Town of Fayston, VT

2024 Local Hazard Mitigation Plan

Date of Town Adoption: 6/11/24
Date of Final Approval by FEMA: 11/12/2024
Plan Expires 5 years from FEMA Approval: 11/11/2029

Town of Fayston, VT
2024 Local Hazard Mitigation Plan
Prepared by the Town of Fayston and Central Vermont Regional Planning Commission

Prepared by

The Town of Fayston Hazard Mitigation Planning Team (2022-3)

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Technical Assistance: Central Vermont Regional Planning Commission

Central Vermont Regional Planning Commission

Glossary/Acronym List

Base Flood: A flood having a one percent chance of being equaled or exceeded in any given year. This is the regulatory standard also referred to as the "100-year flood."

Base Flood Elevation (BFE): The elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year.

Best Manage Practice (BMP): BMPs are practices that manage stormwater runoff to improve water quality and reduce stormwater volume and velocity. Examples of BMPs include gravel wetlands, infiltration basins, and bioretention practices.

Buffer: an undisturbed area consisting of trees, shrubs, ground cover plants, duff layer, and generally uneven ground surface that extends a specified distance horizontally across the surface of the land from the mean water level of an adjacent lake or from the top of the bank of an adjacent river or stream, as determined by the Secretary of Natural Resources.

BIPOC: this acronym stands for Black, Indiginous, and people of color; this term is used generally to refer to a range of communities and identities as an umbrella term while acknowledging the unique relationship to whiteness and colonial systems that Black and Indigenous people have (and to combat indigenous erasure and anti-blackness). This term should not be used in specific contexts and scenarios where the use may conflate or erase the needs, identities, and experiences of specific peoples.

Community Rating System (CRS): A program developed by FEMA to provide incentives for those communities in the Regular Program that have gone beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding.

Declaration: Presidential finding that a jurisdiction of the United States may receive Federal aid as a result of damages from a major disaster or emergency.

Flood Insurance Rate Maps (FIRMS): The official map of a community prepared by FEMA, showing base flood elevations along with the special hazard areas and the risk premium zones applicable to the community.

Floodplain: Any land area susceptible to being inundated by floodwaters from any source.

Fluvial Erosion: streambed and streambank erosion associated with physical adjustment of stream channel depth and width

Frontline Community: Are those who are dispropriotionally negatively affected by a policy, project or event and systematically lack access to its benefits- this can be due to geographic proximity and/or to identity-based discrimination they encounter additional barriers to accessing resources (e.g. intersectiong identities including racial, ethnic, gender, sexual orientation, economic, cultural, ability, and/or linguistic). It is best to define these communities in relation to a specific issue, action, or policy (e.g. Vermont Climate Council work towards defining Frontline/Impacted Communities). Different funding bodies may refer to demographic subsets defined along their own criteria for targeted assistance; these terms and definitions vary including also historically or systematically disadvantaged/underserved populations (e.g. Climate & Economic Justice Screen Tool identifies communities as disadvantaged if they are in census tracts that are at or above the 90th percentile for energy cost OR PM 2.5 in the air AND are at or above

the 65th percentile for low income); vulnerable communities: this term carries negative connotations of intrinsic weakness or deficit of certain people instead of the additional barriers faced due to systemic biases. In Central Vermont, frontline communities include but are not limited too BIPOC, LGBTQ+, New Americans, elderly residents, residents with disabilities, those experiencing or facing homelessness, single care givers, individuals with low-income, recently or currently incarcerated individuals.

Inundation Flooding: the overflowing of rivers, streams, ponds and lakes due to excessive rain, rapid snow melt or ice.

LGBTQ+: An acronym for lesbian, gay, bisexual, transgender, queer or questioning; there are variations on the acronym including commonly asexual (A), intersex (I), and Two-spirit (2), we use the + to hold space for these and others along the spectrums of gender identity and sexual orientation. Use the acronym/identifiers specific community/organziation/individuals use for themselves first and foremost.

National Flood Insurance Program (NFIP): a program managed by FEMA that makes federally-backed flood insurance available in those states and communities that agree to adopt and enforce flood-plain management ordinances to reduce future flood damage.

Pre-FIRM Building: A building for which construction or substantial improvement occurred on or before December 31, 1974 or before the effective date of an initial Flood Insurance Rate Map (FIRM).

Repetitive Loss Structure: An NFIP-insured structure that has had at least 2 paid flood losses of more than $1,000 each in any 10-year period since 1978

Resilience: the capacity of individuals, communities, and natural and built systems to withstand and recover from climatic events, trends, and disruptions.

River corridor: the area of land surrounding a river that provides for the meandering, floodplain, and the riparian functions necessary to restore and maintain the naturally stable or least erosive form of a river thereby minimizing erosion hazards over time

Special Flood Hazard Area (SFHA): the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. This area is where the NFIP's floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies. This area is usually labeled Zone A, AO, AH, AE, or A1-30 on the maps published by FEMA.

1. Executive Summary

The purpose of this Local Hazard Mitigation Plan is to recognize hazards facing the community of Fayston and identify strategies to avoid or reduce risks of damage or loss from those hazards. The Plan was developed by a team of local municipal officials in partnership with the Central Vermont Regional Planning Commission. The Plan also incorporates input from key community organizations, state agency stakeholders, and the public.

By researching the history of hazard occurrences and convening local and expert knowledge, the following hazards were prioritized as the worst threats to Fayston and the most important for the community to plan for:

- Flood/Erosion
- Severe Winter Weather
- Severe Storms (including High Winds)
- Invasive Species

Furthermore, climate change was identified as major overarching hazard, exacerbating vulnerabilities, amplifying risks, and increasing the frequency, severity, and unpredictability of most of the hazards discussed. Changes noted since the last Hazard and Risk Assessment included increased high wind events, severity and variety of invasive species, increased number and severity of hot and dry days, increased microbursts, the COVID-19 pandemic, and increased threat regarding civil disturbances, cyber security, and terrorism.

In order to avoid damage and loss from these, the community has identified hazard mitigation projects and strategies. The following are highlights of those projects. The complete listing of projects can be found on page 107-115.

- Upgrade undersized culverts on Tucker Hill, Marble Hill, German Flats, and Randall Roads
- Update and expand effort to support vulnerable residents including hosting existing resources, an annual review of community needs, and coordination with community partners.
- Consider creating an extreme temperature preparedness plan and establishing a cooling/warming center.
- Inventory upland knotweed patches and prioritize for removal.
- Participate in tri-town wildlife connectivity effort including data collection and analysis, consideration of wildlife corridor development, and public education

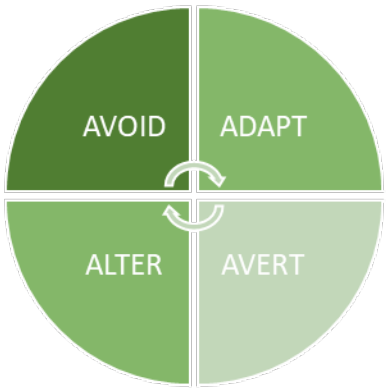
The mitigation projects will be pursued over the five-year course of this Hazard Mitigation Plan. Fayston's hazard mitigation program is a continuous effort by the community that also includes the ongoing land use planning, infrastructure and emergency management programs. The projects in this plan will be integrated into those processes as the community continues to grow its hazard mitigation capacity.

2. Introduction

In accordance with the Stafford Act, municipalities may perform mitigation planning and be eligible to receive increased federal funding for hazard mitigation measures. (42 U.S.C. 5165). 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 community of Fayston more disaster resistant.

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 Project Impact 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 and measures during all of the other phases of emergency management – preparedness, response, and recovery. 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 mitigation 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

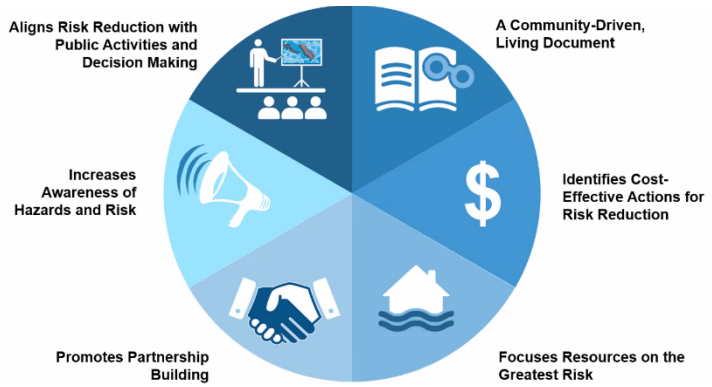
AVOID the hazard by preventing or limiting development.

3. Purpose

The purpose of this Local Hazard Mitigation Plan is to assist the Town of Fayston in recognizing hazards facing the region and is community and to identify strategies that begin reducing risks from acknowledged hazards.

Fayston strives to be in accordance with the strategies, goals and objectives of the Vermont State Hazard Mitigation Plan, including an emphasis on proactive pre-disaster flood mitigation for public infrastructure, good floodplain and river management practices, and fluvial erosion risk assessment initiatives.

The benefits of mitigation planning include:



Source: FEMA LHMP Skill Share Workshop 2021

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The 2023 Fayston Local Hazard Mitigation Plan is an update of the Town's adopted 2017 Local Hazard Mitigation plan, approved by FEMA on 06/01/2017. This Local Hazard Mitigation Plan assists the Town to catalogue hazards facing the region and community, and to identify strategies that reduce risks from acknowledged hazards based on current information. The Town reviewed, evaluated, and revised the 2017 plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities. New information has been incorporated into the plan, making it up to date, stronger, and more useful to Town officials and residents who will implement the actions and measures going forward. Implementation of this plan will help Fayston be more resistant to harm and damages in the future, helping to reduce public costs.

Updates include:

- Update Information from the 2017 plan.
- The Plan Update Process was updated.
- Plan Maintenance activities were updated.
- Risk and Vulnerability Assessments: the hazards were reanalyzed and updated to reflect community priorities and developments; additionally the impacts of climate change and considerations of vulnerable populations were discussed for each hazard.
- The Local Areas of Concern Map was updated to reflect new information.
- Status update of 2017 mitigation strategies was reviewed and documented.
- Addition of a new Transportation Vulnerability Analysis Map (Vulnerability Assessment).
- The new mitigation strategies section was updated and enhanced to reflect current priorities and intended actions of the community over the next five years. Addition of a new Transportation Vulnerability Analysis Map (Vulnerability Assessment).

3. Community Profile

3.1 Geography & Environment

The Town of Fayston is located in the southwest quadrant of Washington County. It is bordered by Duxbury to the north, Waitsfield to the east, Warren to the south and the Chittenden County towns of Huntington and Buels Gore to the west. Fayston is characterized by steep mountains, high elevations, and narrow valley bottom; the spine of the northern Green Mountains run along the Town's western boundary. Fayston is primarily located within the Shepard Brook and Mill Brook-Mad River watersheds, sub watersheds of the larger Winooski River basin.

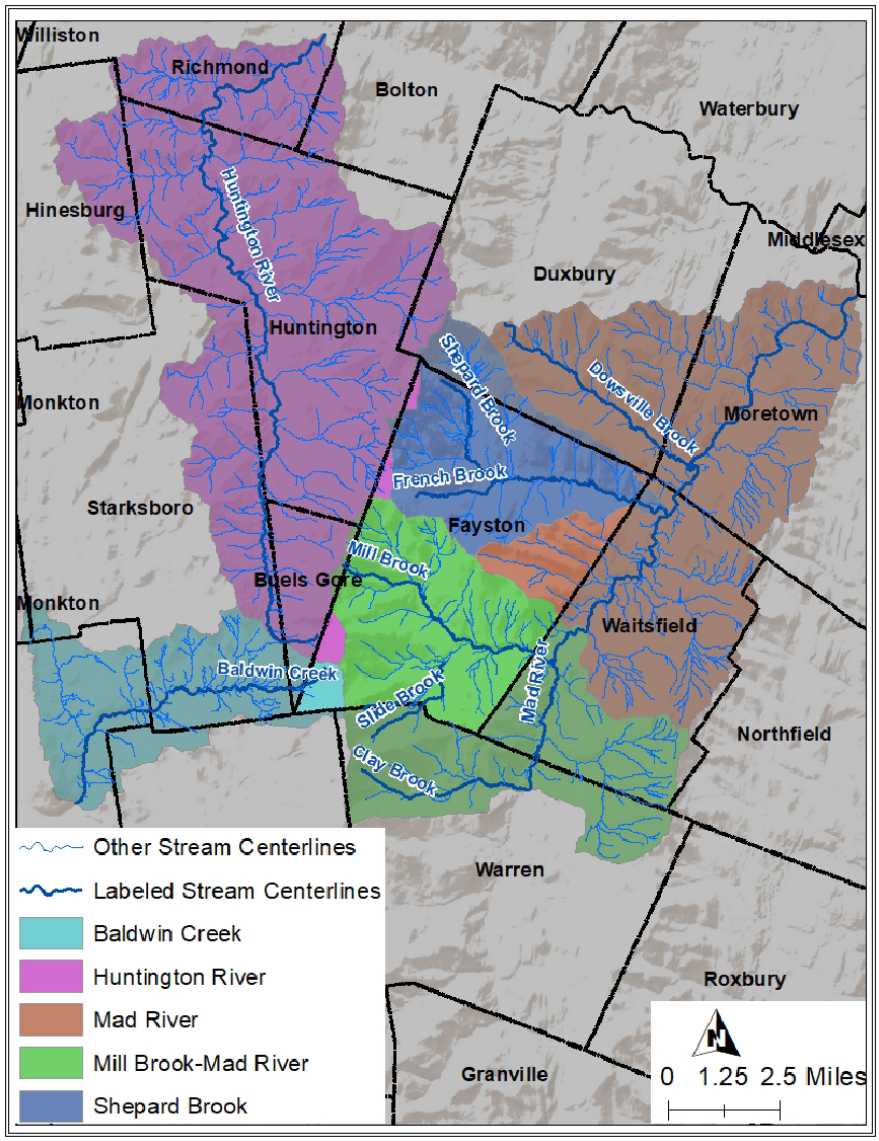


Figure 1 Fayston in the context of the Mad River watershed, including Shepherd Brook and Mill Brook tributaries (Town Plan, Keeping Water Local - Friends of The Mad River)

The town's highest point at 3,700ft is on Mt. Ellen, one of the prominent peaks in the Green Mountain Range. Fayston's mountainous terrain is home to two of Vermont's major downhill ski areas: Sugarbush's Mount Ellen and Mad River Glen. The town's lowest point is a 700 ft where

Shepherd Brook flows into the adjacent town of Waitsfield. Due to steep topography and poor shallow soils commercial and residential development, as well as agriculture, development has been limited to the lower elevation areas near and along the Waitsfield town line and around the base areas of the two ski resorts.

3.2 Demographic and Development Patterns

Fayston is a rural community with 1,364 residents (2020 Decennial US Census) and an estimated 1,000 part-time residents according to the 2020 Town Plan and a 2019 Town Survey. While these overall number have changed little from the 2010, Fayston's 2020 Town Plan and the 2021 Mad River Valley Housing Demand & Market Analysis Report continue to reflect the state-wide trend in younger residents leaving the town and state and an overall "aging" of the population also reflected in decreasing household size (see Town Plan Chapter Four and Report for more details). Older Vermonters are more vulnerable to most hazards due higher likelihood of experiencing one or more of the following:

- mobility challenges,
- existing health conditions that can be exacerbated by extreme weather or require treatment that could be interrupted, etc.,
- fixed incomes which may result in a lower ability to prepare and engage in individual mitigation actions as well as rebound in recovery after a disaster.

Of the 855 housing units in Fayston, 383 are occupied (44.8%) of which almost 90% are owner occupied and the remaining renter-occupied. Of the 472 (55.2%) "vacant" almost 90% are for seasonal, recreational, or occasional use (this designation includes second homes) (see Chapter 6 on Housing in the Town Plan for details). The Town Plan notes that over the past decade, an increasing number of full-time residences have been sold as second homes- leading to a change in the ratio of residential to vacation homes, a decline in school enrollment, and a general shift in demographics (page 85). Housing stock is relatively new and generally in good condition; less than 5% built before 1940 and all housing units have complete plumbing and kitchen facilities according to the census.

Table 1 Housing Types and Vacancy, American Community Survey 5-year Average 2021

Housing Type	Number of Units	% of Total
Total	855	100.00%
Occupied	**383**	**44.80%**
Owner	344	40.23%
Renter	39	4.56%
Vacant	**472**	**55.20%**
For rent	9	1.05%
Rented, not occupied	0	0.00%
For sale only	26	3.04%
Sold, not occupied	9	1.05%
For seasonal, recreational, occassional use	418	48.89%
For migrant workers	0	0.00%
Other vacant	10	1.17%

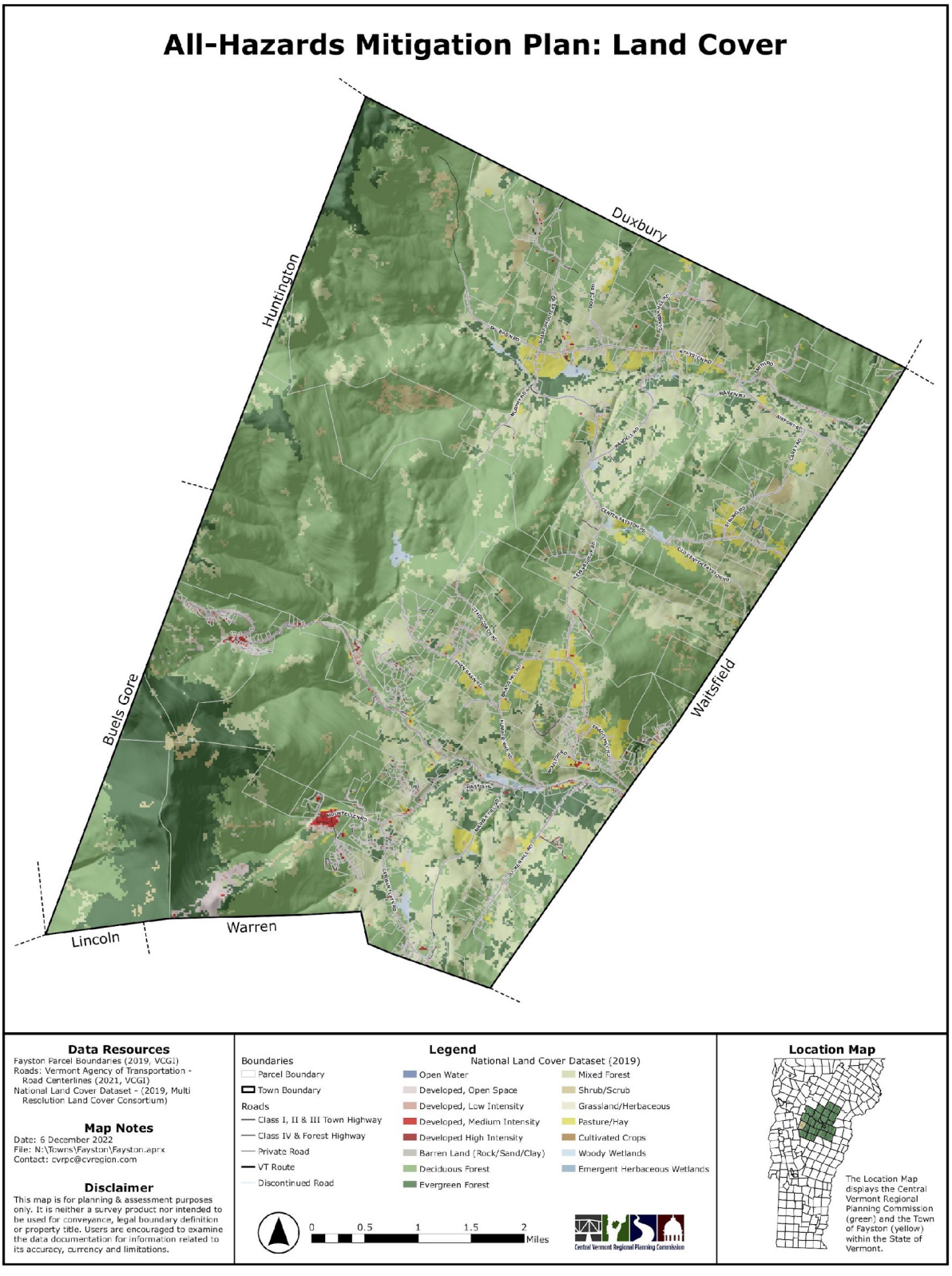


Figure 2 Land Cover

Fayston's history of population growth and development provides critical context for identifying strengths and vulnerabilities regarding hazard mitigation. Between 1960 and 2010 the population grew from only 158 residents to 1,353 residents, largely associated with the development of the area for recreation, which has been the primary focus for physical and social infrastructure. The Town Plan widely recognizes that the majority residents are concerned about the affordability of housing and would like to focus development of housing proximate to resources and social infrastructure as well as municipal physical infrastructure like water and wastewataer (e.g. in proximity to jobs, food, medical facilities, etc. in areas adjacent to Waitsfield Irasville, etc) (page 87 Town Plan)). In spite of this general agreement and efforts to concentrate housing, only some of the housing has been in the four preferred areas of Route 17, German Flats Road, and the base of the two ski areas. Instead, development in Fayston continues to be dispersed rural residential, leading to fragmentation of Fayston's open space, wooded areas and hilly areas (Town Plan page 85). While the impact of development is dispersed across several areas of town and among individual owners, versus concentrated in a few major investments, the construction of roads, residential developments, and clearing of previously forested areas do contribute to increases in stormwater runoff and the destabilization of the hillsides increasing flooding and decreasing water quality (Fayston Stormwater Master Plan). Residential construction remains active alongside residential sales since 2020, with 2022 capturing the 3 trend including 54 residential sales, 22 new homes, 16 residential additions, and 17 structures under construction or permitted to begin construction by the end of the year (Annual Town Report, List Report, 2022). The Zoning Permits generally reflect increasing development pressure:

Table 2 Zoning Permits Type and Number, Town Annual Reports 2019-2022

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Subdivision and Amendments	3	7	5	7	5	3	2	11	8
Single-Family Homes	8	9	6	8	8	12	7	11	13
Additions/Other Structures	21	18	28	20	31	15	35	36	21
Certificates of Occupancy	4	2	11	8	7	7	6	12	17
Conditional Use	5	3	5	3	8	13	5	9	14
Home Occupation	3	1	0	1	0	0	4	1	1
Withdrawn/Denied							2	3	4
Total	**44**	**40**	**55**	**47**	**59**	**50**	**61**	**83**	**78**

The majority of Fayston's transportation network consists of Class 3 town highways. Fayston is served by three collector highways: Route 17, which traverses the Appalachian Gap and provides access from the Mad River Valley to Chittenden and Addison County on the west side of the Green Mountains. German Flats Road and North Fayston Road are also collector highways. Traffic on these roads increase dramatically on the weekends and holidays due to ski resort traffic, and see a lesser increase during fall foliage season.

The major economic activity occurs at the two major ski areas. Much of the residential development has occurred in North Fayston due to its proximity to Route 2 and Interstate 89 to the north and new development is occurring along German Flats Road, Center and North Fayston Roads, Kew-Vasseur and Bragg Hill. The Town Plan recommends that the existing road infrastructure be used for future development and that the overall development pattern enhance Fayston's rural character. This rural character limits land uses and densities in outlying areas and high elevations and instead encourages appropriate clustered or concentrated patterns of development. As stated above, this pattern of development does increase vulnerability in these areas minimally, however risk is also dispersed among each individual homeowner. Multi-unit developments at the ski resorts constitute a large investment, however none have been constructed since 2011.

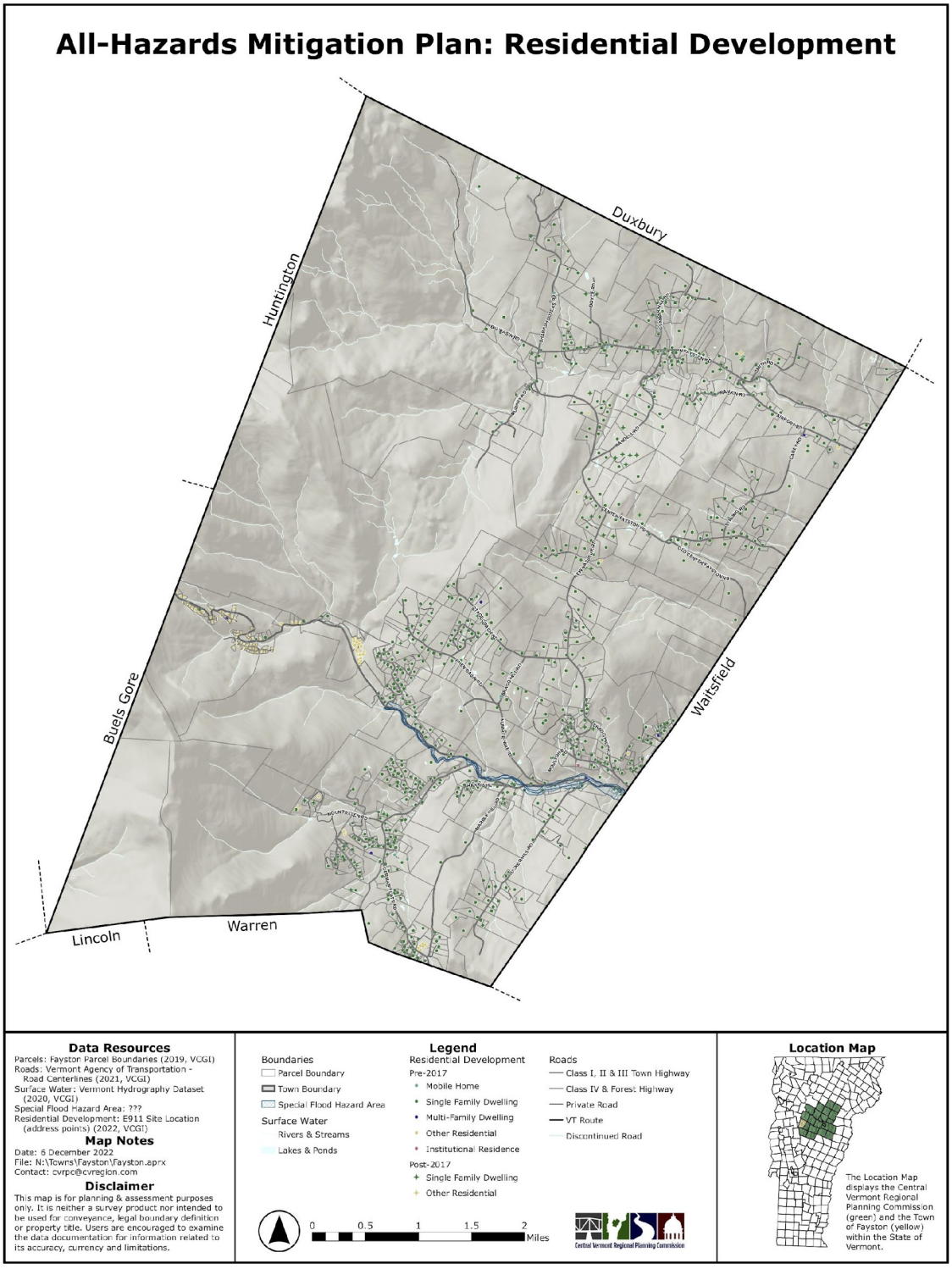


Figure 3 Residential Development

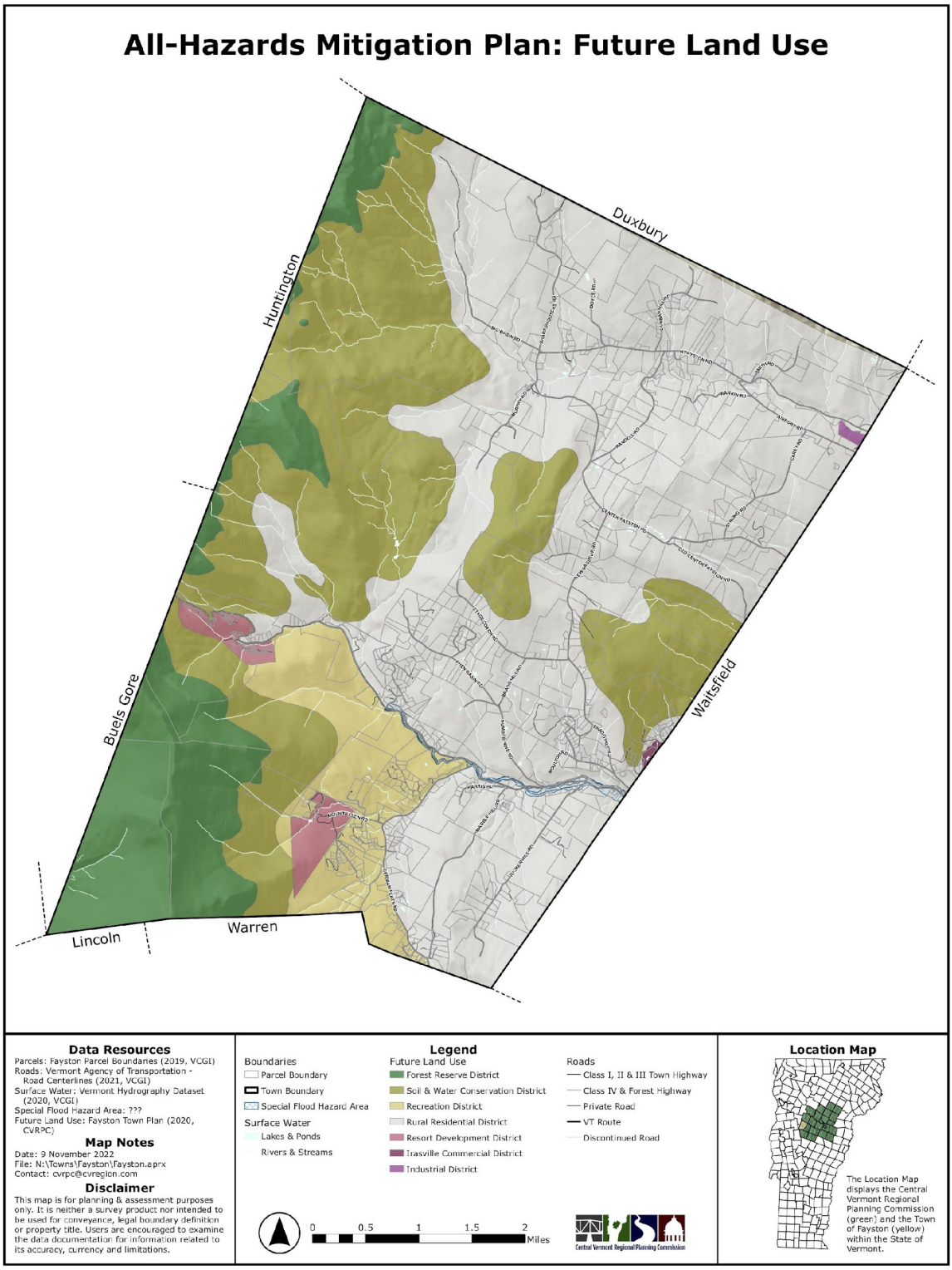


Figure 4 Future Land Use

Utilities and Facilities

Green Mountain Power (GMP) and Washington Electric Cooperative (WEC) provide electricity to the Town of Fayston, with WEC providing service to customers in North Fayston and parts of Center Fayston and GMP serving the remainder of the Town.

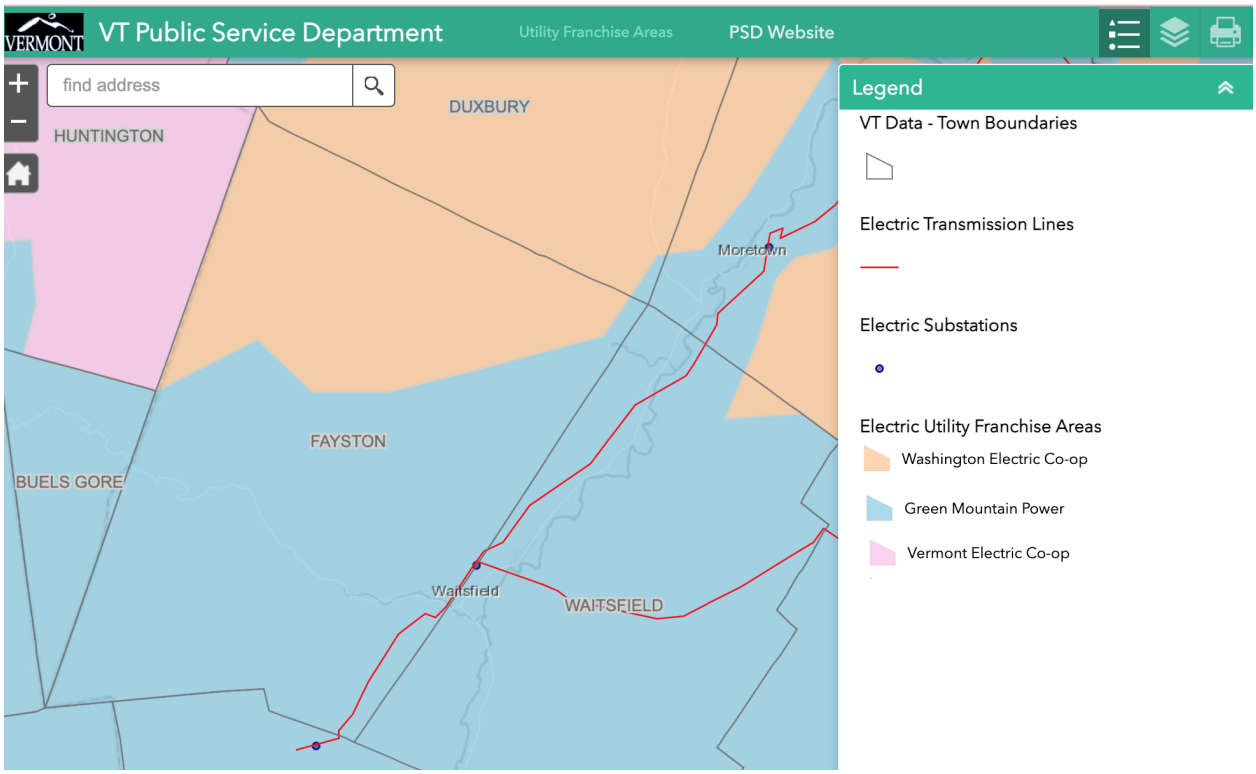


Figure 5 Approximate Electric Utilities Service Areas, VT Public Service Department

Fayston's distributed energy resources include approximately 50 small-scale renewable energy generation projects according to the Vermont Energy Atlas & Dashboard, which aggregates data from Efficiency Vermont and other organizations including Energy Efficiency, Transportation Transformation, Weatherization, and Renewable Electricity (has not been updated since 2019). In addition to the maintenance and condition of large-scale utilities, local distributed energy resources and renewable energy generation are critical to community resilience via powering or enabling access to both physical and social infrastructure as high winter winds do present significant challenges to Vermont energy infrastructure including in the town of Fayston.

