Town of Randolph, Vermont

Local Hazard Mitigation Plan

Adopted August 18, 2015

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Approved August 25, 2015

Prepared by the Two Rivers-Ottauquechee Regional Commission and the Town of Randolph

CERTIFICATE OF ADOPTION

18th of August 2015

TOWN OF Randolph, Vermont Selectboard

A RESOLUTION ADOPTING THE Randolph, VT 2015 Local Hazard Mitigation Plan

WHEREAS, the Town of Randolph has historically experienced severe damage from natural hazards and it continues to be vulnerable to the effects of the hazards profiled in the **Randolph, VT 2015 Local Hazard Mitigation Plan (Plan)**, which result in loss of property and life, economic hardship, and threats to public health and safety; and

WHEREAS, the Town of Randolph has developed and received conditional approval from the Federal Emergency Management Agency (FEMA) for its **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 Randolph; and

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

RESOLVED by Town of Randolph Selectboard:

1. The **Randolph, VT 2015 Local Hazard Mitigation Plan** is hereby adopted as an official plan of the Town of Randolph;

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 should 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 Randolph this 18 day of Aug 2015.

Trini Brassard

Trini Brassard

Marjorie Ryerson

Marjorie Ryerson, Vice Chair

Ross Evans

Tom Schersten, Clerk

Larry Richburg, Chair

ATTEST

Town Clerk

RANDOLPH TOWN CLERK'S OFFICE
Received for Filing
August 19 A.D. 2015
at 10 o'clock 40 minutes AM
Attests
Town Clerk

U.S. Department of Homeland Security
FEMA Region I
99 High Street, Sixth Floor
Boston, MA 02110-2132

FEMA

SEP 03 2015

Larry Richburg, Chair
Selectboard
Town of Randolph
7 Summer Street
P.O. Drawer B
Randolph, VT 05060

Dear Mr. Richburg:

Thank you for the opportunity to review the Town of Randolph, Vermont 2015 Local 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 Randolph 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 Randolph, Vermont 2015 Local 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 25, 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.

SEP 0 3 2015

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
Marjorie Ryerson, Vice Chair, Selectboard, Randolph
Melvin Adams, Town Manager, Randolph
Ellie Ray, Planner, TRORC
Kevin Geiger, Planner, TRORC

Enclosure

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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 Local Hazard Mitigation Plan (hereafter referred to simply as the Plan) seeks to provide an all-hazards mitigation strategy that will make the community of Randolph 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 mitigation 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 the Town of Randolph in identifying all hazards facing the town, rank them and identify strategies to begin reducing risks from known priority hazards.

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

The 2015 Randolph Local Hazard Mitigation Plan is the first stand-alone mitigation plan for the Town. Previously, the Town had a town-specific 2009 Annex in the Regional Pre-Disaster Mitigation Plan. This new plan 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 the community

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

III. Community Profile

Randolph, which covers approximately 31,000 acres of hilly country in the center of the state, is dominated by an expanse of high ground in the center. Valleys run north/south on either side, with the ground rising again on the town's east/west borders. Randolph is situated in the White River Watershed. The town has numerous small streams that collect runoff from residential and commercial areas, as well as farms, fields, and forests before joining Randolph's three largest streams, Ayers Brook, Adams Brook and the Second and Third Branches of the White River.

In 2010, the population of Randolph was 4,778, down slightly from 4,853 residents in 2000. In addition to the resident population, Vermont Technical College's Randolph campus hosts approximately 800 students during the school year. About 475 of those students live on campus while attending classes. In spite of the slight decrease in population, the total number of housing units in Randolph increased from 1,905 in 2000 to 2,076 in 2010. In 2010, only 101 (approximately 5 percent of total housing units) were used on a seasonal basis, and 543 (approximately 26 percent) were renter-occupied (U.S. Census). Almost half of Randolph's housing stock was constructed prior to 1944. Since then, the most significant period of growth in the town's housing stock occurred in the 1970's, when a full 20 percent of the total housing stock was created. Randolph is expected to grow due to its location on Interstate 89.

With regard to services, the Town of Randolph lies within the service area of Green Mountain Power (formerly the Central Vermont Public Service), which supplies electricity to all sections of the town. The majority of Randolph has access to broadband internet; however, certain areas still lack high-speed internet service including sections of VT Route 14 in East Randolph. Anchor institutions in Randolph (such as Gifford Medical Center and the Vermont Technical College) will be connected via SoverNet's middle mile fiber trunk in 2013. Cell phone coverage in the village is good, but coverage is spotty in other various areas of the town.

With regard to fire protection, the town is served by three volunteer fire stations, which are headquartered in Randolph Village, Randolph Center, and East Randolph. Extraction and 100' aerial tower capabilities are maintained at the Randolph Center Fire Department. In addition to serving all areas in Randolph, Randolph's Fire Departments also serve the neighboring Town of Braintree (contracted services). At this time, Randolph Village Fire Department serves East Granville on a per-call basis. They also respond to West Brookfield under a mutual aid agreement with the Town of Brookfield.

The Randolph fire departments are overseen by the Town Manager. The departments collaborate on first responder needs, policies, and procedures with the Fire Advisory Committee, which is comprised of a chair, a liaison appointed by the Selectboard, a chief, and one member-at-large from each department (this is typically the First or Second Assistant Chief). This Committee provides uniform policies and procedures, uniform training schedules, and budget review for all three Departments, and advises the Selectboard. In general, there is a high degree of cooperation among the three departments, as well as departments of surrounding towns in the event that extra support is needed. When any structural fire is reported within the Town of Randolph, two out of the three departments automatically responds, and the third department moves to the Randolph Center Department in the event that an additional fire is reported.

Medical rescue service in Randolph is provided by White River Valley Ambulance, Inc., (WRVA) a non-profit corporation, which is located on Route 12, just south of Randolph Village. WRVA responds to medical emergencies, accidents, and other calls for assistance. They also perform search and rescue operations, and stand-by at all reported structural fires, sports events and other public gatherings. The WRVA has three ambulances that are fairly new. The closest hospital is Gifford Medical Center, which is located in Randolph Village, and medivac services are available through the Dartmouth Hitchcock Advanced Response Team (DHART) helicopter based at Dartmouth Hitchcock Medical Center in Lebanon, New Hampshire.

