

Town of Fairlee, Vermont
2015 Local Hazard Mitigation Plan

***Prepared by the Two Rivers-Ottawaquechee Regional Commission and
the Town of Fairlee***

July 20, 2015

Date of Town Adoption

August 4, 2015

CERTIFICATE OF ADOPTION

July 20, 2015

TOWN OF Fairlee, Vermont Selectboard

A RESOLUTION ADOPTING THE Fairlee, Vermont 2015 Local Hazard Mitigation Plan

WHEREAS, the Town of Fairlee has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the **Fairlee, Vermont 2015 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 Fairlee has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its **Fairlee, Vermont 2015 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 Fairlee; and

WHEREAS, the **Plan** recommends several hazard mitigation actions (projects) that will provide mitigation for specific natural hazards that impact the Town of Fairlee 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 Fairlee eligible for funding to alleviate the impacts of future hazards; now therefore be it

RESOLVED by Town of Fairlee Selectboard:

1. The **Fairlee, Vermont 2015 Local Hazard Mitigation Plan** is hereby adopted as an official plan of the Town of Fairlee;
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 WITNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of the Town of Fairlee this 20th day of July 2015.


Selectboard Chair


Selectboard Member

ATTEST


Town Clerk



FEMA

AUG 20 2015

Frank J. Barrett, Jr., Chair
Selectboard
Town of Fairlee
P.O. Box 95
Fairlee VT 05045

Dear Mr. Barrett:

Thank you for the opportunity to review the Town of Fairlee, Vermont 2015 Hazard Mitigation Plan. The Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA) Region I has evaluated the plan for compliance with 44 C.F.R. Pt. 201. The plan satisfactorily meets all of the mandatory requirements set forth by the regulations.

With this plan approval, the Town of Fairlee is eligible to apply to Vermont Division of Emergency Management & Homeland Security for mitigation grants administered by FEMA. Requests for mitigation funding will be evaluated individually according to the specific eligibility requirements identified for each of these programs. A specific mitigation activity or project identified in your community's plan may not meet the eligibility requirements for FEMA funding; even eligible mitigation activities or projects are not automatically approved.

Approved mitigation plans are eligible for points under the National Flood Insurance Program's Community Rating System (CRS). Complete information regarding the CRS can be found at www.fema.gov/business/nfip/crs.shtm, or through your local floodplain administrator.

The Town of Fairlee, Vermont 2015 Hazard Mitigation Plan must be reviewed, revised as appropriate, and resubmitted to FEMA for approval within **five years of the plan approval date of August 4, 2015** in order to maintain eligibility for mitigation grant funding. We encourage the Town to continually update the plan's assessment of vulnerability, adhere to its maintenance schedule, and implement, when possible, the mitigation actions proposed in the plan.

Frank J. Barrett, Jr.
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Once again, thank you for your continued dedication to public service demonstrated by preparing and adopting a strategy for reducing future disaster losses. Should you have any questions, please do not hesitate to contact Marilyn Hilliard at (617) 956-7536.

Sincerely,



Paul F. Ford
Acting Regional Administrator

PFF: mh

cc: Ray Doherty, Vermont State Hazard Mitigation Officer
Rob Evans, Vermont State NFIP Coordinator
Ben Rose, Recovery and Mitigation Section Chief, VT DEMHS
Lauren Oates, Hazard Mitigation Planner, VT DEMHS
Laurent J. Veilleux, Town Administrator
Ellie Ray, Planner, TRORC
Kevin Geiger, Planner, TRORC

Enclosure

Date of Final Approval by FEMA

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I. Introduction

Natural and human-caused hazards may affect a community at any time; they are not usually avoidable, however, their impact on human life and property can be reduced through community planning. Accordingly, this Plan seeks to provide an all-hazards mitigation strategy that will make the community of Fairlee more disaster resistant.

“Mitigation” is defined as any sustained action that reduces or eliminates long-term risk to people and property from natural and human-caused hazards and their effects. Previous Federal Emergency Management Agency (FEMA), State and Regional Project Impact efforts have demonstrated that it is less expensive to anticipate disasters than to repeatedly ignore a threat until the damage has already been done. While hazards cannot be eliminated entirely, it is possible to identify prospective hazards, anticipate which might be the most severe, and recognize local actions that can be taken ahead-of-time to reduce the damage. These actions, also known as ‘hazard mitigations strategies’ can (1) avert the hazard by redirecting its impact by means of a structure or land treatment, (2) adapt to the hazard by modifying structures or standards or, (3) avoid the hazard through improved public education, relocating/removing buildings in the flood zone, or ensuring development is disaster resistant.

II. Purpose of the Plan

The purpose of this Local Hazard Mitigation Plan is to assist Fairlee in identifying all hazards facing the town and identify strategies to begin reducing risks from known hazards.

The Town of Fairlee seeks to be in accordance with the strategies, goals, and objectives of the State Hazard Mitigation Plan.

The 2015 Fairlee Local Hazard Mitigation Plan is an update of the 2009 Annex to the Regional Pre-Disaster Mitigation Plan. This update has been reorganized and new sections have been added:

- Program eligibility subsequent to plan approval
- Authority for plan development
- Participating jurisdictions
- Funding for plan development
- Brief information about community

Old assumptions have been challenged throughout and new information has been added to make the plan stronger and more useful for those Fairlee town officials and residents who will implement the hazard mitigation strategies in the future.

III. Community Profile

The Town of Fairlee including the Village of Ely, lies between the Connecticut River and New Hampshire and the foothills of the Green Mountains, with rocky ledges towering above. U.S. Route 5 and I-91 run through the center of Town. Its two scenic Lakes Morey and Fairlee attract visitors to vacation homes, summer camps and inns.

According to Vermont Housing Data statistics, there were 395 year-round housing units and 142 seasonal housing units in Fairlee in 2000, for a combined figure of 575 housing units. These figures increased by 2010, at which time there were a total of 429 year-round housing units and 160 seasonal housing units in the Town. The overall increase during this period (2000-2010) was 9.7%. The overall increase for the Two Rivers-Ottawaquechee Region during this period was 10.6%. The primary factor influencing population was due to families moving into Fairlee rather than unusual rates of births or deaths.

The Town lies within the service area of Green Mountain Power, which supplies electrical power to all sections of town.

The Town's Emergency Services Building has a four-bay space to house the Fairlee Fire Department, FAST Squad and the regional ambulance service. The building holds the fire trucks, ambulance, and the rescue truck. It is anticipated that the building will be adequate for both town and regional needs for at least five years. There are plans to purchase a new fire truck. The Fire Department is part of a mutual aid group, which receives and provides help to neighboring towns. This will improve response to some of the outlying areas. There is a Forest Warden and a separate Forest Fire Truck to be used in the event of a forest fire. The Fire Department is getting the required training in hazardous materials operations.

The Fairlee Fast Squad consists of a dedicated group of trained volunteers. The Fast Squad members are the first to respond to emergency calls. Their efforts have been supported with the recent location of the regional ambulance service, Upper Valley Ambulance Inc., to the Emergency Services Building.

Upper Valley Ambulance Inc., a non-profit corporation, is located at the Emergency Services Building. There are two ambulances staffed by a team of paid professional emergency medical technicians (EMTs) and area volunteers certified as ambulance care providers. Purchase of a third ambulance for non-emergency transport is planned. The closest hospital is Dartmouth Hitchcock Clinic, located in Lebanon, NH. Medivac services are available by the DHART helicopter.

Police protection in Fairlee is provided by one Police Chief with provisions for the appointment of three special constables or special officers. The current Police Chief uses his home for office space and patrols in a privately owned vehicle. He is working with the Towns of Thetford, West Fairlee, Bradford and Orford, New Hampshire to discuss coordinated efforts. Local police efforts are augmented by the Orange County Sheriff's Department and State Police, both of which are used for patrol and response to incidences. Dispatch is through the Orange County Sheriff's Department.

IV. The Planning Process

A. Plan Developers

Samantha Holcomb and Ellie Ray, Land Use Planners at the Two Rivers-Ottawaquechee Regional Commission (TRORC), assisted the Town of Fairlee with updating and developing its Local Hazard Mitigation Plan.

This section of the Plan satisfies 44 CFR 201.6(b)(1) and 201.6(c)(1) (or, A3.a and A3.b of FEMA’s Local Mitigation Plan Review Guide, 2011).

Committee members who assisted with the revisions include:

Name	Role/Organization	How Participation Was Solicited
Mary Daly	Fairlee Selectboard Chair, Road Commissioner	On June 17, 2013, TRORC staff sent an introductory letter and e-mail to Selectboard members (Mary Daly, David Colby, Frank Barrett), and the Emergency Director (Lance Colby). In this letter, TRORC’s staff requested names and contact information for potential committee members to revise Fairlee’s LHMP. Mary Daly, the Selectboard Chair coordinated with TRORC staff to set up an initial introductory meeting and invited town officials to be involved. TRORC staff continued to meet and coordinate with the update committee until the Local Hazard Mitigation Plan was adopted by the Selectboard (see below for more meeting-specific details).
David Colby	Fairlee Selectboard	
Lance Colby	Fairlee Emergency Director, Water System Operator	
Peter Berger	Fairlee Planning Commission Chair	
Jason Bachus	Police Chief	
Laurent Veilleux	Town Administrator	
Larry Farnham	Fairlee Fire Department, Chief	
Michael Wright	Road Agent	

Additional Participants in the Process:

- Chris Brimmer, Zoning/Administrative Officer

B. Plan Development Process

The 2009 Fairlee Annex was originally part of the 2008 multijurisdictional Regional Hazard Mitigation Plan drafted by Two Rivers-Ottawaquechee Regional Commission, and approved by FEMA on September 30, 2008 with its first local annex. The Fairlee Annex received subsequent FEMA approval on September 30, 2008, but since it was part of a larger plan, FEMA treats its start date as September 30, 2009, and so the Fairlee Annex expired on September 30, 2013.

This section of the Plan satisfies the Element A: Planning Process requirements set out in 44 CFR 201.6.

This Plan is an update of the 2009 Annex, and it has been reconstructed as a single jurisdiction, standalone Fairlee Local Hazard Mitigation Plan that will be submitted for individual approval to FEMA. As such, several sections have been added or updated to include all necessary information.

The changes to this Plan include:

- **General**
 - New sections: Plan Development Process, 2009 Mitigation Strategies Status Update chart, Existing Hazard Mitigation Programs, Projects & Activities, Plan Maintenance;
 - Data updates: New hazard incidents, emergency declarations, census data;
 - Hazards have been reevaluated with the hazard ranking system used by the Vermont Division of Emergency Management and Homeland Security.
- **Hazards Analysis**
 - Severe Weather, Landslides/Mudslides/Rockslides, and Water Supply Contamination are among the “top hazards” that will be addressed in this Plan and have been added to the list of “top hazards,” **which reflects the intention/priorities of local officials to expand their analysis of hazards that the Town is or may be vulnerable to in the next five years;**
 - Flash Flood/Flood/Fluvial Erosion has been removed from the list of “top hazards,” **as it will be addressed in the Severe Weather section;**
 - Severe Weather events are now depicted in a chart that shows the multiple hazards involved during each event;
 - For each hazard, a location/vulnerability/extent/impact/likelihood table has been added to summarize the hazard description.
- **Maps**
 - Added map of the Town of Fairlee depicting critical facilities, town infrastructure, and the NFIP-designated floodway and 100 year floodplain.