Table 3 Renewable Energy Generation Projects Fayston (as of February 2024, PUC DG Inventory provided by the Public Service Department)

Type	Solar Generation		Storage	
	Projects	Capacity kW (MWh)	Projects	Capacity (kW)
Fayston	65	480.12 (620.32)	12	105

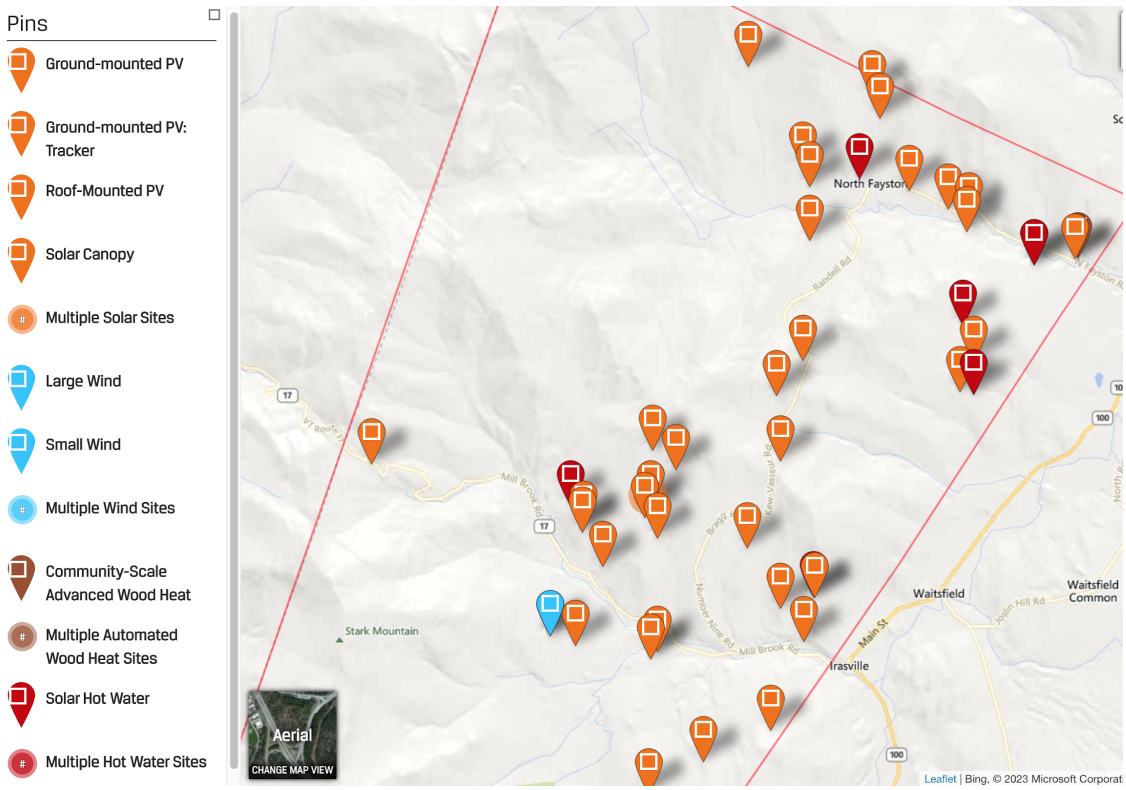


Figure 6 Approximate Locations of Renewable Energy Generation Facilities in Fayston as of 2019, VT Energy Dashboard & Atlas

Wireless telecommunication facilities in Fayston are regulated through the Land Use Regulations and the Public Utilities Commission (see Town Plan page 109). There are three facilities including one at Mount Ellen, Mad River Glen, and off Tucker Hill Road. Residents also utilize a variety of standard wired communication connection types including telephone, DSL, Cable TV, and to a lesser extent cable internet and fiber.

Residents and businesses, including the two ski operations, rely on individual or small-scale community wells and springs for their water supply and private waste water treatment systems. For the majority of the Town's water users, Fayston's mountainous terrain and dispersed settlement patterns make a public water supply system impractical. However, more intensive development at Sugarbush Mount Ellen or elsewhere within the Resort Development and Recreation Districts may require a multi-user water supply system. The neighboring Town of Waitsfield recently completed the installation of a municipal water system; there has been some discussion that proximate Fayston residents may have access to this system with some additional connection infrastructure (Town Plan, page 108). The State of Vermont administers all waste water permitting of both individual onsite systems and public systems (see page 108 of the Town Plan for considerations regarding constraints specific to septic systems given Fayston's terrain and soils).

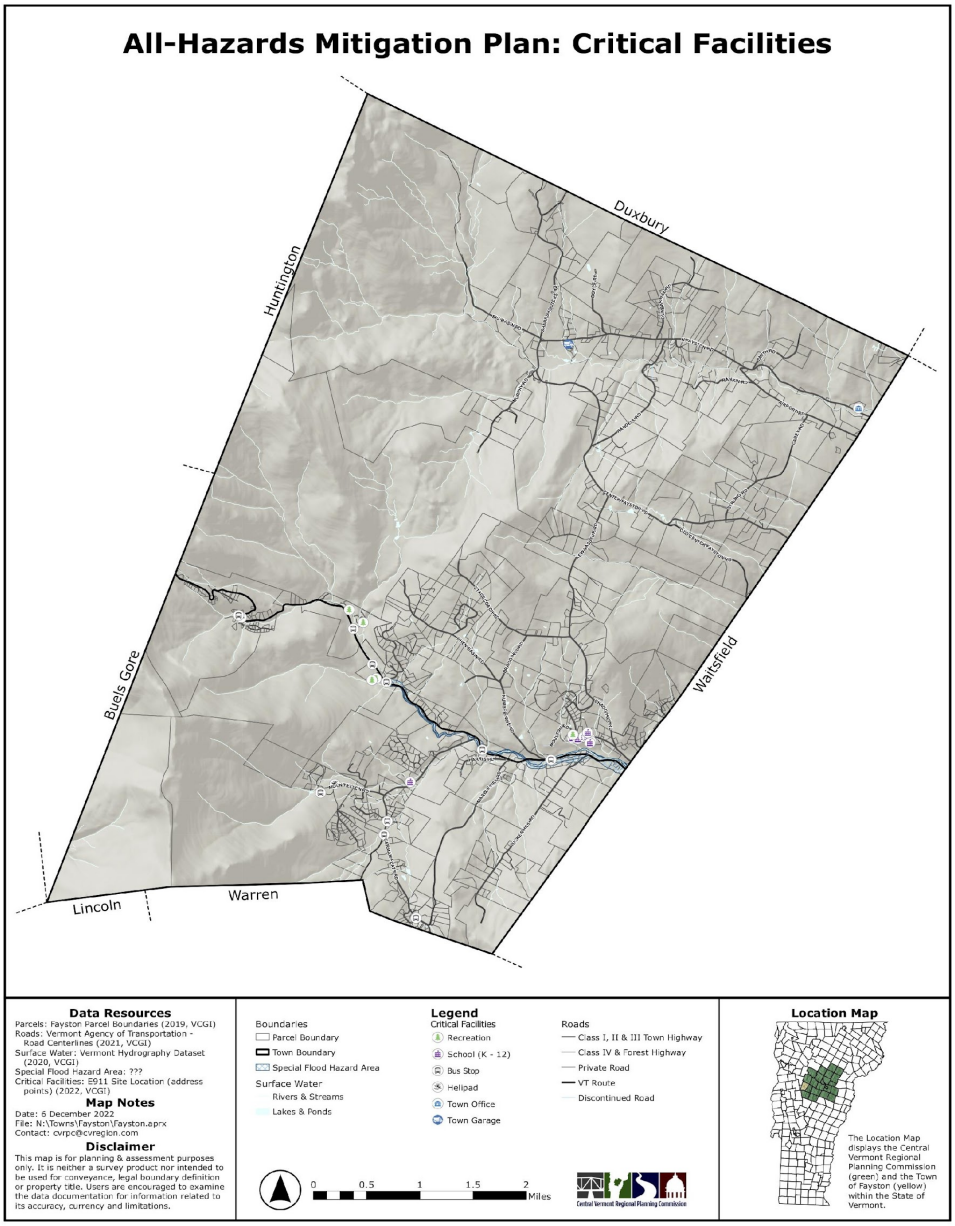


Figure 7 Critical Facilities (Areas of Concern) and Special Flood Hazard Area

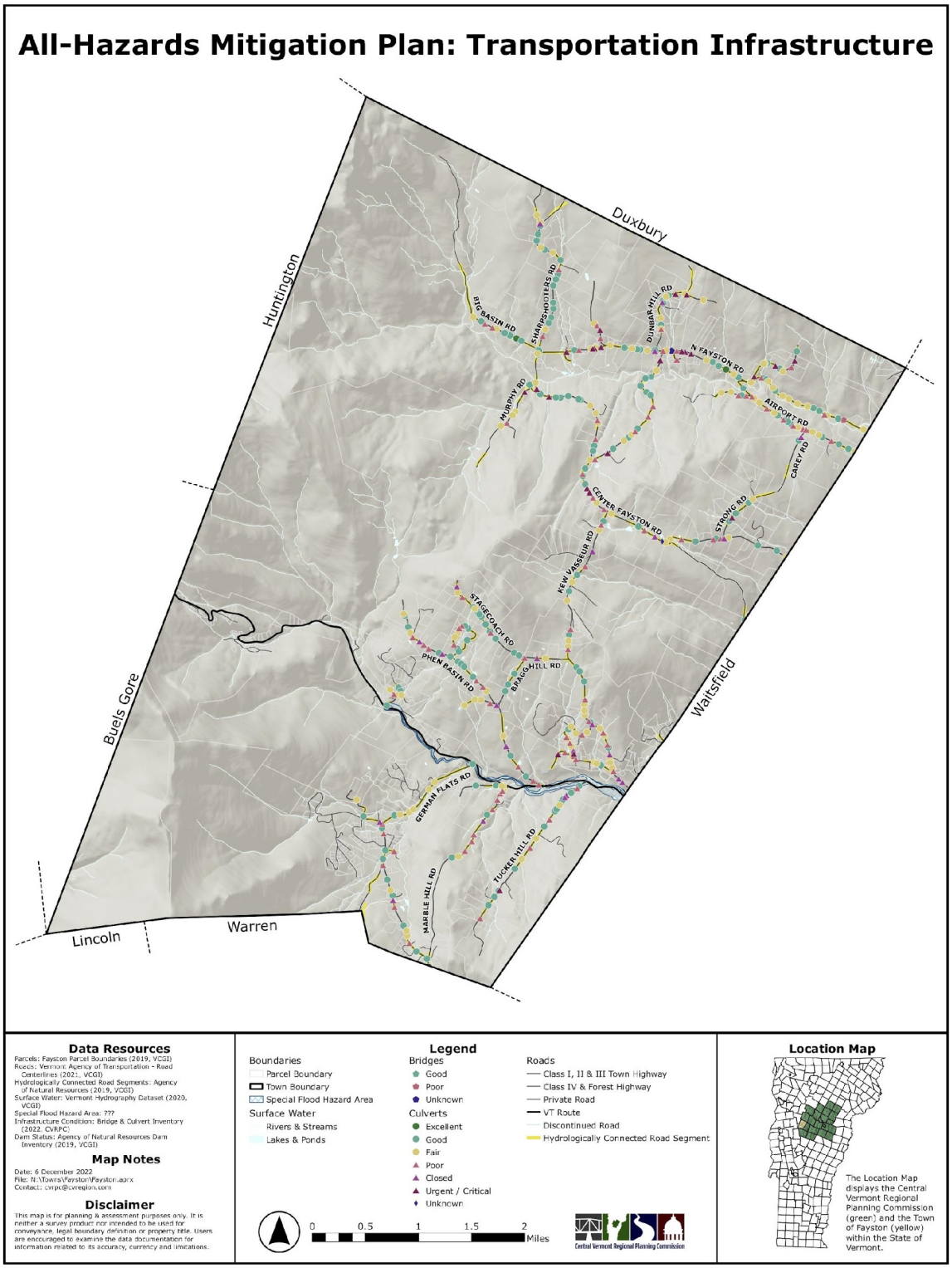


Figure 8 Transportation Infrastructure

Emergency Services

Fayston contracts with other area governments to provide emergency services for the town. Fayston has an agreement with the Town of Waitsfield for fire protection. Fayston contributes 40% to the Waitsfield-Fayston Fire Department's budget (WFFD). This volunteer entity has 20 active members led by Chief Johnson and seven officers as of January 2022. According to the *Annual Report of the Town Officers of Fayston Vermont for the year ending December 31, 2022,* the volunteer department responded to 121 calls, of which 42 were from Fayston (18 of which were smoke/fire alarm activation- no fire). Fayston has a volunteer Fire Warden, responsible for issuing open burning permits, educating town residents, and maintain relationships with local and state partners.

Police protection is provided by the Vermont State Police. Washington County Sherriff Dept. - Main function of the Sheriffs Department is to transport prisoners/ mental health patients and juveniles/ and serve civil process. The department provides services to keep the County safe such as searching out wanted persons, conducting patrols and motor vehicle check points/ snowmobile patrols/ offering hunter safety classes/ and assisting with snowmobile safety classes.

The Mad River Vailey Ambulance Service isa 24 hour, volunteer run/emergency medical provider for the Mad River Valley with its station located in the neighboring town of Waitsfield. It provides EMS and Rescue service to Fayston and according to the town report the MRVAS historically answers 500+ calls annually, about 1/5 of which come from Fayston. Fayston is also served by and is a member of Regional Emergency Management Committee, which supports Tier II Hazardous Materials planning.

The Town of Fayston has an approved Local Emergency Management Plan adopted in 2022 which identifies important hazard areas to check during an emergency, vulnerable sites and populations, and lists Tier II sites and shelters (updated annually). The town coordinates with the Central Vermont Regional Planning Commission who provides technical support and guidance with the Local Emergency Management Plan. Both Fayston Elementary and Green Mountain Valley Schools have emergency evacuation plans, and Sugarbush Resort has a detailed Emergency Action Plan (2019).

Fayston prominently posts information for residents on the town's website including the CARE Program (Citizen Assistance Registration for Emergencies) administered by the United Ways of Vermont, Vermont 211 and E-911, are working together to identify Vermont residents who require special assistance in an emergency. The Mad River Valley Emergency Response Team brings together the Emergency Management Directors from Fayston, Waitsfield, Warren, and Moretown as well as representatives from Stand Up Resources, the Mad River Valley Community Fund, Meals on Wheels, Free Wheelin', and the food shelf, Senior Center, Valley Report, local health care providers and other volunteers to further support residents.
All Public safety entities encourage residents, through the use of Annual reports/ public announcements, and the Town website/ to sign up with VT Alert, post their E-911 addresses in a highly visible location from the roadway/ and use VT211 as needed in efforts to promote personal life safety and property protection.

Fayston's transportation network is managed according to Vermont Road and Bridge Standards. The 2022 highway budget comprised 1/3 of the total municipal general fund budget.

Municipal Governance- Local Ordinances, Plans and Regulations

The 2020 Town Plan includes a discussion and identifies goals regarding natural resources, land use, floodplain management, water quality protection, fire protection, and municipal services. The 2018 Land Use & Development Regulations, updated in 2022, include a Resource Recreation District, Shoreland District, Upland Overlay District, Flood Hazard Area Overlay District and standards regarding steep slopes and surface waters.

Fayston enjoys high quality water sources that include streams, wetlands, seeps, springs, vernal pools and naturally occurring stores of groundwater. Historically, throughout Vermont, human activities such as altering stream channels, converting land cover, constructing dams and constructing road networks have degraded water quality and aquatic habitat. However, over the last few decades an awareness and understanding of the impact of such activities on our water resources has grown and today we enjoy generally healthy surface and ground waters. Preservation of this water quality is one priority highlighted in the Town Survey responses. These waters are fragile and addressing their protection is necessary via Town zoning regulations and other avenues.

Twenty six percent of the Mad River watershed is within Fayston. Therefore, Fayston and its residents have a significant influence on the health of the Mad River ecosystem. In 1993, the Friends of the Mad River, a nonprofit river advocacy group, identified several important steps towns can take through policies and implementation to improve water quality and river health. The Vermont Agency of Natural Resources and various federal programs also provide water quality assistance to towns and individuals. It is in the long-term interest of Fayston and the Town's downstream neighbours to work with these programs to protect water quality. Water quality is not the only concern related to the many streams and wetlands that Fayston contains. Periodic flooding has been a long-time issue within the Mad River Valley, but as these events increase, it will need to be something that Fayston prepares for, along with the other MRV towns. See Section 3.9.5 on Flood Resilience Planning (Town Planning) and hazard profiles below for discussion.

National Flood Insurance Program

The Town has been enrolled in the NFIP since September 1980. The adopted 2010 flood hazard regulations regulate development in the NFIP floodplain according to Digital Flood Insurance Rate Maps (FIRM) that became official in 2013. The DFIRMs define the 100-year floodplain along Mill Brook from the Waitsfield-Fayston Town line to 3-miles upstream. The Fayston Flood Hazard Overlay District (FHO) prohibits new structures, except those required for flood control or stream management, within the district. Generally, national flood hazard and state river corridor regulations prevent new development in Special Flood Hazard Areas, river corridors, and the floodway, institute setbacks, regulate uses, establish minimum standards for building and flood proofing, and regulate improvements to existing structures. There are 15 structures in the Special Flood Hazard Area (SFHA) (2%), there are no repetitive loss properties in Fayston, 1 A-zone and 6 policies; there has been 1 claim since 1978 as of April 2024[1].

[1] Federal Emergency Management Agency, NFIP Insurance Report, VERMONT
https://floodready.vermont.gov/sites/floodready/files/documents/VT%20Insurance%20Report%204.2023.pdf

RE: Thank you for LHMP training and follow-up

Smith, Stephanie A <Stephanie.A.Smith@vermont.gov>
Wed 2022-08-31 14:06
To:Sam Lash <Lash@cvregion.com>

Hi Sam –

Apologies for the delay!

Yes, I can – there are no repetitive loss properties in either Orange or Fayston!

Thanks,
Stephanie

Stephanie A. Smith
State Hazard Mitigation Officer
Vermont Emergency Management
Cell: (802) 989-6793
Stephanie.A.Smith@vermont.gov

Flood Resilient Communities Fund
Building watershed resilience in the face of climate change

Figure 9 Confirmation No Repetitive Loss Properties (Outreach to State Hazard Mitigation Officer

The Zoning Administrator enforces NFIP compliance through permit review requirements in its Flood Hazard Area regulations. Fayston's regulations outline detailed minimum standards for development in flood hazard areas defined as FEMA Special Flood Hazard Areas and Floodway Areas. The regulations also require administering Substantial Improvement and Substantial Damage (SI/SD) requirements in accordance with FEMA P- 758 SI/SD Desk Reference, May 2010. The town is currently awaiting the new flood insurance maps that are being compiled by FEMA and will be reviewed and accepted to maintain the town's NFIP status once the process has been completed

To maintain compliance with the NFIP, Fayston will continue to follow NFIP requirements for close coordination with the Floodplain Management Section of the Vermont Department of Environmental Conservation. All applications will be submitted to the Floodplain Manager assigned to Fayston. Elevation Certificates will be required of structures to be substantially improved in the Zones specified by the Flood Hazard Regulations. Projects alleged or found to be in violation of the FHO regulations will be reported to the State NFIP Coordinator. This established channel of communication allows Fayston to stay aware of changes in state or federal standards to which it must respond, and maintain communication with the Vermont Floodplain Management Section to monitor local program status.

Fayston will also coordinate directly with the Vermont Department of Environmental Conservation, and the Central Vermont Regional Planning Commission, to stay apprised of pending

floodplain mapping and any updates or revisions that may be subsequently necessary to Fayston's Flood Hazard Overlay District maps and standards.

Fayston may qualify to enroll in the NFIP Community Rating System (CRS), however the administrative resources necessary for enrollment and ongoing program maintenance are likely to be a significant challenge for the municipality and a deterrent for participation. The CRS Quick Check indicates that Fayston can achieve the 500 point threshold to apply for Class 9 status. The community's prohibition of new structures and fill contributes greatly to achieving potential CRS credit. However, due to the administrative burden, Fayston will not enroll in the CRS at this time.

Emergency Relief & Assistance Funding (ERAF)

Vermont's Emergency Relief & Assistance Fund (ERAF) provides State funding to match FEMA Public Assistance grants following a federally declared disaster. Eligible public costs are generally reimbursed by FEMA at 75% with the State matching 7.5%. The State will increase its match to 12.5% or 17.5% of the total cost if communities take steps to reduce flood risk as described below:

12.5% funding for eligible communities that have adopted four (4) mitigation measures:

- NFIP participation
- Town Road and Bridge Standards that meet or exceed the VTrans 2013 template
- Local Emergency Plan
- Local Hazard Mitigation Plan

17.5% funding for eligible communities that also participate in FEMA's Community Rating System[2] whereby the community must earn credit under Activity 430,[3] OR adopt Fluvial Erosion Hazard or other river corridor protection bylaw that meets or exceeds the Vermont ANR model regulations.

Fayston is eligible under the Vermont Emergency Relief and Assistance Fund (ERAF) to receive state funding to match Federal Public Assistance funds after a federally declared disaster. Communities that take specific steps to reduce flood damage can increase the percentage of state funding they receive from 7.5% up to a maximum of 17.5%. At the time of this Plan development, Fayston has an ERAF rating of 17.5%. Fayston has taken the specific steps to reduce flood damage by 1) participating in the National Flood Insurance Program, 2) adopting standards that meet or exceed the current Vermont Roads and Bridge Standards 2013, 3) adopting a Local Emergency Operations Plan which is renewed and adopted annually, 4) adopting a Local Hazard Mitigation Plan approved by FEMA, and 5) adopting Interim River Corridor protection standards (River Corridor Plan criteria). Maintaining these measures ensures Fayston the maximum state contribution rating.

Upon the approval of this LHMP update, Fayston will have an ERAF rating of 17.5%. Fayston has taken specific steps to reduce flood damage by 1) participating in the National Flood Insurance

[2] The NFIP Community Rating System (CRS) was implemented in 1990 as a voluntary program for recognizing and encouraging community floodplain management activities exceeding the minimum NFIP standards. Any community in full compliance with the minimum NFIP floodplain management requirements may apply to join the CRS.

[3] Activity 430 (Higher Regulatory Standards) is the primary CRS activity for crediting floodplain development regulations that are more restrictive than the NFIP requirements.

Program, 2) adopting standards that meet or exceed the current Vermont Roads and Bridge Standards 2013, 3) adopting a Local Emergency Operations Plan which is renewed and adopted annually, 4) adopting a Local Hazard Mitigation Plan approved by FEMA, and 5) adopting Interim River Corridor protection standards. Maintaining the first 4 of these measures ensures Fayston at least a 12.5% state contribution rating.

Fayston took the additional 5th step to receive its 17.5% rating- it was one of numerous communities that adopted regulations for a subset of their watercourses (buffer setbacks, Phase 2 data-generated FEH overlays, or avoidance-based Flood Hazard Areas) prior to the ERAF Amendments that took effect on October 2014 as approved Interim River Corridor standards. In order to retain eligibility under the River Corridor Plan criteria of the ERAF and qualify for the maximum 17.5% rate, Fayston needed to update their interim river corridor standards to meet the Agency of Natural Resources (ANR) criteria within two years of ANR publishing a statewide river corridor map updated to include existing Phase 2 Stream Geomorphic Assessment (SGA) data which was not done. The other option to qualify for the maximum ERAF rate is for Fayston to enroll in the NFIP Community Rating System (CRS) and adopt a bylaw that prohibits new structures in the Flood Hazard Area. However, Fayston has elected not to pursue enrollment in the CRS. The CVRPC is readying to assist the community in drafting a river corridor plan with the release of the Phase II data, in the context of still developing updates to the State approach to River Corridors and ongoing FEMA mapping updates.

Current information on Fayston is officially posted on the Fayston Community Report at Flood Ready Vermont.

Expanded Community Report for Fayston

6/1/2022
1:54:17 PM

Emergency Relief and Assistance Fund (ERAF) - State Post-Disaster Funding

Flood Hazard Mitigation Actions	Action Dates		Responsible	ERAF Status
1. Road and Bridge Standards	07/09/2019		Fayston	Yes
2. Local Emergency Management Plan	04/27/2021		Fayston	No
3. National Flood Insurance Program	09/30/1980		Fayston	Yes
4. Local Hazard Mitigation Plan	06/01/2017		Fayston	Yes
5. River Corridor Protection		Interim		Yes
ERAF Rate for Actions 1 - 4:12.5%,	Actions 1 - 5: 17.5%	**ERAF Rate for:**	**Fayston**	**7.5%**

15	Buildings in the Special Flood Hazard Area (SFHA) (estimated from e911 sites).
1	Flood Insurance Policies in SFHA (Zone A, AE, AO, A 1- 30)
7%	Percent of buildings in the SFHA with flood insurance in force.
0	Critical or public structures in SFHA or 0.2% flood hazard area (est. from e911 sites.)
2%	Percent of buildings in the SFHA.
09/30/1980	National Flood Insurance Program (NFIP) (Enrollment Date)
DFIRM	Flood Insurance Rate Map Standard (Digital FIRM (DFIRM), Rough Digital, Paper)
Fayston	NFIP Status: Regular Program
0	Community Rating System (CRS) Class
No	Local Emergency Management Plan (LEMP) ERAF Status valid for Fayston?
04/27/2021	LEMP - annual update after Town Meeting and before May 1.
Yes	Local Hazard Mitigation Plan (LHMP) ERAF Status valid for Fayston?
06/01/2017	LHMP - Valid for 5 years from FEMA final approval date
FEMA Formal Approval	LHMP - Status of review (Plans currently in review are valid for ERAF).
Yes	River Corridor Protection in Fayston?
Interim	River Corridor Interim Protection Status for ERAF valid for Fayston?
10/01/2014	Municipal Plan - Valid for 8 years from adoption date
06/19/2018	Zoning Adoption / Amendment Date
	Hazard Area Regulation Adoption / Amendment Date
Yes	Road and Bridge Standards
40.150	Town Highway Mileage in Fayston
07/09/2019	Fayston_Road and Bridge Standards and Adoption Date
3/5/2021	Fayston_Certificate of Compliance with Road and Bridge Standards and Date
3/5/2021 12:00:00 AM	Town Highway Network Inventory Date
80%	Town Highway Structures Grant Rate (State match 80% or 90%)
70%	Class 2 Roadways Grant Rate (State match 70% or 80%)
District 5	Project Manager email for VTrans Maintenance District 5

Figure 10 Expanded Community Report from August 14th, 2023 showing Fayston's 17.5% Emergency Relief and Assistance Fund Rate[4]

[4] Information on ERAF Eligibility Criteria can be found at floodready.vermont.gov/floodready.

4. Planning Process and Maintenance

4.1 Planning Process

The Fayston Local Hazard Mitigation Plan was originally developed as an Annex to the Central Vermont Regional Local Hazard Mitigation Plan. In 2012 the town moved to a standalone Plan, updated in 2016 and approved on 06/01/2017. The current plan updates the 2017 plan and reflects changes in development, progress in local mitigation efforts and changes in the community's priorities.

The Central Vermont Regional Planning Commission (CVRPC) coordinated the Fayston Local Hazard Mitigation Plan process in partnership with the Town of Fayston. CVRPC Planner Sam Lash worked directly with town. The Town Clerk, Patti Lewis served as the primary point of contact for the planning process. The planning process was conducted primarily over the course of July 2022 – February 2023, a summary of the process taken to develop the 2023 update is provided in the Table 4 below. Primary guidance and oversight of the process was provided by a local hazard mitigation team comprised of the following local officials (Table 5 below). Significant turnover at the town and regional level throughout this planning process and the devastating floods of July 2023 at once significantly slowed the planning process and enriched community discussions about hazards, mitigation, response & recovery, and critically about how to plan for the impacts of future climate change especially for and with vulnerable community members. The Town of Fayston has few commercial and public properties, thus the town itself including its buildings and facilities, serve critical functions- working regularly with the community, health providers, social service agencies, and other partners to support vulnerable community members. Their efforts were significantly amplified by the 2020 COVID-19 Pandemic.

The town and planning team, including CVRPC in monthly+ meetings with community partners, work regularly and closely with the following: Capstone Community Action, Vermont Department of Health, Central VT Home, Health, & Hospice, Green Mountain Transit, Mad River Ambulance, Waitsfield-Fayston Fire Department, Mad River Path Association, Mad River Valley Community Fund, Mad River Valley Health Center, Mad River Valley Recreaiton District, Mad River Valley Seniors, Mad River Valley Resource Management Alliance, Share MRV, Skatium, Mad River Valley Planning District, Mad River Valley Bear Initiative, Central Vermont Council on Aging, Green Mountain United Way, and Washington County Mental Health Services, among others. Town staff and leadership host community events monthly meetings and social spaces for residents and regularly check-in with vulnerable community members on a 1:1 basis. These ongoing relationships underpin this plan, the planning process, and the community. These organizations and community members were updated on this planning process and invited to comment on the draft. While comments were not received on the draft directly, residents and partners alike provided consistent input, ideas, and considerations especially around serving vulnerable community members, throughout the planning process by responding to surveys, interacting with posted maps at the municipal building, participating in climate action and resilience workshops and planning events, and engagement in active mitigation, response & recovery, and resilience actions necessitated by the recent COVID-19 pandemic, July 2023 floods, significant outages including due to high wind events, increase in regional homelessness and general community needs and burdens.

Table 4 Plan Development Process

May 18th, 2022 Initial Planning Team met and reviewed what LHMP is, the benefits of hazard mitigation planning, current plan status, the planning update process, and plan sections; identified key stakeholders and potential core member additions; began public outreach strategy (Agenda, Minutes)

June 13th, 2022 Planning Team Kick-Off Meeting*: Reviewed tasks and milestones, reviewed 2016 plan and set the scope for update and confirmed plan purpose; discussed what has changed in past 5 years and looked ahead to next 5, 10, 20+. Finalized outreach strategies, finalized stakeholders, and each Core Planning Team planned to update their respective Town entities Select board, Planning Commission, Conservation Commission, etc.) (Agenda/Minutes)

July 18th, 2022 Planning Team Meeting*: Reviewed hazards previously identified and determined inclusion/exclusion of hazards considered. Began work on the community hazard risk assessment, hazard event history, and identifying vulnerable residents and assets to each hazard (Agenda/Prework)

July+: Notice posted on CVRP website, sent out via town email, updates provided in each town entity minutes, etc. that the Town is engaged in hazard mitigation planning and updating the LHMP. Notice included instructions to contact CVRPC for information on the planning process and about opportunities for public input. Created dot voting worksheet with top hazards and provided copies with draft areas of concern map for public engagement in Town Clerk's Office (see below).

- Update provided and dot voting utilized at September Community Potluck (see below)

July 26th, 2022: 2022 LHMP Public Update* on progress and top hazards reviewed at public meeting hosted by Selectboard to encourage public input on hazard identification and risk assessments. This meeting was hosted as a hybrid meeting (Agenda)

September: Individual core planning team meetings with Sam (CVRPC): each completed hazard risk and vulnerability assessments and assigned/debriefed individual tasks based on liaison town leadership role:

- consulting and pulling out priority conservation commission projects (review Camels Hump Management Plan, Phen Basin, Knotweed and other Invasive Species, Bear Interactions),
- compiled summary of relevant Land Use Regulations (planning commission)
- updated 2017 mitigation action status;
- discussed the impacts of climate change on the severity and frequency of hazards, impacts of cascading hazards on resilience and vulnerable residents/community members.

September 26th, 2022: Planning Team Meeting*: Completed Hazard Risk and Vulnerability Assessments, continued work on hazard mitigation strategy actions, draft updates, etc. (Agenda)

November 21st, 2022: Town Clerk Patti Lewis and Road Foreman Stuart Hallstrom met with Sam Lash, Climate & Energy Planner from CVRPC and reviewed Bridge and Culvert Inventory, Transportation Resilience Tool Results, and Road Erosion Summary as well as recent work completed and in progress. Top priority mitigation actions associated with transportation infrastructure and storm water management were developed in detail

integrating public and community serving organizational feedback received in survey, at office, via conversations with town staff including the road crew, etc. This is a critical focus given Fayston's steep slopes and increasing complex dynamics given high seasonal traffic, increasing unpredictability and severity of extreme weather, and potential development pressures.

November 2022-December 2022 Planning for Hazards in Fayston Town Survey created and opened public to encourage public engagement including refining top hazards and brainstorming mitigation actions and key hazard locations and events since last plan (34 responses, see below for a summary of results).

November 30th, 2022 Planning Team Meeting*: Mitigation Pathways/Actions. Continued to work on hazard mitigation strategy- completed community capabilities; updated status of 2017 mitigation actions; identified priority mitigation actions; reviewed plan maintenance approach.

December 13th, 2022 Public Hazard Mitigation Plan Update* hosted at Selectboard Meeting Slide Show

February 2023 Draft LHMP posted to CVRPC webpage, Fayston town website, sent out to public via Town email list and Front Porch Forum; shared with key stakeholders (see list below) for input based on expertise in target emails including neighboring towns. Instructions for comment period included links to previous public engagement opportunities (dot voting, survey, etc) as well as option to email comments or call and leave them verbally. due to a variety of barriers, not widely circulated, no comments received.

August, 2023: Submitted for Initial Review to Vermont Emergency Management. The July 2023 Flooding severely stressed capacity limits at the local, regional, and state levels delaying the review of this plan until December 2023 and revisions into 2024. As the town has experience significant turnover, the revised draft was posted again for comment April 24th, 2024 both by the town and CVRPC.

Fall 2024 Comments integrated into plan.

June 2024: Plan Adopted by the Selectboard (see certification of adoption at the end of this plan; agenda). Final draft LHMP submitted to Vermont Emergency Management for Approval.