With regard to law enforcement, the Randolph Police District is served by the Randolph Police Department, which is located on Salisbury Street in Randolph Village. The Department consists of a Chief, two Sergeants and five full-time officers, whose offices are contained in an historic wooden structure. The building is utilized to capacity at present, and is not capable of accommodating future growth or expansion. Areas in Randolph, but outside the service-range of the Randolph Police District are covered by the Vermont State Police and the Orange County Sheriff Department by means of a contract with the town. VSP has a barracks located in nearby Royalton, VT. The Vermont State Police and the Orange County Sheriff's Department also serve as back-up for the Randolph Police Department when needed. In general, there is a high degree of cooperation among the three forces. The jail is located at the County Seat in Chelsea.

IV. The Planning Process

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).

A. Plan Developers

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

Committee members who assisted with the revisions include:

Name	Role/Organization	How Participation Was Solicited
Mel Adams	Town Manager and Emergency Director	On 2/7/2013, TRORC staff sent an introductory letter and e-mail to Selectboard members (John Kaplan, Marjorie Ryerson, Larry Richburg, Trini Brassard and Dennis Brown), and Town Manager (Mel Adams). In this letter, TRORC's staff requested names and contact information for potential committee members to revise Randolph's LHMP. Randolph representatives responded before the end of February with a list of individuals they wanted to participate. A Doodle poll invitation was sent to those individuals on April 18, 2013 and an initial introductory meeting was scheduled. TRORC staff continued to meet with the update committee until the Local Hazard Mitigation Plan was adopted by the Selectboard. (See "Activities" section below for more details on specific meetings.)
Joyce Mazzucco	Town Clerk, Treasurer and Emergency Coordinator	
Cindy Spaulding	Secretary to Town Manager /LEPC Town Rep.	
Jay Collette	Chief, Randolph Village Fire Department	
Michael Marshall	Captain, Randolph Fire Department	
James Krakowiecki	Randolph Police Chief	
Dave Leighton	Randolph Police Department	
Robert Runnals	Highway Supervisor	
Bill Morgan	Highway and Facility Operations Manager	

Additional Participants in the Process:

- Town of Braintree, Emergency Management Director

B. Plan Development Process

The 2009 Randolph Annex was originally part of the 2008 multijurisdictional Regional Hazard Mitigation Plan drafted by Two Rivers-Ottauquechee Regional Commission, and approved by FEMA on September 30, 2008 with its first local annex. The Randolph 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, 2008, and so it expired on September 30, 2013.

This Plan has now been reconstructed as a single jurisdiction, standalone Randolph 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.

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

<u>The changes to this Plan include</u>:

- **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**
  - The Winter Weather (Extreme Cold/Snow/Ice Storm) section has been removed for purposes of hazard analysis;
  - Structure Fire, Hazardous Material Spill and Flash Flood/Flood/Fluvial Erosion remain some of the "top hazards," which reflects the intention/priorities of local officials to continue to focus their analysis on theses hazards as it is believed that the Town is, or is likely to be, vulnerable to these hazards in the next five years;
  - High Wind and Tornado sections have been added, 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;
  - For each hazard, a location/vulnerability/extent/impact/likelihood table has been added to summarize the hazard description.
- **Maps**
  - A map of the Town of Randolph depicting critical facilities, town infrastructure, and the NFIP designated floodway and 100-year floodplain has been added.

<u>The following represent the avenues taken to draft the Randolph Local Hazard Mitigation Plan:</u>

- **Activities and Public Participation and Involvement**

***Note: The meetings listed below were public sessions, and the public was given a chance to comment/provide input.*

  - 02/07/2013: 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 (Dennis Brown, Jon Kaplan, Marjorie Ryerson, Larry Richburg, and Trini Brassard), and the Town Manager/Emergency Director (Melvin Adams). No comments from the public were received.

- 06/04/2013: Met with members of Randolph's emergency services, town administration, and highway personnel 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.
- 07/17/2013: Met with the Local Hazard Mitigation Plan committee to discuss existing hazard mitigation programs, projects and activities. Then the group began discussing and ranking hazards the Town of Randolph was most vulnerable to. After the hazards were ranked, a discussion ensued of the hazards the committee would like to focus on, and the final "top threats" were chosen. No comments from the public were received.
- 09/11/2013: Met with the Local Hazard Mitigation Plan committee to review and revise the first draft of the Local Hazard Mitigation Plan. No comments from the public were received.
- 11/13/2013: The Local Hazard Mitigation Plan committee met with TRORC staff to discuss and identify hazard mitigation strategies for each hazard addressed in the Plan. No comments from the public were received.
- 06/17/2014: The Randolph Local Hazard Mitigation Plan was sent digitally to the following organizations: Vermont Technical College; Gifford Medical Center; Randolph Schools; Randolph Center Fire Department; East Randolph Fire Department; White River Chamber of Commerce; Randolph Area Community Development Corporation; Capstone Community Action, Inc.(formerly Community Action); Stagecoach Transportation; and White River Valley Ambulance. Contact information was provided for receiving comments via hard copy/email. No substantive comments were received.
- 07/22/2014: 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 on the Town's website. A copy of the most current Randolph Local Hazard Mitigation Plan was brought to the meeting. TRORC staff also asked for comments at the meeting, but no substantive comments were received. No substantive comments from the public were received.
- 08/12/2015: A notice was posted in at the Kimball Library, East Randolph's post office, the Middle Branch Market and Deli, Floyd's Store, the Town Hall, and on the Town's website from 08/12/2015 to 08/18/2015 to alert community members that a public hearing with the Randolph Selectboard would be taking place. A public hearing to adopt the final draft was held. Comments were recorded.

- **Governmental participation and involvement** *(44 CFR 201.6(b)(2)*)
  - Sent revised draft to Randolph Selectboard Chair and provided contact information for receiving comments via hard copy/email —06/17/2014
    - No comments received.