The following represent the avenues taken to draft the Fairlee Local Hazard Mitigation Plan:

***The public was given the opportunity to be involved in and comment at the following meetings.**

- **Activities and Public Participation and Involvement**
 - 06/17/2013: Introductory letter and email indicating that the Town’s LHMP would soon expire and explaining the process for revising and readopting. Requested names and

contact information for potential committee members to revise the LHMP. Sent to Selectboard members (Mary Daly, David Colby, Frank Barrett), and the Emergency Coordinator (Lance Colby). **No comments from the public were received.**

- 09/25/2013: Met with members of Fairlee emergency services personnel and Selectboard members, and introduced the Local Hazard Mitigation Plan update process. Reviewed the Mitigation Actions identified in 2009 and determined the current status. **No comments from the public were received.**
- October 2013: A notice was placed in the Two Rivers-Ottawaquechee Regional Planning Commission Newsletter alerting recipients that Fairlee was engaging in hazard mitigation planning and updating their Local Hazard Mitigation Plan. **Contact information was provided in the notice to allow those interested in Fairlee's efforts to receive more information and how to find out about upcoming meetings. No comments were received.**
- 10/28/2013: Met with town officials to discuss and review list of Fairlee's existing hazard mitigation activities/programs/projects. Then used hazard ranking methodology to determine the hazards that would be focused in this Local Hazard Mitigation Plan. **No comments from the public were received.**
- 1/15/2014: Met with town officials to discuss first draft sent a few weeks prior to meeting. The entire draft was reviewed in detail, with TRORC staff making note of any comments or errors. **No comments from the public were received.**
- 2/18/2014: Met with town officials to discuss and develop hazard mitigation strategies for each hazard identified in the Plan. **No comments from the public were received.**
- October 2014: A notice was placed in the Two Rivers-Ottawaquechee Regional Planning Commission Newsletter alerting recipients that Fairlee was engaging in hazard mitigation planning and updating their Local Hazard Mitigation Plan. **Contact information was provided in the notice to allow those interested in Fairlee's efforts to receive more information and how to find out about upcoming meetings. No comments were received.**
- 10/20/2014: TRORC staff attended a Selectboard meeting to inform those in attendance about the work that had been done to update the Town's Local Hazard Mitigation Plan. The Selectboard agenda is posted at the Town Office, and a copy of the most current Fairlee Local Hazard Mitigation Plan was available for viewing at the Town Office. TRORC staff also asked for comments at the meeting, but no substantive comments were received.

○ _____: A notice was posted in _____ from _____ to _____ to alert community members that a public hearing with the Fairlee Selectboard would be taking place. A public hearing to adopt the final draft was held. The Selectboard adopted the Fairlee Local Hazard Mitigation Plan on _____.

- **Governmental participation and involvement (44 CFR 201.6(b)(2))**

- Sent revised draft to Planning Commission Chair **and provided contact information for receiving comments via hard copy/email** —September 23, 2014

- No comments were received.
 - Note: Town officials were given the opportunity to review, provide feedback and approve the changes that were made through the Plan revision and FEMA review process.
 - Sent revised draft to Vermont Division of Emergency Management and Homeland Security—October 21, 2014
 - No comments were received.
- **Neighboring community participation and involvement (44 CFR 201.6(b)(2))**
 - October 2013 and October 2014: A notice was placed in the Two Rivers-Ottauquechee Regional Planning Commission Newsletter alerting recipients that Fairlee was engaging in hazard mitigation planning and updating their Local Hazard Mitigation Plan. Contact information was provided in the notice to allow those interested in Fairlee’s efforts to receive more information and how to find out about upcoming meetings. No comments were received.
 - Posted a notice in four local papers alerting the public to the hazard mitigation planning process that was taking place. Contact information was provided in the notice to allow those interested in Fairlee’s efforts to receive more information and how to find out about upcoming meetings. No comments were received.
 - Valley News—ran October 23, 2013
 - The Herald of Randolph—ran October 24, 2013
 - Journal Opinion—ran October 23, 2013
 - Vermont Standard—ran October 24, 2013
 - Sent revised draft to neighboring Selectboards for comment and provided contact information for receiving comments via hard copy/email —September 29, 2014
 - Towns of: West Fairlee, Thetford, Bradford, and Orford, New Hampshire
 - No comments were received.
 - Sent revised draft to the Lake Morey Resort and provided contact information for receiving comments via hard copy/email —September 29, 2014
 - No comments were received.
 - Sent revised draft to the Samuel Morey Elementary School and provided contact information for receiving comments via hard copy/email —September 29, 2014
 - No comments were received.
- **Review of existing plans, studies, reports, and technical information (44 CFR 201.6(b)(3))**
 - State of Vermont Hazard Mitigation Plan, 2013
 - Fairlee Hazard Mitigation Plan (Adopted March 30, 2009)

- This plan was referenced extensively during the update/plan development process, especially in regard to the worst threats and mitigation action strategies identified in 2009.

This section of the Plan satisfies 44 CFR 201.6(b)(3) (or, A4.a and A4.b of FEMA's Local Mitigation Plan Review Guide, 2011).

Fairlee Town Plan (Adopted September 30, 2014)

- This plan provided TRORC's staff with background information on the community, as well as more detail on their emergency services.
- Fairlee Subdivision Ordinance (Adopted in 1992)
 - The Subdivision Regulations were referenced when completing the Severe Weather section of this Local Hazard Mitigation Plan.
- Fairlee Zoning Regulations (Amended September 13, 2011)
 - The Zoning Regulations were referenced throughout the update/plan development process.
- **Fairlee Flood Hazard Area Interim Zoning Bylaw** (Adopted June 23, 2015)
 - The Bylaw was referenced when completing the Severe Weather section of this Local Hazard Mitigation Plan. **The Town has received the updated model language from VT DEC Watershed Management and is working to adopt this language into the Zoning bylaws.**
- Fairlee's Local Emergency Operations Plan (LEOP) (Last Adopted April 21, 2014)
 - This Plan provided TRORC's staff with general information about Fairlee's emergency operations.
- Source Protection Plan, Fairlee Town Water System; Fairlee, Vermont (October 1996; last amended February 2013)
 - The Town's Source Protection Plan was referenced when completing the Water Supply Contamination section of this Plan.
- Flood Insurance Study: Town of Fairlee, Vermont; Orange County (June 3, 1991)
 - The Flood Insurance Study was referenced for general knowledge of flooding in the Town of Fairlee.
 - Brief historical information on flooding in the Town of Fairlee can be found on pages 2 and 4.
 - Relevant peak discharge information for the Connecticut River can be found on page 5.
 - For the next Local Hazard Mitigation Plan update, the Town will review the 1991 Flood Insurance study in greater depth.

C. Status Update on Mitigation Actions Identified in 2009

The following table outlines the mitigation actions that were proposed in the 2009 All-Hazard Pre-Disaster Mitigation Plan for the Town of Fairlee (adopted on March 30, 2009 as an appendix to the Two Rivers-Ottawaquechee Regional Commission’s multi-jurisdictional Pre-Disaster Mitigation Plan).

This section of the Plan satisfies the requirements of 44 CFR 201.6(d)(3).

Participants in the plan update process reviewed those actions and reported on the status of each (in order of 2009 priority). Actions related to long-term mitigation of natural hazards are so noted.

2009 Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding/Support)	2014/2015 – Status of Mitigation Actions
<u>ALL HAZARDS</u> 1. Ensure that RRP (Rapid Response Plan) is current.	Selectboard	Yearly	Local resources	The newest iteration of the RRP is the Local Emergency Operations Plan (LEOP). The Town updates and approves their LEOP annually; the 2014 version was approved on 04/27/2015.
2. Use PDM (Pre-Disaster Mitigation) plan for Hazard Identification and Mapping.	Emergency Management Coordinator	Ongoing	Local resources	This action is in process.
3. Re-write and update existing Emergency Operations Plan.	Emergency Management Coordinator	Yearly	Local resources	This action is not complete.
4. Improve interoperability of emergency communications equipment.	Emergency Management Coordinator	Ongoing	Local resources	The communication system has changed from wide-band to narrow-band, but once other departments make the switch to digital, there will be no communications. The Police Chief is investigating ways to ensure that communications do not cease and is currently awaiting arrival of a new portable digital radio.
<u>FLASH FLOOD</u> 5. Continue the planned road maintenance program and update existing culvert inventory. Upgrade culverts and ditching. (Mitigation)	Highway Department	Ongoing	Local resources	The Town has been in the process of replacing and upgrading culverts. Culvert work has been completed since last culvert inventory in 2009. The Town is now working to update their culvert inventory. This action has been carried over into the 2015 Plan.

2009 Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding/ Support)	2014/2015 – Status of Mitigation Actions
6. Revise flood hazard regulations. (Mitigation)	Selectboard	2009	Local resources and TRORC assistance	Not complete. The Town will review/possibly revise once the Town Plan update is complete and then work to upgrade the Zoning Plan. This action has been carried over into the 2015 Plan.
<u>HAZMAT</u> 7. Pursue HAZMAT training for Fire Department.	Fire Department	2009	Funded by Fire Service Training Academy	The Fire Department participated in a HAZMAT class for 2014, and had a Firefighter 1 refresher course in March 2013.
<u>FIRE</u> 8. Develop additional dry hydrant sites in rural locations.	Fire Department	Ongoing	Local resources, George Aiken RC&D	Some work has been done to complete this task, but due to the maintenance of dry hydrants, the Fire Department prefers to use a float and a suction line.

There are currently no new development plans in the Town of Fairlee. Fairlee has a small population (1,051 according to the 2008-2012 ACS survey), and it shares an eastern border with the Town of Orford, New Hampshire. Located within Fairlee is Lake Morey, and a portion of Lake Fairlee, which are two of the only lakes in the wider region of Vermont. This attracts recreationists, tourists and vacationers to Fairlee and increases the pressures for secondary home- and lakeshore development. In addition, I-91 runs through the Town of Fairlee, which has the potential to bring additional development pressures.

Permits have been issued or in process for six new single family dwellings. Two of these permits can be considered regular residential development and the other four are for lakeshore development.

Depending on the location and steepness of slope, new development in the Town of Fairlee may be vulnerable to landslides, mudslides or rockslides. Development in areas with steep slopes may also be vulnerable to fluvial erosion hazards. Two site plan approvals have been granted for commercial development. Lake Morey Inn and Resort has completed both local and state permitting for the construction of a pair of resort units totaling roughly 4800 square feet, and completion is expected by July 1st of 2015. Dollar General has obtained local site plan approval for a 9,100 square feet retail building which is currently under construction. The completion is expected in September 2015. The pattern of commercial development in Fairlee tends to be along Route 5 within the village and outside of the village. Sections of Route 5 lie adjacent to the Connecticut River, and development within those areas may be vulnerable to flooding.