***** all core planning team meetings warned in advance as open to the public (no members of the public attended and instead engaged via other opportunities (see below)

Table 5: LHMP Update Core Planning Team Members and Stakeholders
LHMP Planning Team Members
• Patti Lewis, Town Clerk & Treasurer • Craig Snell, Emergency Management Director • Lisa Koitzsch, Asst Town Clerk & Co-Chair Conservation Commission • Jared Cadwell, Chair Selectboard & MRVPD • Stuart Hallstrom, Road Foreman • Don Siminoni, Planning Commission & Central Vermont Regional Planning Commission Transportation Advisory Committee • With Assistance from Daniel Young, Development Review Board and Corrie Miller, Friends of the Mad River/Lake Champlain Basin Program

Community Survey and Result

With the help of the Central Vermont Regional Planning Commission, Fayston Town officials have completed a process to identify and plan for natural hazards that put the community's investments at risk. Fayston's Local Hazard Mitigation Plan outlines the results of this process, and officials would like to invite comment from both residents, neighbors and other interested stakeholders. Hazard mitigation means making long-term investments to protect people, property, infrastructure, natural resources and the economy from harsh weather and other natural disaster events.

Highlights of proposed projects include:

- **Conduct analysis and community outreach to determine if the community would like to regulate River Corridors in addition to the Flood Hazard Overlay District**
- **Continue work toward engineering and/or mitigation solutions for slumping affecting Number Nine Road, Murphy Road, Bragg Hill Road and North Fayston Road**
- **Apply for funding to start the inventory and capital budgeting process in preparation for eventual development of a road stormwater management plan**

Hazard mitigation is most effective when implemented through a strategic, comprehensive, and long-term Hazard Mitigation Plan (LHMP), which is reviewed and updated every 5 years. The Town of Fayston in collaboration with the Central Vermont Regional Planning Commission, is well underway with the LHMP update process and is looking for additional input from Fayston residents to assess the identified hazards that impact the Town.

Here is a SHORT 3 question survey to let us know what you think and/or come on in to the Town Hall for a hard copy! If you'd like to tell us more, please feel free to email Sam Lash at the Central Vermont Regional Planning Commission via lash@cvregion.com.

You can view the 2017 Local Hazard Mitigation Plan here.

Stay tuned! We will share the plan and the projects it recommends for your additional feedback in December 2022.

This email is a courtesy of the Fayston Town Clerk's office.

Town Clerk Outreach Email (Town Listserv) with Community Survey

Community Survey

Planning for Hazards

Hazard mitigation is most effective when implemented through a strategic, comprehensive, and long-term Hazard Mitigation Plan (LHMP), which is reviewed and updated every 5 years. The Town of Fayston in collaboration with the Central Vermont Regional Planning Commission, is well underway with the LHMP update process and is looking for additional input from Fayston residents to assess the identified hazards that impact the Town.

A Local Hazard Mitigation Plan has two main components:

1. Hazard Profiles

- Answers questions like: How often has this happened in the past?
- What/who is vulnerable to this hazard?
- How likely is this to happen in the future?

2. Mitigation Actions

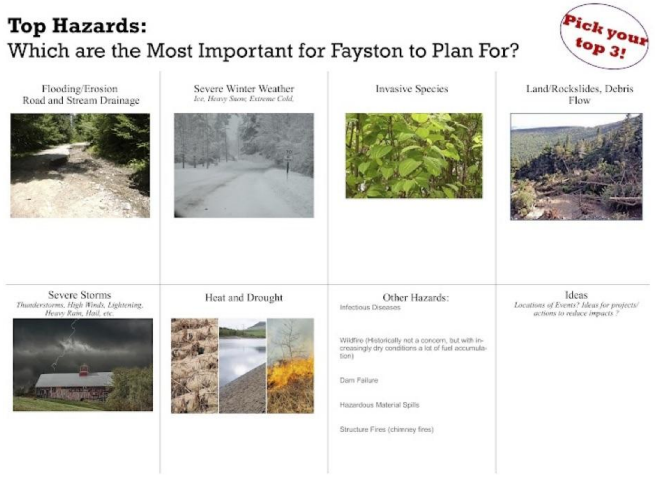
- How can we prevent the hazards identified from turning into disasters?
- How do we reduce our risk/be more resilient?

Hazards: events or physical conditions that have the *potential* to cause fatalities, injuries, damage to property, infrastructure, the environment, agricultural loss, interruption of business, or other types of harm or loss* (different than a disaster!)

Mitigation: long term actions to reduce or eliminate long-term risk to life, property, and the environment from hazards (cost-effective measures to reduce potential for damage to communities)

Answering this 2 question survey will help your local team as they review the draft of the updated plan. The draft will be open for public comment shortly (December 2022) so stayed tuned! If you'd like to tell us more feel free to reach out to Sam Lash at lash@cvregion.com or come into the town hall and submit your feedback!

1. Top Hazards



Mark only one oval per row.

	Flooding/Erosion	Severe Winter Weather	Invasive Species	Land/Rockslides, Debris Flow	Severe Storms	Heat and Drought	Other (write in below)
Top Hazard 1	⬭	⬭	⬭	⬭	⬭	⬭	⬭
Top Hazard 2	⬭	⬭	⬭	⬭	⬭	⬭	⬭
Top Hazard 3	⬭	⬭	⬭	⬭	⬭	⬭	⬭

3. How and/or where do these hazards affect you most as a Fayston Resident?

Mitigation Actions

Do you have ideas for actions the town could take (or continue to take) to address the Hazards you identified?

Previous Mitigation Actions have included:

- Collaborate with Ridge to River Stormwater Planning and Education Project
- Consider adopting River Corridor or Protection Area overlays for all streams and rivers draining more than 2 square miles
- Conduct studies, apply for grants, or implement projects to improve transportation network and infrastructure (e.g. upsize culverts, decrease landslide risk by addressing slumps, etc)
- Conduct outreach to vulnerable residents about CARE: Citizens Assistance Registration for Emergencies

You can view the 2017 Local Hazard Mitigation Plan here and find the previous Mitigation Actions on page 33

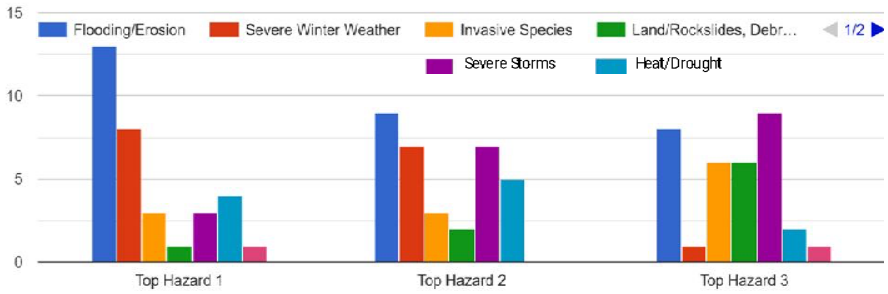
4. Please include your ideas below for Mitigation Actions

Planning for Hazards in Fayston Survey Open 2022-2023- in person versions and questions were out in the town clerk's office, however the online format was more successful in this case. Each local planning team member provided monthly updates to their respective peers (selectboard, planning commission, DRB, conservation commission, town staff) acting as a liaison to town leadership and participating public, while Town Clerk Pattie Lewis during her day-to-day business engaged folks content and resources to shape the plan throughout the planning process.

RESULTS (34 Responses as of January 2023)

Community Responses (34+)

Top Hazards



If you answered "other" above please include below:

3 responses

Drought, we need water to live. Severe Storm, ice = electric outage, wind = electric, collision, communication, heating, Bodily harm, physical property damage. Invasive = upset balance of nature, BEARS are a pain in the neck.

Over development

pollution ie people burning wood at low heat and covering the valley in smoke on warmer days

Results from Question 1 of the Planning for Hazards in Fayston Community Survey (Top 3 Hazards)- shows great agreement with the top hazards identified by the core planning team. See attachments for full survey and results)

How and/or where do these hazards affect you most as a Fayston Resident?

25 responses

Trees fall on power lines during storms

Center Fayston Road if we wash out a cukvert

Along road wayz

Just ensuring access to get medical care when needed.

Snow and ice on Dunbar Hill Rd. The crews are amazing and I hope the great work is kept up.

Town & logging road slumps & washouts; drought impact on wells & forest fire risks

When we lose electricity and when roads become impassable

Land around my home

Given the location of my house the road drainage is key. Also, drought can impact well water levels. The invasive species take away from the health of the woods and waterways.

see above

Shepard brook

Roads and environmental impacts

Just as a member of the community, not especially personally where I live

Knotweed is taking over Mill Brook & Rt-17 from the App Gap to Andy's sawmill. Silt has filled the Mad River. Slides and erosion across from the Hyde-Away could soon block the Mill Brook and flood the entire area.

My property is on a sharp curve on North Fayston Rd. The run off from storms flows across my property and down the river bank, causing erosion to my bank and risking the integrity of my property above Shepherd Brook.

Safe travel and emergency vehicle access including slippery when wet dirt road surfaces due at least in part to excessive silt and clay content in gravel surfacing.

Big baisin , north fayston rd

Road conditions and power outages during severe winter weather. Road conditions, drainage, erosion and washouts due to intense cumulative rains. Specific to me, concern for integrity of Bragg Hill, Number 9, storm water drainage on Glen View.

Drought has been more frequent in recent years. Affects springs/wells, keeping gardens watered.

I live on Center Fayston Rd. at the top of the hill, so access is important.

Quality of life, runoff, erosion

North Fayston Road

Power lines, road conditions and run off from rivers.

Always concerned about our roads surviving inclement weather.

Everywhere- drought and heat and severe storms that topple trees, power lines, flood roads. But particularly on long steep roads away from the irasville center. so we should focus on minimizing new developments with long roads and on far flung roads, density and walkability to resources.

Mitigation Actions

Please include your ideas below for Mitigation Actions

16 responses

Cutting back branches and old trees near power lines

I am concerned with restrictions on expanding flooded plains as we have so little available land for affordable housing

Conduct studies, apply for grants, or implement projects to improve transportation network, infrastructure, and resilience

larger culverts & armored ditches; during droughts, fire risk education/warnings; publicly available alternative water sources for drinking & cooking.

Mitigate based on "best practices"

Local Strategic Planning and utilizing state and federal grants to best prepare ourselves.

I am not an expert in these fields. An expert consultant is recommended.

The slide/erosion across from the Hyde-Away was identified in the 2017 plan, but it doesn't seem that

Results from Community Survey Open November 2022-January 2023

Documentation of Public Input Opportunities (examples)

Town of Fayston Hazard Mitigation Plan – July 26, 2022 6:00 pm - Central Vermont Regional Planning Commission 21/02/2023, 07:43

Stay in touch Sign up for our email newsletter and receive the latest from CVRPC Email GO

Town of Fayston Hazard Mitigation Plan – July 26, 2022 6:00 pm

Fayston has formed a special committee comprised of representatives from the Select Board, DRB, Planning Commission, Conservation Commission, Road Crew and the Town Office to update the town's Hazard Mitigation Plan. Mitigation means making long-term investments to protect people, property, infrastructure, natural resources and the economy from harsh weather and other natural disaster events.

The committee is in the process of identifying and planning for these natural hazards and would like to invite comment from both residents, neighbors and other interested stakeholders.

Five years ago, the following hazards were of greatest concern to the people of Fayston:

- flooding & erosion caused by streams and runoff
- Hurricane/severe storms
- wildfire/forest fire
- avalanche/landslide

If you would like to provide input to this planning process, please attend the next Select Board meeting on **July 26th at 6:00 pm** at the Fayston Municipal Building at 866 N. Fayston Road.

Please more information, email faystonsb@madriver.com › or contact Sam Lash at Central Vermont Regional Planning Commission Lash@cvregion.com › .

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Example CVRPC Notification LHMP Update and Public Meetings

Public Meeting Slides December 13th, 2022

Town of Fayston
Local Hazard Mitigation Plan Update

December 13, 2022 Sam Lash, Central Vermont Regional Planning Commission

Review: What's in it?

A Local Hazard Mitigation Plan has two main components:

- Hazard Profiles
  - Answers questions like: How often has this happened in the past?
  - What/who is vulnerable to this hazard?
  - How likely is this to happen in the future?
  -
- Mitigation Actions
  - How can we prevent the hazards identified from turning into disasters?
  - How do we reduce our risk/be more resilient?
  -

Hazards: events or physical conditions that have the *potential* to cause fatalities, injuries, damage to property, infrastructure, the environment, agricultural loss, interruption of business, or other types of harm or loss* (different than a disaster!)

Mitigation: long term actions to reduce or eliminate long-term risk to life, property, and the environment from hazards (cost-effective measures to reduce potential for damage to communities)

Review: What does it do?

- Minimizes downtime and accelerates recovery of communities after disasters
  - Reduce the cost of disaster response and recovery and the exposure to cascading risk
  - Directs mitigation resources to where they are need most
  - Increases awareness of hazards and identifies actions for risk reduction
- Helps accomplish other community priorities like leveraging capital improvements, infrastructure protection, open space preservation, and community resiliency (social, economic, environmental, etc)
- Reduces long term costs
  - For every $1 saves $6 in losses are avoided according to the Natural Hazard Mitigation Saves: 2019 Report from the National Institute of Building Sciences
- Required to qualify for additional post-disaster funding through the Emergency Relief Assistance Fund (and other programs)

Why are we here?

Process is as important as the plan itself, your core Local Hazard Mitigation Planning Update team has been meeting and reviewing:

- progress made since the last plan (2017),
- changes in trends, town priorities, etc,
- Re-evaluating top hazards, vulnerabilities, and mitigation actions

Future opportunities to participate include:

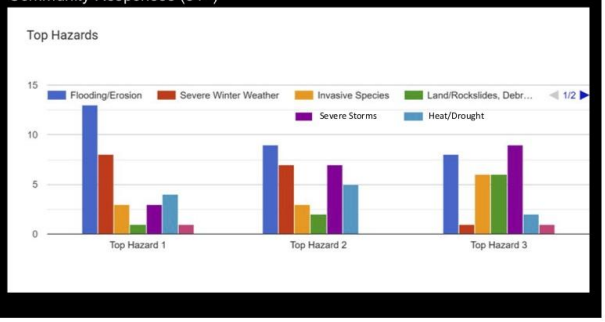
- comment on the draft of the updated plan (will be circulated),
- come into the town clerk office and add locations and thoughts to the map about past hazard occurrences, vulnerable people, infrastructure, or environments, or ideas for mitigation actions,
- email Sam Lash at lash@cvregion.com.

Top Hazards

Hazard Occurrences since last plan update (2017-2022):

- Strong Wind: 8
- Winter Storm/Extreme Cold: 40
- Severe Storm and Flooding (FEMA Declared Disasters): 8
  - July 2021
  - Tropical Storm Henri August 2021
  - April; Oct/Nov 2019
  - May 2018
  - Early June, June/July, Oct 2017
- Infectious Disease: 1

Community Responses (34+)



Other Hazards

Infectious Diseases

Avalanche

Wildfire

Structural Fire

Avalanche

Cyber Security, Terrorism, etc

Other (Community)

Pollution/Air Quality

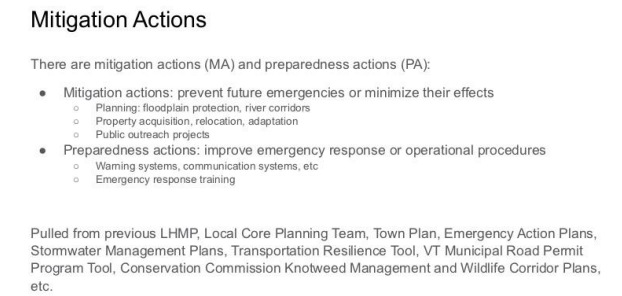
Wildlife Interactions

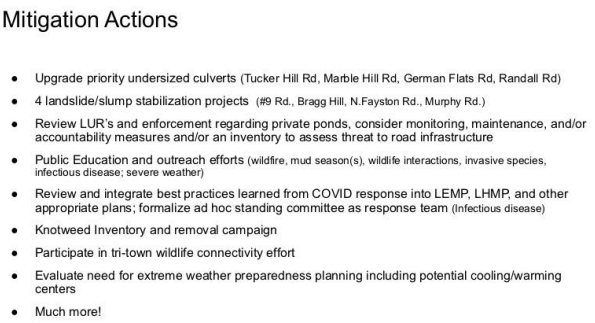
Mud

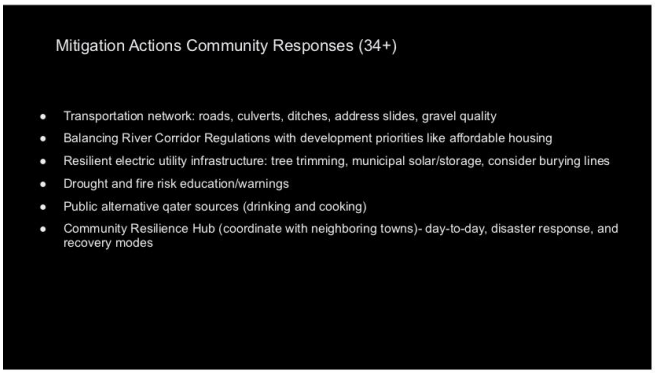
Bodily Harm

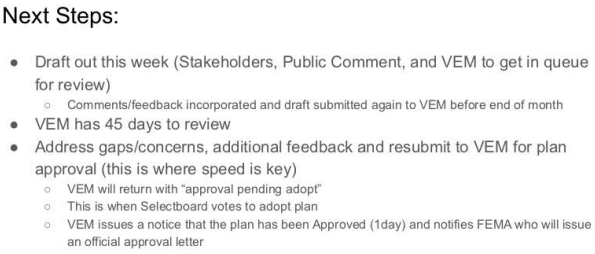
Overdevelopment

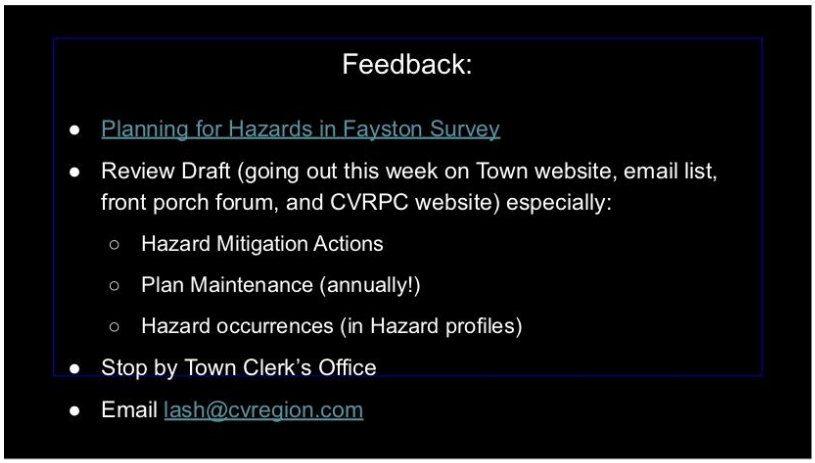
Drought, Wind, Severe Storms, Invasive Species, Soil Quality











Public Meeting Slides December 13th, 2022

Table 6: Stakeholders and Experts (see outreach above)		
Organization	*Name, Position*	
Town of Fayston-	Jason Wilson, Zoning Administrator Appointed Town Officials (Selectboard,	Updated throughout planning process via core planning team member; feedback solicited on draft

	Planning Commission, Conservation Commission, Development Review Board) Dan Beede, Fire Warden Michael Quenneville, Tree Warden Doug Wilson, Camel's Hump Management Brad Long, Energy Coordinator/Efficiency Vermont John Weir, Health Officer	including specific section review.
Fayston Elementary School	Celia Guggemos, Principal	Invited to participate in local planning process, public meetings, and to comment on draft
Sugarbush Ski Resort Mad River Glen	John Hammond, President Ski Patrol	Coordination with their hazard and response planning processes and deliverables
Mad River Valley		
MRV Chamber of Commerce	Eric Friedman, Director	Updated on planning process, outreach during text updates as needed, invited to comment on draft
MRV Planning District	Josh Schwartz, Director	
Waitsfield-Fayston Fire Department	Tripp Johnson, Chief Adam Cook, Fire Warden	
MRV Ambulance Service	Sheila Ware, President	
Library	Trish Read, Joslin Library Trustee	
Green Mountain Valley School	Tim Harris, Asst Head of School	
Hardwood Union High School	Laurie Greenberg & Megan McDonough, co-principals	
MRV Emergency Response Team	EMDs Waitsfield, Warren, and Moretown, MRV Community Fund, Stand Up Resources, Meals on Wheels, Free Wheelin', Food Shelf, Senior Center, Valley Reporter, local health care providers+	
Three Peaks Medical Clinic	Chad Borofsky, Executive Director	
State/Regional		
Local Emergency Planning District Committee 5	Carl Rogers, Chair	Consulted as subject matter experts as needed during update process
Vermont Emergency	Caroline Massa, State Hazard Mitigation	

Management (VEM)	Planner	
Vermont Emergency Management (VEM)	Stephanie Smith, State Hazard Mitigation Officer	
Vermont Emergency Management	Ben Rose, Recovery and Mitigation Section Chief	
Vermont Emergency Management	Josh Cox, Critical Infrastructure Planner	
Central Vermont Regional Planning Commission	Sam Lash, Climate & Energy Planner	
Vermont Department of Environmental Conservation (DEC)	Ned Swanberg, Regional Floodplain Manager	
Vermont DEC	Gretchen Alexander, Regional Rivers Scientist	
Vermont DEC	Eric Blatt, Division Director	
Vermont DEC	Rob Evans, River Corridor and Floodplain Manager	
Police	W. Samuel Hill, Washing County Sheriff Lieutenant David White, Middlesex Barracks, State Police	
Vermont Department of Forests, Parks & Recreation (FPR)	Robert Nelson	
Vermont Agency of Natural Resources	Benjamin Green, Dam Safety Engineer	
Hardwood Unified Union School District	Michael Leichliter, Superintendent	
Green Mountain Power	Brenda Spafford Dan Weston, Director Engineering & Operations, WEC	
List of Surrounding Communities Invited to Comment		
Municipality	*Name, Position*	
Duxbury	Maureen Harvey, Town Clerk & Treasurer Vacant EMD; Zone Captains Mari Pratt, Chair Selectboard	Coordination on text update, initiatives, and mitigation action development as needed; invited to comment on draft.
Moretown	Cherilyn Brown, Town Clerk Stefan Pratt, Fire Chief&EMD Tom Martin, Chair Selectboard	
Waitsfield	Vacant, Town Administrator Fred Messer, EMD; Carla Straight-Messer, EMC	

	Christine Sullivan, Selectboard	
Warren	Brent Adams, Town Clerk Jeff Campbell, EMD/Fire Chief/Public Safety Officer Luke Youmell, Chair Selectboard	
Lincoln	Sally Ober, Town Clerk Barbara Rainville, EM Wililam Finger, Chair Selectboard	
Buels Gore	Anne Williams, Chittenden County Clerk Jacob Perkinson, Board	
Huntington	Heidi Racht, Town Clerk Barbara Elliott, Town Admin, EMD Dore Barton, Chair Selectboard	

Feedback from stakeholders was incorporated during drafting both before the final mitigation actions were chosen and before the draft was finalized. The local mitigation team was presented with the results of the survey after doing the initial Hazard Risk and Vulnerability Assessments and brainstorming potential mitigation actions, but before finalizing those that would be included in the draft. Documentation of opportunities for input on the plan are provided in the Attachments below. Town entities were update throughout the planning process via their representative on the core planning team.

Once the draft was updated, CVRPC conducted outreach to the stakeholders and experts listed above, although the proximity to the July 2023 flooding contributed to extremely low response and partipation directly with the draft update. However, conversations about different types of flooding, hazard mitigation more broadly, community resources and vulnerabilities, and how to adjust our planning horizons and priorities to the shifting baselines as well as the episodic disasters of climate change have only intensified and become more nuanced since this flooding, informing this and other town planning processes. The draft update was also available at Fayston Municipal Offices, on the Fayston website, sent out via town email list and Front Porch Forum, and by request from CVRPC for public review and comments. The announcement of the draft update in the CVRPC newsletter reached over 300 peoples and partners in the Region's 23 towns, including the adjacent municipalities Duxbury, Moretown, Waitsfield, Warren. Public comments submitted in the future will be reviewed by the Town Administrator (and CVRPC staff dependent on funding) and attached as an appendix. Despite COVID-19, plan expiration, and low capacity, the planning team found that the online survey and hosting materials in the municipal building were both effective means to engage some public participation. In the future, having annual check-ins and beginning the planning process a year-18months prior to expiration will provide more public awareness and opportunity to have materials on hand for town events and to coordinate local meetings with the public, State, and local officials. The Selectboard adopted the plan at their 6/11/24 meeting (Certificate of Adoption can be found as the final page of this document, page 121).

In addition to the local knowledge of Planning Team Members and other relevant parties, several existing plans, studies, reports, and technical resources were utilized in the preparation of this Plan. A summary of these is provided below in Table 6, these are integrated by reference throughout the plan.

Table 7 Existing Plans, Studies, Reports and Technical Resources Consulted for Plan Update

2020 Fayston Town Plan- cited throughout this plan, especially community profile, 4.3 town capabilities section, section 6 Hazard profiles, and section 7: Mitigation

Annual: Fayston Local Emergency Operations Plan: cocoordination and by reference herein

2021 Fayston Town Report referenced throughout

2019 Central Vt Stormwater Master Plan:

- Fayston;
- Chase Brook Subwatershed Plan
- integrated into community profile and hazard profiles

2022 Landuse and Zoning Regulations (and 2018): existing, and potential to expand, mitigation activities/capabilities

2020 An Ecological Assessment and Natural Resources Inventory of Boyce Hill Town Forest: reviewed for updating community profile and hazard profiles

2018 Sugarbush Resort Emergency Management Plan: reviewed for identification of stakeholders, vulnerabilities & hazards (risk assessment) and mitigation actions

2018 & 2023 Vermont State Hazard Mitigation Plan: reviewed and integrated by reference in hazard profiles, vulnerability and risk assessment, identification of stakeholders and mitigation actions, etc.

2021 Vermont Climate Assessment: reviewed and integrated by reference in hazard profiles, vulnerability and risk assessment, identification of stakeholders and mitigation actions, etc.

2022 Vermont Initial Climate Action Plan: reviewed and integrated by reference in hazard profiles, vulnerability and risk assessment, identification of stakeholders and mitigation actions, etc.

2020 Mad River Valley Housing Demand & Market Analysis Report: reviewed and referenced in community profile and in consideration of vulnerable community members

2017 Vermont Forest Action Plan reviewed an integrated by reference into community and hazard profiles

2018 Road Erosion Inventory Report: supported risk assessment, mapping, hazard profiles, identification of vulnerable community members, and facilitated community conversations.

FEMA Disaster Declarations for Vermont; OpenFEMA Dataset: Public Assistance Funded Project Summaries for Vermont; FEMA Flood Insurance Rate Maps: hazard profiles nad mapping

National Oceanic and Atmosphereic (NOAA) National Climatic Data Center's Storm Events

Database: used in hazard profiles and risk assessments 2021 American Community Survey Five-Year Estimate: used to update community profile and identify vulnerable community members VTrans: Transportation Resilience Planning Tool, VT Culverts, Town Highway Flood Vulnerability and Risk Map, Town Highway Bridge Inspection Reports: supported risk assessment, mapping, hazard profiles, identification of vulnerable	community members, and facilitated community conversations.

4.2 Status of Prior Plan's Mitigation Actions

The following projects were proposed for implementation in the 2016/7 Fayston Hazard Mitigation Plan.

Table 7: 2016/7 Town of Fayston LHMP Mitigation Action Status	
Mitigation Action	*2022 Project Status*
Continue to participate in Ridge to River Stormwater Planning & Education project by: ● Planning Commission & Selectboard representatives continue to participate in core project team ● Municipal officials and staff participate in education programs and work to implement recommendations of the project team	Completed (will continue to support next phase of efforts) ● Selectboard Chair participated in bi-monthly meetings. ● Fayston participated in two-year Stormwater Master planning effort (2017-2019) resulting in the Fayston Stormwater Master Plan, which included a list of top projects, and conceptual engineering plans for 5 sites to 30% design (broader effort also included sub-watershed plan for Chase Brook as well). ● Attended Ridge to River/Friends of the Mad River education series in 2022.
Support the Friends of the Mad River through staff and volunteer collaboration, for the following services: outreach & education on river hazard issues, landowner education & collaboration, River Corridor Planning, assessing erosion threats to bridges, culverts & ditches, Fluvial Erosion Hazard Planning - outreach events	Completed: ● SB has worked closely with Friends of the Mad River on several feasibility and engineering plans for high priority stormwater runoff areas. ● Chase Brook remains one of the field sites for Mad River Watch 2.0 (community water quality monitoring program along the Mad River and its tributaries).
Conduct appropriate analysis and public outreach to determine if the community wants to augment its Flood Hazard Overlay District Standards to maintain its 17.5% ERAF state contribution rate, by adding Fluvial Erosion Hazard (or River Corridor) Regulations ERAF 17.5% Requirements: ● adopt a River Corridor Or River Corridor Protection Area overlay for all streams and rivers draining greater than two square miles; ● adopt a small streams setback as part of their flood hazard/river corridor bylaws (50' setback); ● adopt a minimum regulatory requirement for River Corridors or River Corridor Protection Areas consistent with the Flood Hazard Area and River Corridor Protection Procedure or be at least as restrictive as those outlined in the ANR Municipal Guide to Fluvial Erosion Hazard Mitigation.	● Fayston Land use Regulations provide for a 50-ft wide vegetated buffer strip for streams as well as brooks, wetlands, and rivers and the 2020 Town Plan prompts future incorporation of the Agency of Natural Resources recommendations for buffers in order to provide sufficient protection of both riparian resources and road/driveway infrastructure. ● Fayston adopted land use regulations that prohibit new structures (except as required for flood control and stream management) in floodplains and require conditional use approval for substantial improvements and additions to structures in the floodplain. ● Fayston did not update interim river corridor standards within two years of ANR publishing Phase 2 Stream Geomorphic Assessment data. After consideration and public engagement, River Corridor protections were not adopted due, in part, to concern it could unduly limit potential development in more desirable locations (e.g. along Route 17). ● Fayston will continue to consider River Corridor adoption particularly in the context of bylaw updates associated with FEMA in progress update of Vermont insurance rate maps.
If community elects to bring Flood Hazard Overlay regulations into conformance with State Models, make and adopt necessary revisions.	Flood Hazard Overlay (FHO) District included in 2020 Town Plan and Flood Hazard Area regulations were updated in 2010 to meet National Flood Insurance Program (NFIP). Town did not decide to adopt additional regulations but continue to consider it.

Table 7: 2016/7 Town of Fayston LHMP Mitigation Action Status	
Mitigation Action	*2022 Project Status*
Join with regional municipalities and CVRPC to develop a Rural Water Supply Protection Plan and dry hydrant assessment and designs	Fire Pond Completed at Town Garage. Deferred until adequate funds re Rural Water Supply Protection Plan and dry hydrant assessment
Number Nine Rd: decrease probability of landslide 1. seek funding & conduct engineering design for preferred alternative 2. seek implementation funding 3. construction	Partially complete: ● contracted with Dubois and King, the engineering phase resulted in an unfeasible design and expense (had an additional assessment done as well) ● Continues to be discussed annually, in the meantime- the hill is monitored regularly by Road Foreman for sloughing. An asphalt shim was put in in 2021. ● Slump temporarily fixed w/ pavement 6/2024
Murphy Rd. Slump above 353 - French Bk. Undercutting Murphy Rd. 1. commission borings to characterize geologic issues 2. Seek recommendation from River Engineer and AOT District for mitigation strategy	Action taken: ● Applied for engineering assistance in January 2018 ($19,853.93 requested- 266404 ERP Design for Murphy Road Erosion Process)- Grant Denied.
Bragg Hill Rd Slump: 1. Request collaboration with Waitsfield 2. meet with Waitsfield officials and property owners to define options and roles for mitigation 3. engineering study to characterize the issues etc.	The slump is outside of Fayston's 50ft ROW, Selectboard reached out to Waitsfield to determine Waitsfield's appetite for collaboration. Both road crews have reported the lower section of Bragg Hill Rd is sloughing and fracturing. ● Joint Fayston-Waitsfield Selectboards meeting 12/19/2022 including preliminary discussion of maintenance needs
N. Fayston Rd. Slump: Step 1: Continue to investigate mitigation options via DEMHS & State Geologists Office	Due to limited capacity and funding, action is limited to monitoring and cleaning out the ditches regularly (approximately every 3 years; last done in 2021)
Seek grant funding to upsize culvert on Center Fayston Road (VT Culverts ID# 23040217) 1. request VTrans hydraulic study 2. complete grant application based on hydraulic study recommendations	● Hydraulic study completed (State recommended 40ft section connected to Randall) ● Sought grant for engineering and denied
Replace 18" culvert on North Fayston Road (VT Culverts # 23040303) before road resurfacing scheduled for 2019, if paving grant awarded. Includes requesting hydraulic study.	Completed- replaced all 19 culverts on N Fayston Rd
Work w/the landowners on Randall Rd to install a bridge	Completed

Table 7: 2016/7 Town of Fayston LHMP Mitigation Action Status	
Mitigation Action	*2022 Project Status*
Apply for Better Roads Program Road Inventory & Capital Budget Planning grant to start inventory process toward anticipated Municipal Roads General Permit road stormwater management plan	Completed and update in progress
Identify contractors in the LEOP that Fayston or emergency response partners/agencies can call upon for assistance with snow, debris clearing and removal during an event; ● Use Appendix B5 of the LEOP resources to create and maintain list.	Completed
Obtain landowner permission to install snow fences on the Bragg Hill Rd section subject to blowing and drifting.	Completed Spring 2017.
Conduct outreach to vulnerable residents about CARE: Citizens Assistance Registration for Emergencies	Completed: posted to Town website and Town officials refreshed knowledge and resources to connect residents on ad hoc basis.

The 2024 Fayston Hazard Mitigation Plan was revised to reflect changes in priorities, changes related to the town's vulnerabilities to hazards and how Fayston addresses them based on the effects of the implementation of past mitigation actions and strategies. The implementation of several mitigation actions over the past five years, have reduced the town's vulnerability to specific hazards. Fayston has benefitted from the collaborative approach to achieving mitigation on the local level, by partnering regularly with adjacent towns (especially but not only, in the Mad River Valley),as well as with the Agency of Natural Resources (ANR), Vermont Agency of Transportation VTrans, Agency of Commerce and Community Development (ACCD), Division of Emergency Management and Homeland Security (DEMHS) renamed Vermont Emergency Management (VEM) in 2017, Central Vermont Regional Planning Commission (CVRPC), Federal Emergency Management Administration (FEMA) Region 1, and others.

