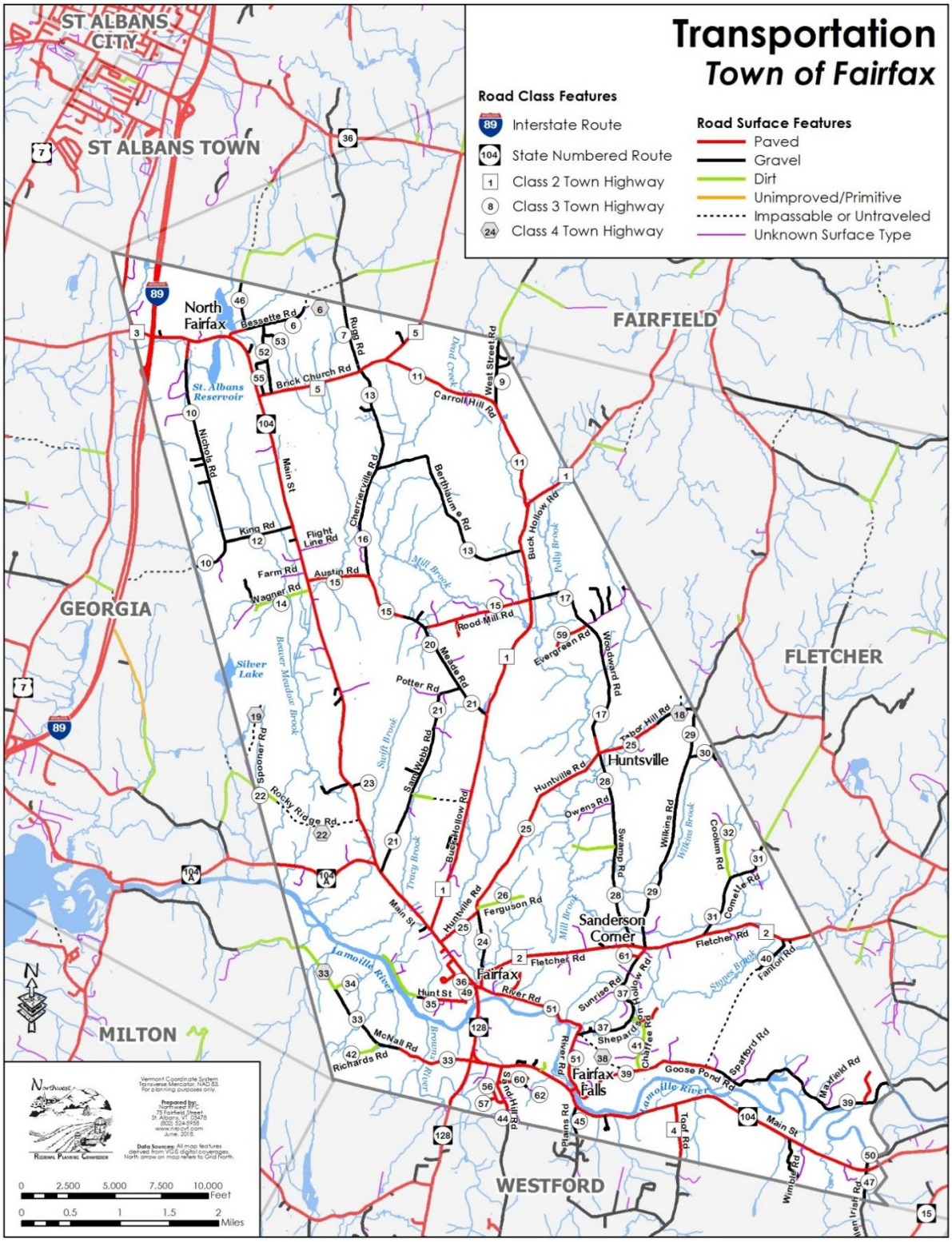
Facilities and Utilities Map


Facilities & Utilities
Town of Fairfax
100 Acre Woods
Municipal Sewer
Municipal Water
Fairfax Town Forest
Ground Water SPA
Surface Water SPA
FAIRFIELD
FLETCHER
GEORGIA
CAMBRIDGE
MILTON
WESTFORD
See Fairfax Inset
Vermont Coordinate System Transverse Mercator, NAD 83. For planning purposes only.
Prepared by: Northwest RPC 75 Fairfield Street St. Albans, VT 05478 (802) 524-5958 www.nrpcvt.com June, 2018
Data Sources: All map features derived from VCGI digital coverages. North arrow on map refers to Grid North.
0 2,500 5,000 7,500 10,000 Feet
0 0.5 1 1.5 2 Miles
N
1 Town Office
2 Fire Station
3 Fairfax Rescue
4 Community Center
5 St. Luke's Catholic Church
6 Historical Society
7 Wastewater Treatment Plant
8 BFA Fairfax K-12 School
9 Community Library
10 Recreation Fields & Path
11 United Church of Fairfax & Food Shelf
12 Water System Building
13 Town Well
14 Town Garage
Sam Webb Rd
Buck Hollow Rd
Huntville Rd
Ferguson Rd
Boissoneault Rd
Mill Brk
Swamp Rd
Wilkins Rd
Wilkins Brk
Fletcher Rd
Birch Rd
Beeman Rd
Sanderson Corner
Fairfax
Main St
Hunt St
River Rd
Sunrise Rd
Dusterbrae Rd
Stones Brk
Lamoille River
Shepardson Hollow Rd
Fairfax Inset
0 1,000 2,000 3,000 4,000 Feet
0 0.25 0.5 0.75 1 Miles

Existing Land Use Map



Transportation Map



Appendix G: Hazard History

Flooding

Date	Narrative
07/29/2024–07/31/2024	(DR-4826) The event was caused by slow-moving nocturnal thunderstorms that brought torrential rainfall, with totals ranging from 4 to 8 inches and intensities exceeding 2 inches per hour in some areas. The extreme precipitation was driven by an unseasonably strong high precipitation low pressure system across New England, overnight. This resulted in rapid and severe flash flooding, particularly in Morgan, Lyndon, and St. Johnsbury, where 42 homes and 16 bridges were destroyed, and St. Johnsbury's 8.08 inches of rain shattered a 1913 record. The Town of Fairfax was spared from damages.
07/09/2024–07/11/2024	(DR-4810) Vermont experienced significant flooding and storms, notably two major events in the first and last weeks of the month. The first resulted from the remnants of tropical cyclone Beryl impacting portions of Central and Northeastern Vermont and northern New York. The heaviest rainfall—ranging from 3 to 5 inches with localized amounts exceeding 7 inches in places like Walden—led to widespread flash flooding, river flooding, and nearly 700 damage reports in Vermont. In addition to the flooding, the event included severe thunderstorms that produced damaging winds and large hail up to 1.5 inches in diameter due to favorable atmospheric conditions supporting supercells. This event caused only minor flooding along River Road and Goose Pond Road in Fairfax.
12/18/2023	Flooding and saturated soils from summer flooding likely contributed to a slope failure on Fletcher Road before the intersection with Boissoneault Road. The road was reduced to one lane for several weeks while repairs were made to stabilize the slope. Mill Brook undercut the bank and caused the road to slump. River Road, at the confluence of Stones Brook and Lamoille River was closed for several hours due to flooding and water backed up behind the bridge near Fairfax Salvage and into basements in the area. There were no substantial damages to residents or businesses.
07/07/2023–07/21/2023	(DR-4720) The event known as the “Great Vermont Flood of July 10-11, 2023,” caused catastrophic flash and river flooding across much of the state, with rainfall totals reaching 9.20 inches in Calais and Montpelier setting a calendar-day record of 5.28 inches. This event exceeded Tropical Storm Irene's 2011 record. Crucial preparation, including a “High-risk” Weather Prediction Center outlook and a State of Emergency declaration, facilitated the mobilization of swift water teams and saved lives despite two fatalities and widespread destruction that rivaled or exceeded the impact of Tropical Storm Irene in 2011. Fairfax was largely spared in comparison to other communities. Flooding occurred along Goose Pond Road, Stones Brook Road, River Road, Hunt Street and Maple Street. Many finished basements were flooded but FEMA preliminary damages assessments found no significant structural damages or infrastructure damages. The Lamoille River rose to just shy of the decking on Bridge 9 on VT104. Goose Pond Road and Hunt Street were closed briefly due to flooding, and first response crews