D. Existing Hazard Mitigation Programs, Projects & Activities

The Town of Fairlee is currently engaged in the following on-going hazard mitigation programs, projects and activities:

This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(3).

	Type of Existing Authority / Policy / Program / Action	Resources: Staffing & Funding	Ability To Expand/Improve On
Community Preparedness Activities	Program—Annual update of Fairlee’s Local Emergency Operations Plan (LEOP). Last updated and approved on 04/27/2015.	Volunteer time from the Emergency Management Director/ Coordinator; assistance from TRORC. Funding from Vermont Division of Emergency Management and Homeland Security (DEMHS).	Current program works well, no need to expand or improve on.
	Program— Participation/attendance in the Local Emergency Planning Committee District 12 (LEPC 12)	Staff/volunteer time from the Fairlee Emergency Management Coordinator, meetings convened by TRORC. Funding from Vermont DEMHS.	There is need to expand or improve on attendance as it is considered satisfactory.
	Completed Action— Designated Red Cross Shelters At the Samuel Morey Elementary School and Free Evangelist Church in Bradford	Staff time from the Town Administrator and volunteer time from the Emergency Management Coordinator and Selectboard, and perhaps other emergency management personnel. Funding from American Red Cross.	This was a one-time action.
	Program—Disaster Plan for the Fairlee Library (2014 version currently in effect)	Volunteer time from the Library Board of Trustees. Funding from library budget.	This plan is currently serving its purpose well, and there is no need to expand or improve on it at this time.
Insurance Programs	Authority/ Program— participation in National Flood Insurance Program (NFIP) [Note: This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(3)(ii).]	The Fairlee Zoning Administrator serves as the NFIP Administrator. Assistance from TRORC and Vermont ANR. Funding from local resources—annual town budget.	Fairlee’s initial Flood Hazard Boundary Map was identified on 12/1/1976 and their initial Flood Insurance Rate Map (FIRM) was dated 06/03/1991. The Town’s FIRM has not been updated since—the current effective date of the Town’s FIRM is 06/03/1991. The Town also has a Flood Insurance Study and its effective date is 06/03/1991. The Town continues its participation in the NFIP by administering and enforcing its Flood Hazard Area Zoning Bylaw, which was last updated and adopted on 06/17/1991. The 2014 version of the Fairlee Town Plan indicates that the Planning Commission should update the Town’s Flood Hazard Area Zoning Bylaw to ensure it meets the standards required by the NFIP.

	Type of Existing Authority / Policy / Program / Action	Resources: Staffing & Funding	Ability To Expand/Improve On
	Authority/Program—Insurance through Vermont League of Cities & Towns on buildings and repair on Town Office.	Staff time from Town Office staff and Vermont League of Cities & Towns staff. Funding from local budget for insurance coverage.	Town officials are satisfied with the insurance through Vermont League of Cities & Towns, and there is no need to expand or improve on it.
Land Use Planning	Policy/Program— Fairlee Town Plan. Revised and adopted on 09/30/2014 and includes a “Flood plains and Flood Resiliency” section	Volunteer time from Planning Commission, and assistance from TRORC and other state agencies on specific subject matter. Funding from Municipal Planning Grants.	The Town Plan is updated every five years, as required by statute. The Planning Commission may expand or improve on any section it deems necessary, or that is required by changes in state statute.
	Authority— Flood Hazard Area Zoning Bylaw Interim Adopted on 05/15/2015, includes a “Special Flood Hazard Area” (SFHA) zoning district.	Volunteer time from the Planning Commission, and assistance from TRORC. Funding from Municipal Planning Grants.	During the Town Plan review/update period, the Zoning Bylaw is also reviewed and updated if needed. The 2014 version of the Fairlee Town Plan indicates that the Planning Commission should update the Town’s Flood Hazard Area Zoning Bylaw to ensure it meets the standards required by the NFIP.
	Authority— Fairlee Zoning Regulations Adopted 07/26/1978, and last amended 06/23/ 2015.	Volunteer time from the Planning Commission, and assistance from TRORC. Funding from Municipal Planning Grants.	During the Town Plan review/update period, the Zoning Regulations are also reviewed and updated if needed.
	Authority— Fairlee Subdivision Ordinance Adopted in 1992.	Volunteer time from the Planning Commission. Funding from Municipal Planning Grants.	The Subdivision Regulations may be updated when deemed appropriate by the Selectboard. Currently, there is no need to expand or improve on these regulations.
	Policy/Program—Fairlee Hazard Mitigation Plan Adopted 03/30/2009.	Volunteer time from Town officials; assistance from TRORC and Vermont DEMHS. Funding from FEMA; Vermont DEMHS; TRORC.	The 2015 Fairlee Local Hazard Mitigation Plan will replace the 2011 Plan. The 2015 LHMP has evolved from the 2011 Plan and has greatly expanded and improved upon it. Future iterations of the Town’s LHMP will be updated by the Town at least every five years.
Hazard Control & Protection of Critical Infrastructure & Facilities	Policy/Program—Fairlee Hazard Mitigation Plan Adopted 03/30/2009.	Volunteer time from Town officials; assistance from TRORC and Vermont DEMHS. Funding from FEMA; Vermont DEMHS; TRORC.	The 2015 Fairlee Local Hazard Mitigation Plan will replace the 2011 Plan. The 2015 LHMP has evolved from the 2011 Plan and has greatly expanded and improved upon it. Future iterations of the Town’s LHMP will be updated by the Town at least every five years.

	Type of Existing Authority / Policy / Program / Action	Resources: Staffing & Funding	Ability To Expand/Improve On
	<p>Program— Culvert inventory in fall of 2009</p> <p>This culvert inventory includes georeferenced locations for all Fairlee culverts and recommendations for culvert upgrades to reduce vulnerabilities to flooding.</p>	<p>Staff time from the Town Road Foreman/Agent; assistance from TRORC. Funding from Better Backroads grant; local personnel time and funding.</p>	<p>The Town is currently using the culvert inventory to further its culvert improvement program, and seeking funding through the Better Backroads grant program for implementation projects.</p>
	<p>Program/Policy— Source Protection Plan, Fairlee Town Water System; Fairlee, Vermont</p> <p>Originally completed in 10/1996; last amended 02/2013</p>	<p>Staff time from the Fairlee Town Water System Operator, and assistance from Vermont Department of Environmental Conservation’s Drinking Water and Groundwater Protection Division. Funding from the Fairlee Town Water System budget.</p>	<p>Vermont regulations require that this document be updated periodically (every 3 years), and the Fairlee Town Water System meets that requirement.</p>
Education/ Public Outreach	<p>Ongoing Action—Town-produced newsletter</p>	<p>Staff time from the Town Office/ Funding from local budgets.</p>	<p>There is no need to expand or improve on this action.</p>
	<p>Ongoing Action—Information on Red Cross shelters included in the Town Report</p>	<p>Staff time from the Town Office/ Funding from local budgets.</p>	<p>There is no need to expand or improve on this action.</p>

E. Plan Maintenance

This Plan (the Fairlee Local Hazard Mitigation Plan) will be updated and evaluated, by discussing its effectiveness and making note to incorporate any necessary revisions in the update process, annually at an April Selectboard meeting, along with the review of their Local Emergency Operations Plan (LEOP). At this meeting, the Selectboard will monitor the implementation of the hazard mitigation strategies outlined in this Plan, by noting those that have been completed, are in the process of completion, or any issues with initiating the activity. Any comments from local officials and the public will be incorporated when relevant. This meeting will constitute an opportunity for the public and other town officials to hear about the town's progress in implementing mitigation strategies and to give input on future activities and Plan revisions. The public will be given the opportunity to comment at this meeting, and the comments will be incorporated when relevant.

This section of the Plan satisfies 44 CFR and 201.6(c)(4)(i), 201.6(c)(4)(ii), and 201.6(c)(4)(iii).
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Updates and evaluation of this Plan by the Selectboard, the local Emergency Coordinator/Director, or the Town Administrator will also occur within three months after every federal disaster declaration directly impacting the Town of Fairlee. The Town will monitor, evaluate and update this Local Hazard Mitigation Plan at every April Selectboard meeting and after every federally declared disaster according to the graphic on page 40. The Town shall reference the Local Hazard Mitigation Plan when working on Town Plan amendments or changes to the Town's bylaws.

At least one year before the Plan expires, the update process will begin (though annual updates, monitoring of progress and evaluation will occur at the April Selectboard meeting). For this next Plan update, the Two Rivers-Ottauquechee Regional Commission (TRORC) will help with Plan updates if assistance is requested by the Town of Fairlee and funding is available. If TRORC is unable to assist the Town, then Fairlee's Town Clerk, Town Administrator, or Selectboard will update the Plan, or the Selectboard may appoint a committee of interested citizens (including the current local Emergency Coordinator/Director) to draft changes. Ultimately, it will be the Town's responsibility to update their Local Hazard Mitigation Plan.

The process of evaluating and updating the plan will include continued public participation through public notices posted on the municipal website, notice in the municipal building, The Valley News, the Journal Opinion, and the TRORC newsletter and blog inviting the public to the scheduled Selectboard (or specially scheduled) meeting. The public will be given the opportunity to comment during these public meetings. Additional stakeholders shall be invited to the meeting; these include: Upper Valley Ambulance Inc., representatives from the Fairlee Elementary School, and the Vermont Agency of Natural Resources (VT ANR). VT ANR will be invited because they can provide assistance with NFIP outreach activities in the community, models for stricter floodplain zoning regulations, delineation of fluvial erosion hazard areas, and other applicable initiatives. These efforts will be coordinated by the Town Administrator.

Updates may include changes in community mitigation strategies; new town bylaws, zoning and planning strategies; progress on the implementation of initiatives and projects; effectiveness of implemented projects or initiatives; and evaluation of challenges and opportunities **including overall effectiveness of plan goals and actions in reducing vulnerabilities**. If new actions are identified in the interim period, the plan can be amended without formal re-adoption during regularly scheduled Selectboard meetings.

Fairlee shall also incorporate mitigation planning into their long-term land use and development planning documents. The 2013 Vermont Legislature passed a law requiring all towns to incorporate flood resiliency elements into their town plans as of July 2014. To do so, flood hazard and fluvial erosion hazards will be identified, and strategies and recommendations will be provided to mitigate risks to public safety, critical infrastructure, historic structures and public investments. This Local Hazard Mitigation Plan will help the town to comply with the new community flood resiliency requirement for town plans adopted after July 2014.

It is recommended that the process work both ways and the Town review and incorporate elements of the Local Hazard Mitigation Plan when updating the municipal plan, zoning regulations, and flood hazard/FEH bylaws. The incorporation of the goals and strategies listed in the Local Hazard Mitigation Plan into the municipal plan, zoning regulations and flood hazard/FEH bylaws will also be considered after declared or local disasters. The Town shall also consider reviewing any future TRORC planning documents for ideas on future mitigation projects and hazard areas.