- Sent revised draft to Planning Commission Chair and provided contact information for receiving comments via hard copy/email — 06/17/2014
  - No comments received.
- Sent revised draft to Vermont Division of Emergency Management and Homeland Security—07/28/2014
  - No comments received.
- Note: Town officials were given the opportunity to review, provide feedback and approve the changes that were made through the initial Plan drafting process, and during Plan revision and FEMA review process, if applicable.

- **Neighboring community participation and involvement** *(44 CFR 201.6(b)(2)*)
  - 10/2013: A notice was placed in the Two Rivers-Ottauquechee Regional Planning Commission Newsletter alerting recipients that Randolph 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 Randolph's efforts to receive more information and how to find out about upcoming meetings. No comments were received.
  - Braintree's Emergency Director
    - The Town of Braintree relies on Randolph's Fire Departments all emergency services, and all hazardous events. As the threat of structural fire remains high in both Towns, the Emergency Director was invited to participate in Randolph's Local Hazard Mitigation Plan update.
  - Posted a notice in four local papers, the town website, and public venues (Randolph Town Hall, East Randolph Post Office, and two local businesses) 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 Randolph'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 towns' Selectboards for comment and provided contact information for receiving comments via hard copy/email —06/17/2014
    - Towns of: Braintree, Brookfield, Tunbridge, and Bethel
    - No substantive comments were received.
- **Review of existing plans, studies, reports, and technical information** (*44 CFR 201.6(b)(3)*)

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).

- State of Vermont Hazard Mitigation Plan, 2013
- Randolph Hazard Mitigation Plan (Adopted Jan. 20, 2009)
    - This Plan was referenced extensively during the update process, especially in regard to the worst threats and mitigation action strategies identified in 2009.
- Randolph Town Plan (Revised and readopted on 09/17/2013)
    - This Plan provided TRORC's staff with background information on the community, as well as more detail on their emergency services.
- Randolph Zoning Regulations (Last rewrite adopted on 01/05/2010)
    - The Zoning Regulations were referenced for general knowledge and for Randolph's Flood Hazard Regulations.
- Randolph, Vermont Town Report for Fiscal Year 2012
    - The Town Report was referenced for information regarding activities and happenings during Randolph's 2012 Fiscal Year.
- Ayers Brook Phase 1 and Phase 2 Stream Geomorphic Assessment (11/01/2006)
    - This information was incorporated into the mapping/GIS components of this Plan; specifically in determining the number of structures that are vulnerable to fluvial erosion hazards.
- Ayers Brook River Corridor Management Plan (05/02/2007)
    - The Ayers Brook River Corridor Management Plan provided information about an important tributary to the Third Branch of the White River. The lower reaches of Ayers Brook are located in the Town of Randolph. This information was also incorporated into the mapping/GIS components of this Plan; specifically in determining the number of structures that are vulnerable to fluvial erosion hazards.
- Flood Insurance Study: Town of Randolph, Vermont, Orange County (07/16/1991)
    - The Flood Insurance Study was referenced for general knowledge of the Second Branch of the White River, the Third Branch of the White River and Ayers Brook.
    - Brief historical information on flooding in the Town of Randolph can be found on pages 4 and 5 of the Flood Insurance Study.
    - Relevant peak discharge information for the Second Branch of the White River, the Third Branch of the White River and Ayers Brook can be found on pages 7 and 8.
    - 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 Randolph's 2009 All-Hazard Pre-Disaster Mitigation Plan for the Town of Randolph (adopted on January 20, 2009 as an appendix to the Two Rivers-Ottauquechee Regional Commission's multi-jurisdictional Pre-Disaster Mitigation Plan). Participants in the new 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.

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

2009 Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding/ Support)	2014/2015 – Status of Mitigation Actions
ALL HAZARDS 1. Ensure that RRP (Rapid Response Plan) is current.	Selectboard	Yearly	With TRORC assistance	The new iteration of RRP is the Local Emergency Operations Plan (LEOP). Randolph updates this document annually. See below.
2. Re-write and update existing Emergency Operations Plan.	Emergency Management Director and Coordinator	Yearly	With TRORC assistance	☑ Complete. Randolph updates its entire Local Emergency Operations Plan (LEOP) annually. Their most recent LEOP was updated and then adopted on 3/5/2015 by the Randolph Selectboard.
3. Conduct table top drills for Emergency Response Plan and EOC activation. Provide Selectboard with ICS for executives training.	Emergency Management Director and Coordinator	Ongoing	Local resources	Randolph officials are concerned that there are few (or no) opportunities for managerial staff.
FLOOD 4. Continue planned road maintenance program that addresses culvert survey and upgrade and ditching. (Mitigation)	Highway Supervisor, Town Manager and Selectboard	2009 and ongoing	Local resources	An extensive culvert inventory update was conducted in the summer of 2013, and the Town has used this inventory to prioritize culvert upgrades.
5. Revise flood hazard regulations. (Mitigation)	Selectboard and Town Manager	2009 and ongoing	With TRORC assistance	The zoning regulations have not been updated since 2010. This project has been carried over into 2015 plan.
6. Improve flood and fluvial erosion Hazard Identification and Mapping. (Mitigation)	Selectboard and Town Manager	2010	FMA, PDM-C with TRORC and state assistance	Thus far, fluvial erosion hazard identification and mapping has been completed for Ayers Brook. In 2015, the State of Vermont released river corridor maps, which include flood and fluvial erosion areas, as well as additional area included to protect the river's meander pattern.