	were staged nearby to assist residents if needed. The town recorded $8,000.76 in Category B (Emergency Protective Measures) expenses.
10/31/2019–11/01/2019	(DR-4474) This event is locally referred to as the "Halloween Storm." Steady rain developed during the mid to late evening of October 31 and became heavy at times through the early morning hours. Rainfall amounts from 2.5 to 4 inches fell across northwest and north central Vermont. Numerous rivers including the Lamoille River and area streams flooded. Several roads were full or partially washed in the northern areas. In Fairfax, there were several private bridges damaged, many basements were flooded, several culverts were washed out. Hunt Street, River Road and Goose Pond Road were temporarily closed. Bridge 21 on Shepardson Hollow Road was destroyed.
05/04/2018–05/05/2018	(DR-4380) While Fairfax did not experience the most severe damages reported statewide, the event caused some localized flooding from overwhelmed culverts and road washouts typically associated with intense rainfall events.
01/13/2018	Record high temperatures followed by precipitation caused rapid snow and ice melt. The conditions were perfect for localized flooding along the Missisquoi River and its tributaries. Town properties were spared of significant damages.
04/15/2014–04/18/2014	(DR 4178): Severe storms and flooding affected Caledonia, Essex, Franklin, Lamoille, Orange, Orleans, and Washington Counties in Vermont. A federal declaration was made. In Fairfax, some flooding occurred along local roads with an estimated $10,000 in damages.
08/2011	(DR-4022) Flooding caused by Tropical Storm Irene in Southern and Central Vermont was catastrophic, destroying property and taking lives, and again eliciting a disaster declaration (DR-4022). The details and impacts of Tropical Storm Irene are provided in the Hurricanes/Tropical Storms section of this risk assessment. However, it is important to underscore that the majority of damages in the state resulting from Tropical Storm Irene were due to flooding and fluvial erosion.
04/2011–05/2011	(DR- 1995, DR 4403) The year 2011 was a record year for flooding in the state of Vermont. The first floods occurred over a two-week period. These floods impacted the northern half of the state, including the counties of Addison, Chittenden, Essex, Franklin, Grand Isle, Lamoille, Orleans, Washington, and Windham. The damage totaled over $1.8 million in FEMA assistance. In the spring, heavy rains in late March/early April on top of a deep late season snowpack resulted in riverine flooding and sent Lake Champlain well over the 500-year flood elevation breaking the 140-year-old peak stage elevation.
06/14/2008–06/17/2008	(DR 1778) A series of storms affected the entire state. Stronger storms on Monday June 16 produced up to 1-inch hail. These storms also produced heavy rainfall but were moving more quickly. No flooding resulted. On Tuesday June 17 strong thunderstorms produced pea sized hail and heavy rain in the Lamoille River basin in northwest Vermont. Flash flooding occurred in the eastern parts of Franklin County.
08/24/2007	(FEMA-1715-DR): Franklin County was on the edge of a strong frontal system that brought heavy rain which damaged road infrastructure.
06/04/2007	(FEMA-1698-DR) Franklin County was on the edge of a strong frontal system that brought heavy rain which damaged road infrastructure.
10/25/2004	A strong storm system produced heavy rain in northern Vermont. Many roads were flooded resulting in approximately $9,350 in damages.

08/29/2004–08/30/2004	Heavy rain fell across the region as a cold front moved through the area. Several roads were closed due to wash outs and bridges were damaged throughout Town. Stones Brook overtopped its banks and caused extensive damages to Chaffee Road and private property. There was approximately $40,000 in damages.
02/28/2000	Mild winter weather combined with a cold front creating flood conditions throughout Fairfax and neighboring communities. Steady rain added to the snowmelt runoff. Several roads in Fairfax were flooded.
09/11/1998	Flooding occurred during a storm that resulted in $5,492 in damages.
06/30/1998	A strong storm system settled over the area. Torrential rain fell across most of the county. Roads were flooded and undermined in Fairfax causing approximately $10,000 in damages.
01/06/1998	(FEMA-1201-DR-VT) This storm is referred to as the Ice Storm of 1998, but the weather was more akin to a traditional winter storm than an ice storm for the Town of Fairfax. The storm produced flooding along streams as snow turned to freezing rain. TH51 (River Road) in Fairfax was impassable for 14 days due to flooding.
08/31/1997	Heavy rain caused flooding throughout the southern portion of Franklin County causing roads to flood as many culverts were overwhelmed. There was significant damage to TH51 (River Road) and TH 39 (Goose Pond Road) resulting in $5,224 in damages.
01/15/1996	(FEMA 1101-DR) The winter storm triggered flooding throughout the county. The flooding damaged many roads in Town.
07/09/1994	A flood event caused approximately $5,000 in property damages in Fairfax.
Floods on the Lamoille River occurred in 1936, 1938, 1942, 1973, 1976, 1977 and 1984. The last serious flood occurred in November 1927 when dangerous flash flooding was recorded. There is no official record of loss of life. Four covered bridges were destroyed. Numerous homes were inundated with rising waters, and many roads were damaged. Small buildings were observed being swept down the Lamoille River over Fairfax Falls. The electric plant at the Falls was flooded but remained structurally sound.	

Severe Winter Storms (Ice Storm)

Date	Narrative
2/17/2025	A low-pressure system brought heavy snow and strong winds on Saturday afternoon before ending Sunday night. Some sleet mixed in at times Sunday across northern and central area with a complete changeover to sleet and freezing rain with some ice accumulations in southern areas before changing back to snow during the afternoon and evening. Scattered power outages were reported on February 17th due to strong winds in excess of 50 mph in northeast and southern areas where it combined with some lightly ice laden trees. Numerous wind gusts in excess of 40 mph were recorded. Blowing and drifting snow made for poor driving visibility on snow covered roads.
4/3/2024 – 4/5/2024	Mixed rain, wind, sleet and snow developed in the afternoon and evening hours of April 3rd and then transitioned to heavy wet snow overnight through midday on April 4th. Heavy, wet snowfall totals of 8 to 15+ inches were common. Some specific snowfall totals include 18 inches in Enosburgh, 14 inches in Fairfax and St. Albans and 11 inches in Swanton. Impacts were significant across the state with hundreds

	of motor vehicle accidents, numerous school closing and more than 35.000 power outages at its peak due to snow weighted trees on powerlines.
3/9/2024 – 3/11/2024	Heavy wet snow accumulated on the night of March 9th that led to isolated power outages, but the main storm was the wraparound, northwest upslope, powdery snowfall during the night of March 10th through midday March 11th. Storm total snowfall was 8-12+ inches.
1/9/2024 – 1/13/2024	(DR-4770). A powerful winter storm tracked from the Pacific Northwest to the Great Lakes, intensifying as it moved. A sharp pressure difference between the Great Lakes and eastern Canada created extremely strong winds across New York and Vermont. These winds caused widespread damage, including downed trees, power outages affecting 80,000 people, and over $1 million in losses. In Franklin County, there were several reports of 50-55 mph winds and NWS estimated wind gusts more than 60 mph. Numerous power outages occurred as well. Several inches of wet snow accompanied the storm, with higher elevations seeing more accumulation. There was an estimated $50,000 in property damages in Eastern Franklin County.
12/11/2023	A mild, wet December 10th slowly turned snowy from northwest to southeast and higher elevations to lower elevations during the overnight hours and into the morning of December 11th before ending by early afternoon. A heavy wet snow accumulated 3 to 6 inches in the valleys with 6 to 10 inches in elevations above 1,200 feet. These accumulations led to scattered power outages in the County and created hazardous travel conditions.
03/14/2023– 03/15/2023	A strong winter storm brought heavy snowfall, strong winds, and caused widespread disruptions. Snowfall amounts ranged 6 to 12 inches across most of the state, with some areas in southern and central mountains exceeding 2 feet. Strong north winds gusting up to 45 mph created hazardous travel conditions. The wet, heavy snow caused numerous power outages, impacting nearly 90,000 customers, especially in central and southern Vermont. Dozens of roads were closed due to vehicle accidents, downed trees, and downed utility lines. Many schools, especially in southern areas, were also closed due to the storm.
03/03/2023	A winter storm impacted the entire state bringing snow and mixed precipitation. Northern Champlain Valley saw lower amounts of 3 to 6 inches while western Franklin County received 7 to 10 inches.
12/16/2022– 12/17/2022	A powerful storm system brought heavy snowfall on December 16th. Snow started during the early morning and continued into the night. Snow mixed with rain in some valleys. The heavy, wet snow caused power outages, impacting over 100,000 customers at its peak. Snowfall amounts ranged from 4 to 8 inches in the valleys, 8 to 14 inches in the north central mountains, and up to 20+ inches in the southern Green Mountains. Specific areas in Franklin County received 6 to 11 inches of snow including 11 inches in Fairfax, 8 inches in St. Albans and 6 inches in Swanton.
02/25/2022	A winter storm traveled from the Ohio River Valley to southern New England bringing snowfall to Vermont. Snow began in the early morning and stopped by mid to late afternoon. Snow accumulations ranged from 6 to 12 inches across the state including Fairfax.
02/03/2022– 02/04/2022	An arctic front produced a winter storm from February 3rd to 4th. It started with light rain or snow in northern Vermont and southern Quebec. As the cold front moved south, snowfall intensified, reaching moderate to heavy rates at times (>1 inch per hour) across most of the state. Southern areas experienced freezing rain