V. Community Vulnerability by Hazard

A. Hazard Identification

Mitigation efforts must be grounded in the rational evaluation of hazards to the area and the risks these hazards pose. This is done through a process, which in essence asks and answers three basic questions:

- What bad things can happen?
- How likely are they to occur?
- How bad could they be?

This process, which is laid out in the table (below), is an attempt to inventory the known hazards, establish the likelihood of them occurring in the future, and then assess the community's potential vulnerability to each. By performing this analysis, we are then able to prioritize actions that are designed to mitigate the effects of each of these disaster types and ultimately make Fairlee a safer place.

It is important that we learn from the past in order to avoid the same disasters and their outcomes. Disasters that have occurred within the Town of Fairlee, the larger region, and the State of Vermont can give us good information about what types of disasters we can expect in the future and what kinds of damage they might cause. However, while this historical data can inform our perspective of what might happen in the future, it is by no means a prophecy. While the Town of Fairlee might not have been impacted by a specific hazard in the past, this does not necessarily mean it will never be affected in the future. Indeed, the advance of climate change means that old weather patterns may not hold. For instance, in recent years, Vermonters have seen an increase in the number and severity of storms, especially rainfall events. Armed with historical data and a healthy respect for climate change and the unknown, we have tried our best to identify hazards and prepare for the future.

The following table reflects the hazards that we believe can be expected, or are at least possible, in the central Vermont area. We have considered factors such as frequency of occurrence, warning time and potential community impact to rank each and determine which hazards pose the greatest threats to life and property in Fairlee.¹ The top threats (bolded in the table, below) are then followed-up with discussion and mitigation strategies throughout the rest of this Plan.² It should be noted that hazards assigned with the same "Hazard Score" are not in order and their placement in the table should not be assumed to reflect their potential to create hazards for the town.

¹ The ranking methodology used in this Plan (see Appendix A) is closely modeled on that which is used by the Vermont Division of Emergency Management & Homeland Security (VDEMHS). The only changes made were intended to reflect the more limited geographical scope of this analysis, which is focused on a small, rural town rather than the entire State of Vermont (which is the focus of VDEMHS).

² It's important to note that those hazards which were not found to pose the greatest threats may still occur in Fairlee's future; however, they are not the focus of this Plan.

Hazard	Frequency of Occurrence	Warning Time	Potential Impact	Hazard Score
Severe Weather (Thunderstorm, Lightning, High winds, Hail, and Flooding) <i>*Note: We have defined 'Severe Weather' to include two or more of the above hazards.</i>	Highly Likely	3-6 hours	Moderate	10
Hazardous Material Spill	Likely	None-minimal	Moderate	10
Structural Fire	Likely	None-minimal	Moderate	10
Landslides/Mudslides/Rockslides	Highly Likely	None-minimal	Negligible	9
Water Supply Contamination	Occasionally	None-minimal	Moderate	9
Flash Flood/Flood/Fluvial Erosion	Likely	3-6 hours	Minor	8
Wildfire	Likely	None-minimal	Negligible	8
Extreme Cold/Snow/Ice Storm	Likely	6-12 hours	Moderate	8
Dam Failure	Unlikely	3-6 hours	Major	8
Hail Storms	Likely	3-6 hours	Negligible	7
Earthquake	Occasionally	None-minimal	Negligible	7
Hurricanes/Tropical Storms	Occasionally	More than 12 hours	Moderate	6
Tornado	Unlikely	3-6 hours	Minor	6
Invasive Species/Infestation	Highly Likely	More than 12 hours	Negligible	6
Ice Jams	Unlikely	More than 12 hours	Minor	4
Drought	Unlikely	More than 12 hours	Negligible	3
Extreme Heat	Unlikely	More than 12 hours	Negligible	3

For the purposes of this Plan, the committee decided to focus on the five hazards that had the highest “Hazard Score” based on the ranking methodology above and agreed the hazards that had the highest “Hazard Score” were indeed the hazards the Town was most vulnerable to. The committee also believed that the Town’s vulnerabilities to flooding would be adequately addressed in the Severe Weather hazard profile. Refer to Appendix A for definitions of the hazard ranking terms used in the above chart.

The Town of Fairlee identified the following “top hazards” which they believe their community is most vulnerable to:

- Severe Weather (Thunderstorm, Lightning, High winds, Hail, and Flooding)
- Hazardous Material Spill
- Landslides/Mudslides/Rockslides
- Structural Fire
- Water Supply Contamination

Each of these top hazards will be discussed in the following sections. Within each section, previous occurrences of each hazard will be listed, including the County-wide FEMA Disaster Declarations (DR-#) when applicable. Hazards information was gathered from local sources (ex. town history book), the National Climatic Data Center’s (NCDC’s) Storm Events Database (1950-2012 and 2006-2012), the Spatial Hazard Events and Losses Database for the United States (SHELDUS) 1960-2012, and Special Reports produced by the National Weather Service in Burlington, Vermont. Each section also includes a description of each top hazard and a hazard matrix that will also include the following information (please see each hazard profile for a hazard-specific matrix):

Hazard	Location	Vulnerability	Extent	Anticipated/ Observed Impact	Likelihood/ Probability
Type of hazard.	General areas in community that may be vulnerable to the hazard.	Community structures affected by hazard.	Strength or magnitude, and details of a notable event(s).	Dollar value or percentage of damages.	<u>Occasionally:</u> 1–10% probability of occurrence per year, or at least one chance in next 100 years <u>Likely:</u> >10% but <100% probability per year, at least 1 chance in next 10 years <u>Highly Likely:</u> 100% probable in a year

B. Hazard Profiles for “Top Hazards”

1. Severe Weather

More common than hurricanes or tropical storms are severe thunderstorms (usually in the summer), which can cause flooding as noted above, and are associated with lightning, high winds, hail and tornadoes. Hailstorms have occurred in Vermont, usually during the summer months. While local in nature, these storms are especially significant to area farmers, who can lose entire fields of crops in a single hailstorm. Large hail is also capable of property damage. 382 hail events were recorded between 1950 and 2008 in the state, making hail an annual occurrence in some part of the state. Most of these events had hail measuring .75 inches, but many had hail at least 1.5 inches in size. The largest hail during the period was 3-inch hail that fell in Chittenden County in 1968 (NCDC). Tennis ball-sized hail was reported in the town of Chittenden during a storm in the summer of 2001. Thunderstorms can generate high winds, such as hit the region on July 6, 1999, downing hundreds of large trees in a few minutes.

This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(2)(i), 201.6(c)(2)(ii), and 201.6(c)(2)(iii) for **Severe Weather**.

In Fairlee, severe weather is quite common, typically in the late spring and summer months when the region experiences high temperatures. Severe thunderstorms tend to bring other hazards such as high winds, hail, lightning, and flooding, and these hazards are often experienced in combinations which create many unique weather and emergency management situations. Over the years, Fairlee has been hit with high winds that have downed and uprooted numerous trees, and knocked out electricity to residents in the Town. Town specific wind data could not be found, but the “Remarks” section of NCDC Database helps to illuminate the impact strong winds can have on Fairlee. Sizeable hail has also accompanied storms moving through the Town and region.

The following list indicates the history of occurrence with regard to this hazard in Orange County (given that small population of Fairlee, town-specific data is limited); an asterisk “*” denotes the few instances in which town-specific data is available, and federal disaster numbers are listed when appropriate. In an attempt to capture the individual hazards that may arise, and the different circumstances caused by the hazards in concert, the separate hazards are documented in the table below.

History of Occurrences:

Severe Weather Date	Event					Location	Extent
	Thunderstorm / severe storm	Flooding	Hail	High Winds	Lightning		
6/25/2013-7/11/2013* (DR-4140 VT)	✓	✓	✓	✓		Fairlee, County-wide	Severe storms over a nearly one month period. Rains caused flooding in the region, winds downed trees, power outages were reported. Over \$14,000 in damage assessed in Fairlee.

Severe Weather Date	Event					Location	Extent
	Thunderstorm / severe storm	Flooding	Hail	High Winds	Lightning		
6/2/2013*	✓		✓	✓		Fairlee, County-wide	Thunderstorms with pockets of damaging winds and large hail. At its peak, roughly 20k customers lost power. Greater than dollar size hail reported in W. Fairlee Center.
8/28/2011 (DR-4022 VT)	✓	✓		✓		County-wide	Tropical Storm Irene prompted widespread, devastating flooding throughout the region. 5-6" reported in Fairlee.
06/09/2011*	✓		✓	✓		Fairlee, County-wide	Scattered thunderstorms and a few isolated reports of damaging winds and large hail were reported. Numerous trees downed in Fairlee.
05/26/2011-05/27/2011 (DR-4001 VT)	✓	✓		✓		County-wide	Region struck by severe storms and flooding.
07/21/2010*	✓		✓	✓		Fairlee, County-wide	Thunderstorms hit the area along with high winds, developing into supercells that caused widespread damage to trees, power poles and structures. Also, golf ball-sized hail. Thunderstorm winds damaged a farm along Rt. 5, including flattening one barn and severely damaging others. ~\$75k of property damage.
5/31/2009	✓		✓	✓		County-wide	40-55mph wind gusts and hail caused fallen trees and power outages in the region.
7/21/2008-8/12/2008 (DR-1790 VT)	✓			✓		County-wide	Severe storms and flooding impacted Orange and surrounding counties.
07/09/2011-07/11/2007 (DR-1715 VT)	✓	✓		✓		County-wide	Severe storms and flooding impacted Orange and surrounding counties.
04/15/2007-04/21/2007 (DR-1698 VT)	✓	✓		✓		County-wide	Severe storms and flooding impacted Orange and surrounding counties.
07/21/2003-08/18/2003 (DR-1488 VT)	✓	✓		✓		County-wide	Severe storms and flooding impacted Orange and surrounding counties.
07/14/2000-07/18/2000 (DR-1336 VT)	✓	✓		✓		County-wide	Severe storms and flooding impacted Orange and surrounding counties.
9/16/1999-9/21/1999 (DR-1307 VT)	✓	✓		✓		County-wide	Tropical Storm Floyd's rains and winds caused road and culvert washouts.

Severe Weather Date	Event					Location	Extent
	Thunderstorm / severe storm	Flooding	Hail	High Winds	Lightning		
7/6/1973 (DR-397 VT)		✓		✓		County-wide	One of the largest flood events of the 20 th century in VT. Landslides reported in the region.
11/3/1927	✓	✓				County-wide	"Great Flood of 1927." Worst recorded flood in VT. White River crested at a record of 29.30 feet.

The Town of Fairlee is very prone to strong winds, particularly microburst events that sweep through the region. Power outages are the most common occurrence in the wake of such wind events, usually occurring as a result of tree limbs falling on local power lines. There is an extensive lag time for power line repairs in Fairlee, owing to the distance between the town and Green Mountain Power's nearest supply center in Wilder. In the summer of 2013, a power outage caused by severe storm damage left portions of Fairlee without power for up to eight hours.