4.3 Town Capabilities for Implementing Mitigation Strategy

Services provided by the Fayston municipality are overseen by a three-member volunteer Selectboard. The seven-member volunteer Planning Commission is charged with developing the Municipal (Town) Plan, as well as the community's land use regulations (amended 2018, and 2022/3). A volunteer Development Review Board ensures that development follows the land use regulations before a permit is issued. A seven-member Conservation Commission serves as a key resource on managing Fayston's natural resources, coordinates stewardship of the two Town Forests Chase Brook and Boyce Hill, and participates in multi-town conservation and mitigation efforts (there is additionally a seven-member Boyce Hill Steering Committee).

The Town employs a handful of staff members to carry out services to its residents on a daily basis. The following are the paid positions, which may be involved in hazard mitigation:

- Town Clerk/Treasurer (Full Time) &1-2 Assistants (Part Time)
- Zoning Administrator/Floodplain Administrator (Part Time)
- Road Foreman & 1-2 Person Crew (Full Time & Part Time)
- Selectboard & Grant Writing Assistant (Part Time)

Volunteer municipal officials also play a crucial role in carrying out hazard mitigation. Kirsten Savage is the volunteer Emergency Management Director, taking over from Craig Snell in 2023. The Selectboard oversees all municipal & mitigation activities, the Planning Commission ensures long term community planning, including hazards, and the Conservation Commission takes on some planning and implementation, depending on the nature of the hazard. Fayston also appoints a variety of other relevant positions including Fire Warden, Health Officer, Tree Warden, as well as representative to local and regional partner bodies including Mad River Resource Management Alliance (waste management), Camel's Hump State Forest, Police Advisory Committee, Central Vermont Regional Planning Commission, Recreation District, and Mad River Valley Planning District (see Town Report/Website for most up-to-date appointments).

The municipal budgeting process occurs on an annual basis, planning for a fiscal year from January to December. The budget is usually developed between early November and early

January, and put to voter approval on the first Tuesday in March at Annual Town Meeting Day. The Selectboard is charged with developing and proposing the budget to the voters, including the Capital Budget. Individual municipal departments and committees (Planning Commission, Conservation Commission, Listers) develop budget proposals that are submitted to the Selectboard, and the Selectboard meets at least once with each department and/or committee Chair to discuss and finalize the proposals. After the budget has been adopted by vote of town residents, the Selectboard has the authority to modify it in cases of extraordinary circumstances; i.e. natural disaster, unexpected equipment/infrastructure failure (i.e., water well, power failure, major bridge/culvert failure). The budget is monitored several times a month by the Selectboard, Selectboard Assistant, Town Treasurer and an appointed citizen auditor.

Municipal revenues are generated primarily through levy of taxes on property value. Other major sources are federal & state payments to support the town school, aid from the Vermont Agency of Transportation for highways, and payments in lieu of taxes for land owned by the State of Vermont. The municipality also has the authority to incur debt through bonding.

Fayston engages in significant planning activities via the Mad River Valley Planning District (MRVPD). The MRVPD was created in 1985 for the purpose to "carry out a program of planning for the future of the Mad River Valley. The planning program shall be directed toward the physical, social, economic, fiscal, environmental, cultural, and aesthetic well-being of the member Towns and its inhabitants." The planning district includes Fayston and its neighboring towns, Waitsfield & Warren. The Sugarbush Ski Resort, Mad River Valley Chamber of Commerce and Central Vermont Regional Planning Commission serve on the Steering Committee with the member towns. MRVPD is staffed by an Executive Director and a Planning Coordinator that provide data gathering, analysis, coordination of stakeholders, local municipal planning support, and consultant and special project coordination.

The Town Plan, adopted in 2020, includes goals, objectives and implementation strategies which support hazard mitigation, as referenced in this plan. The LHMP is also incorporated by reference into the 2020 Town Plan. Vermont statue enables this incorporation to satisfy state municipal planning requirements for towns to develop a flood resilience element in municipal plans.

The goals of the Fayston Local Hazard Mitigation Plan are incorporated into the various local land use regulations. Fayston has adopted regulations that include zoning and subdivision bylaws. The 2011 Zoning Ordinance limits development within the Forest District and the Soil and Water Conservation District for the purpose of protecting forest resources and headwater streams and to prevent development in areas with steep slopes, shallow soils, wildlife habitat, fragile features, scenic resources and poor access to town roads, facilities and services. Wetlands are given protection as well, and regulations also help manage stormwater and sediment.

Fayston requires a zoning permit for all land development which includes the division of a parcel, the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any building or other structure, or of any mining, excavation or landfill, and any change in the use of any building or other structure, or land or extension of use of land. All zoning permits are issued by the Zoning Administrator. Town of Fayston's Land Use Regulations establish zoning and subdivision regulations for the town in accordance with Vermont Planning and Development Act (24VSA Chapter 117).

Fayston's Land Use Regulations address hazards relating to water resources in various ways. The Flood Hazard Overlay (FHO) District was created "to protect public health, safety, and welfare by preventing or minimizing hazards to life and property due to flooding and to ensure that private property owners with designated flood hazard areas are eligible for flood insurance under the National Flood Insurance Program." The FHO zoning regulation also includes a warning that "areas located outside this mapped district may also be subject to periodic or occasional flooding." The Flood Hazard Overlay District regulation prohibits new structures in the FHO district. Fayston has also adopted stream buffer standards which limit development within 50 feet of waterways. Development is limited within the vegetated buffer and its purpose is to prevent soil erosion, protect wildlife habitat and maintain water quality. Furthermore, 2022 revisions include the addition of several provisions related to tree cutting, thinning, and clearing to evaluate potential impacts on water quality, erosion, scenic viewsheds, etc.

Fayston does not have local building codes. Vermont has adopted statewide codes for building fire safety as well as commercial and energy standards The Vermont Division of Fire Safety enforces the 2015 National Fire Protection Association (NFPA) 1 Fire Cod; 2015 NFPA 101 Safety Code; the 2015 International Building Code (IBC); 2017 NFPA 70 National Electrical Code; 2021 International Code Council (ICC), Internal Plumbing Code; and the 2015 National Board Inspection Code from the National Board of Boiler and Pressure Vessel Inspectors. Vermont's Residential (RBES) and Commercial (CBES) Building Energy Standards set a minimum efficiency requirement for all new and renovated buildings, including additions and repairs. Under Act 89 (2013), the Department of Public Service developed a more stringent residential stretch code, which applies to all Act 250 projects and priority housing projects as defined in 10 V.S.A § 6001 (30 V.S.A § 55) and which municipalities are granted the authority to adopt and enforce at the local level. These are updated every three years and are inclusive but not limited to International Energy Conservation Code requirements. Per statute, compliance with all building energy standards is currently self-certified after construction is completed.

There is currently no requirement for review of the design of the building or inspection of the construction for compliance with the energy standards Municipalities may elect to have their own code officials (pp 178, 2022 CEP; 30 V.S.A. § 51 and 30 V.S.A. § 53.). VT does not have licensing requirements for builders of residential or commercial buildings. As noted in the 2022 CEP, statewide building code officials are common in other states however those code officials are often focused narrowly on health and safety and not yet with a focus on energy standards (pp 179). Act 89 H.520, 2014 mandated the municipal permitting process as a mechanism for

enforcing compliance with RBES and CBES. Municipalities must provide land use permit applicants that seek approval of a structure with information on the energy standards. Additionally, if the municipality requires a certificate of occupancy (COO) then receiving a Building Energy Standard certificate is a condition precedent to issuance of a COO. However, state statute does not dictate that a municipality have a COO requirement (footnote 205, pp78 2022 CEP).

Other Existing Hazard Mitigation Programs, Projects & Activities:
The additional hazard mitigation activities listed below constitute further mitigation capacities maintained by Fayston. The activities are on-going or recently completed and are listed by mitigation strategy. They share and incorporate the overall goals of the local hazard mitigation plan. Fayston has the capacity to maintain these programs and initiatives using the staff and volunteers described in Community Capacities.

Community Preparedness Activities

- Local Emergency Operations Plan, April 26th, 2022

Land Use Planning/Management

- Flood Resilient Transportation Pilot Study, 2015
- Highway Access Permit Ordinance, adopted on May 28, 2013

Hazard Control & Protective Works of Infrastructure and Critical Facilities

- Maintenance Programs: Road Erosion Inventory (last updated 2018), Bridge & Culverts Inventory (last comprehensive update 2019, interim updates based on improvement projects)
- Dry Hydrants – 5
- Emergency Shelters (backup generator at Town Offices)
    - Fayston School or Green Mountain Valley School (GMVS) (not Red Cross approved);
    - Additional shelters in neighboring Town of Waitsfield
    - State Regional American Red Cross Shelter at the Barre Auditorium, Barre, VT

Public Awareness, Training & Education

- School Fire Safety Program, Waitsfield-Fayston Fire Chief Tripp Johnson, annually
- Public education materials about reducing wild fire risk, Fayston Forest Fire Warden Dan Beede
- School evacuation plans
    - Fayston Elementary School, Denise Goodnow, Shelter Manager; annual review
    - Green Mountain Valley School, Tim Harris, annual review
    - Fayston Elementary School Preschool, Rachel Foley, Director annual review
- Sugarbush Resort Emergency Management Plan (last update 2018)

5. Hazard Identification and Risk Asessment

5.1 Local Vulnerabilities and Risk Assessment

The planning team performed an evaluation of the known hazards to the area and the risks the hazards pose looking at three main questions, 1) what damage can happen given the Town's vulnerabilities, 2) how likely are they to occur, and 3) how damaging can they be. Using a table to show this process, the town was able to then prioritize actions designed to mitigate the effects of each of the disaster types. The Town looked at past occurrences at the town, county and state level for guidance. Although the Town cannot predict the future, recent changes in the climate have made old weather patterns less predictable and Vermont has seen an increase in the number and severity of storms, especially high intensity rainfall events. In response to the changes in the weather patterns, Fayston has added severe weather as a top priority.

The following table reflects the hazards Fayston feels can be expected, or at least are possible, to occur in Fayston. Town expanded on the risk analysis by considering factors such as frequency of occurrence, warning time, and potential community impact modeling the methodology used in the Vermont Statewide Hazard Mitigation Plan. The hazards were ranked based on these factors to determine which hazards posed the greatest risk to Fayston and found to be the most significant and feedback was solicited from the community to ensure these analyses was in line with community perspectives (see above).

The process used to rank the hazards and score them was based on that the State of Vermont used in their 2018 statewide hazard mitigation plan. Unlike the state process, the geographic extent focused on Fayston, a small rural town and not the entire State of Vermont and therefore did not use the state-wide or region wide extent. See Table 9 for criteria and definitions.

The following natural disasters were discussed and hazards were rated on their probability and potential impact to infrastructure, life, economy, and environment (community vulnerabilities). The impact was then averaged, and multiplied by the probability to develop a score to compare hazard impacts in Fayston. See **Table 9** below for ranking criteria, please refer to While low threat hazards may still occur, due to low likelihood of the event they are not discussed in detail herein. Additional discussion, information, and strategies can be found in the 2018 & 2023 updates of the State of Vermont's Hazard Mitigation Plan.

Table 8: Hazard Assessment Ranking Criteria	
Frequency of Occurrence: Probability of a plausibly significant event	Potential Impact: Severity and extent of damage and disruption to:

Probability of a plausibly significant event		Infrastructure	Life/Safety	Economy	Environment	Overall
1	**Unlikely**: <1% probability of occurrence per year	**Minor:** Localized/Isolated impacts to Infrastructure (Temporary loss of use)	**Minor** scrapes/injuries	**< $10,000** in damages (Can generally be handled within budget or via insurance)	**Negligible**: Short term impacts, low clean-up costs for spills	**Negligible**: Isolated occurrences of minor property and environmental damage, potential for minor injuries, no to minimal economic disruption
2	**Occasionally**: 1-10% probability of occurrence per year, or at least one change in the next 100 years	**Moderate:** Neighborhood level impacts (1-2 day loss of use)	**Occasional** Hospitalization required due to injuries	**$10,000-$100,000** (May require assistance for the uninsured or large impact on local budget)	**Minor:** Moderate clean-up costs, temporary redirection of municipal resources	**Minor**: Isolated occurrences of moderate to severe property and environmental damage, potential for injuries, minor economic disruption
3	**Likely**: >10% but <75% probability per year, at least 1 chance in next 10 years	**Severe:** Community-wide impacts (2-5 day Loss of use)	**Multiple** hospitalizations required and/or fatality	**$100,000-$1,000,000** (Requests of assistance/FEMA eligible)	**Moderate:** Extended redirection of local resources/ impacts to normal operations, high clean-up costs	**Moderate**: severe property and environmental damage on a community scale, injuries or fatalities, short-term economic impact
4	**Highly Likely**: >75% probability in a year	**Disastrous:** Regional losses of roads, bridges, homes (Extensive replacement/rebuild)	**Community-wide** hospitalizations and/or fatalities	**>$1,000,000**- (All resources used, Possible National Guard use)	**Major:** Long-term recovery efforts (could take years for full recovery or permanent loss of use)	**Major**: severe property and environmental damage on a community or regional scale, multiple injuries or fatalities, significant economic impact

Table 9: 2022 Fayston Hazard Table							
Hazard Impact	**Probability**	**Potential Impact**					**Score***
		Infrastructure	Life	Economy	Environment	Avg.	
Flood/Erosion	4	3	1	3	3	2.5	**10**
Severe Storm (High Wind, Hurricane, etc)	4	3	2	2.5	3	2.625	**10.5**
Extreme Cold/Winter storm	4	3	2	3	2.5	2.625	**10.5**
Ice	4	3	2	3	3.5	2.875	**11.5**
Snow	4	2	1	2.5	2	1.875	**7.5**
Extreme Heat	3	1.5	2	1.5	1.5	1.625	**4.875**
Drought	3	1.5	1.5	2.5	2	2	**6**
Land/Rockslide	3	2.5	1.5	2	3	2.25	**6.75**
Earthquake	1	2	1.5	1.5	1.5	1.625	**1.625**
Avalanche	1	1.5	1.5	1.5	1.5	1.5	**1.5**
Tornado	1.5	2	2	2	2	2	**3**
Wildfire/Forest Fire	2	2	1.5	2	2.5	2	**4**
Invasive Species	4	2	2.5	3	3	2.635	**10.5**
Infectious Disease	3.5	1.5	2.5	2	1.5	1.875	**6.5**
Pond Failure	2	2	1	1	2	1.5	**3**
Structural Fire	3	2	1	1	1	1.25	**3.75**
Water Supply Contamination	2	1	1	1	1.5	1.125	**2.25**
Civil Disturbance	1.5	1.5	1.5	1	1	1.25	**1.875**
Terrorism	1.5	1.5	1.5	1.5	1.5	1.5	**2.25**
Cyber Security	2.5	3	1	2	1	1.5	**3.75**
Ice Jam	2.5	2.5	1	1.5	1.5	1.625	**4**

*Score = Probability x Average Potential Impact

The Town of Fayston identified the following hazards as presenting the worst threat to the community:

- Ice
- Severe storms (High Wind, Tropical Storm, Hurricane)
- Flooding & Erosion
- Extreme Cold
- Invasive Species

Furthermore, climate change was identified as major hazard, exacerbating vulnerability, amplifying risks, and increasing the frequency, severity, and unpredictability of most, if not all, of the hazards discussed (directly or indirectly). Probability in Table 9 was determined based on consideration of the impacts of future conditions, including climate change. The hazard profiles also include discussion of how climate change could indirectly or directly impact hazards.

Changes noted since the last Hazard and Risk Assessment an increased focus in discussion on identifying vulnerable community members by hazard; additionally, the core team notes changes in the trend of events associated with hazards including:

- increased high wind events (and severity),
- severity and variety of invasive species,
- increased number and severity of hot and dry days increases risk of drought, wild fire, and threatens those who work outside, elderly residents, houseless residents, etc.,
- increased microbursts and possibility of tornados,
- increase in perceived security risks and threats (cyber security, terrorism, civil disturbance)
- COVID-19 pandemic has heightened the awareness of the impacts of infectious diseases.

The Town is interested in focusing a majority of mitigation efforts into reducing impacts from flooding and erosion particularly on its steep roads, as the events occur most frequently, severely and cause the most damage to public and private infrastructure. Furthermore, Fayston is committed to increasing resilience of not only its residents and infrastructure but also of its environment and ecosystems including focusing on how to manage invasive species and human/animal interactions both of which are exacerbated by development pressure and climate change alike.

Other hazards not identified as worst threat may still occur in Fayston, but the Town decided to prioritize the above hazards as they pose a consistent, historical threat with a large impact to most Fayston residents. The Core planning team decided to group some of the hazards they assessed together focusing on shared impacts despite some differences in extent, severity, and frequency as all are discussed at length in the Vermont State Hazard Mitigation Plan (2023):

- Severe Storms focuses on High Winds but includes Hurricanes, Tropical Storms, etc.,
- Winter Storms and Extreme Cold include a discussion of Ice and references to Avalanches, Ice Jams, and Snow.f

While Earthquakes, Tornados, Civil Disturbances, Terrorism, Cyber Security, Structural Fires, Pond Failure, and Water Supply Contamination pose a threat to Fayston residents, due to a lack of consistent historical occurrences and/or lower potential impact, these hazard impacts are not discussed although some mitigation actions are still included. A review of the Vermont State Hazard Mitigation Plan of November 2018 and the 2023 update provides a greater explanation of these hazards and possible mitigation strategies to address them. Like the State of Vermont Hazard Mitigation Plan, Fayston did not include the following hazards in the risk and vulnerability assessment due to the low occurrence, low vulnerability, and or geographic proximity: coastal erosion, expansive soils, karst topography, sinkholes, tsunami, and volcano.

A discussion of each significant hazard profile is included in the proceeding subsections supported by a series of maps illustrating critical facilities, vulnerable locations, and hazard locations where relevant). Each subsection includes a list of past occurrences based upon County-wide FEMA Disaster Declarations (DR-#) plus information from national databases and local records (including but not limited to the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (formally known as the National Climate Data Center, NCDC), reports from the National Weather Service in Burlington, Vermont, the Vermont Forest, Park and Recreation Department, and VT State Hazard Mitigation Plan), a narrative description of the hazard and a hazard matrix containing the following overview information as shown in the chart below. The information identified in the "Extent" and "Likelihood/Probability" columns are based on the hazard ranking methodology as discussed in section 5.1 of this Plan above.

Hazard	*Location*	*Vulnerability*	*Extent*	*Impact*	*Likelihood*
Type of hazard	General areas within municipality which are vulnerable to the identified hazard.	Vulnerable community members, assets, and infrastructure.	maximum recorded magnitude of the event, measuring things such as numerical measurement (inches rain/snow, flood depth, wind speed, etc.), rating on a scientific scale (i.e. Category 3 Hurricane), speed of onset, or duration of event. Typical magnitudes experienced may also be reported.	Dollar value or percentage of damages, or the value of the assets that are at risk of damage (if known).	Highly Likely: >75% probability in a year. Likely: >10% but <75% probability per year, at least 1 chance in the next 10 years. Occasionally: 1-10% probability of occurrence per year, or at least one chance in the next 100 years. Unlikely: <1% probability of occurrence per year

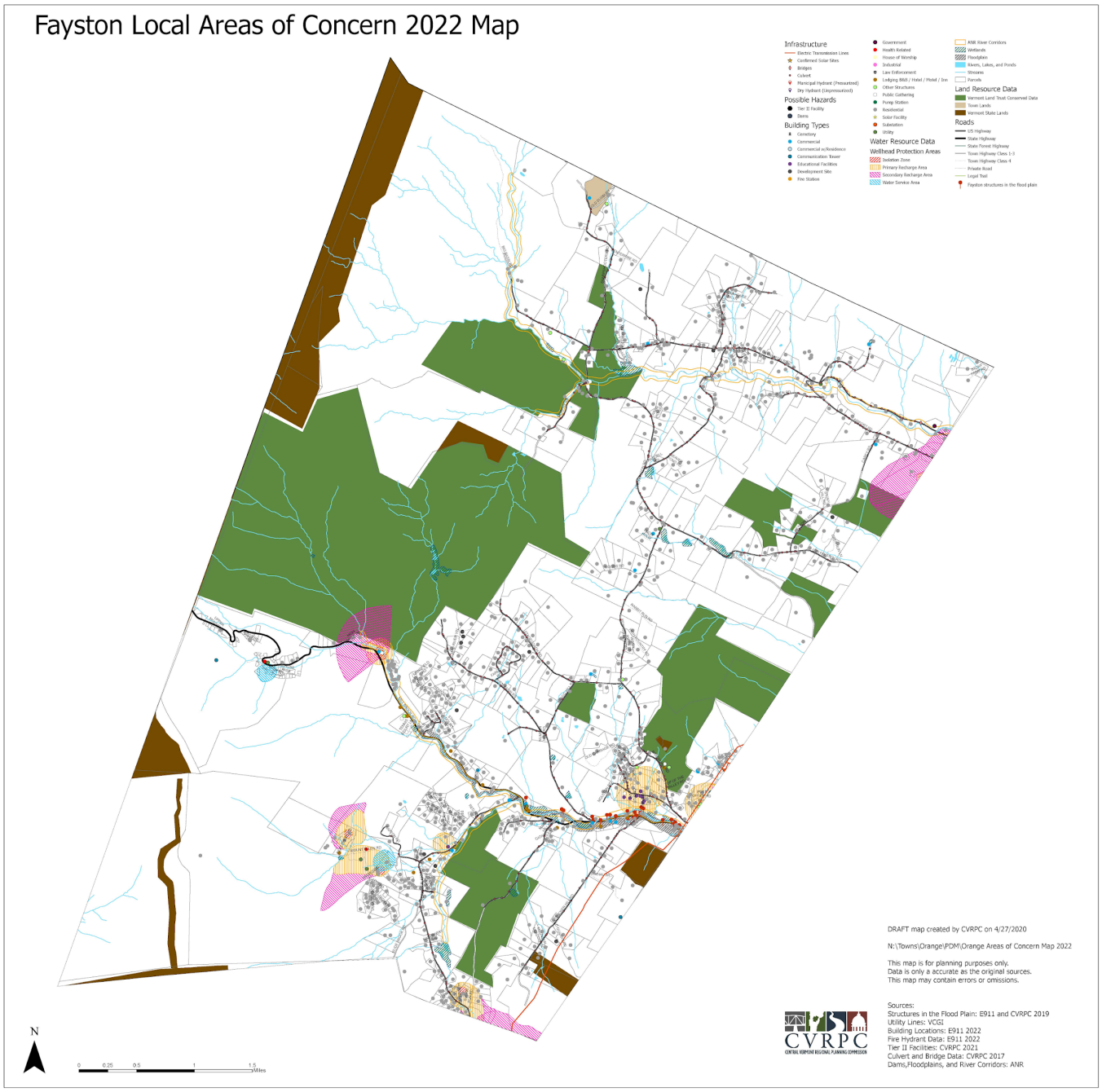


Figure 12 Local Areas of Concern 2022 Map used to support Hazard Vulnerability and Risk Assessment

6. Hazards Profiles

Data for these hazards were gathered from several federal resources and are often only available at the county level. As such, information specific to Washington County was used to identify and evaluate the type, frequency and relative impact of past events within the larger Washington region, which could therefore be expected to affect the community in the future. For a detailed description of hazards, the reader should review the Vermont State Hazard Mitigation Plan. Data for these hazards was obtained from several resources within the State of Vermont, FEMA, and the National Oceanic and Atmospheric Administration (NOAA). NOAA compiles storm events data, dating from 1950 to present. These cover “regional” weather events for the larger Washington County area (National Weather Service Forecast Zone) for periods of cold/wind chill, extreme cold/ wind chill, flash flood,

flood, frost/freeze, hail, heat, heavy snow, high wind, strong wind, thunderstorm wind, winter storm, and winter weather.

OVERALL SUMMARY: EVENTS & FEDERAL DISASTER DECLARATIONS Washington County

According to FEMA, there have been 31 federally-declared major disasters for Washington County between 1952 and April 2024 which have become increasingly frequent due to climate change. Not all affect the Town of Fayston directly although Fayston can often be affected also by declarations in neighboring counties. As indicated below, there are clear trends including a spike in flooding disasters June-September (compounded by increased likelihood for hurricanes in August), with a smaller spike in February-March, as well as pretty consistent severe storm baseline throughout the year with spikes in July, January, and March. Notably, a disaster declaration was issued for the COVID-19 pandemic in 2020.

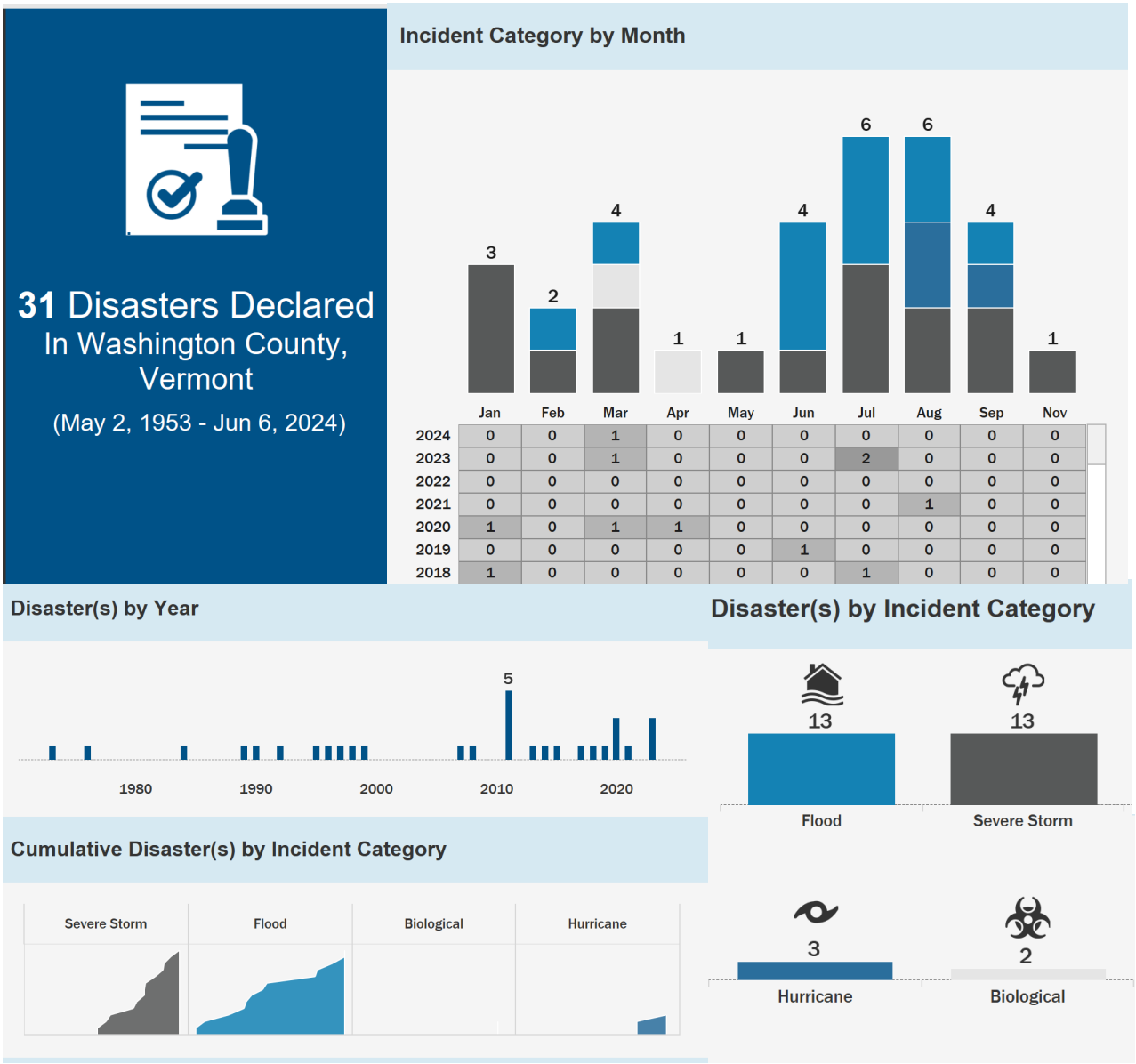


Figure 13 Summary of FEMA Disasters Declared for Washington County, VT

Source: FEMA Disaster Declarations https://www.fema.gov/data-visualization/disaster-declarations-states-and-counties

The NOAA Storms Database for Washington County, Vermont, totals over 700 regional severe weather events with approximately 655 of those occurring since 2000 over the past 23 years. This is an average of over 28 regional storms events a year (2000-present) although the several events can be reported for the same storm system (and often are). Database entries also include general (and inconsistently) estimates of related property and crop damages- totaling over $115.345 million in property damage, of which 94% was in the last 23 years, and over $6.595 million in crop damages.

Table 9 NOAA Severe Weather Events Washington County, VT

Event Type	**1960-April 2024**	1960-1999	2000-2009	2010-2019	2020-April 2024	**2000-April 2024**
Thunderstorm Wind	**126**	35	32	45	14	**91**
Tornado	**3**	1	2	0	0	**2**
Hail	**35**	12	11	11	1	**23**
Winter Storm	**129**	24	54	35	16	**105**
Flood	**13**	1	4	7	1	**12**
Dense Fog	**1**	1	0	0	0	**0**
Winter Weather	**127**	16	75	20	16	**111**
Cold/Wind Chill	**14**	3	8	1	2	**11**
Flash Flood	**19**	7	5	6	1	**12**
Ice Storm	**1**	1	0	0	0	**0**
Heavy Snow	**5**	2	1	2	0	**3**
Lightning	**7**	1	5	1	0	**6**
High Wind	**8**	1	5	1	1	**7**
Funnel Cloud	**1**	0	1	0	0	**1**
Heavy Rain	**5**	0	5	0	0	**5**
Strong Wind	**25**	0	8	13	4	**25**
Frost/Freeze	**3**	0	1	1	1	**3**
Heat	**6**	0	2	3	1	**6**
Extreme Cold/Wind Chill	**8**	0	4	1	3	**8**
Total	**536**	105	223	147	61	**431**

Source: NOAA Storm Events Database https://www.ncdc.noaa.gov/stormevents/

Table 10 Historic NOAA Severe Weather Events Damages

	Damage to Property ($)		*Damage to Crops ($)*	*Total ($)*
Event Type	*1960-Present*	*2000-Present*	*2009+*	

		(% of Total)		
Thunderstorm Wind	2186000	83%	200000	2386000
Tornado	200000	88%	25000	225000
Hail	30000	100%	40000	70000
Winter Storm	2137500	85%	0	2137500
Flood	5818000	96%	1000000	6818000
Dense Fog	5000	0%	0	5000
Winter Weather	625000	79%	0	625000
Flash Flood	38696000	93%	1500000	40196000
Ice Storm	80000	0%	0	80000
Heavy Snow	240000	94%	0	240000
Lightning	165000	91%	0	165000
High Wind	795000	87%	0	795000
Strong Wind	543000	100%	0	543000
Frost/Freeze	0	0	350000	350000
Heat	0	0	1000000	1000000
Total	51520500	93%	4115000	55635500

Source: NOAA Storm Events Database https://www.ncdc.noaa.gov/stormevents/

The majority of recorded regional events relate to winter storms and extreme winter weather, although heat and flooding are increasing; while the majority of more localized events are associated with severe thunderstorms (including wind, heavy rain, hail, and flooding). In addition to flooding and flash flooding, storm-related hazards include high winds, with estimated gusts ranging from 35 to 75 knots and hail over 1.75 inches. Hazards related to cold temperatures- including unseasonal frosts, and periods of extreme cold during winter months are more common than heat spells, although communities are less prepared and adapted to extreme heat- especially those with existing health conditions, without air conditioning, elderly and infant residents, those working outside, those living alone, etc. All 6 of the heat-related events reported are since 2006, including those also associated with drought in 2011 and 2012, and increased hospitalizations in 2018 and 2020. More details are provided in the hazard profiles below.

6.1 Flooding and Erosion

Fayston's most commonly recurring hazard is flooding; two types of flooding impacts can occur within the town. The first is from water inundation, where water rises into low-lying land. This generally happens in low-lying areas, including areas of Mill Brook and Shepherd Brook, during heavy rain

events. The second impact is from river and stream erosion when a river or stream jumps its bank and rips through an area, taking whatever is in its path. Due to Fayston's hilly terrain and its many upland streams, the latter is even more of a threat to the town, where fast-moving water from heavy rainstorms carries rocks, mud and other debris, undermining stream banks, mountain sides, and roadbeds. Development has increased the potential for flooding because rainfall that used to soak into the ground or take several days to reach a body of water now quickly runs off streets, parking lots and rooftops and through human-made channels and pipes.

Fayston is located within the Mad River Watershed, a sub watershed of the Winooski Watershed. Most of the land is composed of steep hillsides, terraces, ridgelines and narrow valley bottoms. Ninety-five percent of Fayston's landscape has slopes greater than 15%. Fayston is drained primarily by Shepherd Brook in North Fayston and Mill Brook in South Fayston, two of the Mad River's largest tributaries (see Figures 15 and 16 below for locations of key stormwater projects identified, highlighting problematic areas, and local areas of concern figure below). According to the 2013 Flood Insurance Study covering Fayston, Mill Brook drains about 19 square miles and Shepard Brook 17 square miles. As the watersheds are steep with narrow floodplains and no swamps or other storage, these tributaries are prone to peak flows that accumulate quickly.

History of Occurrences: Past instances of flooding in Fayston have included rain and or snow melt events that cause flooding of the major floodplains along the main rivers in town and localized flash flooding from intense rainstorms. Debris and ice build-up can contribute to the failure of infrastructure (culverts and bridges) during these events. The State of Vermont Hazard Mitigation plan states, "In recent years, flood intensity and severity appear to be increasing." The following chart indicates the history of occurrence with regard to this hazard in Fayston. Data is both county-wide and state-wide. Due to the scale of the Town of Fayston, specific data is difficult to obtain. Federal declared disaster numbers are noted where applicable. Data on the fluvial erosion damage in number of acres lost was not found for the events. Fluvial erosion extent data is unavailable. Information to complete the history of occurrences was taken from the National Oceanic and Atmospheric Administration (NOAA), National Center for Environmental Information (NCEI), formally the National Climate Data Center, the FEMA Declared Disasters in Vermont data base, the State of Vermont Hazard Mitigation Plan, and town records.

The Mad River Valley encompasses the towns of Waitsfield, Warren and Fayston. The Mad River does not flow through Fayston, however it is fed by large tributaries in Fayston. The Mad River flood gage is located in Moretown, approximately 8 miles downstream from Fayston. Limited historical data is available for specific fluvial erosion events- including extent- estimated acres or feet loss- as this has not been historically nor systematically collected by the town, however this type of damage often occurs along with inundation flooding events and are thus capture in the flood event history.