	and sleet, leading to ice accumulation and power outages. Total snowfall ranged from 4-8 inches in the south to 12-16 inches in central and northern Vermont including Fairfax.
01/17/2022	A powerful winter storm hit Vermont on January 17th, bringing snowfalls from 4 to 8 inches across the state. Snowfall rates were highest in the morning, reaching 1-2 inches per hour at times. The storm's complexity resulted in uneven snowfall distribution, with higher amounts on the eastern slopes of the Green Mountains and less on the western side. Strong winds caused scattered power outages in some areas, particularly in the foothills and higher elevations.
02/06/2020–02/07/2020	A winter storm brought significant snowfall and freezing rain. Heavier snowfall arrived on the 7th, with accumulations over a foot in Franklin County. ns. The storm caused widespread travel disruptions, school and business closures, and power outages for around 10,000 to 20,000 people.
03/22/2019–03/23/2019	A heavy wet snow fell across Franklin County with snowfall totals of 5 to 15 inches with higher totals in the upper elevations, especially along the western slopes of the Green Mountains. Some specific totals include 14 inches in eastern St. Albans, 12 inches in Bakersfield, 9 inches in Georgia. Brisk winds of 15 to 25 mph, with higher gusts later Friday night, caused power disruptions to approximately 10,000-15,000 customers.
01/19/2019	A widespread snowfall of 10 to 16 inches occurred across Franklin County. Depths ranged from 16 inches in neighboring Westford to 13 inches in Swanton.
01/08/2019	A long duration snow event with a wide range of snowfall amounts with the lowest in the valleys and highest totals along northwest faced higher terrain. Snowfall totals ranged from 20 inches in neighboring Fletcher to 6 inches in Swanton.
11/26/2018	Light rain changed to pasty, heavy wet snow that resulted in downed tree limbs and power outages across VT. Snow accumulations ranged from 4 to 8 inches in Franklin County.
03/13/2018	A nor'easter delivered 8 to 18 inches across Franklin County, with the heaviest snow occurring during the night of March 13th into the following morning. Some specific snowfall amounts include 18 inches in St. Albans and 15 inches in Swanton.
02/07/2018	A quick moving low-pressure system brought snowfall rates of an inch or more per hour for several hours. Locally, 8 to 10 inches of snowfall were observed in Franklin County which made for a dangerous evening commute.
03/14/2017–03/15/2017	A major nor'easter developed off the North Carolina/Virginia coast during the early morning hours and intensified as it moved northeast across New England during the night. Snowfall totals across Franklin County generally ranged from 20 to 36 inches including 27 inches in nearby Enosburg Falls. Brisk winds of 20 to 30 mph contributed to white-out conditions at times with considerable blowing and drifting snow. Numerous schools, businesses and local government offices closed with numerous vehicle accidents and stranded vehicles. No significant damages were reported.
02/12/2017	Two areas of low pressure from the Great Lakes and Ohio River Valley traveled east and brought snow to Vermont. Snow fell steadily through the evening hours before slowly tapering overnight. A second wave of snow showers fell across the western slopes of the Green Mountains during the 13th. A total of 6 to 12 inches of snow fell with some localized higher amounts. Impacts were largely travel related and nearly all school districts cancelled classes for February 13th.

10/25/2015	A rare autumn Nor'easter that was fed by the remnants of Hurricane Wilma struck Franklin County. There were reported snowfall amounts in the County varied from 6 to 14 inches. Trees still laden with fall foliage were downed due to the heavy, wet snow. There were many reports of snapped power lines from downed trees and branches. Many homes were without power for several days.
12/20/2013–12/26/2013	(DR-4163): A wide-spread low-pressure system that brought snow and freezing rain through Ontario, Quebec, and Northern New England. These areas experienced an ice storm that brought widespread power outages. Many Towns throughout Franklin County were affected. Vermont Electric Cooperative responded to over 60,000 customer outages and estimated costs of restoring power at $7,400,000. In Fairfax, the highway department was active keeping roads open and removing ice damaged trees and limbs from local roads. Green Mountain Power service area was greatly impacted by the ice storm and approximately 500 people were without power during the outage. Mutual Aid resources were assisting public utility companies for two weeks. The Fairfax High School gymnasium was opened as a community shelter. Hundreds of residents were without power for several days.
12/22/2010	(DR 1951): Vermont received a Presidential disaster declaration to supplement state and local recovery efforts in the areas struck by severe storms during the period of December 1-5, 2010. FEMA's public assistance funds were made available to affected counties including Franklin County.
02/14/2007	A winter storm blanketed most of New England. In Vermont, Snowfall rates of 2 to 4 inches per hour and brisk winds of 15 to 25 mph caused near whiteout conditions at times, along with considerable blowing and drifting snow, making roads nearly impassable. Temperatures in the single numbers combined with brisk winds created wind chill values of 10 degrees below zero or colder. In Fairfax, there was 26" of snowfall from the event.
10/20/2006	A fall snow event occurred when a low-pressure system brought cold air to the northern portion of the state. Heavy, wet snow accumulation of 3-6 inches occurred in Fairfax damaging many trees and causing power disruptions.
01/6/1998	(FEMA1201-DR): A winter storm affected the Town and produced some flooding along streams. Snow turned to freezing rain and produced power outages into the area. This storm is referred to as the Ice Strom of 1998, but the weather in Fairfax was more akin to a traditional winter storm than an ice storm.
01/19/1996	A FEMA declared disaster was made following a winter storm. A warming trend produced heavy rains causing rapid snow melt that led to flooding.

Wind Events (Windstorm, Thunderstorm, Tornado, Tropical Storm and Hurricane)

Date	Location	Type	Magnitude (mph)	Deaths	Injuries	Property Damage
06/19/2026	State wide	Tornado Watch	50 kts	0	0	0
	A Tornado Watch was issued by the National Weather Service for all of Vermont. There were no confirmed tornados in Fairfax. However, a confirmed EF1 tornado occurred in Woodstock and another was confirmed in Lincoln.					
03/17/2026	Western Franklin Co.	Strong Wind	43 kts	0	0	$10,000

	strong low-pressure system tracked from the Great Lakes into northern Quebec, pushing a sharp cold front across the region. Southerly winds ahead of the front generated 40–50 mph gusts across Vermont on March 16 with minimal impact, followed by western gusts exceeding 40–50 mph as the front passed during the early morning hours of March 17. The severe winds knocked tree limbs and trees onto utility lines, leaving approximately 15,000 customers without power, primarily along and east of the spine of the Green Mountains.					
12/19/2025	Western Franklin Co.	High Wind	58	0	0	$10,000
	A cold front moved across NY and VT during the morning hours with strong, gusty and damaging southwest-west winds in excess of 60 mph in several locations resulting in damaged trees, utility lines and scattered power outages of up to 25,000 customers.					
06/19/2025	North Fairfax	Thunderstorm Wind	50 kts	0	0	$1,000
	A cold front moved across an unstable airmass during the afternoon of June 19th. Scattered thunderstorms developed across VT with only one storm intensifying enough to produce isolated severe weather. Trees toppled onto power lines along Carroll Hill Road in Fairfax.					
02/15/2025 – 02/17/2025	Western Frankin Co.	Strong Wind	45	0	0	0
	A low-pressure system moving from the lower Mississippi River Valley to the Gulf of Maine brought heavy snow, sleet, freezing rain, and severe winds across Vermont. Strong northwest winds exceeding 40–50 mph caused scattered power outages, significant blowing and drifting snow, and hazardous driving conditions with poor visibility.					
08/09/2024	Western Franklin Co.	High Wind	58	0	0	$50,000
	The remnants of Hurricane Debby moved across northern New York and northwest Vermont, bringing 1 to 3 inches of rain to Vermont. Strong south-southeast wind gusts reaching 40 to 60 mph impacted the central and northern Champlain Valleys eastward to the western slopes of the Green Mountains. Because trees were in full leaf, these severe wind gusts brought down numerous tree branches and trees onto utility lines, structures, and vehicles, resulting in over 50,000 power outages across the region.					
03/04/2024 – 03/05/2024	Western Franklin Co.	High Wind	58	0	0	$125,000
	A late winter storm brought windy conditions across VT during the afternoon hours of April 3rd and continued into the early morning hours of April 4th. In some places in southern Vermont, wind speeds were between 50-60 mph. Impacts were significant across the state with hundreds of motor vehicle accidents, numerous school closing and more than 35,000 power outages at its peak due to snow weighted trees on powerlines.					
02/28/2024	Western Franklin Co.	Strong Wind	41 kts	0	0	$25,000
	Strong low pressure moved northeast across the Great Lakes on February 28th, but created a strong pressure gradient between this storm and high pressure across the Canadian Maritimes. This allowed strong south-southeast winds ahead of a cold front associated with the strong area of low pressure and southwest winds behind the					

	frontal boundary. The strongest winds occurred along and behind the cold front during the evening and early night hours of February 28th. Numerous reports of wind gusts in excess of 45 mph with several gusts in excess of 55 mph occurred along with downed tree limbs. branches and subsequent power outages. Power outages across VT were between 15,000-20,000. Several reports of wind gusts in the 40-50 mph range along with varying types of tree damage that impacted power.					
01/09/2024 – 01/13/2024	Western Franklin Co.	Strong wind	40 kts	0	0	0
	(DR-4770): A powerful winter storm tracked from the Pacific Northwest to the Great Lakes, intensifying as it moved. A sharp pressure difference between the Great Lakes and eastern Canada created extremely strong winds across New York and Vermont. These winds caused widespread damage, including downed trees, power outages affecting 80,000 people, and over $1 million in losses. In Franklin County, there were several reports of 50-55 mph winds and NWS estimated wind gusts in excess of 60 mph. Numerous power outages occurred as well. Several inches of wet snow accompanied the storm, with higher elevations seeing more accumulation. There was an estimated $200,000 in property damages in western Franklin County.					
01/9/2024	Western Franklin Co.	High Wind	58	0	0	$200,000
	Strong storm moved across the Great Lakes less than 72 hours from a slightly more impactful, stronger storm that moved across a similar path on January 10th. This storm produced slightly lighter winds and less precipitation than the last event but still accounted for scattered to numerous power outages across the region (25,000). Mesonet and public reports of wind gusts of 40-50 mph were reported as well as isolated to scattered tree and utility line damage.					
12/22/2022 - 12/24/2022	Western Franklin Co.	High Wind	48 kts	0	0	$250,000
	(DR 4695): A powerful winter storm centered in the eastern Great Lakes and Ontario slammed Vermont with strong winds. Southeast winds reached speeds of 25-35 mph, with frequent gusts exceeding 50 mph and even reaching 60 mph or higher in some areas. These high winds caused widespread damage, knocking down trees and power lines, and leaving over 100,000 people without power at the peak. Later in the day, a powerful arctic front associated with the storm swept across the state. Temperatures plummeted from the 40s and 50s down to the 20s, accompanied by strong west winds of 20-35 mph. As temperatures dropped rapidly, a widespread snowfall of 2-5 inches occurred. Combined with the sub-freezing air, this snowfall created a flash freeze, making travel extremely dangerous. While wind gusts of 45-55 mph were recorded including one station at Burton Island on Lake Champlain where gusts reached 60-65 mph. Total FEMA Public Assistance grants dollars obligated for this declaration for the affected Counties was $1,495,613.14.					
02/01/2022	Western Franklin Co.	High Wind	50 kts	0	0	$25,000
	Strong winds battered the Champlain Valley due to a pressure difference between New England and the Great Lakes. Measured wind gusts of 45 to 55 mph were common					