The other main hazard caused by severe weather throughout the Town is flooding. The most recent major flooding event to occur in the region was in the summer of 2013. Severe storms brought heavy rain and strong winds over a three week period in late June and early to mid-July. The flooding was widespread and severe enough for a federal Disaster Declaration, DR-4140 VT, to be issued for Orange and other counties in Vermont. The Town of Fairlee was impacted by this event, and sustained over \$14,000 in damages. For this Disaster Declaration, damage was sustained on Quinbeck Road, Hebbard Road, Bragg Road, Terry Hill Road and Brushwood Road.

There are 396 acres of mapped floodplain in the Town of Fairlee, with no mapped floodway. Three-percent of the land area of the Town is the floodplain. There are 74 residences, 2 commercial/ public buildings in the Special Flood Hazard Area, which would equal \$15,169,385 if all properties were severely damaged/destroyed in a severe flooding event. Quinbeck Road and Route 244 are regularly or sometimes (depending on weather event and track of weather event) impacted by flooding.

The Town maintains an up-to-date culvert inventory and its work to upgrade culverts remains in process to help lessen the adverse impacts of flooding events that are often attributable to severe storms. There are a number of existing culverts the Town intends to upgrade in the near future, most notably upgrading an existing culvert on Lake Morey Road. There are no repetitive loss structures in the Town of Fairlee on FEMA's NFIP list.

Hazard	Location	Vulnerability	Extent	Observed Impact	Likelihood/ Probability
Severe Weather	Town-wide for wind, hail, high winds, lightning and thunderstorm impacts. The following areas are regularly or sometimes impacted by flooding: Quinibeck Road and Route 244.	Town and private buildings, and utilities; culverts, bridges, road infrastructure. 74 residences, 2 commercial/ public buildings in the Special Flood Hazard Area	During Tropical Storm Irene- 5-6" of rainfall in Fairlee.	Varied depending on the severity of the storm, impacts of other recent events, etc. For DR-4140 VT, \$14,000 in damages in Fairlee.	Highly likely

2. Hazardous Material Spill

Based on available VT Tier II data, there are five sites in town that have sufficient types and/or quantities of hazardous materials to require reporting. The majority of Fairlee’s village is located along Route 5, running roughly parallel to the Connecticut River to the east and I-91 to the west. There are 21 total Tier II Critical Facilities in the Town, including four hazardous material storage facilities. There are 398 residential and 149 commercial, industrial or public buildings within 1,000 feet of a potential HAZMAT spill on major roads and railways in Fairlee. This includes the town water facility, the Fairlee Town Hall/Town Office, the fire department, the Samuel Morey School, local businesses (namely, the local fireworks store), and the Fairlee Public Library. In the event that 5% of these structures were involved in a HAZMAT incident, the estimated damage would be \$8,070,798. It should also be noted that the State of Vermont currently has one fully trained HAZMAT response team, with vehicles located in Essex Junction, Brandon, and Windsor. The HAZMAT crew chief is available within minutes of a call for the team but on-scene response would be a matter of hours. In the event of a serious accident in Town, there would be little time for evacuation and response would be difficult.

This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(2)(i), 201.6(c)(2)(ii), and 201.6(c)(2)(iii) for **Hazardous Materials Spill**.

The following data was retrieved from the Vermont Department of Environmental Conservation’s Spill List and by searching the archives of local newspapers. The table above is used to illustrate the ease with which trucks, trains and the day-to-day activities in the Town have the potential to create a hazardous material spill and dangerous conditions for emergency responders and town residents.

History of Occurrences:

Date	Event	Location	Extent
09/11/2014	Hazardous Material Spill	Route 2848	Transformer spill resulting from high winds. Approximately 8 gallons of mineral oil dielectric fluid released.
03/11/2011	Kerosene Spill	Avery Apartments	An above ground tank leak/failure reportedly caused the leak of 125 gallons of kerosene after snow from the roof fell on the tank, loosening the pipe.
11/04/1989	Gasoline Spill	Route 5	300 gallon UST overfill at the Fairlee General Store. Information was provided at the scene for mitigation and remediation.
06/08/1983	Diesel Spill	Route 5	Truck accident on Rt. 5 caused a 50 gallon diesel spill.
11/09/1975	Train Derailment	South End of Village	A train wreck in Ely caused a 91,000 gallon propane spill, which required EPA investigation. Explosions could be seen miles off in places as far away as St. Johnsbury.

The historic record of sizable hazardous materials spills in Fairlee and Ely is a testament to the fact that the potential for a major spill exists. One of the major risk-areas in the Town of Fairlee is along Route 5. This corridor poses a constant threat to the Town of Fairlee. Route 5 serves as the main thoroughfare for trucks and other motor vehicles transporting a wide-range of goods, including a wide range of hazardous materials, within the confines of Fairlee. A truck accident and a resulting hazardous material spill could be exceedingly disastrous for the Town and its residents. The majority of Route 5 in the Town of Fairlee is built close to the Connecticut River and Lake Morey, which could create additional water contamination problems if a hazardous material spill occurred on Route 5.

Similarly, I-91 runs parallel to Route 5, and is very close to residences, businesses, and public facilities alike. The same concerns that are present along the Route 5 corridor apply to 7.3 miles of I-91 that passes through Fairlee. Furthermore, I-91 creates a transportation bottleneck through the Town of Fairlee and pushes the village towards the Connecticut River, which constrains the village and depending on the site of the accident or spill, may make accessing the village difficult. As a result, if a major accident or spill did occur, and responders were spread across the Town, there would be difficulties for some responders, depending on where they were located, to access the required gear.

In order to prepare for hazardous material spills in Fairlee, 20 members of the Fairlee Volunteer Fire Department are trained to the HAZMAT Awareness level and 5 to the HAZMAT Operations level.

Hazard	Location	Vulnerability	Extent	Anticipated/Potential Impact	Likelihood/Probability
Hazardous Materials Spill	Route 5, I-91 and the railway. All arteries in close proximity to Lake Morey and Connecticut River.	Road and rail infrastructure, nearby structures (ex. Town Garage if fuel tank struck), Connecticut River, Lake Morey.	Initially, local impacts only; but depending on material spilled, extent of damage may spread (ex. into groundwater)	Within 1,000 feet of Route 5, I-91, and other Class 2 roads, there are 389 residences and 149 commercial, industrial or public buildings. In the event that 5% of these structures were involved in a HAZMAT incident, the estimated damage would be \$8,070,798.	Likely

3. Structural Fire

Vermont has one of the highest per capita death rates from fire in the nation. This is in fact the deadliest form of disaster throughout the state. In 2010, there were 1,956 reported structural fires in the state, which included 5 fatalities and over \$18 million dollars in damage. Although there have been requirements for smoke detectors in rental housing for over 20 years, and requirements for smoke detectors in single-family dwellings since 1994, there was only one building involved in the fatal fires in 2000 that had evidence of working smoke alarms.

This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(2)(i), 201.6(c)(2)(ii), and 201.6(c)(2)(iii) for **Structure Fire**.

Structure fires may occur at any point, and are typically initiated within a single fuel object. Smoke produced by the burning object forms a smoke plume and rises, creating a layer of smoke while also transporting heat to the smoke layer. Fire then spreads quickly by radiation from the flames, or from the smoke layer. Once other objects are engulfed, more smoke plumes are formed and heat radiates to other objects. Fire burns and moves across different materials depending on the material's composition, orientation, surface to mass ratio and air supply in the structure/room.

The majority of the Town of Fairlee's growth is centered in the village area that extends out along Route 5 adjacent to Interstate 91. The Town is typified by a number of old wooden town buildings, residences, and a few commercial spaces. A review of the fires listed in the "History of Occurrences" chart below demonstrates the potential for structures located in the rural Town of Fairlee to be completely or severely destroyed by fire.

The following occurrences were reported by the Committee or obtained from local sources. It is reasonable to assume that more structural fires have occurred in the period of time between the entries listed below.

History of Occurrences:

Date	Event	Location	Extent
07/10/2013	House fire	Route 244	Home was hit by floods that started to wash away homeowners' driveway, and a fire was accidentally started in the kitchen. Residents were cooking and became distracted, hot oil in kitchen sparked flames. Fire was contained to kitchen area. Note: A severe storm was in effect at the same time as the call and washed out driveway to residence.
05/06/2007	Block fire	Colby Block	Fire of undetermined origin consumed the Colby Block. Destroyed 6 stores and 3 apartments, engulfing block in flames that rose up to 50 feet. Retail space and apartments were a complete loss.
03/17/2007	Structure fire		Fire within an unattached two-car garage. Garage was a complete loss.
12/05/2003	Structure fire	Terry Hill Road	Fire in an attached garage spread into the main house. Garage was a complete loss, with moderate damage sustained at the house.
12/28/2002	Structure fire	Route 5 North	Chimney fire spread into wall and attic. Fire was contained and there was minimal damage.

Date	Event	Location	Extent
04/19/2002	Structure fire	Fairview Street	Fire contained to attached garage.
03/31/1995	House fire	Terry Hill Road	House was a partial loss.
10/05/1982	Structure fire	Route 5/Bridge Street	Candle shop burned down—business and an apartment were a complete loss.
03/04/1982	House Fire	Blake House— School Street/ Route 5	The house was a complete loss.

As noted, recognized fire protection problems for the community include the following: development in areas distant from the village center of the Town, development on class 3 and 4 roads, distance from water sources (rivers, hydrants and/or fire ponds), and inadequate snow removal (for building access).

To help improve the Town’s success in fighting structure fires, Fairlee has pursued installing additional dry hydrant locations. However, because the maintenance of dry hydrants can become time-consuming, the Town prefers to use a suction and float line. Despite this drawback to dry hydrants, the Town will continue looking for additional dry hydrant sites. While no new dry hydrants have been installed since 2009, the Town is looking to put in a dry hydrant at Britton’s lumber yard property on Route 5/Ely Road.

Hazard	Location	Vulnerability	Extent	Observed Impact	Likelihood/Probability
Structural Fire	Town-wide	All housing, municipal buildings, retail/commercial sites	Depends on the location and extent of the fire.	Varies depending on the location and extent of the fire.	Likely

4. Landslides/Mudslides/Rockslides

The movement of a mass of rock, debris or earth down a slope by force of gravity is considered a landslide. A landslide occurs when the slope or soil stability changes from stable to unstable due to an outside force, such as an earthquake, a severe storm, erosion, fire or a human-induced activity. Slopes greater than 10 degrees and slopes where the height from the top of the slope to its toe is greater than 40 feet are more likely to slide. A lack of vegetative cover and/or soils with high water content contribute to the slope’s vulnerability to fail.

This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(2)(i), 201.6(c)(2)(ii), and 201.6(c)(2)(iii) for **Landslides/Mudslides/Rockslides**.