2009 Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding/ Support)	2014/2015 – Status of Mitigation Actions
7. Identify frequently flooded roads and bridges. (Mitigation and Preparedness)	Highway Supervisor and Town Manager	2009	Local resources	In process.
8. Replace lower culvert on Howard Hill Road. (Mitigation)	Highway Supervisor and Town Manager	2012	HMGP or PDM-C, local resources	The Randolph Road Crew determined that this was the wrong solution to the problem, and the replacement of the culvert on Howard Hill Road will not be pursued as a solution to fix the flooding issues there. The Road Crew is considering new options to resolve the flooding in the Howard Hill Road area, and this has been added to the mitigation strategy in this Plan.
<u>FIRE</u> 9. Develop additional dry hydrant sites in locations that need additional support. (Mitigation)	Fire Department	Ongoing	Local resources, George Aiken RC&D	In process.
10. Maintain Town wide fire protection plan. (Mitigation and Preparedness)	Fire Department	Ongoing	Local resources	The town has not genuinely pursued this yet.
11. Continue to support "Sound Advice" smoke detector program.	Fire Department	Ongoing	Local resources	This program has been discontinued, but batteries are available to residents.
12. Consider installation of fire sprinkler systems in the closely spaced historic downtown structures.	Fire Department with Town Manager	2010	Local resources	Some public and town buildings have been equipped with sprinklers. The Town feels powerless to require installation of sprinklers in existing buildings, and it is dependent on the scope of the renovation if they are required to be installed. The installation of sprinklers in closely spaced buildings is ongoing and the Town enforces this when possible.
<u>HAZMAT</u> 13. Develop emergency access points to the railroad corridor in locations where access is presently difficult in the event of a derailment.	Emergency Management Director and Coordinator	2010	With state transportation agency assistance	The Town has not genuinely pursued this yet.

2009 Mitigation Action	Who (Leadership)	When (Timeframe)	How (Funding/ Support)	2014/2015 – Status of Mitigation Actions
14. Ensure that all emergency response and management personnel continue to receive HAZMAT awareness training at a minimum.	Fire Chiefs and Emergency Management Director	Ongoing	Local resources	All members of the Fire Department have Level 1 Firefighter Certification. Also, all have been recertified in HAZMAT trainings. Awareness training is required by VOSHA for all first responders (Police and EMS). Recent changes now require that Fire personnel are trained to the Operations level with Decontamination training. As such trainings are required yearly for the Firefighter 1 Certification, this action remains in process.
<u>WINTER STORM</u> 15. Educate citizens on preparedness for winter travel and extended power outages.	Emergency Management Director and Coordinator	Ongoing	Local resources	The Town recognizes that for such a program to be effective, there needs to be consistency, but they are not at that point yet.

The Town of Randolph serves as the economic and commercial hub in the immediate region and attracts visitors throughout the state of Vermont. As a result, there are greater pressures for development in Randolph Village and in other locations throughout the Town of Randolph. For example, development has occurred in in the Village with Wall-Goldfinger, a manufacturer of high-quality corporate office furniture, relocating from Northfield, Vermont to Randolph in 2012, and the expansion of Freedom Foods, a business that works with artisan food producers to develop, produce, package, and distribute these foods. The northern section of the Village is vulnerable to flooding due to its location close to the Second Branch of the White River. New development, reuse or redevelopment in that area is vulnerable to flood damage, but the enforcement of Randolph's flood hazard regulations will help minimize this risk.

In addition, development is occurring outside of the Village as well. Gifford Medical Center (the major health care provider in the Town of Randolph and for the region) is planning to develop a senior living community in Randolph Center. The project is comprised of a 40-unit independent living facility and a 30-bed skilled nursing facility. The groundbreaking for this project occurred in May 2014, and construction on the project should be complete in a year's time. The skilled nursing facility is located on a hill, and is not vulnerable to flood damage. Another proposed development project that is on the horizon, is a large development located at Randolph's I-89 interchange area. Initial plans for the development include a $15 million dollar visitor's center, and subsequent phases of the project could include a 180-room hotel, and a new office and industrial park. The area where this proposed development will take place is not vulnerable to flood damage. As of writing, this project has not received approval in Vermont's Act 250 process.

D. Existing Hazard Mitigation Programs, Projects & Activities

The Town of Randolph is currently engaged in the following 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 Randolph's Local Emergency Operations Plan (LEOP). Last updated and approved on 04/15/2014, 03-04-2015.	Updated by the Town Manager's Office with assistance from TRORC and funding from Vermont DEMHS.	This document is reviewed and updated each year to ensure that the contact information of emergency response personnel is up-to-date. This information is sent to Vermont Division of Emergency Management Homeland Security and Local Emergency Planning Committee for their records. The current program works well, no need to expand or improve on.
	Program—Participation in Citizens' Emergency Response Team (CERT)	Volunteer time from Randolph residents. Funding/training from FEMA and from local budgets.	There is a core group that is still active; but it is a constant work in progress and there is desire for training.
	Ongoing Program/Action— Fire Department staff have Vermont Fire Academy Firefighter I and Firefighter II level certifications	Volunteer time from Fire Department staff, staff/volunteer time from the Vermont Fire Academy. Funding from local budgets and the Vermont Fire Academy. Trainings are completed in-house or at another facility.	There is currently no need to expand or improve on this training program, as it stands, however, there may be interest in getting additional Fire Department staff trained.
	Program—Participation/attendance in the Local Emergency Planning Committee District 12 (LEPC 12)	Staff/volunteer time from the Fire Chiefs from the Randolph Fire Departments and/or other emergency personnel; meetings convened by TRORC. Funding from Vermont DEMHS.	No need to expand or improve on attendance, as it is satisfactory.
Insurance Programs	Authority/ Program—participation in National Flood Insurance Program (NFIP) The Town participates and complies with the NFIP through the enforcement of their Zoning Regulations, which includes a "Flood Protection District", and were last amended on 09/16/2009. [Note: This section of the Plan satisfies the requirements of 44 CFR 201.6(c)(3)(ii).]	The Randolph Zoning Administrator serves as the NFIP Administrator. Assistance from TRORC and Vermont ANR. Funding from local resources—annual budget.	Randolph's initial Flood Hazard Boundary Map was identified on 6/28/74 and their initial Flood Insurance Rate Map (FIRM) was dated 07/16/1991. The Town's FIRM has not been updated – the current effective map date is 07/16/1991. The Town's Flood Insurance Study (FIS) was last completed on 07/16/1991. The "Flood Protection District" regulations are kept up-to-date and regulate new development in the Special Flood Hazard Area (SFHA).