	across Franklin County. Several branches and small, weak trees downed by winds were the main impacts as well as isolated power outages.					
12/11/2021 - 12/12/2021	Western Franklin Co.	Strong Wind	42 kts	0	0	$25,000
	A very powerful cold front with winds more than 100 knots at 5,000 feet moved into Vermont from the west. The front produced strong surface winds in excess of 40-50 mph around mid-evening and gradually decreased into the 30-40 mph range during the early morning hours of the 12th. There were approximately 15,000 customer power outages statewide. In Fairfax, scattered tree limbs and small trees downed by strong winds, measured in the mid-upper 40s but some local estimates were more than 50 mph.					
11/12/2021	Franklin Co.	Strong Winds	40 kts	0	0	$20,000
	A powerful fall storm tracked from Great Lakes to New York and Vermont. Numerous surface wind gusts in excess of 40 mph were observed with several wind gusts approaching or exceeding 50 mph in the higher terrain of the Green Mountains that led to more than 10,000 power outages. In Franklin County, several wind gusts were recorded by spot forecaster at 40-45 mph, including 52 mph in East Berkshire. This led to scattered power outages due to downed trees on powerlines.					
08/22/2021	Statewide	Strong Winds	30 kts	0	0	$0
	(3567 EM): Tropical Storm Henri brought some rain and gusty winds to the region but there were no local impacts in Fairfax.					
03/01/2021	Western Franklin Co.	Strong Wind	39 kts	0	0	$5,000
	An arctic front moved across Vermont during the evening of March 1st delivering arctic air on strong winds during the overnight of March 1st-2nd. Persistent northwest winds of 15 to 30 mph with gusts in excess of 40-50 mph began around 9 pm March 1st and continued until daybreak March 2nd. These strong winds combined with ambient temperatures of 5 below to 5 above zero created wind chills in the 15 to 30 below zero range. Nearly 10,000 customers lost power during the event.					
08/04/2020	Western Franklin Co.	Strong Wind	40	0	0	$25,000
	A brief period of gusty winds associated with the approach and passage of weakening Tropical Storm Isaias brought measured and estimated wind gusts of 40 to 50 mph that caused some scattered tree damage that resulted in scattered power outages.					
07/08/2020	Franklin Co.	Thunderstorm Wind	55 kts	0	0	$10,000
	A mid-level shortwave (disturbance) moved from southern Quebec into a unstable air mass across Vermont during the afternoon of July 8th. This lead to several rounds of thunderstorms, some with damaging winds, large hail and torrential rains of 2 to 3+ inches.					
10/16/2019 – 10/17/2019	Western Franklin Co.	Thunderstorm Wind	43 kts	0	0	$25,000
	A powerful Nor'easter intensified rapidly across New England, bringing 1 to 4 inches of rain to Vermont along with localized lowland and drainage flooding. Strong winds gusting up to 50–55 mph combined with heavily saturated soils to knock down trees and branches across the Champlain Valley and the western slopes of the Green Mountains, resulting in over 20,000 power outages across the region.					
	Franklin Co.	Thunderstorm Wind	60 kts	0	0	$120,000

07/30/2019	A weak upper level disturbance moving through a very warm, humid and unstable air mass lead to scattered thunderstorms, including several severe storms in the Champlain Valley of Vermont. Severe storms caused damaging winds in the form of downed tree limbs, trees and utility lines.					
02/24/2019	Western Franklin Co.	Strong Wind	48 kts	0	0	$25,000
	A powerful winter storm tracked across the Great Lakes into Ontario and Quebec, bringing strong winds to the region. Initial southeast downslope winds of 25–35 mph with gusts exceeding 50 mph transitioned to west-southwest winds of 20–30 mph with gusts up to 50 mph behind the system. The severe gusts damaged trees and utility lines, leaving between 500 and 1,500 customers in Western Franklin County without power.					
06/30/2018	Northern VT	Thunderstorm Wind	55 ks	0	0	$15,000
	(DR 4380): An atmospheric heat ridge with accompanying thunderstorm clusters moved into northern Vermont and southern Quebec during the late evening. The high winds generated by the thunderstorms downed many trees and caused some power disruptions. The total FEMA Public Assistance grants dollars obligated for this declaration for the affected Counties was $3,246,787.21.					
05/04/2018	Northern VT	Strong WInds	40 kts	0	0	$44,096
	Winds up to 60-80 mph occurred across the five affected counties. Strong winds and microbursts created power outages throughout the state. Several trees were knocked down in eastern Franklin County. Hail showers were also reported among several counties. $44,096.31 was distributed to communities after the storm for damage.					
10/29/2017 – 10/31/2017	Western Franklin Co.	High Wind	52 kts	0	0	$5,296,752.
	(DR-4022**):** A strong thunderstorm fueled by an ex-tropical storm brought damaging winds to Vermont, causing power outages and knocking trees down throughout the state. Winds reached over 70 mph at times and rain caused flooding. Electric companies had multiple broken poles and many primary and service lines down. All power was restored to customers in two days. The total FEMA Public Assistance grants dollars obligated for this declaration for the affected Counties was $5,296,752.57.					
06/18/2017	Fairfax Falls	Thunderstorm Wind	50 kts	0	0	$5,000
	Numerous wind gusts measured 45 to 50 mph, especially closer to the shores of Lake Champlain. Isolated to Scattered power outages due to downed tree limbs and small trees on utility lines.					
01/10/2017	Western Franklin Co.	Strong Wind	39 kts	0	0	$20,000
	A strong pressure gradient between high pressure east of New England and an intensifying low pressure system over the northern Great Lakes produced powerful southerly winds across the northern Champlain Valley. Sustained winds of 25 to 35 mph with gusts reaching up to 60 mph—particularly 45 to 50 mph near the shores of Lake Champlain—brought down tree limbs and small trees onto utility lines. These downed lines resulted in isolated to scattered power outages, leaving thousands of local residents without electricity.					
12/26/2016	Western Franklin Co.	Strong Wind	45 kts	0	0	$20,000

	The combination of strong high pressure departing Maine and Nova Scotia and a strong low-pressure system moving across the northern Great Lakes created a strong southerly jet streak across the Champlain Valley during the afternoon and evening. numerous mesonet observations of 45-50 mph gusts, largely between 2 pm and 10 pm. Several branches downed by winds and resultant power outages.					
07/07/2016	Huntville	Thunderstorm Wind	40 kts	0	0	$5,000
	A surface cold front moved across a moderately unstable airmass during the afternoon of July 7th. Scattered thunderstorms developed ahead and along this front produced isolated severe wind damage. Fallen trees caused broken utility pole and downed lines.					
05/29/2016	Western Franklin Co.	Strong Wind	39 kts	0	0	$10,000
	Widespread gust downed tree limbs and damaged power lines across communities in northern Vermont. While most outages were brief, they disrupted electrical and telecommunication services for many residents and businesses. Emergency crews and utility workers responded quickly to clear debris and restore power.					
02/29/2016 – 03/01/2016	Western Franklin Co	Strong Wind	39 kts	0	0	$10,000
	Two low-pressure areas merged over Quebec and strengthened a cold front moving across New York and Vermont. The system brought strong west-to-northwest winds with gusts of 40 to 45 mph across the region, occasionally approaching 50 mph. These severe winds knocked down tree limbs and power lines, causing isolated damage locally and scattered to widespread power outages across Vermont, including nearly 20,000 outages concentrated in the Connecticut River Valley.					
06/01/2013	Fairfax	Thunderstorm Wind	50 kts	0		$2,000
	A very warm and humid air mass was located across northern New York and Vermont during the afternoon and evening hours of June 1st. A weak disturbance, well ahead of a cold front forecast to cross on June 2nd, triggered a few scattered thunderstorms in northern New York that produced damaging winds and weakened as it entered Vermont with only an isolated report of wind damage. A large tree and several weaker trees downed by thunderstorm winds along Buck Hollow road.					
1/20/2013	Western Franklin Co.	Strong Wind	43 kts	0	0	$23,000
	Strong low pressure moved across Quebec, while its associated vigorous cold front moved across Vermont during the late morning to early afternoon hours of January 20th. Strong west winds measured more than 50 mph caused numerous reports of scattered tree branch, tree or power line failures in Vermont. An estimated 10,000 customers lost power during this event. Scattered reports of tree limbs, tree branches down and power outages across the region. A measured wind gust of 54 mph was recorded by a trained spotter along with several other reports in excess of 45 mph.					
10/29/2012 – 10/30/2012	Western Franklin Co.	Strong Wind	43 kts	0	0	$15,000
	Hurricane Sandy made landfall near Ocean City, New Jersey. In Vermont, a predominant east-northeast wind blew across the region with the strongest winds in northeast Vermont and along some Green Mountain western slope communities including Fairfax. Much of the state witnessed wind gusts of 35 to 45 mph with those western slope communities in the 50-60 mph range. Tree and power line damage was					