In simple terms, the two factors needed to trigger a landslide are gravity and precipitation. Therefore, because much of Vermont is mountainous and receives relatively high levels of precipitation, the land areas in Vermont have certain predisposition towards landslides. Heavy winter snows combined with spring snow melt and heavy rains in the spring, summer and fall all contribute to high water content in the soil. The majority of landslides within Vermont involve a small quantity of rock and soil materials, but they frequently occur without any warning. Over 200 years ago (1783), landslides in Vermont were made famous in newspaper accounts that chronicled devastating spring flooding events. It is important to highlight the connection between precipitation, flooding and landslides in Vermont.

The following data was retrieved from various sources, including the NCDC Database, and publications issued by the State of Vermont.

History of Occurrences:

Date	Event	Location	Extent
04/08/1996	Rockslide	Fairlee	Rockslide on Sawyer Mtn./Route 5 north of the village. The debris rock from the slide consisted of small (about ½ to 2 foot diameter) pieces, however, some were very large fragments. One fragment measured 10-feet by 6-feet by 3-feet. An 8 foot high by 1,000 foot long 74 foot-ton rated Brugg® rock fence was installed. This fence was designed to stop rocks in a certain energy range (74 foot-tons). This slope has the potential for rockfalls in excess of that range, however at the time of this project, the chosen fence was the best solution based on expected energies, bounce height and cost. Even considering today’s heavy duty fences, this slope has the potential for rockfalls that could even exceed those capacities. Travel through this corridor still needs to be done carefully as rockfalls are common here. This fence has performed well over the years stopping some large pieces of rock that have fallen from the cliffs. Minor repairs were made to the fence a few years ago and inspections are performed periodically.
03/09/1987	Rockslide	Fairlee	A large block of rock fell on the south-bound lanes of I-91 in the same area as the 4/5/85 slide. Caused extensive damage to two vehicles, though the passengers were unharmed.
04/05/1985	Rockslide	Fairlee	A large block of rock fell from near the crest of the Palisades cliff on south-bound I-91 early in the morning. Landed in the fall area and shattered spraying chunks across the south-bound lanes and causing damage to all four tires on a passing truck.
04/30/1977	Rockslide	Fairlee	Rockslide along the south-bound cut face of I-91, resulting in debris and scarring of the rock face.

Date	Event	Location	Extent
07/06/1973 (DR-397 VT)	Flooding, landslides	County-, region- wide	Torrential rains caused some landslides in the region.
03/12/1973	Rockslide	Fairlee	A very larger boulder fell. May have been related to work being along I-91, prior to its opening.

Landslides, mudslides and rockslides within the Town of Fairlee are likely to be associated with heavy precipitation, flooding, erosion and/or snow melt. With the anticipated increase in precipitation events, this particular hazard may become more prevalent in the future. Because there is a great deal of steep terrain in the Town of Fairlee, there are areas that are currently vulnerable to landslides, mudslides and rockslides. These areas include the I-91 corridor, Sawyer Mountain along Route 5 along the eastern side of Lake Morey, the brooks along the western portion of Lake Morey, and along the banks of the Connecticut River.

Damage caused by future rockslides at the Sawyer Mountain/Route 5 sit, north of the village of Fairlee, has been mitigated with an appropriately-built fence that is inspected periodically. However, the possibility remains for future rockslides in that area.

Hazard	Location	Vulnerability	Extent	Anticipated Impact	Likelihood/ Probability
Landslides/ Mudslides/ Rockslides	Areas along the I-91 corridor, along the eastern side of Lake Morey, the brooks along the western portion of the lake, and along the banks of the Connecticut River.	Road infrastructure, public and private property.	Localized damage.	Dollar value or percentage of damages not known because of a lack of historical data. Minor damage is anticipated.	Highly likely

5. Water Supply Contamination

The majority of town and individuals in Vermont use groundwater as their primary source of water. While groundwater is more protected from contamination than surface water and is generally of a high quality, groundwater is still at risk of contamination from a number of point and non-point sources. Sources of surface contamination located directly above the aquifer may leach through the soil and into the groundwater, or groundwater contamination from another distant source may migrate, and consequently, contaminate a town or individual's water supply.

This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(2)(i), 201.6(c)(2)(ii), and 201.6(c)(2)(iii) for **Water Supply Contamination**.

The migration of contaminants is made more complex because the patterns of groundwater movement, and their relationship to surface water movement, are not completely understood. This creates the potential for groundwater supplies to become contaminated from discrete and unknown sources. It is important to protect groundwater supplies from contamination to the greatest extent possible, because, once contaminated, it is difficult and expensive to clean them to the point where they are again suitable for drinking water.

The following data was retrieved from the Vermont Department of Environmental Conservation's Spill List. It includes some data copied from the Hazard Materials Spill section of this Plan discussed above because the spilling of any hazardous materials also has the potential to contaminate the Town of Fairlee's water supply.

History of Occurrences:

Date	Event	Location	Extent
09/11/2014	Hazardous Material Spill	Route 2848	Transformer spill resulting from high winds. Approximately 8 gallons of mineral oil dielectric fluid released.
03/11/2011	Kerosene Spill	Avery Apartments	An above ground tank leak/failure reportedly caused the leak of 125 gallons of kerosene after snow from the roof fell on the tank, loosening the pipe.
07/31/2008	Gas line release	Lake Morey	A stolen snow machine was driven into Lake Morey, causing a gasoline spill.
11/04/1989	Gasoline Spill	Route 5	300 gallon UST overfill at the Fairlee General Store. Information was provided at the scene for mitigation and remediation.
06/08/1983	Diesel Spill	Route 5	Truck accident on Rt. 5 caused a 50 gallon diesel spill.
11/09/1975	Train Derailment	South End of Village	A train wreck in Ely caused a 91,000 gallon propane spill, which required EPA investigation. Explosions could be seen miles off in places as far away as St. Johnsbury.

The village of Fairlee has a public water system, the Fairlee Town Water System, which currently has approximately 284 connections. The Town's water supply well is a 92 foot deep gravel packed well that is located off of Route 5. As a requirement of Vermont state law, the Fairlee Town Water System has developed a Water System Source Protection Plan. It was last amended in February, 2013. In the Water System Source Protection Plan, the potential sources of contamination are identified, as well as the actions that have been taken to minimize the risk of groundwater contamination.

The Town of Fairlee has an almost entirely closed water system, and the Town uses around 50,000 gallons of water daily. A large proportion of Fairlee residents have private water wells. The only portion of the system that is somewhat vulnerable to outside contamination is the pump house. All other areas of the water system are locked, hard to access or remote. There have been incidences in the past where trucks have spilled oil that has entered into the system, but such instances have never caused prolonged or severe problems for the local water supply.

In the event of water contamination in Fairlee, major facilities would likely shut down. If and when such contamination was to occur, the Town could likely get water from Bradford. There would be roughly five days' worth of conserved water for the residents.

The Fairlee Wellhead Protection Area operates similar to a zoning district overlay, and prohibits certain activities that may contaminate the wellhead area, such as using herbicides, in an effort to manage groundwater quality and quantity. Property owners located in Fairlee's Wellhead Protection Area are informed of that fact, and offered assistance in the ways they can help minimize contamination into the groundwater supply.

Private well contamination also threatens those residents and business owners who are not located in the village of Fairlee, and maintain their own well for drinking water. As private wells are not required to develop a Wellhead Protection Plan or Wellhead Protection Area, the activities nearby a property owner's well are not necessarily regulated. While an individual property owner may only be affected by his or her well being contaminated by a small contamination source, a hazardous material spill may impact multiple wells. The list of hazardous material spills in the Town of Fairlee demonstrates the ease with which private wells could be contaminated, even with a few gallons of hazardous material.

It is important to note that groundwater supplies can also become contaminated by bacteria from a number of sources. These sources may include: a poorly designed leach field, a ruptured septic tank, or over-application or improper storage of manure or fertilizer.

Hazard	Location	Vulnerability	Extent	Anticipated/Potential Impact	Likelihood/Probability
Water Supply Contamination	Fairlee, private homes and businesses located throughout the Town.	Approximately 284 connections to the Fairlee Town Water System	Depends on the amount of and location of the source of contamination —may impact one individual’s well or the public water supply.	For individual homeowners who experience a heating oil spill, and the groundwater becomes contaminated: \$90,000 (according to the Massachusetts Dept. Environmental Protection). For the public water supply, it would depend on the type and extent of contamination. (To clean a very small water system of MTBE (a gasoline additive) over a 10 year period are estimated at \$500,000-\$1,000,000.) A new supply may also be sought (\$3/1000 gallons in small system and community wants a 65,000 gallon capacity) = \$195,000. The costs of medical treatment are not factored in here, but could be substantial.	Occasionally

VI. Mitigation

A. Mitigation Goals

- To reduce injury and losses from the natural hazard of severe weather.
- To reduce injury and losses from the hazard of hazardous material spills.
- To reduce injury and losses from the natural hazard of landslides/mudslides/rockslides.
- To reduce injury and losses from the hazard of structural fire(s).
- To reduce injury and losses from the hazard of water supply contamination.

B. Town Plan Goals & Objectives Supporting Local Hazard Mitigation

- To enhance and maintain use of flood hazard areas as open space, greenways, non-commercial recreation and/or agricultural land (page 32).
- It is the policy of the Town that new or replacement utilities or facilities serving existing development (e.g. water lines, electrical service, waste disposal systems, roads, and bridges) may be located within these areas only when off-site options are not feasible and provided that these utilities or facilities meet the flood proofing requirements in Fairlee's Flood Hazard Ordinance (page 33).
- The Planning Commission should consider using Fluvial Erosion Hazard data (when it becomes available) to create a river corridor protection area (page 33).
- The Planning Commission should consider reducing the types of uses allowed within the mapped floodplain in order to protect lives and property (page 33).
- To maintain or enhance the quality and quantity of drinking-quality resources (page 40).
- To identify and encourage land use development practices that avoid or mitigate adverse impacts on significant wetlands (page 42).
- It is the policy of the Town to provide residents with safe, effective, responsive and affordable municipal infrastructure, facilities and services consistent with other Town goals and whenever possible, to encourage and work with other public and private utility or service providers to do the same (page 60).
- It is the policy of the Town that the Selectboard maintain an up-to-date Local Emergency Operations Plan (page 65).
- It is the policy of the Town to work with the Two Rivers-Ottawaquechee Regional Commission to properly plan for hazard events (page 65).
- To provide and maintain a safe, energy-efficient and well-maintained transportation network in a cost-effective manner, integrating all modes of travel (auto, pedestrian, bicycle and mass transit) and meeting the needs of the public in a manner consistent with the other goals, policies and recommendations of this Town Plan (page 69).

The Fairlee Town Plan was adopted by the Town Selectboard on September 30, 2014.