Table 12: Fluvial Erosion and Inundation Flooding Historical Events

Date	*Event*	*Location*	*Extent*
12/18/2023-12/19/2023	Flooding	Washington County	2" of rain on snow event
7/7/2023-7/21/2023	Vermont Severe Storms, Flooding, Landslides, and	Statewide	DR-4720. IA: 3612 applications approved for

Table 12: Fluvial Erosion and Inundation Flooding Historical Events			
Date	*Event*	*Location*	*Extent*
	Mudslides		almost $26million; obligated over $47million in PA and $1.14million in HMGP.
7/9/2023-7/17/2023	Vermont Flooding	Statewide	EM-3595
12/22/2022-12/24/2022	Severe Storm and Flooding	Washington County	DR-4695
10/31/2019-11/1/2019	Severe Storm and Flooding	Washington County	DR-4474 2-4" rain; $250k county damages
6/20/2019	Heavy Rain	Washington County	Heavy rain; $25k county damages
5/20/2019	Heavy Rain	Washington County	Heavy rain; $25k county damages
4/15/2019	Severe Storm and Flooding	Washington County	DR-4445 1" rain with significant snow melt
10/29/2017-10/30/2017	Severe Storm and Flooding	Washington County	DR-4356
7/1/2017	Flash Flood	Washington County	Heavy rain showers and thunderstorms moved across central VT delivering very heavy localized rainfall. DR 4330. $169k (AB), $10.3million (CH), Total PA (11.7million); HMGP $593k.
8/17/2016	Flash Flood	Washington County	Rainfall totals of 3 to 5 inches in a few hours caused flash flooding in central Washington County.
7/19/2015	Flash Flood	Washington County	Thunderstorms with heavy rainfall moved over northeast Washington County Vermont repeatedly for several hours.
4/15/2014-4/19/2014	Flood/Severe Storms	County Wide	Mad River flood gage at 10.02 ft DR 4178
4/10.2014-4/15/2014	Flood; heavy rain/snowmelt	Fayston	10.02ft; 4-6 inches of water released from snowpack
6/25/2013	Flood/Severe Storms	County Wide	Mad River flood gage 9.33ft DR 4140
8/28/2011	Flash Flood (TS Irene)	Fayston; County Wide	Mad River flood gauge at 19.07 ft; 10.07ft above flood stage DR 4022
5/20/2011	Flash Flood	County Wide (No Fayston Impact)	4 inches of rain; Montpelier gauge 17.59 feet DR 4001
3/6/2011	Flood; ice jams	Fayston; County Wide	1-2 inches of rain followed by ~15 inches of snow

Table 12: Fluvial Erosion and Inundation Flooding Historical Events			
Date	*Event*	*Location*	*Extent*
8/2/2008	Flash Flood	Mad River Valley; County Wide	Mad River gauge at 7.89 feet
12/24/2003	Flood	Mad River Valley	Mad River flood gauge at 14.17 feet
12/17/2000	Flood	Mad River Valley	3 inches of rain
9/16/1999	Tropical Storm Floyd	County Wide	Montpelier flood gauge at 9.30 feet, 5-7" rain county wide - DR 1307
6/27/1998	Flash Flood	Mad River Valley; County Wide	Mad River Flood gauge at 14.13feet; 3-6inches of rain over 2 day period – DR 1228, not a historical crest
8/6/1995	Flood	Mad River Valley	Mad River flood gauge at 8.12 feet
3/31/1987	Flood	Mad River Valley	Mad River flood gauge at 11.97 feet
3/13/1977	Flood; ice jams	Mad River Valley	Mad River flood gauge at 13.72 feet
8/5/1976; 8/10/1976	Flood	Mad Rivery Valley; County Wide	Montpelier flood gauge at 12.31 feet – DR 518; Mad River flood gauge at 13.47 feet, more bank erosion and channel incision than prior 1973 event (2008 Upper Mad River Corridor Plan)
6/30/1973	Flood	Mad River Valley; County Wide	Montpelier gauge at 17.55 feet - DR 397
9/22/1938	Flood/Hurricane	Mad River Valley; County Wide	Mad River flood gauge at 16.34 feet; Montpelier flood gauge at 14.11 feet
11/03/1927	Flood	Mad River Valley; County Wide	Mad River flood gauge at 19.40 feet; Montpelier flood gauge at 27.10 feet

The worst anticipated flooding is unknown in the low-lying areas in the Town of Fayston. The worst flooding event in Fayston's recorded history occurred in 1927, followed closely by T.S. Irene in 2011. The Mad River flood gauge readings during these events were 19.4 feet and 19.07 feet, respectively. Detailed historical records relating to the extent of the 1927 flood in Fayston are lost; however, during Tropical Storm (T.S.) Irene up to 4 feet of flooding occurred in Fayston. Lesser but more regular flooding occurs in Fayston, with generally 1 -2 feet of flooding in low lying areas every two or three years.

Several major flooding events have affected the state in recent years, resulting in multiple Presidential Disaster Declarations. From 2003 to 2019, Washington County experienced roughly $17.23 million in property damage due to inundation flooding events, and over the same time period $71.85 million from flash flooding/fluvial erosion events. The most recent flood event from July 2023 total property damages are still being calculated at the time of this writing.

The worst flooding events in recent years include the July 2023 storm (DR4720) which dropped 9" of rain in the area on already saturated soils, and stalled the update of this plan. The state is currently estimated at having over $500 million in damages from the July flood event which nearly doubled the previous record of Tropical Storm Irene (DR4022) in August of 2011, which dropped 5 to 8 inches of rain in some areas of Washington County, resulting in $239 million in damages held statewide.

The July 2023 flood was created by an atmospheric river that compounded an unseasonal

weather pattern which had already saturated soils across the state. The effects of these storms are profiled in this flooding section, since the storms brought extreme rainfall and associated flooding to the Town. This caused most streams and rivers to flood in addition to widespread and severe fluvial erosion which undermined the fire station leading to its abandonment.

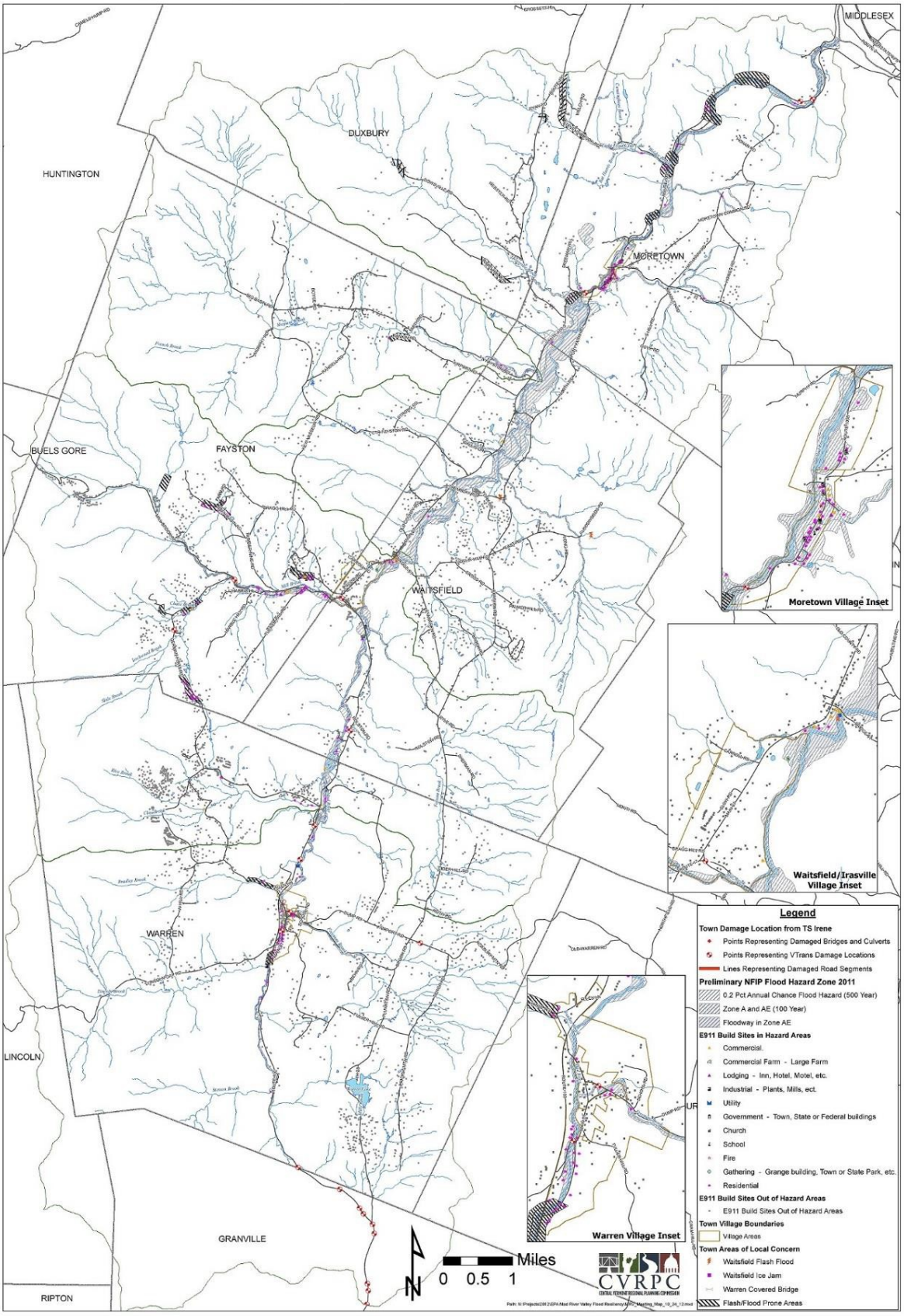
Fayston incurred damages from flooding during the spring 2011 floods and Tropical Storm Irene. Culverts on the following roads were damaged: German Flats, Rankin, Center Fayston, Moulton, Old Mansfield, Phen, Tucker Hill and Fayston Farms. Damages to culverts, bridges and road surfaces from these two events cost upwards of $250,000. In August of 2016, a very isolated severe thunderstorm caused flows that overwhelmed drainage infrastructure in North Fayston, especially along Sharpshooter Road. Preliminary estimates of total damage for this event are $170,000. Again in June of 2019, Fayston suffered localized damage from brief, heavy downpours. The town has had a good history of replacing bridges and culverts as needed, and most of them now meet current standards. However, damage also stems from water flow through private infrastructure, and the Town is interested in having private landowners take responsibility for driveway culvert maintenance and upsizing

Based on the results of overlaying the FIRM flood maps with the location of the E911structures, there are 67 properties (parcels) and 16 structures in the 100 year floodplain. By using median property values from the Fayston grand list, a very general sense of risk of loss can be calculated for 15 parcels that have both land and structures, parts of which may be in the floodplain. Many of the structures on these parcels, however, are not in the floodplain. The total value for these properties is $4,072,500, and the value of the land only is $6,489,600. As many of the structures represented in the land and structure value are not in the floodplain, this gives only a very broad sense of the value at risk in the Special Flood Hazard Area. There are no FEMA repetitive loss properties in Fayston.

The Town Plan recognizes the shortcomings of solely relying on the NFIP maps as they do not map all areas of possible flooding due to new development, localized drainage, or the effects of stream channel erosion during flooding events. While the town's flood hazard map identifies the official 100-year flood hazard, mitigating issues in the FEMA-floodplain is just one approach to reducing flood hazards. As mentioned in the 2020 Town Plan, Fayston has experienced damages from flood events outside of the mapped floodplain, caused by fluvial erosion. Localized heavy rainstorms inundate small mountain streams and tributaries creating fast-moving water that carries rocks, mud, and other debris. In addition, erosion caused by flooding undermines stream banks, mountainsides and road beds. The effects of these events are compounded by the failure of infrastructure such as undersized and/or blocked culverts. The Areas of Local Concern map (below) shows the most vulnerable areas of fluvial erosion, which include nine properties. This map also illustrates the importance of Fayston's taking steps to address erosion on downstream towns within the Mad River watershed. Section 3.16 Flood Resilience Planning of the Town Plan details

Areas of Local Concern (page 48 Town Plan)
https://www.faystonvt.com/wp-content/uploads/2020/02/2020-Town-Plan.pdf

Figure 3-4: Areas of Local Concern



147 parcels and 56 E911 structures are in the Statewide River Corridor hazard area. 107 of the parcels with both land and structures are valued at $29,050,500, and the land only at $4,992,000. Again, many of the structures represented in this value are not actually located in the Statewide River Corridor. Fayston's flood hazard regulations prohibit new structures in this zone and limit development to nonsubstantial improvements, infrastructure improvements, outdoor recreation, agriculture and forestry. Any substantial improvement (reconstruction, rehabilitation, addition, or other improvement of an existing structure) must go through conditional use review (see Town Plan Section 3 for more). Existing risks are primarily to tranposrtation infrastructure cutting off residents; high risk populations include the Town's two schools , Fayston Elemenary and Green Mountain Valley, which have their own emergency evacuation plans, individuals that may need access to care, medications, etc.

To address both the flooding and water quality implications of stormwater runoff, Fayston and the other 4 towns in the Mad River Valley are starting a planning initiative to improve stormwater management. Called Ridge to River, the initiative will focus on the following strategies:

- Educate local officials, road crews, contractors and land owners about the implications of their routine decisions on stormwater runoff
- Minimizing erosion and stormwater runoff from land disturbance through better regulations, procedures, trainings, policies and inspection & reporting protocols
- Improving practices for roadway construction and maintenance and repair by both municipal road crews and local contractors
- Reducing the "water footprint" of land uses such as development, driveways, and recreation trails
- Ensure municipal permitting, standards and enforcement require effective erosion control & stormwater management
- Promote partnership with farmers, foresters and other working lands stewards

These strategies will all have effects that reduce the creation and/or exacerbation of flash flooding and inundation hazards from stormwater runoff. At the time of plan development the project team was reviewing the results of an information gathering report produced by the project consultant, and starting to review regulatory differences between the municipalities to identify the most effective improvements to regulatory strategy.

Fayston has also pursued mitigation projects to protect its highway assets by participating in the 2015 Mad River Valley Flood Resilient Transportation Study. The study analyzed the vulnerability of highway drainage structures to runoff and flooding damage, and made recommendations for infrastructure improvements. As part of the update of Fayston's LHMP, the Road Foreman prioritized vulnerable structures for both for inclusion in the LHMP implementation plan, or for future project development. Structures with a simple project scope have been included in the implementation plan. Project development efforts for structures with a less well-defined project scope is beyond the scope of the current LHMP planning process. These projects have been listed for additional project development. A map of vulnerable structures, study recommendations, and the project development priorities list, are included in the attachments.

The Hazards Analysis Map identifies areas that have experienced flash flooding in the past. The following matrix provides an overview of the hazard:

Hazard	Location	Vulnerable Assets	Extent	Impact & Risk	Probability
Flooding	German Flats Rd, Rankin Rd, Center Fayston Rd, Moulton Rd, Old Mansfield Rd, Phen Rd, Tucker Hill Rd, Fayston Farms Rd, Murphy R Rd, Bragg Hill Rd	Culverts, bridges, road infrastructure	TS Irene - ~6" of rain, Mad River flood gauge at 19.07 feet; 9 ft is flood stage	Impact: Over $250,000 from 2011 events; Risk: ~$13 million in floodplain properties	High

In 2017, CVRPC conducted a Road Erosion Inventory to identify locations that result in problematic road erosion - the sites with the most significant hydrological impact due to erosion. The inventory found that out of the 652 hydrologically connected road segments in Fayston, 56% do not fully meet the standards of the Municipal Roads General Permit (MRGP). Twenty-six segments were identified as Very High Priority - segments on slopes greater than 10% that do not meet standards. See **below** for a full list of very high priority segments. Implementation plans to bring segments to MRGP compliance standards will include measures like grass and stone-lined drainage ditches, stone check-dams, sheet flow infiltration, ditches and turnouts disconnected from surface waters, road crowning, upgrading culverts, installing outlet stabilization headwalls, and stabilizing exposed soil.

The town variously works with the Agency of Transportation and CVRPC to inventory all the roads and associated infrastructure. Fayston maintains a culvert inventory with up to date information on size and condition but lacks a data base for tracking the culverts. CVRPC maintains a GIS database that has the coordinates for each culvert and bridge and other road infrastructure. The transportation Vulnerability Assessment Map shows the mapped infrastructure locations based on GIS field coordinates. These tools will help the town prioritize and implement their strategies.

Decreases in Vulnerability

The new river corridor bylaws, will reduce vulnerability to fluvial erosion and inundation flooding; the proposed regulations prohibit new structures in the flood hazard overlay and river corridor overlay.

Table 13: 2018 Road Erosion Inventory

Road Name	Priority				
	Very High	High	Moderate	Low	Total
AIRPORT RD	2	1	5	2	10
BARTON RD			1		1
BIG BASIN RD		1	6	2	9

Table 13: 2018 Road Erosion Inventory					
Road Name	**Priority**				
	Very High	**High**	**Moderate**	**Low**	**Total**
BRAGG HILL RD	3	5	8		16
CARROLL RD	1	1			2
CENTER FAYSTON RD	1	7	9	1	18
DUNBAR HILL RD	6	1	3		10
FARM RD		2	3		5
GERMAN FLATS RD	1	1	3	1	6
GLEN VIEW RD		2	2		4
GRIGGS RD			2		2
HARRIS HILL			2		2
KEW-VASSEUR RD	2	2	2		6
MANSFIELD RD		1	2		3
MARBLE HILL RD	2	1	8		11
MOULTON RD		1	3	2	6
MURPHY RD	2	1	1		4
NORTH FAYSTON RD		4	13	6	23
NELSON FARM RD			1		1
NUMBER NINE RD			3		3
OLD CENTER FAYSTON RD			1		1
PHEN BASIN RD			1	1	2
RANDELL RD	10	1	1	3	15
RANKIN RD			1		1
SHARPSHOOTER RD	3	2	3		8
SMITH RD	3	1	2		6
STAGECOACH RD		2	8		10
STRONG RD	1	1	2		4
TOWN GARAGE RD		1			1
TUCKER HILL RD	4	3	5		12
Total	**41**	**42**	**101**	**18**	**202**

Table 14: High Priority Culverts Inventory						
Road	**Overall Condition**				**Total**	**High Erosion**
	Critical	**Closed**	**Urgent**	**Poor**		
AIRPORT RD				4	**4**	3
BARTON RD						
BIG BASIN RD				2		
BOYCE RD	1			2	**3**	2
BRAGG HILL RD		5		7	**12**	4
CAREY RD		1			**1**	1
CARROLL RD						
CENTER FAYSTON RD	4	1		9	**14**	4
DUNBAR HILL RD	2	1		1	**4**	4
FARM RD				3	**3**	2
GERMAN FLATS RD		1		4	**5**	1
GLEN VIEW RD	1	1		4	**6**	4
GRIGGS RD						
HARRIS HILL						1
KEW-VASSEUR RD		1		4	**5**	5
MANSFIELD RD						1
MARBLE HILL RD		1		7	**8**	3
MOULTON RD	1			2		
MOUNT ELLEN RD		1				
MURPHY RD			1			
NORTH FAYSTON RD	6			5	**11**	4
NELSON FARM RD				1		
NUMBER NINE RD		1		3	**4**	4
OLD MANSFIELD RD				1		
PHEN BASIN RD		3		6	**9**	1
RANDELL RD	2			4	**6**	2

Table 14: High Priority Culverts Inventory						
Road	**Overall Condition**				**Total**	**High Erosion**
	Critical	**Closed**	**Urgent**	**Poor**		
RANKIN RD				2	**2**	**2**
SHARPSHOOTER RD				2	**2**	**2**
SMITH RD	2		1	1		
STAGECOACH RD		1		3	**4**	**3**
STRONG RD			1			
TOWN GARAGE RD						
TUCKER HILL RD	1	2		5	**8**	**5**
TOTAL*	20	20	3	82		**58**

*only includes culverts that had a road labled (several had roads labled unknown- these will be identitied properly in future surveys and data cleaning efforts) .Source: VTrans Culvert Inventory. Note: there can be a significant lag between municipal work including culverts cleared/replaced and condition updated depending on Bridge&Culvert inventory timing and if local crew is updating VT Bridge & Culverts directly

Historical channel management activities, floodplain encroachments, adjacent land use practices and/or changes in watershed hydrology associated with conversion of land cover and drainage activities, within and beyond the NFIP floodplain, have frequently been documented to have devastating consequences. Fayston's Flood Hazard Overlay District is in an effort to reduce the risk of flood damage and maintain the floodplain area to receive waters. It is important to note that Vermont has experienced a majority of their flooding in areas along upland streams and in road drainage systems that do not adequately convey the amount of water they are receiving. Flooding in these areas should be expected and planned for. The National Weather Service has seen a trend in recent years of more intense, locally severe storms with high intensity rain and flooding associated with them; increasingly rain on snow events are contributing to additional flooding hazards as well, as winter temperatures warm.

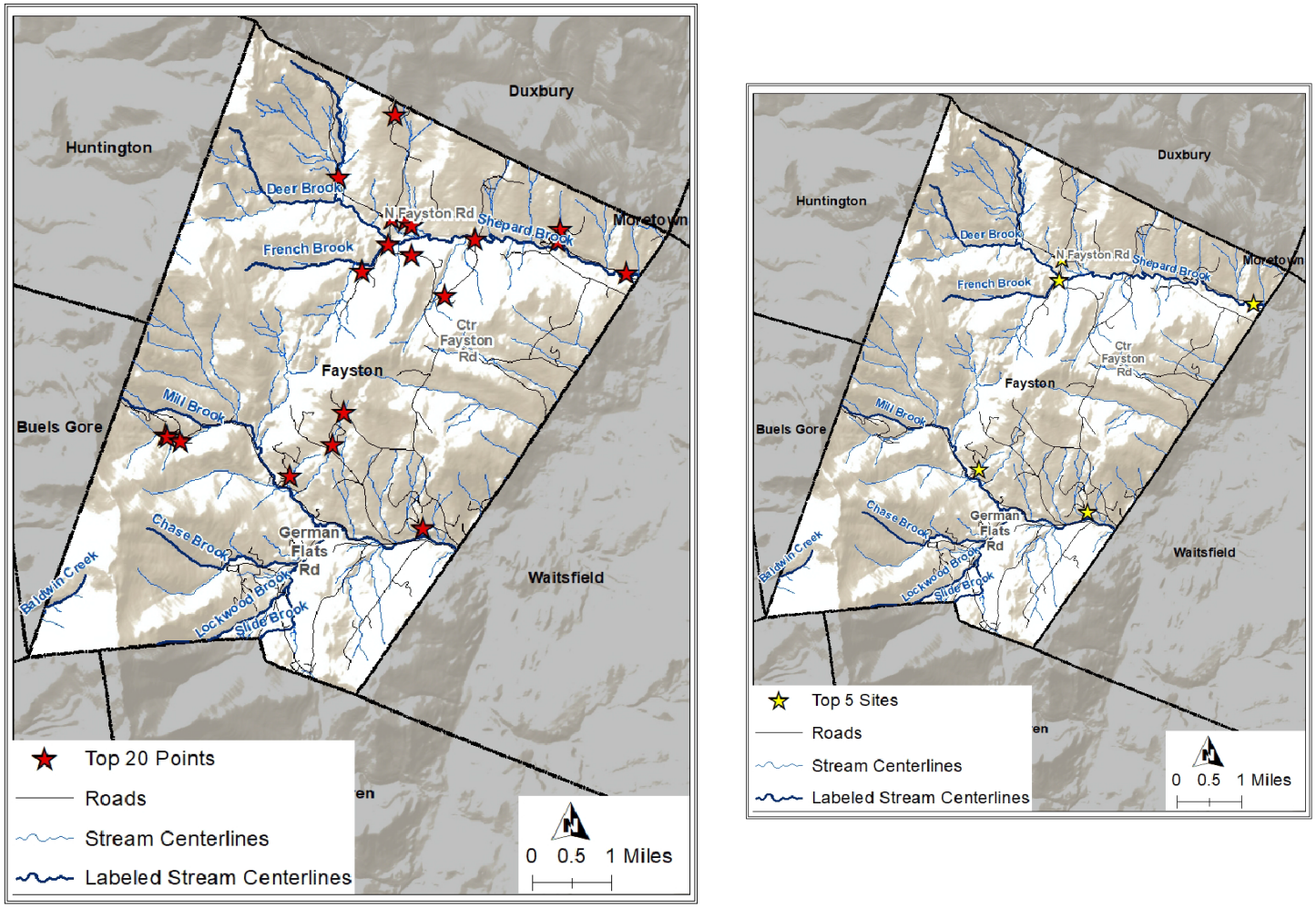


Figure 15 Top 20 and 5 Ranking Sites, 2019 Mad River Stormwater Master Plan; see Interactive Map for project specifics

Rank	Site ID	Address	Proposed Practice Type
1	Green Mountain Valley School	311 Moulton Rd, Fayston, VT	Cistern / Rain Barrel, Dry Wells, Pavement Shim
2	Murphy Rd and Ctr Fayston Rd	Center Fayston Rd and Murphy Rd, Fayston, VT	Filter Strip / Buffer Enhancement, Check Dams, Turnouts, Ditch / Swale Improvements, Sediment Trap
3	Mansfield Rd and Stark Mtn View Rd	1–43 Stark Mountain View Rd, Fayston, VT	Sediment Trap, Ditch / Swale Improvements, Outfall Stabilization
4	N Fayston & Ctr Fayston Rd	Center Fayston Rd and N Fayston Rd, Fayston, VT	Sand Filter, Sediment Trap, Ditch / Swale Improvements
5	Fayston Town Offices	866 N Fayston Rd, Fayston, VT	Infiltration Basin
6	Fayston Town Garage & Sand Pile	41 Town Garage Rd, Fayston, VT	Ditch / Swale Improvements, Filter Strip / Buffer Enhancement, Infiltration Basin
7	Center Fayston Road Upper	3561-4083 Center Fayston Rd, Fayston, VT	Ditch / Swale Improvements, Check Dams, Turnouts
8	Stagecoach Rd	530–1030 Stagecoach Rd, Fayston, VT	Ditch / Swale Improvements, Check Dams, Turnouts
9	Smith Rd	Smith Rd, Fayston, VT	Ditch / Swale Improvements, Turnouts, Cross Culverts
10	Fayston Gravel Pit	1482 Sharpshooters Rd, Fayston, VT	Filter Strip / Buffer Enhancement
11	Farm Rd	129 Farm Rd, Fayston, VT	Ditch / Swale Improvements, Check Dams, Turnouts, Regrade Road
12	MRG - Cricket Club Building	57 Schuss Pass, Fayston, VT	Filter Strip / Buffer Enhancement, Sediment Trap
13	N Fayston Rd Stream Crossing	4008-3984 N Fayston Rd, Fayston, VT	Ditch / Swale Improvements, Check Dams, Dry Wells

14	MRG - Base Area	Mad River Resort Rd, Fayston, VT	Bioretention, Filter Strip / Buffer Enhancement, Vegetated Swale, Check Dams
15	Beaver Pond Rd and Randell Rd	1031–1223 Randell Rd, Fayston, VT	Check Dams, Ditch / Swale Improvements
16	Randell Rd Stream Crossing	343-297 Randell Rd, Fayston, VT	Filter Strip / Buffer Enhancement, Ditch / Swale Improvements, Check Dams, Turnouts
17	Big Basin Rd Parking Lot	862-2059 Big Basin Rd, Fayston, VT	Filter Strip / Buffer Enhancement, Turnouts
18	N Fayston Rd Buffer	2380-2850 N Fayston Rd, Fayston, VT	Filter Strip / Buffer Enhancement
19	MRG - Schuss Pass	Schuss Pass, Fayston, VT	Check Dams, Ditch / Swale Improvements, Dry Wells
20	Sugaring Operation Access Drive	551-23 Murphy Rd, Fayston, VT	Filter Strip / Buffer Enhancement, Ditch / Swale Improvements, Check Dams, Turnouts

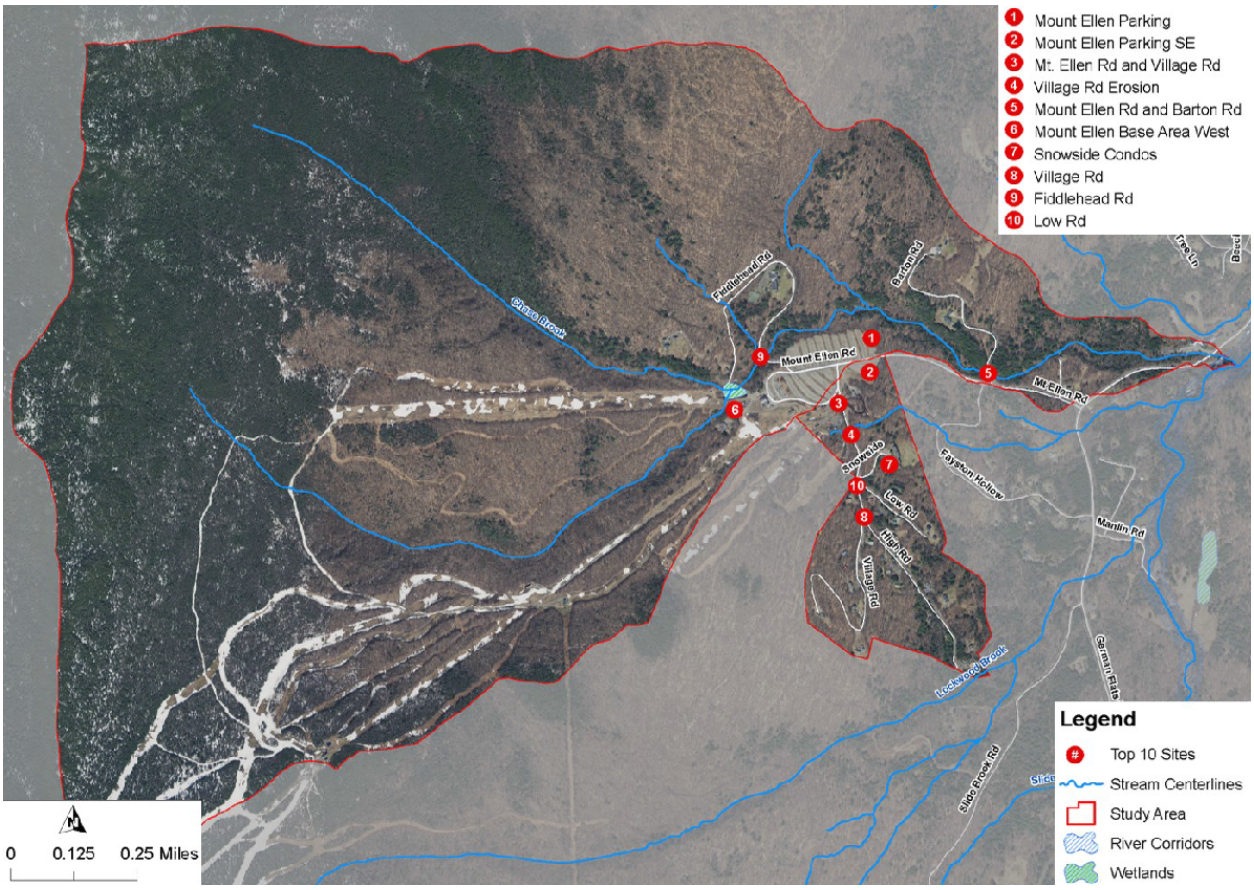


Figure 16 Top 10 Priority Site Locations, Chase Brook Stormwater Master Plan

Project Name	*Proposed BMP Practice Type*	*Total Score*	*BMP Rank*
Mount Ellen Parking	Infiltration Basin, General Road Improvements	36	1
Mount Ellen Parking SE	Infiltration Basin, Ditch / Swale Improvements, Dry Well	35	2
Mt. Ellen Rd and Village Rd	Infiltration Basin	33	3
Village Rd Erosion	Check Dams, Ditch / Swale Improvements, Dry Well, Infiltration Basin	26	4
Mount Ellen Rd and Barton Rd	Ditch / Swale Improvements, Step Pools, Filter Strip / Buffer Enhancement	26	5
Mount Ellen Base Area West	Bioretention, Ditch / Swale Improvements, Dry Well	25	6
Snowside Condos	Filter Strip / Buffer Enhancement, Infiltration Trench, Stormwater Planter, Dry Well, Ditch / Swale Improvements	23	7

Village Rd	Check Dams, Ditch / Swale Improvements, Dry Well, Infiltration Basin	23	8
Fiddlehead Rd	Check Dams, Ditch / Swale Improvements, Sediment Trap	21	9
Low Rd	Check Dams, Cross Culverts, Ditch / Swale Improvements, Sediment Trap, Step Pools	20	10

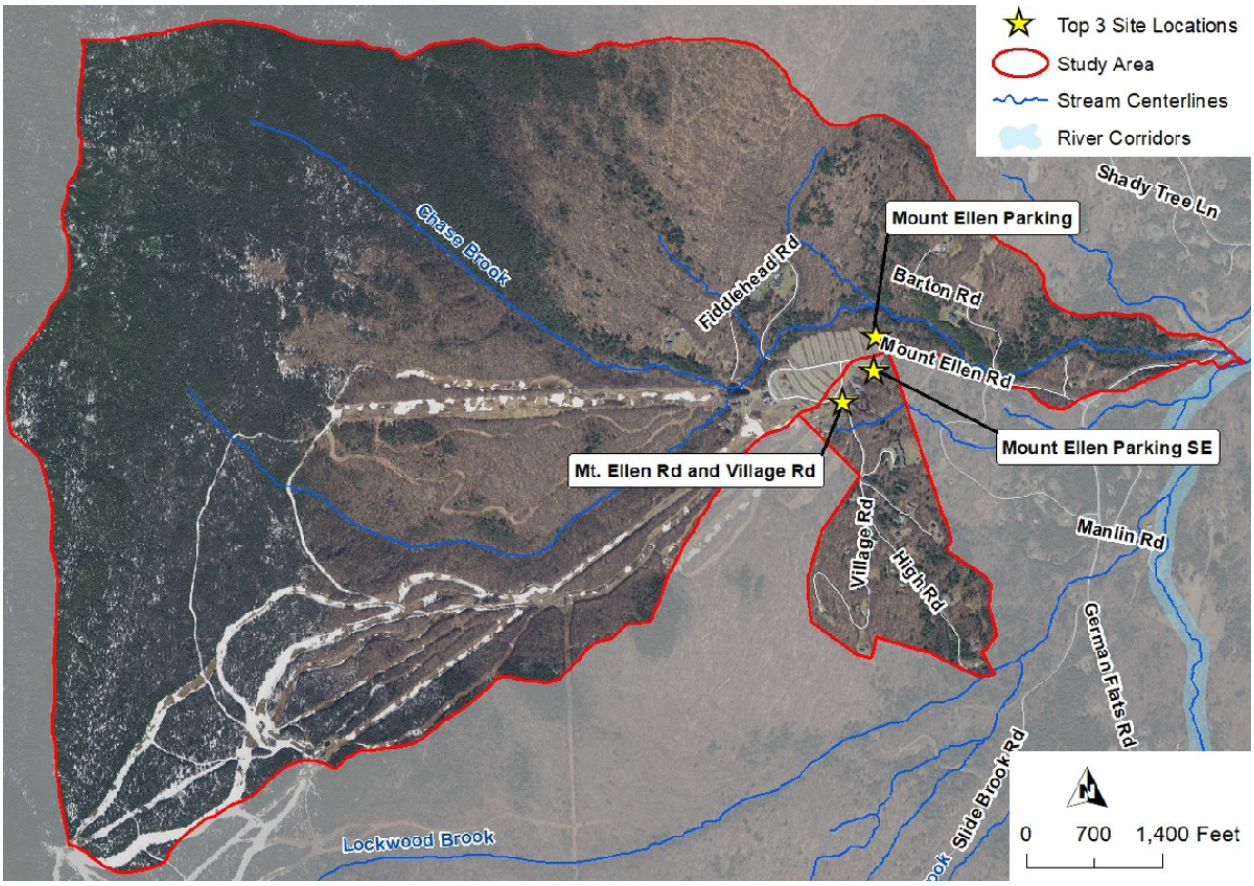


Figure 17: Top 3 Priority Site Locations, Chase Brook Stormwater Master Plan

Project Name	*Proposed BMP Practice Type*	*BMP Rank*
Mount Ellen Parking	Infiltration Basin, General Road Improvements	1
Mount Ellen Parking SE	Infiltration Basin, Ditch / Swale Improvements	2
Mt. Ellen Rd and Village Rd	Infiltration Basin	3

6.2 Severe Storms

According to NOAA, severe weather is a destructive storm or weather that usually is applied to local, intense, and often damaging storms such as thunderstorms, hail storms, and tornadoes, but it can also describe more widespread events such as tropical systems, blizzards, nor'easters, and derechos. The Town of Fayston considers winter storms, hurricanes, tropical storms, and a combination of high winds, hail, thunder and lightening below:

Thunder and Lightening

Thunderstorms are further defined in the Vermont State Hazard Mitigation Plan as follows, "Thunderstorms range in size and type. An ordinary cell thunderstorm consists of one cell with an updraft and downdraft and produce strong winds, rain, lightning, and even hailstones. Multicell cluster thunderstorms consist of several ordinary cell thunderstorms in the vicinity of each other. Multicell cluster thunderstorms are extremely prone to causing flash flooding. Squall line thunderstorms move in a linear front that can exceed 100 miles in length, with the strongest rains and winds at the front of the storm. Supercell thunderstorms are the largest, longest lasting, and most devastating thunderstorms. Nearly all tornadoes are formed from supercell thunderstorms. Supercell thunderstorms can also form hailstones larger than golf balls. These Supercell storms have a clockwise rotating winds that exacerbate the storm. Lightning, hail, flash flooding, and tornadoes are all associated with this type of thunderstorm." Thunderstorm activity in Washington County causes power outages, damaging winds, hail, and transportation and economic disruptions, particularly from blown down trees.