	scattered but still left a total of 35,000 residents throughout the state without power at some point during the storm.					
09/08/2012	Fairfax	Thunderstorm Wind	50 kts	0	0	$25,000
	During the afternoon and evening, a rapidly intensifying low-pressure system moving across Quebec drew an abnormally warm and unstable air mass into Vermont, initially generating strong southerly winds with gusts over 40 mph that caused minor wind damage. As the system's cold front swept eastward, it triggered a squall line of severe thunderstorms that produced widespread and significant wind damage, including numerous downed trees and power lines across Fairfax and surrounding areas.					
07/23/2012	Western Franklin Co.	Thunderstorm Wind	50 kts	0	0	$35,000
	A quick moving disturbance across Ontario and Quebec provinces in Canada pushed a warm front across the region during the morning and early afternoon followed by a cold front during the night. Numerous thunderstorms developed ahead of the cold front in northern New York and intensified as they moved into Vermont during the late afternoon and evening hours. There were numerous reports of damaging winds and large hail. In the neighboring town of Fletcher, multiple trees down in approximate 6 acre swath approximately 200 yards wide.					
01/18/2012	Western Franklin Co.	Strong Wind	43 kts	0	0	$10,000
	Strong south to southwest winds with frequent gusts in excess of 40 mph and a few gusts to 50 mph knocked down some tree limbs and caused some scattered power outages.					
08/28/2011	Western Franklin Co.	High Wind	50 kts	0	0	$200,000
	(DR-4022: Tropical Storm Irene devastated parts of Southern and Central Vermont, however the northern part of the state was largely spared. Heavy rain fell in Fairfax throughout the day and evening. Some local roads experienced flooding from culverts being overtopped but damages were minor compared to other areas of the state.					
07/06/2011	Fairfax	Thunderstorm Wind	50 kts	0	0	$10,000
	A cold front and upper atmospheric disturbance moved across a warm, moist unstable air mass across northern New York and Vermont during the afternoon of July 6th. Thunderstorms developed across Franklin County New York and became more organized as they moved across the Champlain Valley of New York into Vermont. In Vermont, a well-established squall line moved across the state during the afternoon with numerous reports of wind damage as well as lightning strikes. As a result of these storms, more than 15,000 customers in Vermont lost power. In Fairfax, trees and power lines were down especially in north Fairfax.					
05/26/2011	Western Franklin Co.	Thunderstorm Wind	50 kts	0	0	$20,000
	A surface low as well as upper atmospheric energy traveled along a quasi-stationary boundary across northern New York and Vermont during the afternoon and evening of May 26th. The air mass ahead of this boundary was moderately to largely unstable and the combination led to numerous reports of damaging winds. Some 25,000+ customers lost power during these storms across the state.					
12/01/2010	Western Franklin Co	High Wind	43 kts	0	0	$100,000

	A strong pressure gradient between a massive low-pressure system moving over Canada and a high-pressure system over New Brunswick generated powerful south-to-southeast winds across Vermont. Downslope winds exceeding hurricane force hit communities along the western slopes of the Green Mountains, while gusts approaching 55 mph spread across the Champlain Valley. The persistent, damaging winds blew off roofs, collapsed barns, downed utility lines, and left over 35,000 customers across the state without power.					
10/15/2010	Western Franklin Co.	Strong Wind	43 kts	0	0	$10,000
	A low-pressure system off the Delmarva Peninsula rapidly intensified into a strong Nor'easter as it tracked toward the Gulf of Maine, bringing heavy rainfall, mountain snow, and severe winds to Vermont. Prolonged north winds of 20–35 mph with frequent gusts of 50–55 mph battered the Champlain Valley and higher terrain, knocking down large branches and shallow-rooted trees in saturated soils, leading to scattered power outages.					
05/31/2009	Western Franklin Co.	Strong Wind	43 kts	0	0	$10,000
	An unseasonably cold storm system traversed across Ontario and Quebec provinces. This translated into a strong mid-level disturbance and low-level jet stream that supported a sharp, strong cold front that moved across Vermont resulting in strong winds with gusts of 40 to 55 mph along with a 20-degree temperature plunge. There were numerous reports of fallen trees, scattered power outages across the state as well as property damages from fallen trees.					
05/14/2009	Western Franklin Co.	Strong Wind	43 kts	0	0	$10,000
	Strong south to southwest winds of 25 to 35 mph with frequent gusts in excess of 50 mph was witnessed across much of northern Vermont during the morning and early afternoon. These winds resulted in numerous reports of scattered downed trees and powerlines, as the spring season accounted for foliage on the trees.					
03/11/2009	Western Franklin Co.	Strong Wind	43 kts	0	0	$5,000
	A strong low-level jet aloft preceded an approaching cold front on March 11th and eventually lowered to the surface during the afternoon. Surface winds of 25 to 35 mph with gusts in excess of 50 mph were observed with scattered tree damage and very isolated property damage across northwest Vermont					
12/24/2008	Western Franklin Co.	Strong Wind	39 kts	0	0	$3,000
	A powerful storm moved from the Mississippi River Valley on December 24th across the Great Lakes and into eastern Quebec by the morning of December 25th. A strong cold front associated with this storm moved across northern New York during the late evening. South to southwest winds of 20 to 30 mph with gusts to 40 mph ahead of the cold front shifted to the west-northwest at 25 to 35 mph with gusts to 50 mph during early Christmas morning. Scattered reports of tree limbs, power outages and torn roof shingles were reported across Vermont.					
07/18/2008	Western Franklin Co.	Thunderstorm Wind	55 kts	0	0	$50,000

	A developing squall line across the Champlain Valley of New York moved into northwest Vermont by mid-afternoon and continued across the state. Widespread tree and structural damage occurred with this system in Grand Isle, Franklin, Lamoille and Orleans counties. This squall line interacted with an individual thunderstorm near Fletcher, that eventually produced an extensive damage path around 7 miles in length between North Cambridge and Waterville (Lamoille County), caused by straight-line winds of 60 to 80 mph. However, within this greater damage field was a tornadic storm with two very brief touchdown with EF0 and EF1 damage.					
06/3/2008	Franklin Co.	Tornado Watch, Strong Wind	n/a	0	0	n/a
	The National Weather Service issued a Tornado Watch for Franklin County. A powerful cold front with strong winds tracked across Lake Champlain and into Vermont during the afternoon and early evening. Power outages were scattered throughout Town as many trees and branches toppled power lines. Power was restored within 12 hours					
04/01/2008	Western Franklin Co.	Strong Wind	39 kts	0	0	$3,000
	During the evening of April 1st into the early morning hours of April 2nd, strong winds of 25 to 35 mph with gusts to 50 mph blew across Vermont, especially the higher terrain. This was a result of a combination of strong high pressure off the Atlantic coast along with a strong and deepening area of low pressure that moved across the Great Lakes and southeast Canada. These strong winds knocked down a few tree limbs and caused scattered power outages.					
01/09/2008	Western Franklin Co.	Strong Wind	40 kts	0	0	$10,000
	A strong and rapidly intensifying low-pressure system moved into the state from the Great Lakes across Ontario and western Quebec during the morning. Strong winds translated down to the surface and caused scattered wind damage in the form of downed trees and scattered power outages throughout Vermont.					
08/16/2007	Fairfax	Thunderstorm Wind	60 kts	0	0	$50,000
	A powerful front brought damaging high winds during the afternoon of. There were brief power disruptions, downed trees and associated damages to residential property throughout Town.					
08/03/2007	Western Franklin Co.	Thunderstorm Wind	50 kts	0	0	$5,000
	An upper atmospheric ridge was dominating much of the United States, with mid-level disturbances traveling along the periphery. During the early morning hours of the 3rd, one of these disturbances created a thunderstorm complex across Quebec, which traveled into Franklin County. This complex resulted in severe thunderstorms that produced damaging winds in the form of toppled trees onto power lines disrupting power.					
08/07/2006	Fairfax	Thunderstorm Wind	50 kts	0	0	$5,000
	A relatively strong westerly low-level flow interacted with a moderately unstable airmass across northern New York and northern Vermont in the afternoon. Scattered thunderstorms moved across the region, including a supercell structure that originated in Clinton county New York, moved into Grand Isle County, before it knocked a few trees and powerlines in St. Albans.					