C. Hazard Mitigation Strategies: Programs, Projects & Activities

Vermont Division of Emergency Management & Homeland Security encourages a collaborative approach to achieving mitigation at the local level through partnerships with Vermont Agency of Natural Resources, VTrans, Vermont Agency of Commerce and Community Development, Regional Planning Commissions, FEMA Region 1 and others. That said, these agencies and organizations can work together to provide assistance and resources to towns interested in pursuing hazard mitigation projects.

This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(3)(ii), 201.6(c)(3)(iii) and 201.6(c)(3)(iv).

With each mitigation strategy, general details about the following are provided: local leadership, possible resources, implementation tools, and prioritization. The prioritization category is based upon the economic impact of the action, Fairlee’s need to address the issue, the cost of implementing the strategy, and the availability of potential funding. The cost of the strategy was evaluated in relation to its benefit as outlined in the STAPLEE guidelines (includes economic, political, environmental, technical, social, administrative, and legal criteria). A range of mitigation strategies was vetted by the committee, and those that were determined to be feasible are included in the table below.

Strategies given a “High” prioritization indicate that it is either critical or potential funding is readily available, and should have a timeframe of implementation of less than two years. A “Medium” prioritization indicates that a strategy 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.

The Town of Fairlee understands that in order to apply for FEMA funding for mitigation projects that a project must meet FEMA benefit cost criteria, and a project seeking FEMA funds will undergo a full benefit-cost assessment in the FEMA-approved format. The Town must have a FEMA approved Local Hazard Mitigation Plan as well.

The following strategies will be incorporated into the Town of Fairlee’s long-term land use and development planning documents. In addition, the Town will review and incorporate elements of this Local Hazard Mitigation Plan into updates for the municipal plan, zoning regulations, and flood hazard/ fluvial erosion hazards (FEH) bylaws. The incorporation of the goals and strategies listed in the Local Hazard Mitigation Plan into the municipal plan, zoning regulations and flood hazard/FEH bylaws will also be considered after declared or local disasters. The Town shall also consider reviewing any future TRORC planning documents for ideas on future mitigation projects and hazard areas.

Hazard(s) Mitigated	Mitigation and Preparedness Actions	Local Leadership	Prioritization (Mitigation Plan Status)	Possible Resources*	Time Frame
All Hazards	<i>Ensure that Fairlee's Local Emergency Operations Plan (LEOP) is kept up-to-date.</i>	Town Administrator / Emergency Management Coordinator	High	Local Resources; TRORC assistance	1 year from date of Plan Approval
	<i>Host a Red Cross Designated Shelter training and invite the public to participate.</i>	Lister	Low	Local Resources; American Red Cross	5 years from date of Plan Approval
	<i>Develop a program to consistently document municipal infrastructure damage after weather events. Should the Town decide to apply for any FEMA grants, consistently documenting infrastructure damage will help them complete a benefit-cost analysis.</i> (Mitigation and Preparedness)	Town Administrator	High	Local Resources	1 year from date of Plan Approval
Severe Weather	<i>Develop a program to maintain and update town bridge and culvert inventories. Regularly inspect and maintain town bridges and culverts.</i> (Mitigation)	Town Administrator /Selectboard/ Road Agent	Medium (1 st priority of 2 natural hazard mitigation projects in 2009 Plan)	Local Resources; TRORC assistance; VTrans	2-4 years from date of Plan Approval
	<i>Develop a schedule and capital budget to replace undersized culverts.</i> (Mitigation)	Town Administrator /Selectboard/ Road Agent	Medium (new)	Local Resources; TRORC assistance; VTrans	2-4 years from date of Plan Approval
	<i>Work with local utilities to request that utility corridors are cleared and maintained, as needed.</i> (Mitigation)	Administrator /Road Agent	Medium (new)	Local resources; Green Mountain Power	As needed
	<i>Adopt river corridor regulations.</i> (Mitigation)	Planning Commission; Selectboard	Medium (2 nd priority of 2 natural hazard mitigation projects in 2009 Plan)	Local resources; TRORC	2-4 years from date of Plan Approval

Hazard(s) Mitigated	Mitigation Action	Local Leadership	Prioritization (Mitigation Plan Status)	Possible Resources*	Time Frame
Severe Weather	<i>Upgrade culvert on Lake Morey Road to improve its ability to convey floodwater. (Mitigation)</i>	Road Agent/ Selectboard	High (new)	Local resources	1 year from date of Plan Approval
Hazardous Material Spill	<i>Ensure that all emergency response and management personnel continue to receive HAZMAT Awareness training at a minimum.</i>	Fire Chief/Fire Department	High	Local Resources; Vermont Division of Fire Safety	Annually
	<i>Monitor the Ameri-gas storage facility for leaks in their storage tanks.</i>	Fire Chief	Medium	Local Resources	Annually
	<i>Monitor and work with the business storing fireworks near the railroad tracks to ensure the storage of their fireworks does not impede or endanger train traffic through that area.</i>	Town Constable	High	Local Resources	On-going
	<i>Develop and organize/formalize an I-91-ramp evacuation plan for Terry Hill.</i>	Zoning Administrator / Fire Chief	Medium	Local Resources	2-4 years from date of Plan Approval
Landslides/ Mudslides/ Rockslides	<i>Develop a program to educate landowners about the hazards associated with building on steep slopes and their vulnerability to landslides/rockslides/mudslides. (Mitigation)</i>	Selectboard	Low (new)	Local Resources; engineer/geographic study	3-5 years from date of Plan Approval
	<i>Strengthen driveway and access design criteria/regulations to help prevent additional development in areas vulnerable to landslides/rockslides/mudslides. (Mitigation)</i>	Selectboard	Low (new)	Local Resources; TRORC	5 years from date of Plan Approval
Structural Fire	<i>Maintain mutual aid agreements with surrounding towns.</i>	Fire Chief/ Fire Department	High	Local Resources; 40-town mutual aid system	Annually /On-going
	<i>Purchase new fire truck for the Fire Department to improve their ability to respond to and fight structural fires.</i>	Fire Chief/ Fire Department	High	Local Resources; Capital Campaign/ Fundraising	1-2 years from date of

					Plan Approval
Hazard(s) Mitigated	Mitigation Action	Local Leadership	Prioritization (Mitigation Plan Status)	Possible Resources*	Time Frame
	<i>Ensure that all firefighters have and maintain up-to-date training.</i>	Fire Chief	High	Local Resources; Vermont Division of Fire Safety	Monthly/ On-going
Water Supply Contamination	<i>Complete a hydrology study (the Town already has a proposal) to assess a new or secondary location for the Town Water Well.</i> (Mitigation)	Selectboard/ Water Operator	Medium	Local Resources; Engineer/ Consultant	2-4 years from date of Plan Approval
	<i>Continue to maintain and update the Source Protection Plan for the Fairlee Town Water System.</i> (Mitigation)	Water Operator/ Town Administrator	Medium	Local Resources; Vermont's Drinking Water & Groundwater Protection Division	5 years from date of Plan Approval
	<i>Reduce threat of pump house vulnerability and contamination impacts to the water supply by ditching along the road from the pump house to the well in order to stem the flow of contaminants. This will be a "stop-gap" measure until a new water supply is identified and new water supply infrastructure is constructed.</i> (Mitigation)	Water Operator/ Assistant Water Operator/ Road Agent	Medium	Local Resources; Vermont's Drinking Water & Groundwater Protection Division	Annually

*Depending on the mitigation action, local resources may include the following: town personnel/staff time; town volunteer time; town budget line items, donations, cash from capital campaigns, among others.

CERTIFICATE OF ADOPTION
<<DATE>>
TOWN OF Fairlee, Vermont Selectboard
A RESOLUTION ADOPTING THE Fairlee, Vermont 2015 Local Hazard Mitigation Plan

WHEREAS, the Town of Fairlee has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the **Fairlee, Vermont 2015 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 Fairlee has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its **Fairlee, Vermont 2015 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 Fairlee; and

WHEREAS, the **Plan** recommends several hazard mitigation actions (projects) that will provide mitigation for specific natural hazards that impact the Town of Fairlee 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 Fairlee eligible for funding to alleviate the impacts of future hazards; now therefore be it

RESOLVED by Town of Fairlee Selectboard:

1. The **Fairlee, Vermont 2015 Local Hazard Mitigation Plan** is hereby adopted as an official plan of the Town of Fairlee;
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 WITNESS WHEREOF, the undersigned have affixed their signature and the corporate seal of the Town of Fairlee this ____ day of _____ 201__.

Selectboard Chair

Selectboard Member

ATTEST

Town Clerk

Appendices

Appendix A: Hazard Ranking Methodology

<u>Frequency of Occurrence</u> Probability	<u>Warning Time</u> Amount of time generally given to alert people to hazard	<u>Potential Impact</u> Severity and extent of damage and disruption
1 = <i>Unlikely</i> <1% probability of occurrence in the next 100 years 2 = <i>Occasionally</i> 1–10% probability of occurrence per year, or at least one chance in next 100 years 3 = <i>Likely</i> >10% but <100% probability per year, at least 1 chance in next 10 years 4 = <i>Highly Likely</i> 100% probable in a year	1 = More than 12 hours 2 = 6–12 hours 3 = 3–6 hours 4 = None–Minimal	1 = <i>Negligible</i> Isolated occurrences of minor property damage, minor disruption of critical facilities and infrastructure, and potential for minor injuries 2 = <i>Minor</i> Isolated occurrences of moderate to severe property damage, brief disruption of critical facilities and infrastructure, and potential for injuries 3 = <i>Moderate</i> Severe property damage on a neighborhood scale, temporary shutdown of critical facilities, and/or injuries or fatalities 4 = <i>Major</i> Severe property damage on a metropolitan or regional scale, shutdown of critical facilities, and/or multiple injuries or fatalities

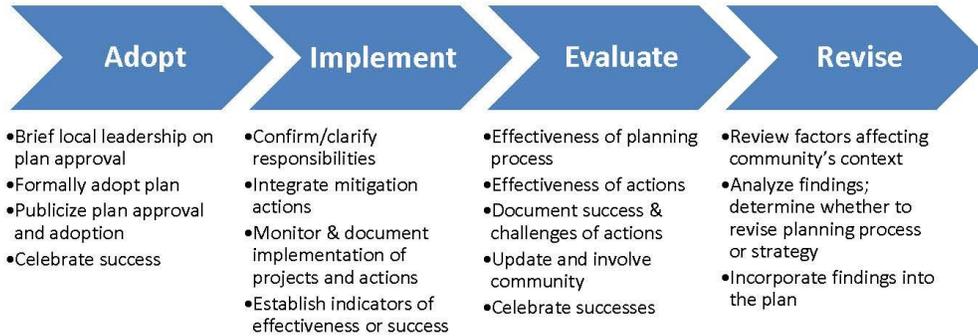
Appendix B: Critical Stream Crossings

Critical crossings in the table below includes stream crossing structures on town highways that cross third order streams or larger. Headwater streams generally include first through third order. Third order was included as these headwater streams will have larger drainage areas and may have larger structures that are more difficult to replace and have a larger impact on the road network. Most of these are bridges. Structures that have a “Y” in the “AOTSTRUCT” column are state-owned.