	Type of Existing Authority / Policy / Program / Action	Resources: Staffing & Funding	Ability To Expand/Improve On
Land Use Planning	Policy/Program— Randolph Town Plan Adopted on 09/17/2013	Volunteer time from the Planning Commission, and assistance from TRORC and other state agencies on specific subject matter. Funding from Municipal Planning Grants.	The Town Plan is reviewed/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 statue.
	Policy/Program— "Ayers Brook River Corridor Management Plan—Brookfield, Braintree and Randolph, Vermont" Published 06/22/2007.	Completed with staff time from Bear Creek Environmental and the White River Partnership, and volunteer time from the Town officials. Funding from the New Hampshire Charitable Foundation, though the Upper Connecticut River Mitigation and Enhancement Fund.	There is currently no need to expand or improve on this document, but it should be reviewed periodically.
	Authority—Randolph Zoning Regulations Last adopted on 01/05/2010 Includes a "Flood Protection District", and limitations/requirements for development within the Special Flood Hazard Areas.	Volunteer time from the Planning Commission, and assistance from TRORC and Vermont Agency of Natural Resources. Funding from Municipal Planning Grants.	During the Town Plan review/update period, the Zoning Regulations (the "Flood Protection District" being part of the Zoning Regulations) are also reviewed and updated if needed. o As of June 2014, the Zoning Regulations were being rewritten.
	Authority— Randolph Subdivision Regulations Adopted on 12/06/1988.	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.
Hazard Control & Protection of Critical Infrastructure & Facilities	Policy/Program— Randolph Hazard Mitigation Plan Adopted on 01/20/2009.	Updated with volunteer time from local officials and assistance from TRORC and Vermont DEMHS. Funding from DEMHS/FEMA.	The 2015 Randolph Local Hazard Mitigation Plan will replace the 2009 Plan. The 2015 LHMP has evolved from the 2009 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.
	Authority— 2014 Town Road and Bridge Standards Adopted 01/14/2014	Adopted by the Selectboard, implemented by Highway Operations Manager and Highway Supervisor, with assistance from TRORC. Funding from VTrans and the local budget to implement.	Specifies minimum construction standards for roadway, ditches, culverts and bridges and guardrails. VTrans updates the Town Road and Bridge Standards on a fairly regular basis. The Town has the authority to require above-and-beyond what is written in the policy. Needs to be recertified each year.

	Resources: Staffing & Funding	Ability To Expand/Improve On	Type of Existing Authority / Policy / Program / Action
	Completed Action/Program—Better Backroad culvert inventory completed in 2013 for the Town of Randolph This inventory includes georeferenced locations and attributes for all culverts/drop inlets/driveway culverts in Randolph. The Town received targeted assistance in the culvert inventory and specific priority projects were identified.	Staff time from the Randolph Road Operations Manager and Highway Supervisor with assistance from TRORC. Funding from Better Backroads grant; local personnel time.	The Town will use the culvert inventory to further its culvert improvement program, and seeking funding through various sources for implementation projects. Routine in-house updates occur on an on-going basis. There is no need to expand or improve on this program at this time.
	Completed Action/Program—2010 Better Back Roads Class III Roads Inventory	Staff time from the Randolph Highway Operations Manager and Highway Supervisor with assistance from TRORC. Funding from Better Backroads grant; local personnel time.	The Town will use the Class III road inventory to further its transportation network improvement program, and seeking funding through various sources for implementation projects. There is no need to expand or improve on this program at this time.
	Program—Projects with White River Partnership for riparian buffers, other water quality improvement projects	Staff time from the White River Partnership and the Town Manager's office/other Town Office staff; possibility for volunteer hours or town match requirements (based on grant). Permission/buy-in from private landowners for some projects. Funding (state and federal) sought and obtained by the White River Partnership.	The White River Partnership, in coordination with the Town of Randolph has completed a number of water quality improvement projects in the past (ex. Ayers Brook Corridor Plan, 2007, among others), and continues to do so. There is no need to expand or improve on this program, as needs are identified and then funding is sought to implement the appropriate project.
Education/ Public Outreach	Completed Action— Community Recovery Partnership Meeting Meeting held on Jan. 17, 2012 in Sharon, VT.	Organized by the State of Vermont and partnering organizations for the following towns—Sharon, Royalton, Bethel, and Randolph—in the aftermath of Tropical Storm Irene (Aug. 2011). Staff and volunteer time; funding from the State of Vermont and partnering organizations.	This was a one-time action, and there is no need to expand or improve upon it.
	Action — Public training associated with Red Cross Shelter designation	Staff time from Town Office personnel; volunteer time from meeting attendees. Funding from the American Red Cross.	This was a one-time action, and there is no need to expand or improve on it at this time.

E. Plan Maintenance

This Plan (the Randolph 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/Town Manager 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 comment s 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.

Updates and evaluation of this Plan by the Town Manager (Emergency Management Director by State Statute)/Selectboard will also occur within three months after every federal disaster declaration directly impacting the Town of Randolph. 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 46. The Town shall reference the Local Hazard Mitigation Plan when working on Town Plan amendments or changes to the Town's bylaws.

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).

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 Randolph and if funding is available. If TRORC is unable to assist the Town, then Randolph's Town Manager's Office will update the Plan, or the Town Manager/ Selectboard may appoint a committee of interested citizens (including the current local Emergency Coordinator/Director and/or Local Emergency Planning Committee Representative) 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 within the municipal building, and notice in The Herald of Randolph, and other official posting places throughout the town and the TRORC newsletter, 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 should be invited to the meeting; these include but not limited to: White River Valley Ambulance, Inc., the National Forest Service, 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 Manager.

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. If new actions are identified in the interim period, the plan can be amended without formal re-adoption during Selectboard meetings.

Randolph 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 (24 VSA Chapter 117 §4382). 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 also recommended that the process work both ways and the Town review and incorporate elements of the Local Hazard Mitigation Plan into updates for the municipal plan, zoning regulations, and flood hazard/ fluvial erosion hazards (FEH) bylaws (currently incorporated into Randolph's zoning regulations). 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 Randolph 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 Randolph, 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 Randolph 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 Randolph.[1] The worst 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 Randolph's future; however, they are not the focus of this Plan.