02/17/2006	Western Franklin Co.	High Wind	35 kts	0	0	$75,000
	On the morning of Friday, February 17, 2006, an arctic front pushed across the Champlain Valley of Vermont, bringing sustained winds of 30 to 40 mph and damaging gusts exceeding 60 mph. These severe winds knocked down trees and power lines, causing structural damage to homes and tearing shingles off roofs in towns like Williston, St. Albans, and Enosburg. The storm resulted in widespread disruption across the region, leaving an estimated 50,000 customers statewide without power					
10/16/2005	Western Franklin Co.	High Wind	46	0	0	$10,000
	An ocean storm system moved north to the east of New England and resulted in strong winds across the region. There were downed trees and power outages in the county and across the State. Damage estimates in the county were approximately $10,000.					
09/29/2005	Western Franklin Co.	High Wind	40	0	0	$100,000
	A strong cold front moved across western Vermont during the morning. Large scale damaging winds preceded and followed the front. Trees and power lines were downed across both Franklin and Addison counties, with numerous power outages. There were damages estimates of $10,000 between both counties.					
08/30/2005 – 08/31/2005	Statewide	Tropical Storm	30 kts	0	0	$0
	Tropical moisture and high winds from Katrina reached Fairfax on August 30th. The rain was initially steady then became heavy on the 31st. Winds were steady but non-threatening. Rainfall totals across Franklin County were between 2.5 and 4 inches. A few local roads had minor flooding. The Town was largely spared.					
07/08/2005	Statewide	Tropical Storm	n/a	0	0	$0
	Tropical Storm Cindy produced heavy rain and high winds across much of the state including Fairfax. Rain amounts were estimated between 1 and 3 inches with no reported damage.					
07/05/2005	Franklin Co.	Thunderstorm Wind	55 kts	0	0	$100,000
01/02/2005	Franklin Co.	Strong Wind	46 kts	0	0	$100,000
	A cold front moving southeast from Canada triggered severe thunderstorms across Franklin County, Vermont, accompanied by 1 to 2 inches of rain and pea-sized hail. Estimated wind gusts of 58 to 72 mph knocked down dozens of trees, damaged cars, and caused structural damage to mobile homes, chimneys, and a barn in Franklin, Richford, and Berkshire, resulting in power outages throughout the county.					
08/12/2004	Statewide	Tropical Storm	n/a	0	0	$10,000
	(FEMA-1715-DR): Tropical Storm Francis generated high winds and heavy rain throughout most of the state. Several culverts and ditches in the Town were damaged due to flooding.					
06/26/2004	Western Franklin Co.	Strong Wind	40 kts	0	0	$10,000
	A cold trough in the upper levels of the atmosphere resulted in micro burst type winds. People reported hearing only one clap of thunder with no lightning. Wind gusts were estimated at 40 to 50 mph. In Chittenden and Franklin Counties, tree limbs were blown					

	down with some power outages. In Barre (Washington County), a tree was blown down onto a car. A boat was over turned on Lake Champlain.					
06/09/2004	Fairfax	Thunderstorm Wind	50 kts	0	0	$5,000
	A low-pressure system moved across southern Quebec during Wednesday along with an associated cold front that tracked slowly across northern New York and Vermont. This front was preceded and accompanied by thunderstorms with damaging winds. In Fairfax, trees and power lines were blown down.					
11/13/2003	Wester Franklin Co.	High Wind	35 kts	0	0	$5,000
	A strong low-pressure system moved through the eastern Great Lakes and into southern Canada. Strong winds preceded and followed the passage of the storm system, with scattered power outages reported across Franklin County. Early morning winds uprooted a few trees in neighboring Fletcher.					
09/19/2023	Western Franklin Co.	High Wind	40 kts	0	0	$10,000
	The remnants of Hurricane Isabelle brought strong winds. Trees and power lines were blown down across the area with most reports from Enosburg, Fairfield and Fairfax. Damage estimates between the 3 municipalities were approximately $10,000.					
2/04/2003	Western Franklin Co.	Strong Wind	40 kts	0	0	$1,000
	A large low-pressure system passing over Quebec pushed a cold front across Vermont, generating post-frontal wind gusts between 35 and 50 mph. Peak reported gusts across the state included 46 mph in Burlington, 43 mph in Morrisville, 40 mph in Montpelier and Walden, and 38 mph in Springfield.					
9/27/2002	State wide	Tropical Storm	n/a	0	0	$0
	The remnants of Tropical Storm Isidore produced high winds and heavy rain throughout Franklin County. There was minor damage reported from falling trees and limbs.					
9/14/2002 – 9/15/2002	State wide	Tropical Storm	n/a	0	0	$1,000
	Remnants of Tropical Storms Hannah produced high winds and heavy rain throughout Franklin County. There was minor damage reported from falling trees and limbs.					
6/23/2002	Fairfax	Thunderstorm Wind	n/a	0	0	$1,000
	A cold front moved into northern Vermont from Canada and triggered thunderstorms in the region during the evening hours. Thunderstorms with accompanying winds blew down trees in Fairfax.					
3/10/2002	Franklin Co.	Thunderstorm Wind	54 kts	0	0	$5,000
	A strong cold front moved across the area from Canada. Strong winds were associated with this low-pressure system and strong cold front during the early morning in the town of Swanton that measured at 62 mph (54 knots). In addition, trees were reported blown down in the St Albans area.					
12/06/2001	Franklin Co.	Strong Wind	n/a	0	0	$0
	Primary storm system moved across southern Canada during. Gusty winds occurred with passage of the associated cold front during the morning into the early afternoon. Several locations reported wind gusts over 34 mph (30 kts). A few wind gust reports included: On Lake Champlain, Colchester Reef reported a gust of 50 mph (40 kts), Burlington Airport had 37 mph (32 kts). .					

2/10/2001	Franklin Co.	High Wind	64 kts	0	0	$1,000
	A strong storm system moved across the Canadian Province of Quebec Friday night, February 9th and Saturday, February 10th. The associated cold front was accompanied and followed by very windy conditions. In the town of Sheldon Springs, winds were measured at 74 mph (64 knots) around 605 AM Saturday.					
12/12/2000	Franklin Co.	High Wind	n/a	0	0	$10,000
	A storm system down from Canada. Strong winds were associated with this system. Tree damage with whiteout conditions due to blowing snow were reported. There were power disruption in northern parts of Vermont.					
9/21/2000	Western Franklin Co.	Thunderstorm Wind	54 kts	0	0	0
	A strong cold front moved across the north country during the early morning. A thunderstorm with high winds accompanied the front. Winds were measured at 65 mph.					
3/28/2000	Franklin Co.	Strong Wind	n/a	0	0	$10,000
	A storm system moved into Vermont from New York. This system resulted in strong east and southeast winds primarily along the west slopes of the Green Mountains. Saturated ground conditions combined with the winds resulting in downed trees. Scattered power outages were reported throughout Franklin County due to wind damage.					
11/02/1999	Franklin Co.	Strong Wind	n/a	0	0	$5,000
	In northern Vermont, a significant windstorm caused widespread damage and power outages. The storm's strong east to southeast winds, combined with heavy wet snow from earlier in the day, downed numerous trees and power lines, particularly along the western foothills of the Green Mountains.					
9/17/1999	Franklin Co.	Thunderstorm Wind	n/a	0	0	$10,000
	Impacts of Hurricane Floyd, which had weakened to a tropical storm by the time it reached the state. Despite its diminished strength, Floyd produced high winds and heavy rain across Vermont, including Fairfax, leading to widespread downed trees and power lines. Wind gusts reached up to 60 mph, and rainfall totals of 3 to 6 inches were common, with some areas reporting higher amounts. The heavy rainfall contributed to localized flooding, and the downed trees caused structural damage, blocked roadways, and affected hiking trails.					
07/05/1999	Franklin Co.	Thunderstorm Wind	n/a	0	0	$30,000
	A cluster of thunderstorms moved across northern New York and northern Vermont during the early morning hours of Monday, July 5th. There were numerous reports of trees and power lines blown down across the county.					
9/27/1998	Franklin Co.	Thunderstorm Wind	n/a	0	0	$5,000
	A cold front moved southeast from Canada across Vermont during the late afternoon and night of Sunday and triggered thunderstorms. Locally strong winds and small hail accompanied a few of the storms. In St. Albans where thunderstorm winds gusted to 58 mph (50 knots) along with pea size hail.					
06/29/1998	Franklin Co.	Strong Wind	n/a	0	0	$0-

	A cold front moved into Vermont during the late afternoon and evening. Thunderstorms developed along and ahead of this front with locally strong winds and large hail..					
1/27/1996	Western Franklin Co.	High Wind	n/a	0	0	$50,000
	A storm system tracking from the Mississippi Valley through the Great Lakes into Canada brought snow transitioning to rain across Vermont, accompanied by strong wind gusts of 30 to 50 mph and localized gusts up to 83 knots. The damaging winds blew down numerous large trees, caused extensive power outages, tore off roofs, and caused a leg injury in Franklin County when part of a building collapsed onto a person. Additionally, rainfall and snowmelt caused minor field flooding along local rivers.					
08/31/1993	Franklin Co.	Thunderstorm Wind	n/a	0	0	$5,0000
	Per NOAA Storm Events database.					
9/10/1992	Franklin Co.	Thunderstorm Wind	n/a	0	0	$0-
	Per NOAA Storm Events database.					
8/28/1991	Franklin Co.	Thunderstorm Wind	n/a	0	0	$3,000
	Severe thunderstorms moved across Lake Champlain from New York causing extensive damage to parts of Northwest Vermont. Damage reported include a field of corn was knocked flat in Georgia, a barn was toppled in Georgia, numerous trees and lines were downed resulting in 3,500 people without power.					
6/11/1973	Western Franklin Co.	Strong Wind	n/a	n/a	n/a	n/a
	The locally known *Fairfax Tornado* event (unofficial) occurred. High winds caused widespread damage throughout the Town. Barns were swept away or damaged beyond repair including a 353-foot poultry farm. Roofs were torn off homes and downed trees littered the roadside.					
8/7/1907	Western Franklin Co.	Strong Wind	n/a	n/a	n/a	n/a
	A “cyclone” touched down in Fairfax damaging several barns and destroying cattle according to the historical records.					
(Source: NOAA Storm Event Database)						

Appendix H: Stakeholder and Public Outreach Plan

LOCAL HAZARD MITIGATION PLAN – STAKEHOLDER AND PUBLIC OUTREACH PLAN

To meet FEMA requirements and to ensure public, neighboring community, local and regional agency input opportunities, the following communication methods are recommended.