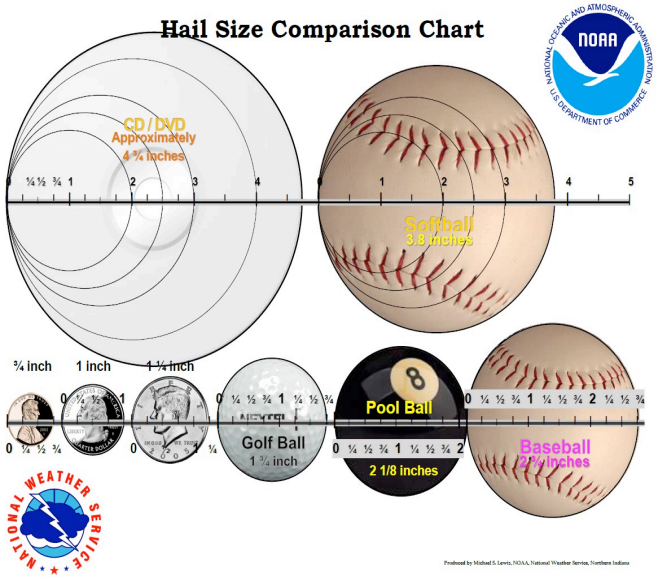
Lightning produces thunder. Lightning is the electrical charges in the atmosphere between clouds, the air, or the ground. In the early stages of development, air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground. When the opposite charges builds up enough, this insulating capacity of the air breaks down and there is a rapid discharge of electricity that we know as lightning (as defined by NOAA). The discharge of electricity produces light (lightning) and sound (thunder). Lightning can kill, cause forest fires, and damage property.

Beaufort Wind Chart – Estimating Winds Speeds

Beaufort Number	MPH Range	MPH Average	Terminology	Description
0	0	0	Calm	Calm. Smoke rises vertically.
1	1-3	2	Light air	Wind motion visible in smoke.
2	4-7	6	Light breeze	Wind felt on exposed skin. Leaves rustle.
3	8-12	11	Gentle breeze	Leaves and smaller twigs in constant motion.
4	13-18	15	Moderate breeze	Dust and loose paper is raised. Small branches begin to move.
5	19-24	22	Fresh breeze	Smaller trees sway.
6	25-31	27	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult.
7	32-38	35	Near gale	Whole trees in motion. Some difficulty when walking into the wind.
8	39-46	42	Gale	Twigs broken from trees. Cars veer on road.
9	47-54	50	Severe gale	Light structure damage.
10	55-63	60	Storm	Trees uprooted. Considerable structural damage.
11	64-73	70	Violent storm	Widespread structural damage.
12	74-95	90	Hurricane	Considerable and widespread damage to structures.

Webpage: http://www.weather.gov/iwx
Twitter: @nwsiwx
Facebook: NWSNorthernIndiana

High Winds are usually associated with severe thunderstorms in Vermont. When winds are sustained at 31 to 39 mph for at least an hour or any gusts at 46 to 57 mph, the National Weather Service will issue a wind advisory. If winds reach 58 mph or more, the National Weather Service will issue a High Wind Warning. The National Weather Service has classifications for hurricane and tropical storm winds which can be found in the Saffir-Simpson Scale graphic found later on in this Plan as well as the Beaufort Wind Chart used to estimate wind speeds. High winds cause damage to property and personal safety, and are a concern for the electrical and telecommunication utilities in Washington County and throughout the state due to customer power outages and damage to infrastructure.



Hail is defined in the Vermont State Hazard Mitigation Plan as, "a form of precipitation composed of spherical lumps of ice. Known as hailstones, these ice balls typically range from 5-50 mm in diameter on average, with much larger hailstones forming in severe thunderstorms. The size of a hailstone is a direct function of the severity and size of the thunderstorm that produces it." Hail is known to cause devastating crop damage, property damage, and bodily injury if one is struck. NOAA has created a diagram to help visualize the size of hail in relation to common items like a softball or golf ball or coins as depicted below.

Similar to flooding, the extent of severe weather is not well documented in the Town of Fayston systematically but certainly impacts our community annually. The impact of severe weather is also often flood related. (see above). According to the Vermont State Hazard Mitigation Plan, thunderstorms are the most prevalent hazard event occurring in Vermont and "severe summer thunderstorm winds occur more frequently than any other natural hazard incident within Vermont." Precipitation associated with thunderstorms often causes flash flooding due to the large amount of precipitation over a short period of time coupled with the mountainous and steep terrain of Vermont. In Vermont, severe thunderstorms occur most often in the spring and summer. Damage from flooding is covered under that hazard threat of this Plan and can include property and structure damage, erosion, and loss of life. Flash floods cause rapid rises in water levels with little time to prepare but generally recede quickly. The worst flood event was the 1927 storm when the Winooski River in Montpelier was 12 feet above flood stage. Fayston has experienced flash flooding on numerous occasions over the years and has a high likely hood of this occurrence to continue. Lesser but more regular flooding occurs in Fayston as well.

Severe thunderstorms also produce high winds and hail. Both can damage crops, trees, structures, and property. High winds and hail tend to be localized but can cause significant damage and loss, especially to farmers and woodlot owners who can lose their whole crop in a single event. In Vermont, hail storms have seen hail the size of .75 inches up to 3 inches and hail the size of 1.5 inches is not uncommon. High winds during thunderstorms have been common in recent years in Washington County causing numerous downed trees and power outages. During 2000 – 2010, Washington County was impacted on four different dates by thunderstorms causing more than $200,000 in damage (Table 4-7 Vermont State Hazard Mitigation Plan 11/2013). In 1999, Tropical Storm Floyd passed through Vermont. The primary

impact from Floyd was downed trees and power lines due to high winds. Approximately 3,000 people were without power in the Central Vermont Region. About 7" of rain fell over parts of the region; however, flood impacts were offset by drought conditions from earlier in the year. There were no high wind impacts associated with the 2011 events of Tropical Storm Irene and the May 28, 2011 storm. The power outages are scaled at substations which are not set by jurisdictional lines. As a result, frequency and specific dates of power shortage/failure could not be attained. Downed trees can make transportation corridors impassable and cut power service to town residents and neighboring communities. Lightning, with the potential for strikes to the trees within the forested area, also threatens this resource.

Information to complete the history of occurrences was taken from the National Oceanic and Atmospheric Administration (NOAA), National Center for Environmental Information (NCEI), formally the National Climate Data Center, the FEMA Declared Disasters in Vermont database, the State of Vermont Hazard Mitigation Plan 2018 and 2023, and town records.

Hurricanes/Tropical Storms

Hurricanes and tropical storms are violent rainstorms with strong winds that have large amounts of rainfall and can reach speeds up to 200 mph. Hurricane season is between the months of June and November. These types of storms originate in the warm waters of the Caribbean and move up the Eastern seaboard where they lose speed in the cooler waters of the North Atlantic. Severe storm events can occur late spring and early summer as temperatures increase in the summer season. The frequency and intensity of hurricanes, tropical storms, and severe storms is expected to increase with climate change.

The extent of severe storms is not well documented in the Town of Fayston. The impact of storms is usually flood related. See flood extent description in flood section above. Wind extent from storms is not well documented as there is no monitoring station in Fayston.

High wind is defined as an event with sustained wind speeds of 40 m.p.h. or greater lasting for 1 hour or longer or an event with winds of 58 m.p.h. or greater for any duration. Thunderstorms can generate high winds and down hundreds of large trees within a few minutes. The following is a history of occurrences of documented wind events in Fayston. Estimates for wind are gathered from county wide data off the National Climatic Data Center website.

History of Occurrence: (Mad River Valley encompasses the towns of Waitsfield, Warren and Fayston)

Date	Event	Location	Extent
7/7/2023-7/21/2023	Vermont Severe Storms, Flooding, Landslides, and Mudslides	Statewide	DR-4720. IA: 3612 applications approved for almost $26million; obligated over $47million in PA and

Date	Event	Location	Extent
			$1.14million in HMGP.
12/22/2022-12/24/2022	Severe Storm and Flooding	Washington County	DR-4695
8/22/2021 and continuing	Vermont Tropical Storm Henri	Statewide	3567-EM-VT
10/31/2019-11/1/2019	Severe Storm and Flooding	Washington County	DR-4474
4/15/2019	Severe Storm and Flooding	Washington County	DR-4445
10/29/2017-10/30/2017	Severe Storm and Flooding	Washington County	DR-4356
7/1/2017	Flash Flood	Washington County	Heavy rain showers and thunderstorms moved across central VT delivering very heavy localized rainfall. DR 4330. $169k (AB), $10.3million (CH), Total PA (11.7million); HMGP $593k.
02/29/2016	Strong Wind	County Wide	Wind gusts of 35 to 45 MPH. Isolated to scattered tree limbs and power lines downed by wind.
10/07/2013	Strong Wind	State Wide	Reports of tree branches on utility lines in Washington County.
01/20/2013	Strong Wind	County Wide, State Wide	Winds in excess of 50 MPG. Numerous reports of tree or power line failures statewide. Estimated 10,000 without power statewide
10/29/2012	Hurricane/Superstorm Sandy	Statewide	15 to 30 MPH winds with frequent gusts in excess of 40 MPH. Scattered damage to trees. 35,000 residents statewide without power.
07/23/2012	Hail	Fayston	Quarter and larger size hail reported. 1.75” total.
8/28/2011 DR 4022	Tropical Storm, Flash Flood (TS Irene)	Fayston; Washington County	Mad River flood gauge at 19.07 feet; 10.07 feet above flood stage (flood stage is 9 feet)

Date	Event	Location	Extent
7/06/2011	Thunderstorm	Washington County	50 knot winds; 15,000 people in VT lost power
5/26/2011 DR 4001	Hail/Thunderstorms/Flash Flooding	Fayston/Irasville; Washington County	1" hail, 25,000 customers lost power in VT, 3-5" of rain Golf ball size hail along Butcher House Road in Irasville, causing minor dents in vehicles and siding. 1.75" total
8/9/2010	Thunderstorm/Wind/Hail	Fayston	50 knot winds
7/21/2010	Hail	Washington County (Mad River Valley)	1" Hail
7/18/2008	Hail	Mad River Valley	1" Hail, 30 knot winds
8/25/2007	Severe Storms	County Wide	55 knot wind gusts, 1" hail
7/9/2007 DR 1715	Hail, thunderstorms	Mad River Valley	Baseball sized hail
7/1/2006	Hail, thunderstorms	Mad River Valley	1" Hail, severe t-storms
6/19/2006	Severe storms	County Wide	50 knot winds, downed trees and power lines
9/29/2005	Severe thunderstorms	Mad River Valley	Downed trees and power lines, 35 knot winds
8/1/2005	Severe Storm	County Wide	1" hail, 55 knot winds
7/22/1999	Hail, Thunderstorms	Mad River Valley	1.5" hail, severe t-storms
6/27/1998 DR 1228	Severe Storms	County Wide	$2M in damages, 3-6" rain across county
6/17/1998	Severe Storms	County Wide	No Extent Data Available
7/15/1997	Severe Storms	County Wide	No Extent Data Available
8/4-6/1995 DR 1063	Severe storms, flooding	County Wide	Heavy rain, flooding – no NCDC/FEMA info
7/23/1990 DR 875	Severe Storms, flash flooding	County Wide	Heavy rain, flooding – no NCDC/FEMA info
5/19/1982	Thunderstorm winds	County Wide	56 knot winds
8/5/1976 DR 518	Hurricane Belle	Statewide	Gale force winds, 2 deaths
7/3/1964	Hail	County Wide	1.5" hail
9/22/1938	Hurricane	Statewide	Category 1 force winds

On Aug 28, 2011, Tropical Storm Irene hit Vermont and proceeded to deposit 4-5" of rain over Fayston. Total damages from the storm exceeded $150,000. The municipality requested $18,700 to repair road & bridge damage, $900 of which was paid out of municipal funds.

Roads that received the greatest damage were German Flats Rd and Route 17. These roads typically experience flooding during extreme rain events and were similarly damaged in the spring 2011 floods, but to a lesser extent. Culverts on German Flats Rd were previously upsized and replaced prior to Irene. One had to be replaced after Irene. Roads damaged in Irene are now open, but still need permanent repairs.

The Town is now focusing on upsizing all culverts up to new State standards and having hydraulic studies performed on culverts that are repeatedly flooding. Wind during Irene was not a problem.

Hazard	Location	Vulnerable Assets	Extent	Risk	Probability
Hurricane/ Tropical/ Severe Storms, High Winds, Hail	Town Wide for Wind impacts, German Flats Rd	Large trees, power lines, culverts/ Bridges, tall structures	~6" rain – TS Irene ; Mad River flood gauge at 19.07 feet; 55 knot winds, Baseball sized hail	Data gap – depends on severity $250,000 from Spring 2011 events	Medium

Winter Storms

A winter storm is defined as a storm that generates sufficient quantities of snow, ice or sleet to result in hazardous conditions and/or property damage. Ice storms are sometimes incorrectly referred to as sleet storms. Sleet is similar to hail only smaller and can be easily identified as frozen raindrops (ice pellets) that bounce when hitting the ground or other objects. Sleet does not stick to wires or trees, but in sufficient depth, can cause hazardous driving conditions. Ice storms are the result of cold rain that freezes on contact with the surfaces coating the ground, trees, buildings, overhead wires and other exposed objects with ice, sometimes causing extensive damage. Periods of extreme cold tend to occur with these events. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication. These accumulations of ice also make walking and driving extremely dangerous. Significant ice accumulations are usually accumulations of ¼" or greater.

The physical impacts of winter storms are town wide due to the expansive nature of winter storms. For the next plan update, Fayston will more closely monitor winter storms to determine the worst impacts possible on the Town. While snow and/or ice events occur on a regular basis during the winter months, an increasingly aging population, marked increases in those experiencing homelessness (or on the verge), and rising costs of infrastructure- compounded by an increase in the severity and frequency of storm events associated with the continued impacts of climate change; make severe storms a top hazard for Fayston.
One of the major problems associated with ice storms is the loss of electrical power. Major electric utility companies have active, ongoing programs to improve system reliability and

protect facilities from damage by ice, severe winds and other hazards. Typically, these programs focus on trimming trees to prevent encroachment of overhead lines, strengthening vulnerable system components, protecting equipment from lightning strikes and placing new distribution lines underground. Other major problems include closed roads and restricted transportation.

By observing winter storm watches and warnings, adequate preparations can usually be made to lessen the impact of snow, ice and sleet, and below freezing temperature conditions on the Town of Fayston.

Providing for the mass care and sheltering of residents left without heat or electricity for an extended time and mobilizing sufficient resources to clear broken tree limbs from roads, are the primary challenges facing community officials. Fayston should plan and prepare for these emergencies. That planning and preparedness effort should include the identification of mass care facilities and necessary resources such as cots, blankets, food supplies and generators, as well as debris removal equipment and services. Fayston Elementary and Municipal Offices are the shelters located in town. Additional shelters are located in the neighboring towns of Duxbury and Waitsfield. The State Regional American Red Cross Shelter for Central Vermont is located at the Barre Auditorium on Seminary Hill in Barre, VT and opens at the direction of the State Emergency Operations Center Watch Officer.

The following history of significant events has been gathered from Federal Disaster Declarations, the NOAA Storm Events Database & Property Damage estimates from the 2018 Vermont State Hazard Mitigation Plan.

Date	Event	Location	Extent (Magnitude)	Impact
02/01/2015 – 02/28/2015 UNDECLARED DISASTER	Cold/Wind Chill	Countywide Statewide	Average temp was 13 to 17 degrees below normal statewide.	Statewide, damage to infrastructure, frozen water mains, etc. totaled at least $1 million.
01/07/2015 – 01/08/2015	Extreme Cold/Wind Chill	Countywide , Statewide	Lows of 15-25 Degrees below 0 in Washington County.	No impact information available.
Dec. 9-13, 2014 DR 4207	Severe Winter Storm	Countywide	heavy, wet snow, 23” in Warren	175,000 power outages statewide
March 7, 2011	Winter Storm	Countywide	18+” snow in Fayston, 26” snow in Waitsfield, ice accumulation to ¼”	nearly all school districts closed, along w/local/state gov’t
Feb. 23, 2010	Winter Storm	Countywide	32” Snow in Warren, 31” in	50,000 w/o power cent. & S. VT

Date	Event	Location	Extent (Magnitude)	Impact
			Waitsfield	
Feb. 14, 2007	Winter Storm	Countywide	29” snow in Waitsfield	
				$237,192.99
				Countywide
Oct. 25-26, 2005	Winter Storm	Countywide	8-14” snow countywide, gusty winds	snow heavy foliage took many trees, thousands w/o power
January 4, 2003	Winter Storm	Countywide	17” snow in Waitsfield	Numerous minor traffic accidents, $49,523.81
March 22-23 2001	Winter Storm	Countywide	20” snow in Waitsfield	power outages reported and a number of accidents
March 5-7, 2001 DR 3167	Snowstorm	Statewide	16” snow in Northfield	Many schools closed, many towns postponed Town Meeting Day
December 31, 2000	Winter Storm	Countywide	17” snow in Waitsfield	a few auto accidents
January 6-16, 1998 DR 1201	Ice Storm of ‘98	Countywide between 1500-2500’ elevation	<1/2” ice	much tree damage, power lines snapped, many brief power outages, numerous auto accidents

Hazard	Location	Vulnerable Assets	Extent	Impact &/or Risk	Likelihood
Winter Storm/Ice Storm	Town Wide	Utilities, trees, roads, old/under insulated structures	18+” snow in March 2011 storm, 13-17 degrees below normal temps. for 1 mo.	5-10% damages –routine emergencies	High

6.3 High Winds

Strong Wind can occur alone, such as during straight-line wind events, but more often it accompanies other natural hazards, including severe thunder and/or winter storms.

FEMA’s National Risk Index defines Strong Wind as damaging winds that exceed 58 mph. Strong Wind poses a threat to lives, property, and vital utilities primarily because of flying

debris or downed trees and power lines.

From 1996 to 2022, wind events caused more than $1.270 million in property damage in Washington County, with $450,000 due to an event in December 2022. Downed trees within the road right-of-way are the root cause of many power outages. Roads that pass through dense wooded areas are prone to downed trees, which can lead to fallen power lines.

Strong Wind Hazard History

These are the most up to date significant events impacting Fayston. Federal declarations are depicted in **bold**. Damages are to Washington County.

12/23/2022: 50-60+ wind gusts: $450,000
10/30/2017: 40 mph wind: $250,000
2/26/2010: 55 mph wind: $15,000
2/17/2006: 37 mph wind: $10,000
9/29/2005: 35 mph wind: $50,000
11/13/2003: 35 mph wind: $10,000
10/15/2003: 50 mph wind: $10,000
3/10/2002: strong wind: $5,000
12/12/2000: strong wind: $5,000
3/28/2000: strong wind: $5,000
9/17/1999: strong wind: $75,000
11/23/1998: strong wind: $10,000
2/22/1997: 50 mph wind: $15,000

Power outages are the main reason for disrupting communications, which are crucial in times of crisis. For example, the loss of phone service is of particular concern for more remote homes, vulnerable populations, and seasonal residents. Landline phones that have been converted from copper wire to fiber rely on an in- home battery back-up. The battery life is typically less than eight hours, whether the phone is used or not. Though many residents use cell phones, service in Fayston is spotty, further complicating the problem of contacting emergency services during power outages.

Telecommunications are also needed for warning systems before a disaster, as well as for response during and recovery after. During a disaster, municipal response is managed by the local Emergency Operations Center (EOC), this would include all communications – from phone calls to internet browsing and 2-way radio.

Power outages are also particularly problematic for those who are electrically dependent requiring electricity to support refrigeration for life-saving medication, medical equipment, or the like. Medicare data, updated monthly, includes at risk individuals over 65+ and residents with disabilities of all ages is featured in the Empower Program; Fayston's zip code includes 708 beneficiaries, 11 of which are considered electricity-dependent (https://empowerprogram.hhs.gov/empowermap).

In addition to power outages, downed trees during strong wind (and heavy snow/ice) events can damage buildings and other property and in rare cases result in fatality. Sixty-six percent (66%) of Community Survey respondents reported having seen areas in the community damaged during a past severe weather event. The most common type of damage that survey respondents reported seeing was downed trees. Fifty-seven percent (57%) of Community Survey respondents reported having experienced damage during a

past severe weather event. Roof and other property damage from downed trees were specifically noted by several respondents.

Environmental impacts are predominantly tree damage. Strong wind events with associated power outages can have a short-term impact on the local economy due to business closures. This can in turn have an adverse impact on local tourism and recreation. Wind events with associated road closures from downed trees can also have a short-term impact on the local economy due to commuter delays.

6.4 Land/Rockslide

A landslide is the sliding of a large mass of rock material, soil, etc., down the side of a mountain or cliff. Landslides can be caused by rainstorms, fires, alternate freezing or thawing and/or by the steepening of slopes by erosion or human modification.

In 1897 Fayston experienced a great landslide on the east side of Lincoln Mountain at Fayston's very southern end. According to Fayston's Historic Sites and Homes Tour quoted in the Town Plan "after a copious shower which lasted the whole night and most of the early morning, a heavy roaring sound was heard for a long distance and for a long time. Those living near "Slide Off Brook" soon saw a tremendous mass of floating trees, rock and mud coming down the stream. It cleared a wide channel in its course as it went on its way with a resistless current." The area of this historic debris flow is depicted in red on the attached Surficial Geologic Map of the Mad River Watershed – Northern Sheet (2007).

History of past occurrences:

- July 6th, 1973 –Statewide Disaster Declaration #397 for Severe Storms, Flooding, Landslides – Unknown if Fayston Impacted
- July 14, 1897 – Slide Brook landslide
- 1812, 1827, 1840 Historical Accounts of Landslides terminating in Fayston on the eastern slope of the Green Mtns. ("Historical Sketch" by Anna Bixby Bragg for Fayston Centennial Celebration 1898)

Four key landslides are of primary concern to the Town of Fayston. Each is detailed in the table below:

Slide Location	Issues
Number Nine Road	Slump/erosion along the road. The Town has been patching the roadway damage for around 15 years. The erosion has been more gradual than tied to a severe isolated event. No waterways involved. The surficial geology of this area primarily consists of the thin till, which is a layer of mixed material that was laid down by glacial ice. Number Nine Road traverses a 25% grade near the intersection with Route 17 and the municipal road foreman has witnessed a 2-foot drop in the road level in the past couple of years. A

Slide Location	Issues
	sudden rainstorm or alternate freezing and thawing could create a landslide resulting in the loss of a portion of Number Nine Road and extensive property damage to the private residence located down slope. Town has also solicited bore testing and engineering solution recommendations from an engineering firm. Road Foreman believes the fix is likely to be outside the town Right of Way. The roadway has been base ground and resurfaced within the last 10 years.
Bragg Hill Road	Stream bank of Mill Brook is eroding into the stream, and threatening to undermine Bragg Hill Rd. The erosion has 60-80 feet to go before it hits the travel lane.
Murphy Road above address 353 Murphy Rd.	French Brook is eroding its bank and undermining the roadway. The very edge of the travel lane is starting to drop. The erosion has been more gradual and is not tied to a severe isolated event. The erosion creeps up to the roadway, the town dumps more material to rebuild the shoulder, it erodes and the process keeps repeating.
North Fayston Road	Hillside on private property abutting municipal road ROW has been depositing material along roadside. Town has repeatedly had to clean the shoulder ditch out to prevent material from filling into the roadway. Threatens to block roadway if hillside lets go, which happened once, perhaps two decades ago. Since that incident no events have cause damage warranting repair to the roadway. The exact number of structures served by this route is yet to be determined, however all residences do have other routes of access available. No waterways involved.

Several other roads and areas in Fayston are slumping due to erosion and undermining of road bases. These areas are: North Side of Tucker Hill area – under Hoop's house, "dark corner" of North Fayston Rd, Piper property on Randall's Rd, section of Mill Brook Trail, hill across from the Hyde Away, Barton Rd, Kew Vasseur, Old Mansfield Rd, etc. The extents of the possible landslide areas are unknown as extensive soil and geological studies have yet to be performed. Historical data for landslides in Fayston is limited. For the next plan update, Fayston can monitor the current possible slide areas and further investigate soil and geological maps of the known areas to better understand the risk each area poses. Additionally, building an inventory of key areas and notable risks (natural and man-made) is being considered, as is a digital survey, and a review of the town permitting process regarding high risk actions and areas.

Hazard	Location	Vulnerable Assets	Extent	Risk	Probability
Landslide	Number Nine Road, North side of Tucker Hill, Dark corner N. Fayston	Road infrastructure & private residence located at 891 Mill Brook Road, culverts bridges, roads, trails	1897 slide – 330 feet average width x 80 feet deep - 4	Unknown – data gap	Medium

Hazard	Location	Vulnerable Assets	Extent	Risk	Probability
	Rd, between Rte 17 and Bragg Hill Rd, Mill Brook Trail, across from Hyde Away, Randall's Rd		miles long and 2400 ft drop in elevation		

6.5 Invasive Species

Invasive species are plants, animals, and other organisms that are introduced to a non-native ecosystem and also cause harm to the environment, economy, or human health. They are primarily spread by human activities that are introduced intentionally for reasons like agriculture, medicine, sport, decoration, land stability, and biological control. These organisms often have no natural predators and can out-compete native species, greatly reducing biodiversity and altering ecosystems. Such invasive exotic species pose a number of environmental, economic, and human health threats. Invasive species already present in the Mad River Valley is extensive and includes knotweed, gloss buckthorn, honeysuckle, Japansese barberry, winged euonymus or "burning bush", purple loosestrife, and wild chervil, as well as several insect species that will likely have a transformative effect on Fayston forests including the Asian longhorn beetle, emerald ash borer, hemlock wooly adelgid, and spongey moth (Lymantria dispar) . There have been marked changes in the prevalence of these in Fayston since the last update, including:

- a potential infestation of emerald ash borer at the cemetery,
- a severe economic threat to maple from the spongey moth,
- increasing need to address knotweed and staunch its spread in roadside ditches, private homes, municipal property.

Increased survivability of forest pests, including the Emerald Ash Borer, is a concerning impact of warming due to climate change. Invasive species can decimate Vermont's tree populations, not only shifting the composition of our forest but also creating additional debris that may exacerbate the impacts of other hazards, such as flooding and wildfire (Vermont State Hazard Mitigation, X).

6.5.1 Knotweed

Fayston has noted an increasing infestion of Knotweed (a highly invasive species) along Fayston's roads and streams, spread by road machinery and stream currents. Knotweed continues to spread in Fayston as it does across Vermont's riverbanks uncontrollably, negatively impacting native insect populations as well as the birds, fish, and mammals that rely on them as a food source. Knotweed also undermines the stability of streambanks with its shallow root system exacerbating fluvial erosion. This further undercuts ongoing road maintenance efforts focused on Fayston's steep roads, which can inadvertently allow for quick spread of the knotweed's rhizomes and stems if not addressed properly and quickly. Fayston's Conservation Commission (FCC) has put hundreds of hours into trying to manage knotweed, but a more concerted and collaborative effort, akin to that in Warren and Waitsfield, is required. Warren

and Waitsfield have learned a great deal about how to successfully eliminate knotweed patches and the town can learn from their experience. With funding, the FCC will conduct an inventory of all upland knotweed patches, determine priority for removal based on the feasibility of elimination (i.e., resources won't be wasted if the patch is a lost cause!, organize volunteers, and (perhaps) fund a summer youth crew to remove the highest priority patches. Furthermore, the management of knotweed should be considered in the Roadwork budget and workplan. Lastly, resources and education can be made available to homeowners managing invasive spread to reduce cost to residents and limit damage.

Hazard	Location	Vulnerable Assets	Extent	Risk	Probability
Invasive Speci (Knotweed focus)	Streambanks, roadside ditches and drainage	Roads and culverts, streams, private homes	Not yet documented	Unknown – data gap	High

Chervil and Giant Hogweed, among other invasive species, will also need to be inventoried and actively managed as patches have been identified in town.

Chervil

Wild Chervil is a weed belonging to the parsley family (Apiaceae). It is becoming a serious problem in hay fields and pastures in Central Vermont. Its 3-4-foot height, fern-like leaves, and white flowers arranged in a compound umbel pattern are quite pronounced during late May to early July. It is commonly found along roadsides and in meadows in Central Vermont.

Figure 18: Wild Chervil, Anthriscus sylvestris
Photo Credit: VT Urban & Community

Over the past five years, this weed has spread rapidly. It propagates by both seed and by lateral budding at the top of the root. It competes aggressively with forage crops for light, water and nutrients and often kills off the surrounding vegetation by shading it. It is particularly damaging to forage crops, but it has not been a problem in cultivated or tilled fields.

Wild chervil is not poisonous to livestock and, although it is unpalatable when large, animals will graze it effectively when small. The stems are very slow to dry and, if harvested in forage, will reduce crop quality due to molding. This weed also serves as a host for the parsnip yellow fleck virus that infects carrots, celery, and parsnips.

Wild chervil is very difficult to control because of its extremely deep taproot and tolerance to selective herbicides. Rosettes and immature plants can be controlled by digging out the roots. Mature plants must be removed below the root crown to prevent resprouting.

Giant Hogweed:

CAUTION: The sap from this plant is dangerous. If it gets on your skin and you are exposed to the sun, it can cause severe burns. Always wear thick gloves and long pants and shirts.

Figure 19: Giant Hogweed, Heracleum mantegazzianum

Giant hogweed is designated as a Federal Noxious Weed, because it produces sap that causes skin sensitivity to UV radiation and leads to blistering and severe burns. Due to its size and rapid growth, giant hogweed is an aggressive competitor capable of displacing native plants. It dies back during the winter months, leaving bare ground open to erosion on riverbanks and steep slopes.

Giant hogweed is native to Europe and Asia, but it was first introduced into the United States in 1917 for ornamental purposes. It can invade a variety of habitats but prefers moist, disturbed right-of-ways. It sprouts in early spring, and flowers r flowering, leaving tall dead stalks. It forms perenating buds which lie dormant through winter until the next growing season. It reproduces by seed dispersal only, not vegetatively. Each flower head contains approximately 1500 seeds, which can remain viable for up to ten years.

Manual treatment can be moderately to highly effective for giant hogweed including both mechanical and chemical management. Giant hogweed leafs out very early compared to most native vegetation, thus making it easy to detect. It is beneficial to manually remove this plant before it begins flowering later in the growing season.

6.5.2 Invasive Tree Pests

Fayston is particularly concerned about invasive tree pests, including the Asian longhorn beetle, emerald ash borer, hemlock wooly adelgid, and spongey moth (Lymantria dispar). The community values its forests for many reasons that could be threatened by poor tree health or die offs that these pests can cause. The community values the forests for its ecological values, including water quality and habitat for flora and fauna. The forest is also a key recreational asset tied to Fayston's resort and recreational economy. Some businesses in the community still operate as timber producers or tapping maple trees for maple products.

Invasive tree pests have been documented sporadically in Fayston, and they have been documented in other parts of Vermont and surrounding states. The magnitude of infestation can be measured in acres affected or cordage of wood from tree die off. Fayston would like to better quantify its risk to this natural hazard. The table below provides a profile of Fayston's forest tree species composition. This gives some indication of the amount of forest susceptible to pests that target specific species. The Emerald Ash Borer targets ash, and the Hemlock Wooly

Adelgid, hemlock. Asian longhorn beetle has some preference for maple, but will infest any hardwood, except oak. The profile is based on Fayston's 2007 Natural Heritage Inventory.