Hazard	Frequency of Occurrence	Warning Time	Potential Impact	Hazard Score
Structure Fire	**Highly Likely**	**None**	**Major**	**12**
Hazardous Material Spill	**Highly Likely**	**None**	**Moderate**	**11**
High Wind	**Highly Likely**	**3-6 hours**	**Moderate**	**10**
Flash Flood/Flood/Fluvial Erosion	**Highly Likely**	**6-12 hours**	**Moderate**	**9**
Tornado	**Occasionally**	**None**	**Moderate**	**9**
Landslides/Mudslides	Occasionally	None	Moderate	9
Severe Weather	Highly Likely	6-12 hours	Minor-Moderate	8.5
Wildfire	Occasionally	None	Minor	8
Water Supply Contamination	Unlikely	None	Moderate	8
Dam Failure	Unlikely	None	Moderate	8
Hurricanes/Tropical Storms	Likely	12+ hours	Moderate-Major	7.5
Hail Storm	Likely	3-6 hours	Negligible	7
Extreme Cold/Snow/Ice Storm	Highly Likely	12+ hours	Minor	7
Drought	Likely	12+ hours	Moderate	7
Earthquake	Occasionally	None	Negligible	7
Ice Jams	Likely	12+ hours	Minor	6
Invasive Species/Infestation	Occasionally-Likely	12+ hours	Minor	5.5
Lightning	Unlikely	6-12 hours	Negligible	5
Extreme Heat	Occasionally	12+ hours	Negligible	4
Avalanche (Randolph does not have the aspects or snowpack required for avalanche conditions to form.)	N/A	N/A	N/A	N/A
Tsunami (Randolph/Vermont is landlocked.)	N/A	N/A	N/A	N/A
Volcano (There are no active volcanoes in Vermont/Randolph.)	N/A	N/A	N/A	N/A

The Randolph Committee discussed the results of the hazard ranking activity and decided to focus on hazards that had a *Highly Likely* frequency of occurrence and have a *Major* or *Moderate* potential impact. The Committee also decided to examine their vulnerability to Tornados, because while a tornado has not been officially recorded in the Town of Randolph, neighboring towns have experienced tornados in the past. The topography of the Randolph area and the surrounding towns seems to make this area more susceptible to tornados than other parts of Vermont. While Landslides/Mudslides were ranked with the same criteria as Tornados, the Committee believed that landslides and mudslides occur most often in relation to flooding and the Town's vulnerability to flooding would be adequately covered in the Flash Flood/Flood/Fluvial Erosion hazard profile. Refer to Appendix A for definitions of the hazard ranking terms used in the above chart.

The Town of Randolph identified the following "top hazards" which they believe their community is most vulnerable to:

- Structure Fire
- Hazardous Material Spill
- High Wind
- Flash Flood/Flood/Fluvial Erosion
- Tornado

Each of these hazards will be discussed in the following sections. Within each section, previous occurrences of each of the top hazards 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:

Hazard	**Location**	**Vulnerability**	**Extent**	**Observed/ Anticipated 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.	Occasionally: 1–10% probability of occurrence per year, or at least one chance in next 100 years Likely: >10% but <100% probability per year, at least 1 chance in next 10 years Highly Likely: 100% probable in a year

B. Hazard Profiles of "Top Hazards"

1. 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 2012, there were 2,225 reported structural fires in the state, which included 6 fatalities and $17.8 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 main concentration of population and development within the Town of Randolph is in Randolph Village. As a result, structures are located relatively close together or adjacent to one another in some areas. The area of greatest concern is the block of commercial buildings located on North Main Street; these buildings were built adjacent to one another. Some of them do not have extended fire suppression systems, though small sections of the downtown area have been equipped with sprinkler systems, including all public and town-owned buildings. However, officials in the Town of Randolph feel powerless to require installation of sprinklers in existing privately-owned buildings, and it is dependent on the scope of the renovation if they are required to be installed. The installation of sprinklers in closely spaced buildings is ongoing and the Town enforces this when possible. A major fire in this section of buildings would likely threaten the whole commercial block.

The following occurrences were reported by the group or obtained from local sources. Entries marked with an asterisk (*) in this section were found in the archives of the local newspaper, *The Herald of Randolph*. 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
06/28/2013*	House Fire	Park Street, Randolph Village	Structure destroyed.
12/29/2012*	House Fire	Fairview Street, Randolph Village	Structure destroyed.
01/03/2013*	Chimney Fire	Randolph Avenue, Randolph Village	Minor damage.

Date	Event	Location	Extent
11/22/2012*	Mobile Home Fire	Route 12A, Braintree.	Randolph Village Fire Department responded as per agreement with the Town of Braintree. Randolph Center Department also responded in mutual aid. Significant smoke damage to mobile home, small burn hole in back of the structure.
11/08/2012*	House Fire	Forest Street, Randolph Village	Contents of home totally destroyed, but main structure considered solid. Mostly smoke and heat damage. Estimated damage at $150,000.
01/05/2012*	Barn Fire	Randolph Center	Barn completely destroyed, burned to the ground. Several farm animals killed.
06/17/2010*	Commercial Building Fire	31 North Main Street, Randolph Village	First two floors had extensive fire, smoke and water damage. The third floor was destroyed. 8+ people homeless, several businesses damaged by fire/smoke/water. It was determined that the fire was likely set by arsonists.
07/16/2009*	House Fire	South Pleasant Street, Randolph Village	Structure destroyed, completely gutted by fire.
11/06/2008*	Structure Fire	Route 66, Randolph Center	Vermont Technical College's Enterprise Center completely destroyed, displacing six local businesses.
12/01/1999	Commercial Building Fire	Pleasant Street & Pearl Street	Branchwood, Inc., located in a 135- year old historic mill was completely destroyed.
07/15/1992	Commercial Building Fire	North Main Street Randolph Village	Belmain's and the Vermont Federal Bank (Billingham Block)—completely destroyed.
01/27/1992	Commercial Building Fire	Randolph Village	The Gray Block, completely destroyed and razed.
12/26/1991	Commercial Building Fire	Main Street, Randolph Village	Original DuBois & Gay Block completely destroyed. 75-90 volunteers from 5 departments participated in the firefighting effort.

There have been four major fires involving Randolph Village's commercial block in the last 20 years. The fire that occurred on December 26, 1991 destroyed a large four-story brick commercial building that dated to 1885. Then, there were two fires in the first half of 1992, one in January and one in the spring. These three successive fires devastated the commercial viability of Randolph Village and businesses suffered as a result. Most recently, a privately-owned three-story building was set on fire by arsonists in the early morning of June 17, 2010. It heavily damaged the first and second floors of the building and destroyed the third floor. While adjacent buildings were damaged by smoke and water, the Randolph Village Fire Department and others were fortunately able to keep the fire from spreading to other adjacent buildings.