Goals:

1. Inclusive Participation and collaboration – Ensure all relevant stakeholders and the public have the opportunity to contribute including people with disabilities and functional access needs. Foster collaboration among all stakeholders.
2. Informed Decision-Making – Provide necessary education and information regarding hazards and risks.
3. Community Buy-In – Foster community support and ownership by involving stakeholders and public from the start.
4. Transparency - Build trust through clear, transparent and consistent communication throughout the planning process
5. Effective Implementation = Gather input that is practical, sustainable and responsive to the needs of the community.
6. Compliance –Ensure federal, state and local requirements for public involvement in hazard mitigation planning are met.

Identifying Planning Team and Stakeholders

- Local Government Officials - Village manager, public works director, first response agencies, finance, zoning administrator, planning, and regional planning commission, Health Department
- School representatives
- Local and regional entities that support persons with disabilities, access, and functional needs (PDAFN) or vulnerable populations (vulnerability specific to hazard mitigation)
  - Hospital / medical care (Northwest Medical Center, Northern Tier Center for Community Health (NOTCH))
  - Visiting Nurses Association
  - Champlain Valley Office of Economic Opportunity
  - Mobile home properties
  - Persons living in flood zones
  - Turning Point Franklin County
- Neighboring communities (Cambridge, Fletcher, Georgia, St. Albans Town)
- Local and regional agencies that support hazard mitigation / emergency response
  - Regional Planning Commissions
  - Regional Emergency Management Committee
  - Sheriff's Department
  - Dispatch center
  - Fire Department
  - EMS
- Businesses that support hazard mitigation / emergency response
  - Business and Community Association (EBCA)

        - Green Mountain Power
        - Public Transportation (Green Mountain Transit)
    - Non-Profit organizations – Including community-based organizations that work directly with or provide support to people with disabilities or functional accesses needs or front-line communities – housing, health care, etc.
        - Food Shelf, Healthy Roots Collaborative, Champlain Valley Office of Economic Opportunity, Northern Tier Center for Health, Meals on Wheels)

Communication Methods and Implementation:

- Post meeting information (agenda, slides, zoom link, etc.) on village website
- Post meeting information (agenda, slides, zoom link, etc.) on village social media sites
- Post Online surveys / questionnaires on village website
- Send email notifications (e.g., meeting dates, agenda, slides, etc.) to the following entities:
- Post hard copies of meeting information (agenda, slides, etc.) in municipal building (e.g., village office, library, public safety building)
- Post hard copy of meeting information (agenda, slides, etc.) ins non-municipal building (e.g., post office, laundromat, pantry, NOTCH, etc.)

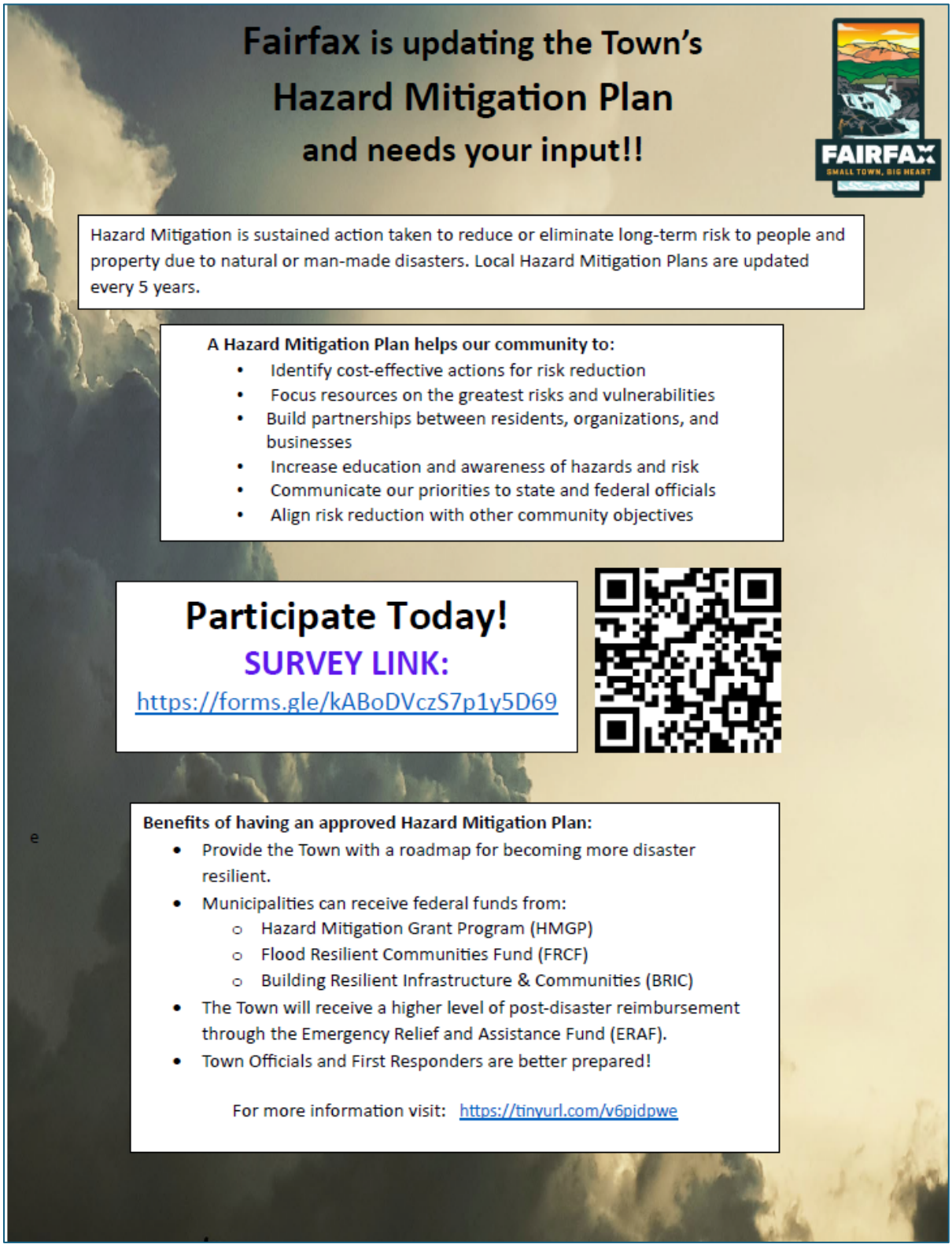
Processing Feedback

Feedback opportunities included public meetings, public comment period, requests. online feedback via email link, phone, regular updates and follow-ups. Comments and feedback received were incorporated during the plan update.

Planning Team and Stakeholders		
Name	Organization	Role
Mike Bishop	Town Manager	Planning Team Lead (Community Lead POC)
Shaun Coleman	Northwest Regional Planning Commission	Planning Team Member (Project Leader)
Micah Genzlinger	Chief - Fairfax Fire Department	Planning Team Member (Community EMD)
Corey Vanselette	Public Works Director	Planning Team Member (Community PW Lead)
Steve Bessette	Resident	Planning Team Member (Local elected official and former EMD)
Laurie Fisher	Fairfax Selectboard Chair	Planning Team Member (Local elected official and Chair)
Tim Burns	Fairfax Selectboard	Planning Team Member (Local elected official and emergency services member)
Linda Horner	Communications	Planning Team Member (Social media and municipal website manager)
Chris Santee	Fairfax Business Association	Planning Team Member (Business community representative)
Michael Wheeler	Director Fairfax Rescue	Planning Team Stakeholder (Ambulance Service)

Sheri Rainville	Fairfax Historical Society	Planning Team Stakeholder (Historical and Cultural Resources)
	Green Mountain Power Vermont Electric Co-op	Planning Team Stakeholder (Electric Utility)
Cheryl LeTourneau	Georgia Town Clerk	Planning Team Stakeholder (Neighboring Community Official)
Casey Toof	St. Albans Town Manager	Planning Team Stakeholder (Neighboring Community Official)
Matt Gillilan	Fletcher Town Selectboard	Planning Team Stakeholder (Neighboring Community Official)
Dan St. Cyr	Cambridge EM	Planning Team Stakeholder (Neighboring Community EM)
Erin Creeley	EP, Vermont Department of Health, St. Albans District	Planning Team Stakeholder (Community Health Including Disabilities and Individuals with Functional Access Needs)
Reginald Beliveau, Jr.	Interim Chair, Franklin County Regional Emergency Management Committee	Planning Team Stakeholder (County EM services and first responders)
Jess Graff	Director, Champlain Valley Office of Economic Opportunity	Planning Team Stakeholder (People with Disabilities and Functional Access Needs)
Rev. Elizabeth Griffin	Fairfax Food Shelf	Planning Team Stakeholder (Food, Shelter)
Ashley Bartley	Visiting Nurses Association (formerly Franklin County Home Health Agency)	Planning Team Stakeholder (Senior Healthcare, Hospice and Community Support Services)
Karen Heinlein-Grenier,	Director Turning Point of Franklin County	Planning Team Stakeholder (Recovery Support and Services)
Keith Ellery	Northwest Medical Center Emergency Ops Manager	Planning Team Stakeholder (Regional Hospital)
Kathy Benoit,	Executive Director Northern Tier for Health Fairfax Health Center	Planning Team Stakeholder (Community Health and Wellness)
John Tague	Superintendent, Franklin West Supervisory Union, BFA Fairfax	Planning Team Stakeholder (Education)
Tim Smith	Director, Franklin County Industrial Development	Planning Team Stakeholder (Business and Industry)

Appendix I: Community Survey Flyer, Survey and Results



Community Stakeholder Survey *
Town of Fairfax, Vermont
Local Hazard Mitigation Plan

***Results in Red:** The Town of Fairfax utilized a survey to solicit public input on 1) potential natural hazard impacts and 2) mitigation strategies to reduce these impacts in the future. The survey was made available online as well as hard copy over the course of the planning process. The Town received 26 responses and a summary of the input received is provided below in red.