Table 3-7 Summary of Locally Significant Upland Natural Forest Communities

Natural Community	Number of Sites	Total Acres
Hemlock Forest	2	256
Hemlock-Northern Hardwood Forest	8	222
Montane Spruce-Fir Forest	13	1615
Montane Yellow Birch-Red Spruce Forest	13	2293
Montane Yellow Birch-Sugar Maple-Red Spruce Forest	1	37
Northern Hardwood Forest	3	5662
Red Oak-Northern Hardwood Forest	1	9
Red Spruce-Northern Hardwood Forest	3	14
Rich Northern Hardwood Forest	1	99

Source: 2007 NHI.

Emerald Ash Borer

The emerald ash borer was first detected in Vermont in 2017 and as of January 2021 EAB had been confirmed in 13 Vermont towns, 7 of which are in Washington County: Orange, Plainfield, Barre, Groton, Montpelier, East Montpelier, Stamford, South Hero, Bristol, Bennington, Peacham, Cabot, and Woodbury.

Figure 20: Emerald Ash Borer Agrilus planipennis. Photo Credit: VT Urban & Community Forestry

EAB overwinters as larvae under the bark of ash trees where it feeds on the inner bark tissue. Once infested, ash trees rapidly decline and die in 1-4 years of exhibiting symptoms, if not treated, and may become a hazard to public safety (standing dead trees that may impact structures and infrastructure, add to riverine debris, and to the accumulation of debris contributing to fire risk). EAB is known to be established in 34 states and four Canadian provinces. It is responsible for widespread decline and mortality of hundreds of millions of ash trees in North America. Three species of ash trees - Green Ash (Fraxinus pennsylvanica), Black Ash (Fraxinus nigra), and White Ash (Fraxinus americana) – are found in Vermont and make up approximately 5% of Vermont's trees, making the State's forests vulnerable to this pest.

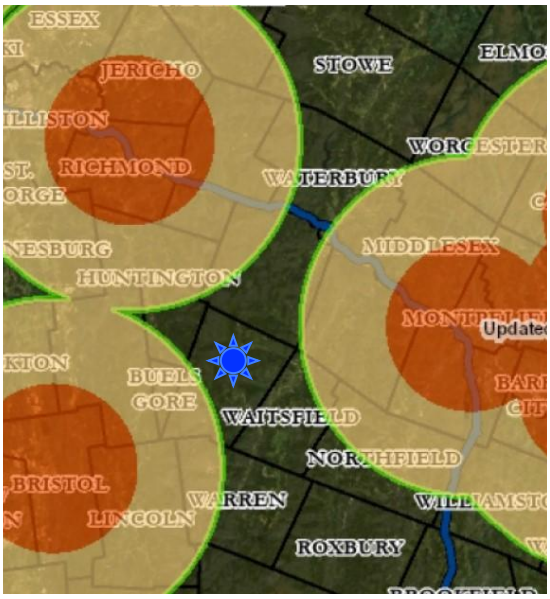
Figure 21 movement under the bark of an ash tree. Photo Credit: VT Urban & Community Forestry.

Infestations could have significant ecological and economic impacts. There are no proven means to control EAB in forested areas, though individual trees can sometimes be effectively treated. An inventory will facilitate realistic management of EAB by prioritizing removals, identifying trees suitable for treatment, and budgeting for tree treatment or removal. Upon completion of an inventory, municipalities are urged to transition this collected data into an Ash Tree Management Plan where they identify the most appropriate approach to take including removing the tree, having it treated, or allowing it to succumb to EAB and fall on its own.

Vermont municipalities should understand their public ash tree population, including ash trees:

- In the right-of-way in town centers (street trees) and in high-use areas
- In parks, town greens, or other town-owned recreational areas
- In the right-of-way on rural roads
- In natural areas, i.e. town forests, that could impact public safety if diseased or dying, such as those along trails
- On private land that impact town properties or the town right-of-way, or are a priority for preservation

As shown in Figure 22, (orange represents confirmed infested areas and yellow represents high risk areas), the Town of Fayston is not in the confirmed infested area but the southwest corner of is within the high-risk area, defined as between 5 and 10 miles in radius from a confirmed EAB infestation, surrounding a hotspot in Bristol (2 towns over to the west-southwest). There are several hotspots surrounding Fayston although it appears from 2019 to 2020 there may be some improvement in the hotspots in Bristol and Richmond. Fayston Tree Warden Martha Veslka has begun calling meetings, begun efforts to organize an ash tree inventory, and could developed a tree plan.



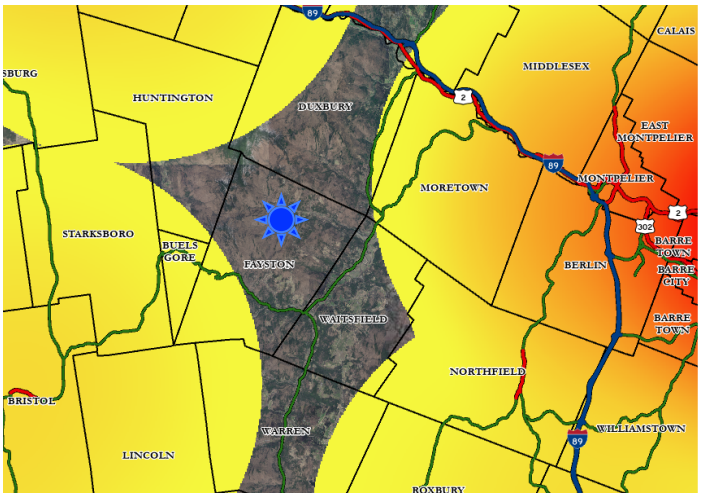


Figure 22: Close up from a Map of EAB Infested Area, showing infested areas in orange, and high risk areas in yellow) in 2019 and 2020.The blue star is Fayston. Source: ANR Atlas.

Adult EAB are estimated to travel between 1 and 2 miles per year on their own but are moved around the landscape much faster by the transportation of infested wood. Due to the proximity of Fayston to a known infestation, it is likely ash trees in Fayston will be infested within the next few years without concerted efforts including an inventory, management plan, or the like. Additionally, as stated above, climate change exacerbates impacts such as increased stress on native species and changes in climate more suitable for southern or invasive species.

Hemlock wolly adelgid is an invasive pest that feeds on its namesake the hemlock trees, first noted in Vermont in 2007. Since, the spread of the wolly adelgid has largely been limited to the southern counties due to Vermont's harsh winters. Again, with increasing temperatures, more adelgids are able to survive the winter (e.g. in 2016-2017) and thus there is a significant concern concerning the impact of these and other invasive species in the near future (see the 2023 Vermont State Hazard Mitigation Plan for further discussion).

> *Increases in average annual temperatures will force [invasive] species to adapt. Potential impacts on forests include increased stress on native tree species, shifts in forest composition due to a climate more suitable for southern species, and the potential for isolated species having a reduced ability to migrate and respond to climate change. Of particular concern are the Asian longhorned beetle (not yet detected in Vermont), emerald ash borer and hemlock wolly adelgid, which have killed millions of trees across the U.S. and Canada.*
>
> --2018 State Hazard Mitigation Plan

Fayston acts independently and in collaboration with others including other Mad River Valley towns, state Agencies, nonprofit organizations like the Friends of the Mad River and the The

Nature Conservancy of Vermont to better understand the impacts and appropriate mitigation strategies. Fayston maintains management for each its Town Forests (e.g. 2020 Ecological Assessment and Natural Resouces Inventory of Boyce Hill Town Forest) and serves on 16 organization Steering Committee focused on the intersection of conservation and recreation. The Conservation Commission will continue to integrate their efforts into Town Planning and build a comprehensive and "model" approach to managing invasive species, an expansion of knotweed inventory and control efforts and to study wildlife corridors in collaboration with the Conservation Commissions of both Waitsfield and Warren. The Vermont Urban and Community Forestry program offers annual grants to support the development of sustainable urban and community forestry programs at the local level. This funding is considered seed money to help communities care for tree canopy and foster tree stewardship by taking the necessary actions to develop and sustain a community-wide tree program. Furthermore, Central Vermont Regional Planning Commission can provide support and technical assistance to conduct an inventory and/or develop an Emerald Ash Borer Management Plan in the future.

Hazard	Location	Vulnerable Assets	Extent	Risk	Probability
Invasive Tree Pests	Forest stands of susceptible tree species	Ecological and recreational assets, timber stands and sugarbushes.	Not yet documented	Unknown – data gap	Medium

Invasive Species Hazard Risk Assessment					
Hazard	*Location*	*Vulnerability*	*Extent*	*Impact*	*Probability*
Invasive Species	EAB and other tree pests: forest stands of susceptible trees Knotweed: roadside, stream banks	Roadways and culverts; forests and recreational assets, utility ROW,	Peak mortality from EAB infestation expected between years 11 and 16. Likely that ash trees will start to die w/in 5 years. Knotweed is already spreading uncontrollably along roadways and streambanks. Patch by gravel pit should be limited so gravel does not act as a conduit for further spread throughout town.	Cost of ash tree removal unknown; loss of recreation and sugaring assets would be severe. Estimated that 95% of ash trees will die after 15 years with peak mortality in years 11 and 16 (based on mortality rates seen in EAB infestation in Midwest)	Highly likely; typically takes 3 years after detection for ash trees to start dying; Town will likely see mortality within 5-10 years. High

6.6 Infectious Disease

The Vermont State Hazard Mitigation Plan states:

> *"an epidemic emerges when an infectious disease occurs suddenly in numbers that are in excess of normal expectancy. Infectious disease outbreaks put a strain on the healthcare system and may cause continuity issues for local businesses. These outbreak incidents are a danger to emergency responders, healthcare providers, schools, and the public. This can include influenza (e.g. H1N1), pertussis, West Nile virus, and many other diseases*." The World Health Organization defines pandemic as "*an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people"*[5].

The novel coronavirus (SARS-CoV-2) was first detected in China at the end of 2019 and by 2020 became a global pandemic. The disease the virus causes has been named "coronavirus disease 2019" (abbreviated "COVID-19").

Major dates in the COVID-19 pandemic include:

- December 2019: First human cases of COVID-19 reported by officials in Wuhan, China
- January 21, 2020: U.S. Centers for Disease Control (CDC) confirms first case of COVID-19
- February 2020: United States declares public health emergency due to COVID-19 outbreak.
- March 7, 2020: Health officials announce first case of novel coronavirus in Vermont
- March 11, 2020: State Emergency Operations Center (SEOC) partially activates in response to COVID-19
- March 11, 2020: World Health Organization (WHO) confirms COVID-19 is now a pandemic
- March 13, 2020: COVID-19 is declared a national emergency
- March 13, 2020: Governor Phil Scott declares a state of emergency in Vermont
- March 18, 2020: Mad River Valley Emergency Response Team is
- March 13th-15th, 2020: The Fayston Town Office closed to the public. All town meetings are being held remotely.
- March 24, 2020: Governor Scott enacts a 'Stay Home, Stay Safe' order directing closure of in-person operations for all non-essential businesses, requiring remote work if possible, and directing residents to reduce trips outside the home to limit human-to-human contact.
- April 10, 2020: Stay Home, Stay Safe order extended to last until May 15, 2020.
- April 17, 2020: Governor Scott issues phased "restart" plan
- July 14th, 2020: Fayston Selectboard approves "Face Coverings Now Required" document.
- October 20th, 2020: Fayston Selectboard approves Employee COVID-19 Screening and Process.
- January 27, 2021: Vaccinations begin for Vermonters age 75+
- April 6, 2021: Governor Scott releases Vermont Forward Plan- phased reopening guide
- April 19, 2021: Vaccinations for all

[5] https://www.who.int/bulletin/volumes/89/7/11-088815/en/#:~:text=A%20pandemic%20is%20defined%20as,are%20not%20considered%20pandemics.

established to support local community, organizations, manage volunteers and help establish an emergency management chain of command.

Vermonters age 16+ open
- June 15, 2021: State of Emergency expires and is not renewed.
- February 26, 2022: The Mask Rule is lifted for the Town of Fayston

As of February 11th, 2023 there have been:

- Statewide: 148,173 cases, 889 deaths (with 3,304 cases and 21 deaths pending validation respectively)
- Washington County: 14,223 cases; 80 deaths
- Fayston: town level data not available

As shown in Figure 23, cases in Washington County increased sharply in November and December 2021, plateauing in April 2021, and beginning to climb again in Summer 2021, resulting in a massive spike in early 2022. Individuals 60+ are especially vulnerable to pandemics including COVID-19., while Vermonters of color, Vermonters working in Food Processing, Food Manufacturing, Agriculture Workplaces, those living in long term care facilities, correctional and detention facilities, etc. (VT State Health Department, Data Briefs and Published Articles).

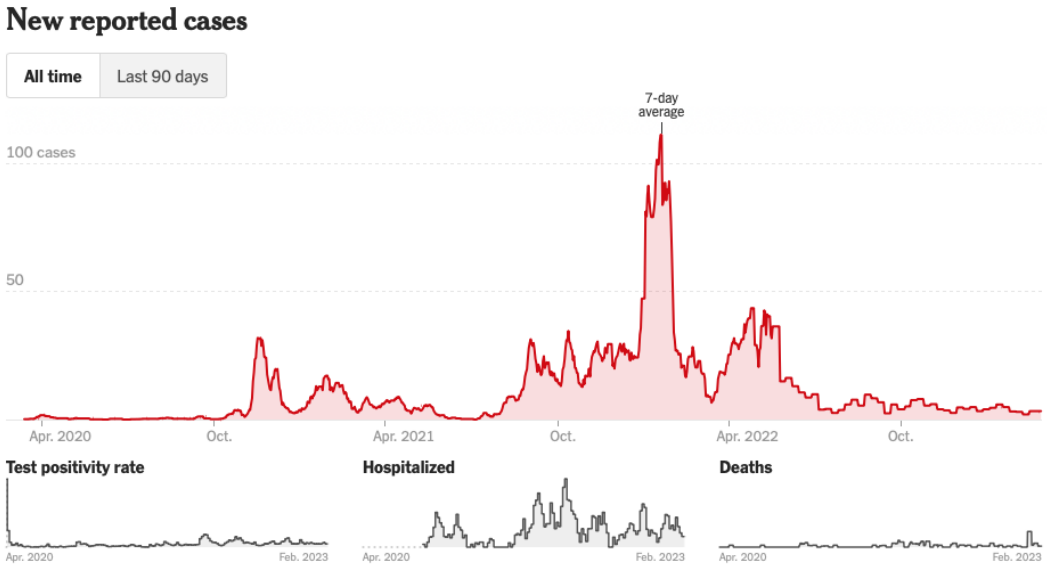


Figure 23 Washington County, Vermont COVID-19 Cases Tracker (NYTimes)

As shown in figure 24, 54% (1067) of COVID-19 cases in Washington County have been in residents age 40 or younger, while 47% of cases have been in residents age 40 or older (as of 2021, the dashboard is no longer operable)

To mitigate impacts from COVID-19, the Town implemented several policies and procedures including:

Resident Socioeconomic Support

- Connected residents to resources including hosting links to the Vermont COVID-19 Resource List and CARE Program (Citizen Assistance Registration for Emergencies), on the main page of the Town website.
- Co-established Mad River Valley Emergency Response Team to support local community, organizations, manage volunteers and help establish an emergency management chain of command.

Changes to Town Services

- Closed the Town Office as needed, adapted to provide remote and hybrid meeting options, developed emergency protocols for town meetings, elections, staff, etc.
- Purchased Zoom license to allow Boards, Commissions, and Committees to meet remotely
- Upgraded the Town website, provided updates and resources on Front Porch Forum and via a town email listserv weekly or as often as needed (Emergency Management Director)
- Ordered test kits for distribution to residents free of charge.
- Improved digital access to Town records to allow virtual handling of record requests and eliminating need for direct contact with Town Office staff
- Installed Wi-Fi hotspot to provide residents with point of access for telehealth and remote learning
- Attended Governor Scott's bi-weekly press conferences, weekly State Emergency Operations Center (SEOC) briefings, and providing updates to residents via the Town website on the current health and safety guidance from the Vermont Department of Health and the Governor
- Sanitized Town Garage and implemented health and safety protocols for Road Crew

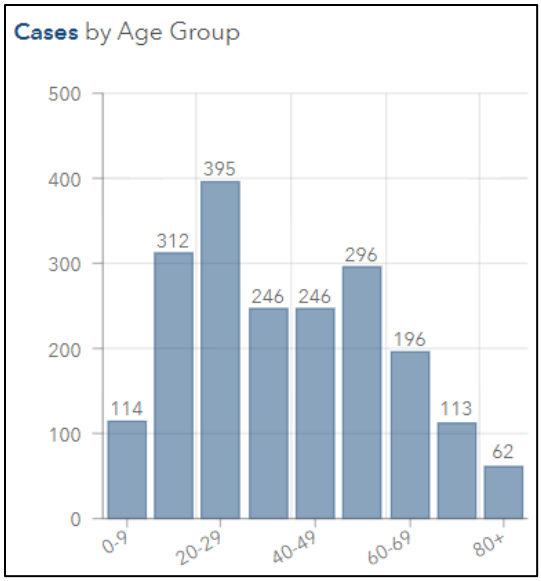


Figure 24 COVID-19 Cases in Washington County by Age Group. Source: VDH COVID-19 Public

The scale and complexity of COVID-19 has not been seen in this country since the 1918 Spanish Flu. With a major pandemic, the hazard to Fayston is its effect on individuals, vulnerable populations, the medical system, and the economy. The current evolving situation makes it

impossible at this time to fully understand and capture short and long term impacts in this LHMP. Some impacts noted by the LHMP Planning Team include:

- Food insecurity – in addition to some proximate grocery stores offering curbside pickup, neighborhoods coordinated shopping trips amongst themselves. Additionally, mutual aid networks and non-profit organizations have delivered food and supplies to multiple households.
- Changes/reduction in Town services due to social distancing and health and safety requirements, as noted above (furloughed Road Crew staff for example)
- Potential impacts on town revenue due to loss of income - unknown at this time.

Pandemic Hazard Risk Assessment					
Hazard	*Location*	*Vulnerability*	*Extent*	*Impact*	*Probability*
Pandemic	Town wide, County wide, state wide	Seniors, housebound residents, low-income population (more likely to experience food insecurity)	Severe Statewide: 148,173+ cases, 889+ deaths Washington County: 14,223 cases; 80 deaths	Unknown at this time; may impact tax revenues in FY22 and FY23.	Unknown; may reoccur seasonally

6.7 Drought

Drought is a period of unusually dry weather that persists long enough to cause problems, such as crop damages or water shortages (Vermont DEC). As noted in the State Hazard Mitigation Plan, "*droughts are a complex phenomenon that are difficult to monitor and assess because they develop slowly and cover large areas."* The State Plan further states, *"…even though the state usually has adequate rainfall, droughts occasionally occur…moderate and mild droughts are much more common…In general, severe droughts are not frequent occurrences in Vermont."*

There are four types of drought[6]:

- **Meteorological**: a reduction in rainfall from a normal precipitation pattern in regard to the amount, intensity, or timing of the event as well as changes in the temperature, humidity, and wind patterns (United States defines meteorological drought as receiving less than 2.5 mm of rainfall in 48 hours). Meteorological drought is the first drought stage detected.
- **Agricultural**: deficient moisture conditions that cause a lasting effect on crops and non-natural vegetation
- **Hydrological**: related to the effects of decreased precipitation on surface or subsurface water supply. It is the last stage of drought and is lagged behind meteorological and agricultural drought because water infiltrates down to the groundwater during the latter portion of the hydrological cycle.
- **Socioeconomic**: what happens when the consequences of the drought start to affect the socioeconomic sector; occurs when the demand for an economic good is greater than the

[6] http://drought.unl.edu/DroughtBasics/TypesofDrought.aspx

available supply due to weather-related drought (examples: water, hydroelectric power, food grains, meat, dairy, etc.)

- **Ecological**: a prolonged and widespread deficit in naturally available water supplies — including changes in natural and managed hydrology — that create multiple stresses across ecosystems.

> *"Vermont has a highly variable, unpredictable climate. Droughts, while low frequency hazards, are of serious concern to the population of Vermont. It is often difficult to recognize the onset of a drought during its preliminary stages, and together with Vermont's variable climate can lead to the disregard for the seriousness of an oncoming drought. Even though the State usually has adequate rainfall, droughts occasionally occur."*
>
> 2018 State Hazard Mitigation Plan

The severity of a drought depends on the duration, intensity, and geographic extent of the water shortage, as well as the demands on the area's water supply. The USDA rates droughts from D0–D4, depending on the severity of the drought, the amount of time it will take for vegetation to return to normal levels, and the possible effects of the drought on vegetation and water supply (Figure below). Additionally, the state SHMP states that due to climate change, by the end of the century, short term droughts could occur as much as 1 time a year in some places.

Category	Description	Possible Impacts
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures Coming out of drought: some lingering water deficits pastures or crops not fully recovered
D1	Moderate Drought	Some damage to crops, pastures Streams, reservoirs, or wells low, some water shortages developing or imminent Voluntary water-use restrictions requested
D2	Severe Drought	Crop or pasture losses likely Water shortages common Water restrictions imposed
D3	Extreme Drought	Major crop/pasture losses Widespread water shortages or restrictions
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses Shortages of water in reservoirs, streams, and wells creating water emergencies

Figure 25: Drought Classification. Source: United States Drought Monitor

Droughts can cause localized deficiencies in water, leaving wells dry, causing crop damage, and causing restriction on water usage. As shown below in Figure 12, Washington County has experienced drought at DO (abnormally dry or above) almost every year since 2015. In 2017,

7% of Washington County was at D2-D4 level. Since 2000, the longest duration of drought in Vermont lasted 45 weeks, from June 21, 2016 to April 25, 2017. The most intense period of drought occurred the week of September 29, 2020, where 29% of Vermont was at level D2 (United States Drought Monitor). In November 2020, ten Vermont Counties, including Washington County, were designated as "primary natural disaster areas" by the United States Department of Agriculture as a result of the 2020 drought[7]. Specific impacts in Fayston are unknown.

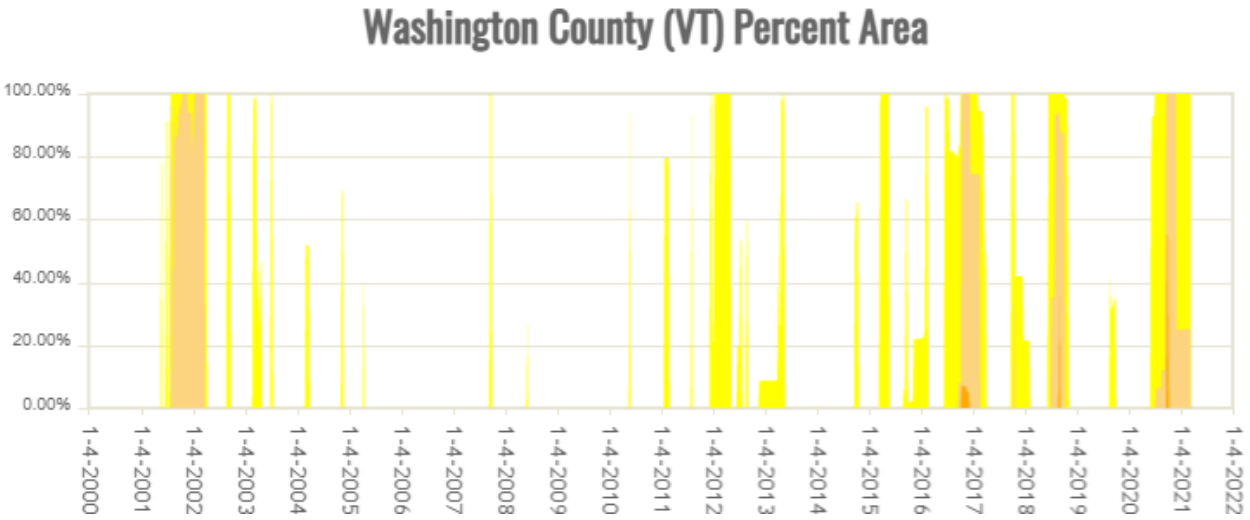


Figure 26: Washington County Drought over Time. Source: United States Drought Monitor

In consultation with Vermont Emergency Management, the Vermont Agency of Natural Resources developed a Drought Plan in response to the 2001-2002 drought to guide its activities in response to droughts and extended periods of dry weather. The plan outlines operating procedures, responsibilities of various programs, and sequence of actions to be followed based on the severity of the situation. This plan was updated for inclusion in the 2018 State Hazard Mitigation Plan. Additionally, the Drinking Water and Groundwater Protection Division developed a Groundwater Management Strategy in 2018 to "help ensure adequate quantity and quality of groundwater, including during periods of drought" (2018 SHMP).

Drought is a hazard of concern in Fayston due to the reliance of Fayston residents on private wells and springs. These groundwater sources can lower during seasons of drought. There are 2 public water systems in Fayston; all other residents use private wells or are supplied with water from their own springs. The Town Plan notes that "the ECFD #1 water system cannot support any new connections without increasing the reservoir capacity. This means limiting new growth within existing village limits." In the event of a drought these water supplies are vulnerable. LHMP Planning Team members also noted receiving anecdotal information of personal wells having supply issues.

[7] https://www.fsa.usda.gov/news-room/emergency-designations/2020/ed_2020_1118_rel_0286

The Town is concerned that climate change may pose an increased risk of drought, which can have a potential impact on the water supply, exacerbate fire risk, etc. A review of the Vermont State Hazard Mitigation Plan provides a greater explanation of this hazard and possible mitigation strategies to address drought.

Drought Hazard Risk Assessment					
Hazard	*Location*	*Vulnerability*	*Extent*	*Impact*	*Probability*
Drought	Town-wide	Residents of Fayston using r	many residents have private wells. Reduced water supply; could also lead to reduced food output, affect natural habitats	Reduction/ loss of water supply for Fayston residents	Moderately likely supply may decrease during season of drought in the future

6.8 Extreme Heat and Cold

Heat warnings are becoming increasingly more prevalent due to our shifting climate. Vermont has been seeing an increase in 90+ degree temperature days and an increase in heat-realted emergency room visits in Washington County starting at 86 degrees. Fayston temperatures have not been rising as fast as other towns in the region, due to elevation. However, this trend is expected to continue and while most of our housing stock and individuals are well adapted to dealing with cold temperature the quick swings to higher temperatures do not allow for acclimation and many of our structures are designed to retain, rather than shed, heat. Due to the climate of our region the high temperatures and high humidity often create situations that negatively affect elderly individuals, those with preexisting conditions, young children, those working outside, etc. Fayston is considering Hot Weather Preparedness Planning efforts supported by CVRPC and the Vermont Department of Health as well as a host of education and outreach, considerations around building and HVAC systems, community resources and cooling/warming shelters, etc.

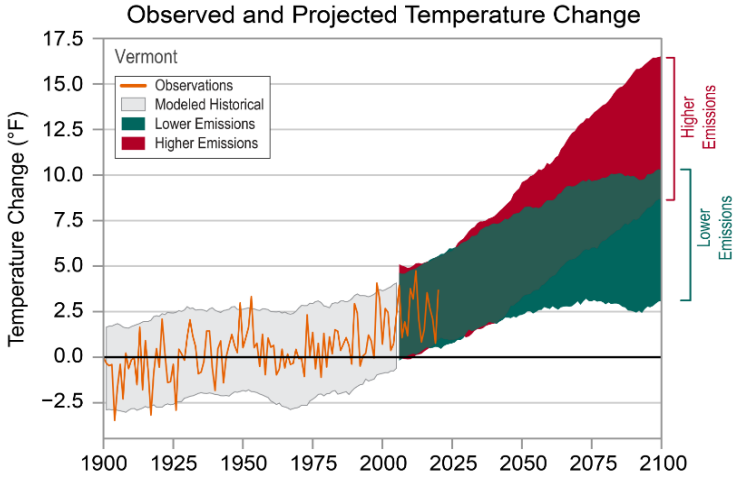


Figure 27. NOAA 2022 Vermont Climate summary

Due to the instability of the jet stream from climate changes, extreme cold can still be an issue. If it is a long-lasting cold without snow cover, frost can migrate deep into the ground freezing pipes and heaving roadways. Most of this would be dealt with by the town either

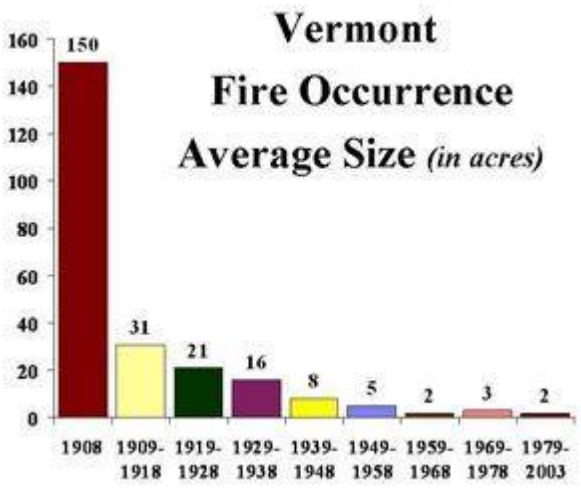
through their utility contract or by the town road crew in keeping the transportation infrastructure in usable condition. Loss of power during one of these cold snaps may require use of the town shelter and is planned for in the town Local Emergency Management Plan.

6.9 Wildfire

The definition of a wildfire is the uncontrolled burning of woodlands, brush, or grasslands. FEMA classifies wildfires into four categories:

1. Wildfires – fueled by natural vegetation; typically occur in national forests and parks, where federal agencies are responsible for fire management and suppression.
2. Interface or Intermix Fires – Urban wildfires in which vegetation and built environment provide fuel.
3. Firestorms – Events of such an extreme intensity that effective suppression is virtually impossible; occur during extreme weather and generally burn until conditions change or the available fuel is exhausted.
4. Prescribed Fires and Prescribed Natural Fires – Fires that are intentionally set or selected natural fires that are allowed to burn for beneficial purposes.

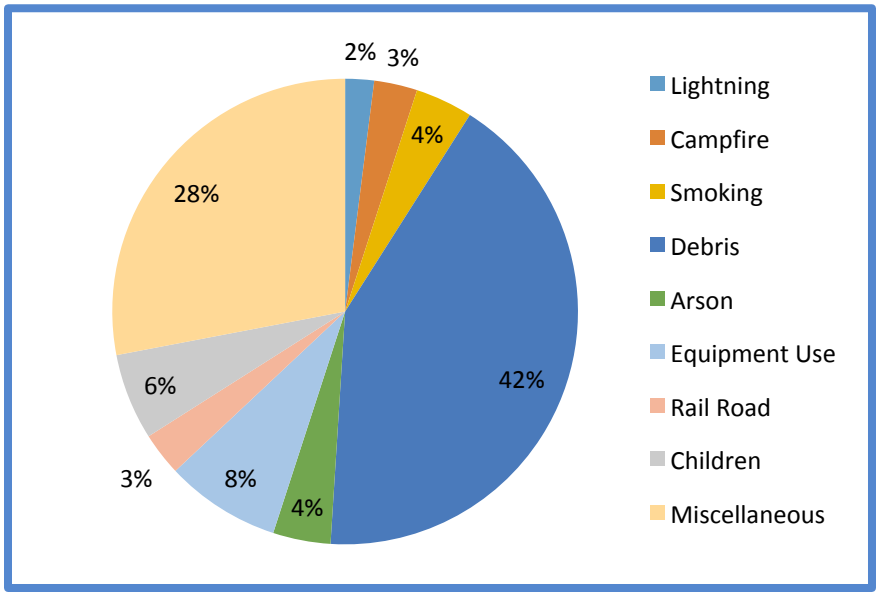
Wildfires burn as a surface fire, ground fire, or crown fire. Surface fires burn slowly along the forest floor, killing and damaging trees. Ground fires burn on or below the forest floor and are usually caused by lightning strikes. Crown fires occur in the treetops or crown of the trees and spread quickly and effortlessly through the treetops. Often started by lightening, crown fires move quickly by jumping along the tops of trees. Crown fires can spread quickly during windy conditions. Wildfire causes can be natural (lightning, drought, extreme heat) or man-made (campfires, spark from a railroad track, smoking, arson, equipment).



Vermont has two primary fire seasons in the spring and fall. 2017 Vermont Forest Action plan notes that while there is a low likelihood our vulnerability is severe and the risk of loss of nonhuman life and ecology is high. Associated with the impacts of climate change in Vermont, there is also an increased risk of fire with increasing numbers and severity of hot and dry days. In Vermont, wildfires are not a common occurrence. The Vermont State Hazard Mitigation Plan states there has not been a major wildfire in Vermont in the last 50 years. According to the Northeast Wildfire Organization, Vermont averages 200 - 400 fires a year with an average size of 1.5 to 2 acres. Back in 1908, the average fire size was 150 acres. The area of acres burned in Vermont has consistently gone down each year.

According to the Vermont Forest Parks and Recreation, burning debris is the most common cause of wildfires in Vermont. In Vermont, wildfires are most prevalent in the spring and late summer and early fall when conditions are most favorable. Drought conditions also increase the threat of wildfires. In 1903, Vermont experienced a devastating fire season, which prompted the state to pass legislation creating a town forest fire warden program. The forest fire warden program focuses on fire prevention, suppression, and fire safety at the local level. In 1939, an amendment to the law required the use of burning permits, issued by the local fire warden. In Vermont, forest fire wardens issue 20,000 burning permits annually. In 1966, 1999, 2000, and 2005 the state issued statewide bans on open burning due to the extreme vulnerability to the wildfire/forest fire hazard. In March of 2012, the threat of fire was severe due to the low humidity, warm temperatures, and strong winds prevalent in Vermont. The low occurrence of wildfires in Vermont is attributable to the local forest fire warden program, early detection measures, trained and equipped fire departments, and public education and outreach. The fires that do ignite tend to be small.

Figure 28 Vermont Wildland Fire Causes 1980-2010



Source: Reproduced from http://www.northeastwildfire.org/vermont

The Waitsfield-Fayston Fire Department documents one wildland fire occurring in Fayston in 2015, and 3 in 2014. The table below documents average wildfire occurrences over a recent 10 year period for the State of Vermont. Fayston is identified by the 2010 Vermont Forest Resources Plan as a Town at Low Risk for wildfire, along with the vast majority of the state. There was however a 2-3 acre fire, caused by an unattended fire catching on a windy day, on Bragg Hill causing substantial damage to sugaring operations nearby. Given the volume of the Town's forested landscape in conjunction with increasing occurrences of dry and windy weather, and the potential for lightning strikes, Fayston is aware that it may become increasingly vulnerable to wildfires and forest fires that can rapidly spread creating hazardous situations. Stress caused by disease, insect infestation, and changes in climate affect the health

of the forest and can lead to die off, adding more fuel availability which can increase the risk, extent, duration, and severity of a wildfire or forest fire.