Randolph Village is considered to be a commercial hub of the wider region, and is therefore depended on by residents of surrounding towns including, Braintree, Brookfield, Tunbridge, and Bethel. As evidenced by the economic downturn the Village experienced after the fires in 1991 and 1992, a major fire in the commercial block could devastate the Town's economy and vitality.

In addition, a fire in one of Randolph Village's neighborhoods is capable of spreading to other nearby structures and increasing the amount of damage caused by a structural fire. Closely spaced structures in any of Randolph's five mobile home parks and numerous housing complexes/apartment buildings are also vulnerable to the impacts of a fire spreading among structures. There is another cluster of mobile homes located on East Randolph Common off of Route 14, but there is a tree buffer. These are privately

individually owned. The Randolph Area Community Development Corporation (RACDC) owns five housing complexes, which include the Red Lion Inn (an elder housing complex on the top two floors of building on Merchants Row), Randolph House (an elder housing complex on North Main Street), Sass Apartments (located on Hedding Drive), Branchwood Apartments (located on Randolph Avenue & Pearl Street), and finally, Salisbury Square (located at the end of Salisbury Street & School Street). Further, there is another subsidized housing complex on Hedding Drive, called Randolph Circle, but this complex is not owned by RACDC. For the remaining areas in the Town, poor access to fires, limited water supply for firefighting outside the Village area, and the distance of homes from one of Randolph's three volunteer fire stations leave the Town of Randolph vulnerable to the impacts of structure fires.

Because of a concentrated student population, Vermont Technical College is an area of local concern. Although the Randolph Center Fire Department acquired an aerial ladder truck capable of reaching the taller buildings on campus in 2006, a hazard event at the school could easily overload Randolph's emergency services.

The Town of Randolph provides fire protection to three surrounding towns, under various conditions. The Town of Braintree contracts with the Town of Randolph to provide fire protection services. Randolph Fire services East Granville on a per-call basis, and responds to fires in West Brookfield under mutual aid. The Emergency Director from the Town of Braintree, and the Fire Chief and one member-at-large (usually the Assistant Chief) from the Town of Brookfield participate in monthly Fire Advisory Committee meetings, where the previous month's events are discussed. The arrangement of the Town of Randolph providing mutual aid to three adjacent towns places more responsibility and pressure on Randolph fire departments, and could run the crews thin if two large emergency events occurred in multiple Towns at the same time.

Hazard	Location	Vulnerability	Extent	Observed Impact	Likelihood/ Probability
Structure Fire	Town-wide. Increased risk in Randolph Village, and mobile home parks.	Town and privately owned structures.	Depends on fire location and conditions.	Estimate: $8-9 million for Randolph Village fires that occurred between 12/1991 and 07/1992.	Highly likely

2. Hazardous Material Spill

Based on available VT Tier II data, there are 19 sites in town that have sufficient types and/or quantities of hazardous materials to require reporting. In addition, the New England Central Railroad runs through the village of Randolph. There are four railroad crossings on public or Town land. At any given time, there can be hazardous materials aboard the train. Additionally, Randolph's village is located at the junction of Route 12, 12A and 66; and the Town is bisected by I-89. These roads (particularly I-89) see a heavy amount of truck traffic. There are 1,226 residences and 268 commercial & industrial

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**.

buildings within 1,000 feet of a potential HAZMAT spill on the railroad, Routes 12, 12A, 14, 66 and I-89, and Vermont Class II roads. The Police Department, Town Hall and Post Office are both public buildings that are also located within 1,000 feet of a potential HAZMAT spill. In the event that 5% of these structures were involved in a HAZMAT incident, the estimated damage would be $13,323,180.

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. The Fire Department has participated in HAZMAT training in the past.

Information in the table below was retrieved from the Vermont Department of Environmental Conservation's Spill List. Information marked with an asterisk (*) was supported with research of newspaper articles or through local knowledge. Although this table reflects, mostly oil based hazardous materials that have spilled, some of which occurred in the residential setting, it is intended to demonstrate the wide range of impacts and circumstances that may follow a hazardous material spill. Unless otherwise noted, the spills were cleaned up or treated as required by law.

History of Occurrences:

Date	Event	Location	Extent
06/23/2015	Box Truck turn-over, leaking battery acid	North Randolph Road, Randolph Center	Box truck overturned on the N. Randolph Road with a cargo of batteries, which were leaking into a nearby stream. Conditions that day (during incident): heavy rain incident. Cost to clean up just for Town of Randolph (fire & highway) $9,200.
10/17/2013	Propane release	North Main Street	Release from rooftop heating unit required the evacuation and closure of the store until the system was repaired.
07/07/2012	Tour bus engine blew apart	I-89 South	Motor oil sprayed all over southbound line, covered 2 cars. Oil slick ran from approximately mile marker 37 to mile marker 34.
05/29/2012	Tractor trailer ruptured saddle tank	I-89, Exit 4	80 gallons diesel spilled onto parking lot, into storm drains and into drainage swale.
03/14/2012	Leaking kerosene tank	School Street	Approximately 50 gallons leaked, sheen on nearby stream reported a few days later. Clean-up invoice: $18,666.91.
09/12/2011	Drum found on riverbank	Third Branch of White River	55 gallon drum of gasoline found on riverbank. Washed downstream during Tropical Storm Irene flooding.
Fall 2010	Propane release	VT Route 12	Quantity unknown, but release required evacuation for several hours.
06/23/2009	Blown hydraulic hose	Clay White Road	8 gallons of hydraulic fluid spilled, released into soil.
08/09/2008*	New England Central Railroad train derailment	South of VT Route 12A crossing in Braintree	Last rail car dragged 4 miles, damaging rails (tore up a few miles of rail ties) and spilled 200,000 lbs. of limestone along rail bed. Train service suspended a few days for repairs.
2003*	Propane release	South Main Street	Quantity unknown but spill could have required the evacuation of Gifford Medical Center.
05/15/2002	Fuel line leak	I-89 North	20 gallons of diesel spilled.
06/29/1999	Chlorine release	School Street	120 gallons of chlorine released due to broken pipe.
03/05/1997	Diesel fuel tank leak	I-89	Diesel spill along several miles, no cleanup possible.