Hazard mitigation is an action that reduces the long-term impacts of Natural Hazards (e.g. ice, snow, wind, heat, cold, drought, flood inundation, fluvial erosion, earthquake, wildfire, invasive species, infectious disease outbreaks, and hail) on that community including people, buildings, environmental systems, and other infrastructure.

Your Name (optional):
Email address (if you would like to be contacted for follow-up information):

Town, Village or City of residence?:
Fairfax Town: 98%
Fairfax Village: 1%
St. Albans Town: 1%

Have you ever experienced a natural disaster? If so, what type and where?
Yes: 53% (Various locations and dates)
No: 15%
No answer: 32%

Please select the three hazards you think pose the *greatest concern* to your community:
Flooding: 80.3%
Severe Winter Storm (Ice Storm): 69.2%
Severe Wind: 50%
Fluvial Erosion: 26.9%
Severe Thunderstorm: 19.2%
Infectious Species: 11.5%
Invasive Species: 11.5%
Cold: 7.7%
Drought: 7.7%
Heat: 7.7%
Wildfire: 3.8%
(Pesticide in Farm Soil): 3.8%
Dam Failure, Landslide, Earthquake, Hail: <1%

Hazard	Most Concerned	Very Concerned	Somewhat Concerned	A Little Concerned	Least Concerned
Drought	0	0	4	9	9
Cold	0	5	0	10	7
Earthquake	0	0	1	3	18
Flood Inundation	3	5	12	2	0
Fluvial Erosion	2	4	10	3	3
Hail	0	0	1	0	21
Heat	0	0	2	15	5
Ice	0	1	8	11	2
Infectious Disease Outbreak	0	2	11	7	2
Invasive Species	0	2	6	14	0
Landslide	0	0	1	0	21
Snow	1	3	9	6	3
Wildfire	0	0	1	8	13
Wind	3	0	10	8	1

Is there another hazard not listed above that you think is a wide-scale threat to the community? If yes, please explain.

- Ticks and mosquito borne illness
- Heat and humidity will become more of issue. Need safe centers for seniors
- Climate Change

Please explain why you think these hazards pose the greatest risk to the community or you in particular.

Based on the survey results, residents highlighted several reasons why these specific hazards pose the greatest risk to themselves and the community:

High Financial and Recovery Costs

- **Personal financial toll**: Home flooding requires extensive time and money to fix, with very few resources available to help individual families recover.
- **Utility expenses**: Severe temperatures significantly drive up the costs associated with heating and cooling local residences.

Road and Travel Dangers

- **Hazardous driving**: Heavy snowstorms make road conditions extremely dangerous, compounded by a perception that the state does not clear highways as effectively as the town crew.
- **Severe drifting snow**: Specific locations like **Fletcher Road**, **Route 104 heading south**, and **Brick Church Road** suffer from heavy snow drifts that block passage.

Severe Infrastructure and Access Disruptions

- **Isolation from flooding**: Rising waters along the Lamoille River frequently isolate neighborhoods and block access near **Goose Pond Road** and the local school road.
- **Emergency access failure**: Natural disasters damage businesses and roads, which completely disrupts emergency response services and threatens public health.

- **Widespread property damage**: High winds routinely cause power outages and knock down trees, while fluvial erosion destabilizes streambanks, bridges, and nearby river infrastructure

What do you think the community's disaster resiliency priorities are?
69% responded. Summary of responses:

- **Life Safety**: Ensuring public safety and zero casualties during disasters.
- **Flood Mitigation**: Protecting homes and fixing roads prone to frequent flooding.
- **Infrastructure Protection**: Maintaining open, safe roads and bridges during storms.
- **Utility Reliability**: Keeping the electrical power and heat running reliably.
- **Emergency Preparedness**: Setting up safe warming centers during prolonged power outages.

Based on the hazards you listed, what actions can the town implement to reduce the risk for each hazard either to you and/or the community?
26% responded. Summary of residents recommended actions for the town:

Infrastructure & Physical Improvements

- Drainage & Flooding Fixes: Upgrade local ditches and culverts, raise Goose Pond Road and the road past the school, and build a storm wall at the bottom of Hunt Street.
- Winter Safety Controls: Install guardrails along Stones Brook Road and Goose Pond Road, and place snow fences along field edges to manage severe snow drifting.

Road Crew Retention & Equipment Upkeep

- Competitive Compensation: Keep the town road crew well-paid, happy, and trained so they are not lost to neighboring Chittenden County.
- Maintenance: Keep roads open and continuously maintain response equipment so it stays functional and ready for deployment.

Planning & Emergency Support

- Response Frameworks: Maintain active response plans for major flooding and power outages while supporting local fire, ambulance, and police services.
- Inter-Agency Coordination: Maintain sufficient administrative and road crew staffing to collaborate with external agencies and organizations on preparedness efforts.

Policy & Fiscal Requests

- Tax relief: Lower local taxes.

What do you think your community's disaster resiliency priorities are?

- Multiple residents explicitly prioritized keeping the public safe, ensuring no one gets hurt or killed during a disaster including keeping the roads open and safe.
- Ensuring roads are structurally sound enough to handle heavy rains and are cleared quickly after winter storms
- Include pet protection in evacuation or shelter plans.
- Drainage upkeep like keeping ditches clear.
- Protecting homes and businesses, driven by severe flood impacts over the last two years.
- Fix recurring flooding on Goose Pond Road that physically traps people on their land
- Providing safe, designated backup centers for residents during extended winter power outages.
- A small portion of respondents noted they simply "don't know" or are "not really sure" what the town's current resiliency priorities look like

How concerned are you about the following hazard events? (scroll to the right the columns)?

Highly Concerned Hazards

- Flood Inundation: 69.2% highly concerned
- Severe Winter Storm: 65.4% highly concerned
- Severe Thunderstorm: 53.8% highly concerned
- Severe Wind: 53.8% highly concerned

Moderate-Concern Hazards

- Infectious Disease: 23.1% highly concerned
- Invasive Species: 23.1% highly concerned
- Fluvial Erosion: 19.2% highly concerned
- Heat: 15.4% highly concerned
- Wildfire: 15.4% highly concerned
- Cold: 11.5% highly concerned
- Drought: 11.5% highly concerned

Low-Concern Hazards

- Earthquake: 0.0% highly concerned
- Hail: 0.0% highly concerned
- Dam Failure: 0.0%

Which types of mitigation projects do you believe local, state and federal government agencies should focus on to reduce disruptions of services and to strengthen the community?
(Circle all that apply)

- Retrofit and strengthen essential facilities such as the fire station, emergency medical services, schools, etc. (44%)
- Replace inadequate or vulnerable bridges and culverts (76%)
- Retrofit infrastructure by, for example, elevating roadways and improving drainage systems (60%)
- Work on improving the damage resistance of utilities (electricity, communications, water/wastewater facilities, etc.) (44%)
- Install or improve protective structures, such as floodwalls, levees or overflow facilities (8%)
- Buyout flood prone properties and maintain as open space (20%)
- Strengthen codes, ordinances and plans to require higher hazard risk management standards (20%)
- Inform property owners of ways they can mitigate damage to their property(s) (20%)
- Improve local emergency shelter facilities (8%)

Where do you turn for information during an emergency? (circle all that apply)

- Cell phone: (69%)
- Front Porch Forum: (27%)
- Land Line Phone: (8%)
- Newspaper: (12%)
- Radio Station: (39%)
- Social Media (Instagram, Facebook/Meta, X (Twitter), other) (65)
- Television (50%)
- VT Alert (65%)
- Town email list (3.8%)
- Weather.gov (3.8%)

How would you rate the importance of the following actions to protect yourself and your community:
(1= Most important 5= Least important)

Priorities	Actions	Most Important	Very Important
High	Protecting transportation infrastructure (roads/bridges)	92%	30%
	Protecting and reducing damage to utility infrastructure (power/water/wastewater)	62%	19%
	Strengthening emergency services (police, fire, ambulance)	26%	27%
	Preventing development in hazard areas	26%	27%
Medium	Promoting cooperation among public agencies, citizens, non-profits, and businesses	42%	27%
	Protecting private property	38%	23%
	Protecting the natural environment	36%	15%
Low	Protecting historical/cultural landmarks	<5%	<5%

What actions have you taken to reduce the risk to your residence of potential disasters?
(Circle all that apply)

- Developed a family plan: 20%
- Have a 3-day supply kit: 48%
- Have a car emergency kit: 32%
- Certified in First Aid and/or CPR: 28%
- Installed smoke detectors: 80%
- Installed carbon monoxide detectors: 64%
- Installed a generator and know the utility: 32%
  shutoff procedure
- Purchased fire extinguishers 80%
- Installed Floodproofing 0%
- Purchased flood insurance 16%
- Purchase homeowners/renter's insurance 84%
- Other: Home solar with battery storage. Multiple heating options and diverse fuel/energy

Sources

- Other: Added stone to our driveway to raise it.

Thank You for your Input!
If you have questions or would like additional information, please contact **Shaun Coleman, Northwest Regional Planning Commission at** scoleman@nrpcvt.com or (802) 524-5958.