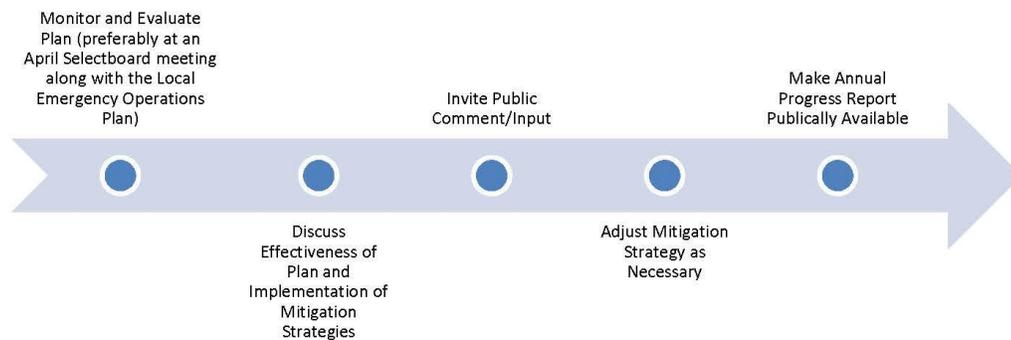
RDFLNAME	STRUCT_NUM	CATEGORY	STRUCTYPE	STRC_LBL	AOTCLASS	X_COORD	Y_COORD	AOTSTRUCT
TERRY HILL RD					0	-72.1581	43.9031	
LAKE MOREY RD					0	-72.1573	43.9072	
CLUBHOUSE RD	400906001609061	B	TS	B16	3	-72.1578	43.9097	Y

Appendix C: Five-Year Review and Maintenance Plan

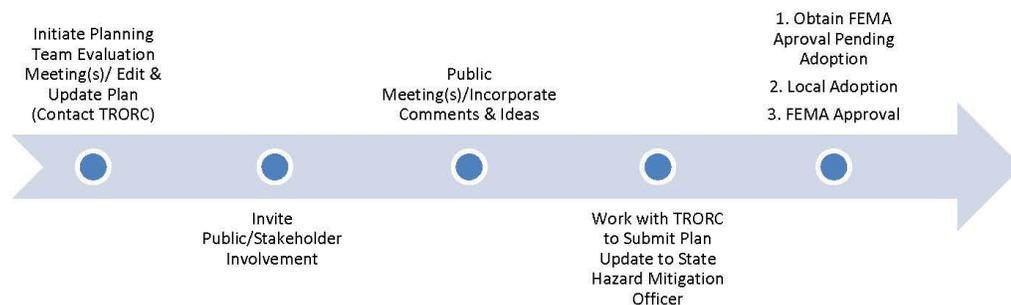
Five-Year Local Hazard Mitigation Plan Review/Maintenance



After Plan Adoption—Annually Implement & Evaluate



Fifth Year, and After a Major or Federally Declared Disaster Directly Impacting the Town Evaluate & Revise



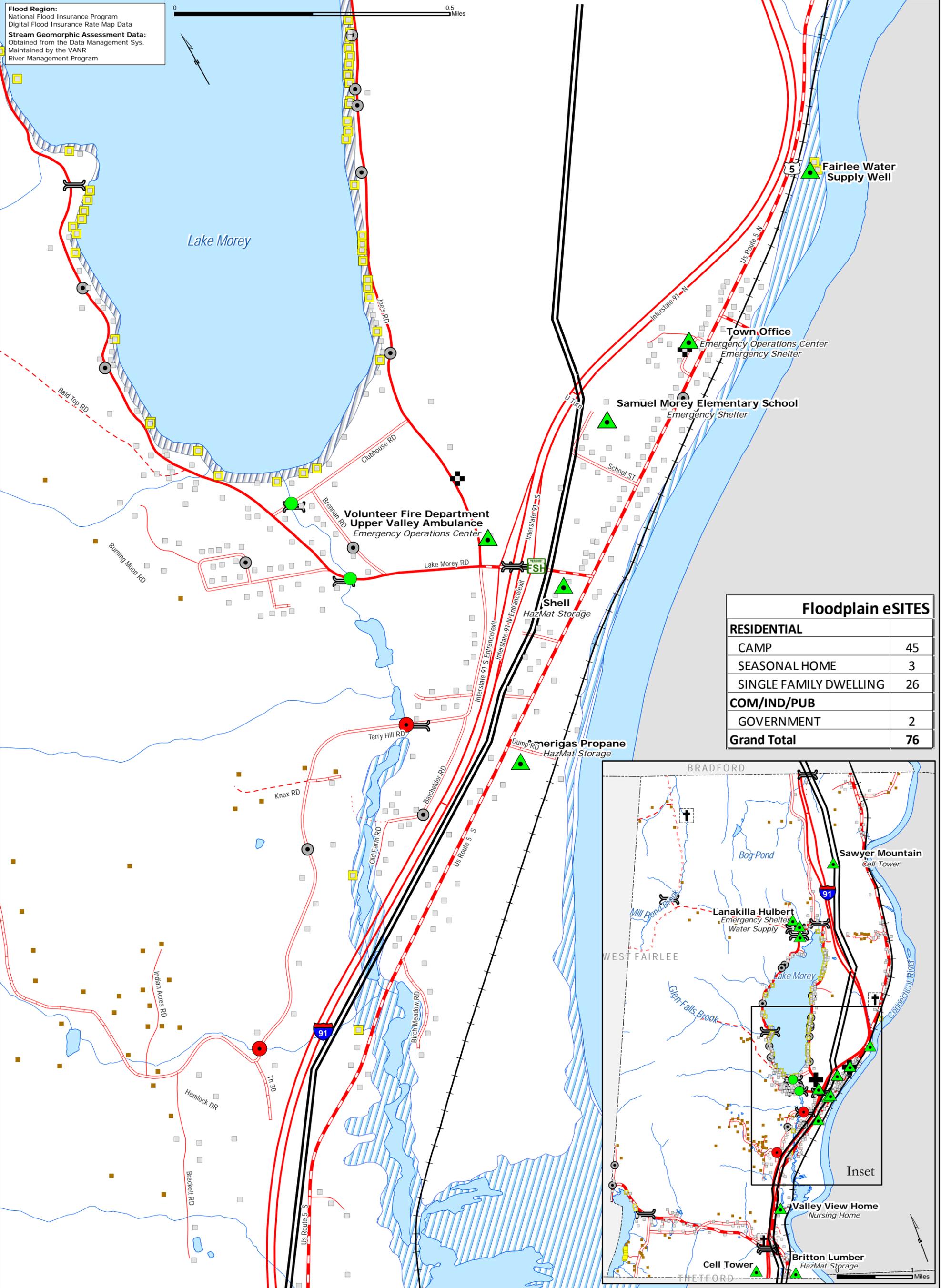
Attachments

Attachment A: Map of the Town of Fairlee

Flood Region:
National Flood Insurance Program
Digital Flood Insurance Rate Map Data

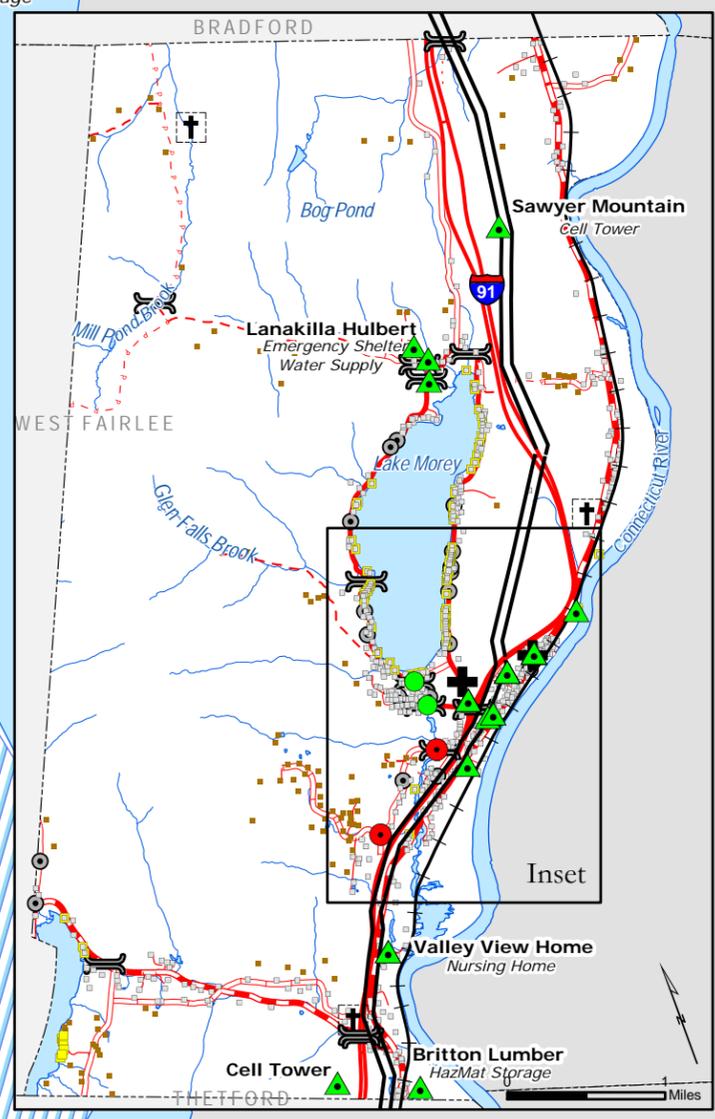
Stream Geomorphic Assessment Data:
Obtained from the Data Management Sys.
Maintained by the VANR
River Management Program

0 0.5 Miles



Floodplain eSITES

RESIDENTIAL	
CAMP	45
SEASONAL HOME	3
SINGLE FAMILY DWELLING	26
COM/IND/PUB	
GOVERNMENT	2
Grand Total	76



- ### Hazard Mitigation Plan Essential Services Map Fairlee, Vermont
- TH cls 1 (village VT rt)
 - TH cls 2
 - TH cls 2 gravel
 - TH cls 3
 - TH cls 3 gravel
 - TH cls 4 gravel
 - TH cls 4 impassable
 - VT forest hwy
 - trail
 - private
 - VT route
 - US route
 - US interstate
 - TH cls 4 gravel
 - TH cls 4 primitive
 - Railroad
 - Electrical Transmission
 - ▲ Critical Facility
 - Critical Stream Crossing
 - + Church
 - + Cemetery
 - Significantly Undersized Structure
 - Culvert Under 18" Wide
 - = Bridge
 - SUB Electric Substation
 - e911 in Floodplain
 - e911 Within 1000' of Major Route
 - e911 Address
 - Floodway
 - 100 Year
 - 100 Year, No BFE
 - 500 Year

TWO RIVERS-OTTAUQUECHEE
REGIONAL COMMISSION
GIS Service Center
128 King Farm Rd
Woodstock, VT 05091
802-457-3188
trorc.org