Fayston Calls for Spreading Burn Pile- Wildland Fire (Waitsfield-Fayston Fire Department, annual reports)

Year	Number of Calls for Spreading Burn Pile- Wildland Fire
2013	
2014	3
2015	1
2016	0
2017	2
2018	0
2019	0
2020	3
2021	0
2022	1

VERMONT SPRING WILDFIRE STATISTICS		
10-year Average 2005 - 2014		
Official reports - reports have been verified by warden & VT FPR		
Month	# Fires	# Acres
March	9	29
April	62	142
May	19	30
TOTAL	90	201
Vermont Dept. Forest, Parks, & Recreation - 2015 Spring Fire Season Summary		

Average wildfire occurrences over a recent 10-year period for the State of Vermont are provided in the table to the left. Fayston is identified in the 2010 Vermont Forest Resources Plan as a Town at Low to Moderate Risk for wildfire (Map 32: Vermont Wildfire Risk Assessment, May 26, 2010). Data on the magnitude of forest fires affecting Fayston is not available. A data gap exists.

Approximately 90% or 21,204 acres of Fayston is forested. State and Federal agencies own 3,034 acres and the rest is in private ownership (see Hazards Analysis Map). The volume of the Town's forested landscape in conjunction with dry and windy weather has the potential to rapidly spread fire and create a hazardous situation. Stress caused by disease and climate change affect the health of the forest and can lead to die off, adding more fuel availability which can increase the risk, extent, duration, and severity of a wildfire.

While a dry hydrant system does exist in Fayston, much of the forestland is unreachable by road limiting fire fighting measures. Private residences, ski resort infrastructure and timber related businesses are all located within forested areas. Fayston's Local Emergency Operations Plan identifies "Phen Basin Forest Fire" as a vulnerable site to check in the case of an emergency. Additional impacts include loss of wildlife habitat and recreational amenities

including hiking, skiing and snowmobiling trails. All impact the local tourist economy, maple sugaring businesses, and resident's quality of life.

Fayston's Fire Warden is responsible for forest fire prevention and suppression activities in town. The Fire Warden issues open burning permits if fuel and weather conditions are safe for outdoor burning. The Warden also has the authority to ban open burning in town when fire danger is high or when conditions are hazardous.

Hazard	Location	Vulnerable Assets	Extent	Risk	Probabi
Wildfire	Town Wide – State and National Forest land	State and private Forest land. Ski infrastructure, private homes on urban/forest interface	To date – 2-3 acres	Approx. 21,024 acres of forested area	LOW

6.10 Other

Safeguarding Wildlife Crossings in Fayston

Fayston's wildlife corridor and habitat data is not as complete as Warren's and Waitsfield's and to participate fully in a tri-town wildlife connectivity effort, we need to gather more data together. Funds will be used to support geographic data collection and analysis (to identify corridors between larger habitat blocks), field data collection and analysis (wildlife cameras and tracking) to confirm wildlife use of mapped corridors. As we anticipate and plan for a changing climate, making sure infrastructure (like culverts and bridges) is properly sized is important, not just for fish and floods but also for terrestrial mammals to use to cross our roads.

What is the MRV Community Black Bear Initiative? The Fayston, Waitsfield and Warren Conservation Commissions, Moretown Recreation Committee, Friends of the Mad River, Stark Mountain Foundation and Sugarbush Resort's SEW Committee have formed a committee of volunteers to help address the growing black bear concerns the Mad River Valley has been experiencing over the last few years. Though still in the early stages of planning, the Initiative is developing a centralized web-based education and resource center for the MRV community to learn about black bears in Vermont, developing a community bear ethos about how to live with and protect bears, and increasing the community's understanding of how human actions impact and affect bear behavior.

7 Mitigation

7.1 Hazard Mitigation Goals and Strategies

The goal of this Hazard Mitigation Plan is:

- To take actions to reduce or eliminate the long-term risk to human life and property from:

- Flooding/Flash Flooding/Fluvial Erosion
- Hurricane/Tropical/Severe Storms
- Extreme Cold/Winter Storms/Ice Storms
- Land/Rockslide or Debris Flow
- Invasive Tree Pests
- Wildfire

Specific hazard mitigation strategies related to goals of the Plan include:

- Ensure existing and future drainage systems are adequate and functioning properly
- Preserve and limit development in areas where natural hazard potential is high, in accordance with Fayston's Town Plan and bylaws.
- Ensure that all residents and business owners are aware of the hazards that exist within Fayston and ways they can protect themselves and insure their property
- Ensure that emergency response services and critical facilities functions are not interrupted by natural hazards

7.2 Municipal Plan Goals and Policies that Support Local Hazard Mitigation

In order to ensure that comprehensive community planning takes into account priorities of the hazard mitigation planning process, and that the LHMP process works within broad community goals, the two planning processes are used reciprocally to inform each other. The LHMP is an important source of information for defining Town Plan goals related to flood resilience, land use, location of development, and community infrastructure. As the Fayston Land Use Regulations (Zoning) must be in conformance with the Town Plan, mitigation goals adopted into the Town Plan must also be reflected in Land Use Regulations, especially the Flood Hazard Overlay District and any proposed fluvial erosion or River Corridor regulations.

Fayston's Town Plan was updated in 2020. The goals and objectives listed below are excerpted from Chapters of the plan incorporating hazard mitigation issues.

<u>History and Historic Resources:</u>
Objective:

- Protect and preserve historic buildings, structures, agricultural operations and archaeological sites significant to Fayston's history

<u>Fayston's Ecology:</u>
Goal: The responsible preservation, conservation, and enhancement of Fayston's ecological health and biological diversity.
Goal : The minimization of impacts to public: health, safety and welfare associated with natural hazards or poor environmental quality
Objectives:

- Prohibit land development on slopes of 25% or greater.
- Prohibit land development within 100 feet of wetlands and waterways where appropriate and require mitigation of development effects where necessary.

- Design land subdivisions to minimize development on and fragmentation of land characterized by:
    - Primary agricultural soils
    - High elevation (above 1,500 feet)
    - Significant wildlife habitat and travel corridors
    - Trail corridors, river accesses, and areas for dispersed recreation
    - Riparian lands, river corridors
    - Identified scenic viewsheds
    - Adjacency to existing conserved lands
- Encourage responsible use and careful stewardship of Fayston's natural heritage by landowners and managers.
- Encourage the permanent conservation of areas containing:
    - Significant natural heritage elements and other listed attributes
    - Primary agricultural soils
    - Ridgelines
    - Significant wildlife habitat and travel corridors
    - Trail corridors, river accesses, and areas for dispersed recreation
    - Riparian lands, river corridors Identified scenic viewsheds
    - Adjacency to existing conserved lands
- Protect water quality
- Reduce human impact on climate
- Prevent the exposure of Fayston residents to air and or water pollution.
- Minimize the extent to which development occurs in areas subject to natural and/or environmental hazards.
- To take actions to reduce or eliminate the long-term risk to human life and property from flooding and fluvial erosion.

Land Use:
Objective:

- Maintain an overall high level of site design and environmental protection throughout Town.

Transportation:
Objective:

- Ensure that new development and changes to land use activities do not produce undue adverse impacts to the condition and function of the Town’s transportation system.

Community Facilities:
Goal : Increase cooperation and coordination with neighboring towns, the Central Vermont region, and the State.
Objective:

- Provide municipal services necessary to ensure the health, safety, welfare and emergency service needs of Fayston residents and visitors.

Fayston's Economy:

Objective:

- Ensure that any new business-related development preserves Fayston's rural character and natural features such as ridgelines, open fields, wildlife habitat, wildlife corridors, water quality, and wetlands.

Existing Mitigation, Maintenance, and Preparedness Programs, Projects and Activities

The additional hazard mitigation activities listed below constitute further mitigation capacities maintained by Fayston. The activities are ongoing or recently completed and are listed by mitigation strategy. They share and incorporate the overall goals of the local hazard mitigation plan. Fayston has the capacity to maintain these programs and initiatives using the staff and volunteers described above.

Community Preparedness Activities

- Local Emergency Operations Plan, DATE

Land Use Planning/Management

- Flood Resilient Transportation Pilot Study, 2015
- Highway Access Permit Ordinance, adopted on May 28, 2013

Hazard Control & Protective Works of Infrastructure and Critical Facilities

- Maintenance Programs (Culvert Inventory) – every 3 years, last updated 2013
- Dry Hydrants – 5
- Emergency Shelters (backup generator at Town Offices)
    - Fayston School or Green Mountain Valley School (GMVS) (not Red Cross approved);
    - Additional shelters in neighboring Town of Waitsfield
    - State Regional American Red Cross Shelter at the Barre Auditorium, Barre, VT

Public Awareness, Training & Education

- School Fire Safety Program, Waitsfield-Fayston Fire Chief Bub Burbank, annually
- Public education materials about reducing wild fire risk, Fayston Fire Warden
- School evacuation plans
    - Fayston Elementary School, Principal Mr. Berthium, annual review
    - Green Mountain Valley School, Tim Harris, annual review
    - Fayston Elementary School Preschool, Rachel Foley, Director annual review

The ongoing or recently completed programs, projects and activities are listed by mitigation strategy and were reviewed for the development of the plan. The Town Plan (2018), Town Report (2018), Land Use regulations (2015), Local Emergency Management Plan (2019), CVRPC Regional Plan (2018), and past newspaper articles were reviewed for pertinent information. The Upper Winooski Corridor Plan (2008) and VT State Hazard Mitigation Plan (2018&2023) were reviewed as well for information and future mitigation projects. Information from these sources

is incorporated into appropriate sections of the plan.

7.3 Ability to Expand Existing Municipal Policies and Programs

The majority of Fayston's capacity to expand its existing hazard mitigation program is through taking advantage of assistance provided by state agencies, the Mad River Valley Planning District and the Central Vermont Regional Planning Commission. State agencies such as the Division of Emergency Management and Homeland Security, Agency of Transportation, Agency of Natural Resources, Agency of Commerce and Community Development, and the Vermont Department of Health provide guidance and technical assistance as well as funding resources which the Town may access to expand its mitigation programs.

Community institutions and organizations such as the Vermont League of Cities and Towns and the Friends of the Mad River can provide expertise, and in some cases direct man-power and/or financial resources, to assist the Town with carrying out hazard mitigation programming or projects.

Local businesses are another resource for Fayston to access for hazard mitigation capacity. Fayston already has a strong relationship with Sugarbush Ski Resort through the Mad River Valley Planning District. As a major landowner, the resort can influence mitigation activities in Fayston, both by conducting mitigation for its own assets, and assisting the town to protect public assets utilized by the resort and its patrons.

The capital planning and budgeting process is also an important tool through which the municipality may work to incrementally grow revenues designated for specific hazard mitigation expenditures.

7.4 Identified Hazard Mitigation Programs, Projects & Activities

Hazard mitigation programs, projects and activities that were identified for implementation at the LHMP Planning Team meetings are listed below in **Table 15**.

VEM also emphasizes a collaborative approach to achieving mitigation on the local level. Partnering efforts among ANR, VTrans, ACCD, Regional Planning Commissions, FEMA Region 1 and other agencies result in these agencies and organizations working together to provide assistance and resources to towns interested in pursuing mitigation projects and planning initiatives.

The 2023-2028 Hazard Mitigation Activities Schedule (**Table 16**) below lists mitigation activities in regards to local leadership, partners, possible funding resources, timeframe for completion, and prioritization. The projects were selected and prioritized by considering them according to the particular hazard addressed, its overall risk to the community, the likely benefit of the proposed project for mitigating that risk, and the cost of the project. Other factors such as financial resources available, community support, and available staff capacity for project implementation were also weighed by the local hazard mitigation team. Factors were considered qualitatively, except when specific cost, financial or other measurement information

was available. Final prioritization also had to be weighed against overall staff capacity, including outside technical and consulting assistance, to bear the workload scheduled at any point through the five-year implementation cycle. Noted in the priority column is a score for estimated cost bracket, providing a basic benefit cost analysis (1 = $0 to $1000, 2= $1000 to $10,000 and, 3 = $10,000 to $100,000+).

A High prioritization denotes that the action is either critical or potential funding is readily available and should have a timeframe of implementation of less than two years. Highest priority projects also enjoyed strong community support and staff capacity was available to carry them out. A Medium prioritization is warranted where the action is less critical or the potential funding is not readily available and has a timeframe for implementation of more than two years but less than four. A Low prioritization indicates that the timeframe for implementation of the action, given the action's cost, availability of funding, and the community's need to address the issue, is more than four years. Projects for which there was little community support or available staff capacity would also be low priority. Numerical quantities were not assigned to balance the factors, however the Team considered each prioritization in the scope of the other projects, LHMP priorities, and overall community priorities.

Due to the frequency and damage caused by flooding, mitigation actions which address areas that are frequently flooded will be the highest priority of the Town. Other mitigation actions listed will be performed as funds become available and dependent on public interest.

Fayston understands that to apply for FEMA funding for mitigation projects, a project must meet FEMA benefit cost criteria. The Town also must have a FEMA-approved Hazard Mitigation Plan.

Table 15: 2024 to 2029 Mitigation Actions					
Hazard(s) Mitigated	*Mitigation Action*	***Lead Entity*** *Supporting Partners*	*Possible Resources*[8]	*Time Frame*	*Priority*
General					
Flood/Fluvial Erosion, Severe Storms including Tropical Storms and Hurricanes	Ridge to River Stormwater Implementation and Education • Review priority projects and integrate into other planning mechanisms • Municipal officials and staff participate in education programs and work to implement recommendations of the project team (see next action below)	**Planning Commission & Selectboard** Friends of Mad River, Sugarbush Resort; Mad River Food Hub/Irasville Business Incubator;	Municipal Planning Grant, VCRD (Resilient Communities)	Annually; notable timeline includes integration into the 2025 Town Plan update	Medium (Friends of the Mad River in transition) (1)

[8] HMGP – Hazard Mitigation Grant Program, EMGP – Emergency Management Grant Program, PSIC/NTIA – National Telecommunications and Information Administration, USDA – United States Dept. of Agriculture

Table 15: 2024 to 2029 Mitigation Actions					
Hazard(s) Mitigated	*Mitigation Action*	***Lead Entity*** *Supporting Partners*	*Possible Resources*[8]	*Time Frame*	*Priority*
Flood/Fluvial Erosion, Severe Storms including Tropical Storms and Hurricanes	Support the Friends of the Mad River through staff and volunteer collaboration, for the following services: • outreach & education on river hazard issues, • landowner education & collaboration, • River Corridor Planning, • assessing erosion threats to bridges, culverts & ditches, • outreach events • support through leadership transition and development of potential Climate Resilience effort	**Selectboard** Friends of the Mad River, CVRPC	Town Budget; VTrans Bridge & Culvert Inventory (support from CVRPC), partnership with UVM researchers and Leahy Institute for discrete funding	Annually (ongoing- move from integrated into Flood Recovery Work 2024-2025 back out to discrete effort 2026 ahead of summer work as midway to next budget cycle for project development)	Medium (Friends of the Mad River in transition)(1)
Town Planning & Land Use Regulations					
Flood/Fluvial Erosion	Conduct analysis and public outreach to determine if the community wants to augment its Flood Hazard Overlay District Standards to maintain its 17.5% ERAF state contribution rate, by adding Fluvial Erosion Hazard (or River Corridor) Regulations ERAF 17.5% Requirements: • Consider adopting a River Corridor Or River Corridor Protection Area overlay for all streams and rivers draining greater than two square miles; • Adopt a minimum regulatory requirement for River Corridors or River Corridor Protection Areas consistent with the Flood Hazard Area and River Corridor Protection Procedure or be at least as restrictive as those outlined in the ANR Municipal Guide to Fluvial Erosion Hazard Mitigation.	**Planning Commission & Selectboard** CVRPC, ANR River Scientist, ACCD	Municipal Planning Grant, EMPG funds	Revisit once FEMA finishes Flood Hazard Map Updates (Field Survey underway 2023)	High (1)

Table 15: 2024 to 2029 Mitigation Actions					
Hazard(s) Mitigated	*Mitigation Action*	***Lead Entity*** *Supporting Partners*	*Possible Resources*[8]	*Time Frame*	*Priority*
Flood/Fluvial Erosion	If community elects to bring FHO regs into conformance with State Models, make and adopt necessary revisions.	**Planning Commission & Selectboard** CVRPC, ANR River Scientist, ACCD	Municipal Planning Grant, EMPG grant	Ongoing (consideration and next steps will be addressed in the 2025 Town Plan Update throughout 2024, and as State updates policies)	Medium (1)
Flood/Fluvial Erosion	Murphy Rd. Slump above 353 - French Bk. Undercutting Murphy Rd. 1. Commission borings to characterize geologic issues 2. Seek recommendation from River Engineer and AOT District for mitigation strategy 3. Reapply to fund engineering	**Selectboard & Road Foreman** Rivers Management Engineering, AOT District 5, DEMHS, CVRPC	HMGP	Ongoing with application to VTrans and HMGP in Fall/Winter 2024	High (3)
Flooding/Erosion	Number Nine Rd: decrease probability of erosion and landslide due to flooding 1. review Dubois & King report recommendations 2. seek funding & conduct engineering design for preferred alternative 3. seek implementation funding	**Selectboard & Road Foreman** AOT District 5	AOT, HMGP	Fall/Winter 2024 next application cycle; ongoing depending on awards	Medium (1-3)

Table 15: 2024 to 2029 Mitigation Actions					
Hazard(s) Mitigated	*Mitigation Action*	***Lead Entity*** *Supporting Partners*	*Possible Resources*[8]	*Time Frame*	*Priority*
Flood (& landslide)	Bragg Hill Rd Slump: Step 1: meet with Waitsfield officials and property owners to define options and roles for mitigation Step 2: pursue engineering study	**Selectboard & Road Foreman** ANR Rivers Management Engineering, DEMHS	HMGP, Ecosystem Restoration Program	Step 1 2024-2025 (last meeting 12/19/2022)	Medium (1-3)
Flood	N. Fayston Rd. Slump: 1. Monitor and clean out ditch regularly (every 1-3 years) 2. Investigate mitigation options via DEMHS & State Geologists Office	**Road Foreman & Town Clerk** DEMHS, State Geologist, CVRPC	HMGP, State Geologist Technical Assistance	Ongoing- next assessment Spring 2025	1 High (2) 2 Low (1)
Debris Flow/Flooding ; Landslides	Assess potential threat to town road infrastructure from proliferation of private pond embankments: 1. Review permitting process and workflow; 2. Consider inventory/digital survey 3. Consider monitoring, maintenance, and accountability in regards to common infrastructure 4. Implementation & Public education	**Selectboard & Zoning Administrator** CVRPC, DEC, State Engineer	HMGP, MPG, coordination and collaboration with UVM and neighboring towns	2024 Step 1, 2024-2025 Step 2, 2025-2028 Steps 3&4	Med (3)
Forest Resources					

	Table 15: 2024 to 2029 Mitigation Actions				
Hazard(s) Mitigated	*Mitigation Action*	***Lead Entity** Supporting Partners*	*Possible Resources*[8]	*Time Frame*	*Priority*
Wildfire	Join with regional municipalities and CVRPC to develop a Rural Water Supply Protection Plan and dry hydrant assessment and designs	**Fayston - Waitsfield Fire Chief** CVRPC, Vermont Association of Conservation Districts (VACD)	EMGP, VACD Rural Fire Protection Grant (formerly Dry Hydrant Grant Program), VT FPR	Dependent on capacity and funding	Low (2)
Fire	Ahead of dry season, conduct annual public awareness and outreach via town website, public talk/workshop, etc.	**EMD/Fayston-Waitsfield Fire Daniel Beede, Fayston Fire Marshal**	Town Budget, Library Support, REMC	Annually (starting 2024)	Med (1)
Transportation Network & Infrastructure					
Flood/ Fluvial Erosion, Severe Storms including Tropical Storms and Hurricanes as well as High Wind	Mitigation highway drainage structure improvements as prioritized by Road Foreman & Commissioner	**Road Foreman** AOT, DEMHS, Friends of Mad River	MRGP, Town Budget, AOT District, Better Roads, HMGP	Annually with summary meeting before each budget cycle (end of summer, early fall)	High (3)

	Table 15: 2024 to 2029 Mitigation Actions				
Hazard(s) Mitigated	*Mitigation Action*	***Lead Entity*** *Supporting Partners*	*Possible Resources*[8]	*Time Frame*	*Priority*
	1. Upgrade undersized culverts to 2-foot culverts including: a. 8-10 15inch culverts on steep section of Tucker Hill Rd b. Approximately 12 15inch culverts Marble Hill Rd			FY 2024*	High
	2. Upgrade undersized culvert on German Flats Rad by school (hydraulic study underway) to decrease damage from Chase Brook flooding every spring			FY 2024*	High
	3. Upgrade undersized culvert and implement ditching on Randall Rd a. Resolve mismatch between available culverts and study requirements			FY 2024*	High
	4. Monitor, remediate and also begin to record problem locations, timing, and severity during mud season: a. Ensure budget is adequately anticipating needs b. Track long term changes in severity c. Road Foreman and Crew train on offline VT Bridge and Culvert Application (via CVRPC)	**Road Foreman** CVRPC		Annually- spring assessment and early fall ahead of budget cycle	High

Table 15: 2024 to 2029 Mitigation Actions					
Hazard(s) Mitigated	*Mitigation Action*	***Lead Entity*** *Supporting Partners*	*Possible Resources*[8]	*Time Frame*	*Priority*
Flood/ Fluvial Erosion/ Severe Storms including Tropical Storms, Hurricanes and High Winds	Use Municipal Roads General Permit map tool to identify sub-standard segments and apply for Municipal Roads General Program funds (annually)	**Road Foreman/ Commissioner, & Selectboard** Vtrans, CVRPC	Municipal Roads Program; Vtrans Better Roads Program	Spring 2024 (ongoing)	Medium (2)
Extreme Cold/Winter Storm/Ice Storm					
Extreme Cold/Winter Storm/Ice Storm, High Wind	Update and expand effort to support vulnerable residents: 1. Continued ad of CARE: Citizens Assistance Registration for Emergencies 2. Annually review list of vulnerable residents and needs with EMD, Town Clerk, Town Health Officer, Road Foreman, and Selectboard (see Infectious disease below) 3. Coordinate with community fund to support social infrastructure (e.g. for elderly residents)	**EMD, Clerk's Office** Ambulance, Fire Dept.	Local Media, Green Mtn. United Way, VT 211, VT E911, Local Emergency Planning Committee	Ongoing and annually-outreach conducted at next town meeting day or according to an alternative timeline to be identified in Winter 2024-5	High (1)
Other					

	Table 15: 2024 to 2029 Mitigation Actions				
Hazard(s) Mitigated	*Mitigation Action*	***Lead Entity** Supporting Partners*	*Possible Resources*[8]	*Time Frame*	*Priority*
Infectious Disease	Formalize ad hoc standing committee as response team, review and integrate best practices learned from COVID 19 response into LEMP: • EMD coordination with Waitsfield and Warren, • Front Porch Forum and neighborhood email lists • Standing committee EMD, Town Clerk, Selectboard, and town health officer	**EMD, Selectboard, Town Clerk** Neighboring EMDs and Health Officers, State and regional health offices	Front Porch Forum, neighborhood email lists, community champions	2024 review best practices learned from COVID 19 response; 2025 integrate into LEMP and establish standing committee	High (1)
Extreme Temperatures	Consider hot and cold extreme temperature preparedness including establishing the Municipal Building as a cooling and warming center	**EMD, Clerk's office** Library, American Red Cross Shelter (Waitsfield)	VT Department of Health Hot weather preparedness and technical assistance (CVRPC),EOC, MERGP, BGS Community Facilities; Health Equity Technical Assistance Pilot (VT Dept Health & DHCD)	Consider in context of municipal building improvements 2024; Fall 2024 review Local Hot Weather Preparedness Guidance	Medium (1-2)

Table 15: 2024 to 2029 Mitigation Actions					
Hazard(s) Mitigated	*Mitigation Action*	***Lead Entity*** *Supporting Partners*	*Possible Resources*[8]	*Time Frame*	*Priority*
Invasive Species- Knotweed	1. Inventory upland knotweed patches and prioritize for removal 2. Consider on-boarding intern with collaborating towns 3. Organize volunteer removal campaign 4. Address stump dump patch by gravel pit to limit contamination and spread	**Fayston Conservation Commission** Warren and Waitsfield, ANR	$5,000 ARPA funds approved; UVM graduate research (potentially funded February 2023)	Work began during the plan update in 2023, ongoing work in spring 2025- see conservation committee plan	High (2)
Other: Reduce Interaction with wildlife and support ecosystem health	Bears: • Participate in tri-town wildlife connectivity effort • Data collection and analysis to identify corridors between larger habitat blocks (including ground confirmation) • Work with PC to design wildlife corridors and ensure infrastructure and future development considers impact of changing climate on flora and fauna as well • Public education (website, public events, banners and materials, curriculum, etc) Other: • Fish passage (Lockwood Brook) easements • Beaver Pond (impact on Randall Rd above)	**Conservation Commission** Tri-Town collaboration (Mad River Valley); Mad River Valley Bear Initiative	ARPA funds obligated by SB	Work began during the plan update in 2023, ongoing work through 2025- see conservation committee plan	High (2+)
Terrorism	Develop municipal staff plan formalizing response and precautionary measures (e.g. election day)	**Town Clerk, EMD**	VLCT Assistance	Spring 2024	Medium (1)
Cybersecurity	Attend Cybersecurity educational opportunities provided (VMCTA, NEACTC, VLCT, etc)	**Town Staff**	VMCTA, NEACTC, VLCT	Ongoing (annually as available)	Medium (1)

*timelines may have been hastened or delayed due to flooding in July 2023 and especially July 2024- the latter of which hit Fayston extremely hard especially, as the State's steepest municipality, road infrastructure

7.5 Process for Incorporating Plan Requirements into Other Planning Mechanisms

For Fayston to succeed in reducing long-term risks, the information and recommendations of the Local Hazard Mitigation Plan should be integrated throughout government operations.

The following are specific examples of how information and recommendations from the 2023 plan update will be incorporated into other plans, programs, and procedures:

- The Selectboard will incorporate risk assessment and hazard mitigation goals into capital planning efforts and improvement programs.
- The Planning Commission will integrate the hazard mitigation goals for disaster resiliency, including NFIP compliance, into the goals and objectives of the next updates to the Town Plan and Land Use Bylaws.
- The Road Foreman will implement several mitigation infrastructure projects (e.g., upsize perennial and drainage culverts in flood-prone areas, install/re-work roadside ditches, etc.) through existing plans and tools (Road Erosion Inventory and Report for hydrologically-connected raod segments, 2019 Stormwater Master Plans).
- The Conservation Committee will work with tri-town collaborators, the Road Foreman, and others to implement natural resources protection projects including Knotweed Management Plan, Bear Interaction Plan, etc.
- The next Local Emergency Management Plan (LEMP) (2025) will be updated to reflect the hazards identified in the Local Hazard Mitigation Plan and any updates resulting from annual reviews by the Selectboard of the LHMP; the LEOP will also include updates to new officers, areas of concern, vulnerable populations and assets, Tier II sites and shelters, etc.
- The Town Clerk will ensure the NFIP information materials are available at the Town Office and on the Town's website- including promotion of flood insurance, public safety information, and development regulations.
- The Town Clerk will encourage the Zoning Administrator to participate in regular NFIP-related trainings.
- The work of the Mad River Valley Planning District is another key planning mechanism into which Fayston should integrate the LHMP. The MRVPD has undertaken a great deal of flood mitigation planning, such as the Ridge to River stormwater planning project and implementing projects recommended during planning projects following Tropical Storm Irene. They are working to integrate the mitigation concerns of its constituent towns and provide a regional approach. The MRVPD has a staff that can assist Fayston with integrating their plans into MRVPD work.

8 Plan Maintenance

The Fayston Local Hazard Mitigation Plan will be monitored, and evaluated annually at a September Select Board meeting (CVRPC provides a template to track implementation of 2024

mitigations actions, see below). This will allow the Selectboard to determine the status of mitigation projects before developing the next fiscal year budget over the course of the fall. The Selectboard will note projects completed and underway, and whether or not the project is meeting the communities' goals for hazard mitigation. The Selectboard will note projects to be continued or started during the next fiscal year. The Capital Budget is also updated over the fall in preparation for March Town Meeting. Looking ahead at the timing of mitigation projects, the Selectboard will also be able to plan ahead for them by adding any appropriate projects into the Capital Budget. Monitoring updates may also include changes in community mitigation strategies; new town bylaws, land use and planning strategies; progress of implementation of initiatives and projects; effectiveness of implemented projects or initiatives; and evaluation of challenges and opportunities. This includes annual review, ad hoc (post disaster) tracking, and the 5th-year update. CVRPC will provide assistance and support these processes as requested.

Individual staff or volunteer officials responsible for each project will report at this annual September meeting to the Selectboard on the status of the project(s) and their evaluation of the effectiveness of the project at achieving Fayston's hazard mitigation goals. This status and evaluation will be noted in the meeting minutes, and a copy of the minutes filed with the Local Hazard Mitigation Plan by the Town Clerk.

Review and evaluation by the Select Board will also occur within three months after every federal disaster declaration and as updates to town plan/zoning and river corridor plans and bylaws/regulations come into effect. CVRPC will help with updates or if no funding is available, the Town Clerk and Select Board will update the LHMP.

The process of monitoring and evaluating the plan will include continued public participation through public notices posted on the municipal website and notice in the municipal building inviting the public to the scheduled Select Board (or specially scheduled) meeting(s) to give feedback. Also invited in the future will be the VT Agency of Natural Resources (VT ANR), as they are able to provide assistance with NFIP outreach activities, models for stricter floodplain zoning regulations, delineation of fluvial erosion hazard or River Corridor areas, and other applicable initiatives. These efforts will be coordinated by the Town Clerk.

The 5 year update process, will be undertaken by the Town Clerk, Emergency Management Director and appropriate staff and volunteer officials leading up to the expiration of this plan. Ideally, this update and adoption process will begin no later than one and a half years before this plan expires.

If priorities for mitigation projects change or new actions are identified in the five year interim period, this can be noted in the Selectboard minutes and attached to the Plan for future reference and incorporation into the next updated plan. During the 5 year period with an approved unexpired plan, the plan can be amended by the Selectboard without FEMA approval. Prior to the expiration of this plan, the plan will be submitted for re-adoption following the update process outlined in the schematic found in the following figure below (Figure 22).

Fayston will incorporate the goals and objectives of the hazard mitigation plan into their long-term land use and development planning documents, the Municipal Plan, and into annual budget process. It is recommended the Town review and incorporate elements of the Local Hazard Mitigation Plan when updating the municipal plan, road plan, and inundation hazard and river corridor regulations. The Town may consider reviewing any future CVRPC planning documents and studies for ideas on future mitigation projects and hazard areas.

In 2013, the Vermont Legislature passed a law requiring all towns to incorporate a flood resiliency element into their Municipal Plan as of July 2014. As part of meeting this requirement, Fayston committed to identifying flood hazard and fluvial erosion hazards, strategies, and recommendations to mitigate risks to public safety, critical infrastructure, historic structures, and public investments. The 2017 LHMP helped Fayston comply with the new community flood resilience requirements and assisted the Planning Commission in their work as they update the existing Municipal Plan. This update will help inform flood by-law updates associated with FEMA updating the Flood Insurance Rate Maps (FIRMS) for the National Flood Insurance Program (NFIP) (this will be the first map update for many towns since the 70's and 80's). This update process[9] is critical to ensure residents can continue to purchase and renew flood insurance through NFIP, and to ensure the town qualifies for 92.5% disaster funding through the Emergency Relief and Assistance Fund (ERAF) (an additional 10% of public disaster recover costs that the state will cover instead of local taxpayers)

[9] (https://floodtraining.vermont.gov/protection-tools/get-ready-new-fema-flood-insurance-rate-maps).

Figure 29 5-Year Plan Review and Maintenance

Annual Mitigation Action Progress and Hazard Event Tracker

This Mitigation Action Tracker will be utilized by the Town of Fayston as part of their Local Hazard Mitigation Plan Maintenance. Annually, the Selectboard and Town Clerk will convene to review their progress in regards to their Mitigation Actions outlined in their LHMP (annually in September). This not only supports ongoing planning efforts but also the next plan update; towns are encourage to customize this template to include a section with potential future mitigation action steps, hazard events, etc..

Current Plan Year
Annual Review (or Update) Date
Participants

MITIGATION ACTION TRACKER										
Action	Information in Hazard Mitigation Plan				Current Status				Notes: barriers, change in needs, community outreach, etc.	Date(s) edited
	Responsible Party	Timeframe for Completion	Funding Source	Project Priority	Date Began	Current Status	Completion Timeframe	Completion Goal		

Hazard/Event Tracker										
Incident/Event/Hazard	Date	Location	Extent	Damages	Costs	Description	Actions Taken	Potential Mitigation Actions		

Certificate of Adoption

CERTIFICATE OF ADOPTION

June 11th, 2024

Town of Fayston, Vermont Selectboard

A resolution adopting the Town of Fayston, Vermont 2024 Local Hazard Mitigation Plan

WHEREAS, the Town of Fayston has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the Town of Fayston, Vermont 2024 Local Hazard Mitigation Plan, which result in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Town of Fayston has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its Town of Fayston, Vermont 2024 Local Hazard Mitigation Plan (Plan) under the requirements of 44 CFR 201.6; and

WHEREAS, the Plan specifically addresses hazard mitigation strategies, and Plan maintenance procedures for the Town of Fayston; and

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

WHEREAS, adoption of this Plan will make the Town of Fayston eligible for funding to alleviate the impacts of future hazards; now therefore be it

RESOLVED by Town of Fayston Selectboard:

1. The Town of Fayston, Vermont 2024 Local Hazard Mitigation Plan is hereby adopted as an official plan of the Town of Fayston. While content related to Fayston mat require revisions to meet the plan approval requirements, changes occurring after adoption will not require Fayston to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

2. The respective officials identified in the mitigation action plan of the Plan are hereby directed to pursue implementation of the recommended actions assigned to them;

3. Future revisions and Plan maintenance required by 44 CFR 201.6 and FEMA are hereby adopted as part of this resolution for a period of five (5) years from the date of this resolution; and

4. An annual report on the process of the implementation elements of the Plan will be presented to the Selectboard by the Emergency Management Director or Coordinator.

IN WITHNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of the Town of Fayston on this June 11th, 2024 .

, Chair

6/11/24

ATTEST

Fayston Town Clerk