No major hazardous material spill has occurred in the Town of Randolph, although some areas are always at risk for a spill. These areas include Randolph Village, Routes 12, 12A, 14, and 66 corridors, and the I-89 corridor. Railroad tracks pass directly through Randolph Village, leaving the entire Village vulnerable if a hazardous material spill occurred there. Of greater concern is the response to a spill directly in the Village, or a halted train that has experienced a hazardous material spill and whose rail cars extend through the center of Randolph Village. Rail cars stopped in the Village would completely halt traffic in or out of the Village at that intersection. More importantly, response crews passing through the major route through the Village on Vermont Route 12 would be required to turn around and use I-89 to access an emergency on the other side of the train tracks. This could significantly affect and slow down the response effort, especially without advanced knowledge that the tracks are blocked in the Village. At times, a train temporarily stopped on the tracks will halt traffic in the Village, sans any accident. There is currently no framework or system to alert emergency response or emergency medical crews that a train is blocking the passage through the Village.

There is an alternative route to bypass the train tracks in Randolph Village if necessary, Stock Farm Road and Findley Bridge Road—a narrow Class 3 road with a narrow trestle bridge not suited for 18 wheelers. While not suited for all vehicles, this route is significantly shorter than going up to I-89 and then back through the Towns of Royalton and Bethel to get to the other side of the tracks in the Village.

As the major north-south route in the area, which serves both Montpelier and Burlington, many hazardous materials are transported on I-89. I-89 passes through the entire Town of Randolph, for a distance of approximately 14 miles. The level of truck traffic along this highway increases the likelihood of a HAZMAT event. While less hazardous than some other materials, sizable quantities of vehicle-related fluids, such as petroleum products, have been spilled on I-89 a number of times in the past, including within the last 18 months. Petroleum-product spills will continue to occur, and it is only a matter of time before a more serious hazardous material spill will continue to occur on I-89 in the Town of Randolph. The area of Interstate 89 that runs through Randolph is served by local fire and rescue squads in the event of major accident or HAZMAT event. There is limited access to the length of the interstate.

There have also been a few large propane releases in or near Randolph Village in recent years. One was at a residence/business that could have required the evacuation of Gifford Medical Center and the Menig Extend Care Facility and Adult Day Service. The other was at the Justin Morgan Marketplace (Kinney Drugs/Shaw's Supermarket/Aubuchon Hardware/Family Dollar/Riches Recycled) that required evacuation for several hours. Most recently, a propane leak required the evacuation and closure of a Rite-Aid until the system was repaired. In addition, propane tanks of various sizes are occasionally found in rivers and streams throughout the Town after a flooding event. Again, while these spills tend to be minor in nature, they demonstrate the frequency at which spills can occur and it may only be a matter of time before a larger and/or more hazardous spill occurs.

Hazard	Location	Vulnerability	Extent	Anticipated Impact	Likelihood/ Probability
Hazardous Materials Spill	VT Routes 12, 12A, 14, 66, Interstate I-89	Road and rail infrastructure, nearby structures, Randolph Village	Initially, local impacts only; but depending on material spilled, extent of damage may spread (ex. into groundwater).	There are 1,226 residences and 268 commercial & industrial buildings within 1,000 feet of a potential HAZMAT spill on the railroad, Routes 12, 12A, 14, 66 and I-89, and Vermont Class II roads. In the event that 5% of these structures were involved in a HAZMAT incident, the estimated damage would be $13,323,180.	Highly Likely

3. High Wind

Generally speaking, wind is the result of differences in atmospheric pressure, and moves from an area of high pressure to an area of lower pressure. Slight or moderate winds are unlikely to be dangerous, and often have beneficial effects. However, high winds may pose a threat to lives, property, and critical utility infrastructure. Light construction, such as manufactured homes, are often the most damaged by high wind events. High winds typically occur as a result of various weather events, such as severe storms, tropical storms or hurricanes.

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 **High Wind**.

One of the strongest and most damaging types of high winds are straight-line winds. Unlike tornadoes, which demonstrate a rotational damage pattern, damage caused by straight-line winds tends to be very linear. This type of wind can be very strong, producing wind speeds as high as 80 to 90 mph, and can last twenty minutes or more. They often occur at the gust front of a thunderstorm or originate with a downburst from a thunderstorm. Straight-line winds are notorious for downing forest stands in linear swaths.

Another extremely dangerous weather event that produces high winds is a derecho. Derechos are widespread, long-lived windstorms that are associated with a fast-moving band of severe thunderstorms. They are also capable of producing very high, straight-line winds and even tornadic winds. They are considered a warm-weather phenomenon, as they occur most often in the summer months—spring through early fall in the Northern Hemisphere. According to a National Weather Service map, the state of Vermont, the northern half of New York State and the rest of New England, derechos have a frequency of occurring about once every four years. There have been a few derechos that have occurred in Vermont in the last 15 years: on July 14-15 of 1995 (“the Adirondacks/Ontario Derecho”), on September 7, 1998 (“the Syracuse Derecho of Labor Day 1998”), on July 4-5 1999 (“the Boundary Waters-Canadian Derecho”) and most recently on July 15, 2005. It is thought that the worst derecho to hit Vermont was the “Boundary Waters-Canadian Derecho,” killing one camper in the Northeast Kingdom.

Despite the threat of straight-line winds and derechos, the most common type of high winds, are strong, sustained winds or wind gusts or gales. These high wind events can still damage critical infrastructure or down trees, which can knock out electricity, block roads and cause bodily harm. As evidenced by the table below, strong sustained winds and/or strong gales are the most common type of high wind in the Town of Randolph.

History of Occurrences:

Date	Event	Location	Extent
09/08/2012	High Winds with thunderstorm	Town of Randolph, region-wide	Numerous trees and power lines downed by winds. $10,000 in property damage. 20-30 mph with gusts in excess of 40 mph across the region.
08/21/2011	High Winds with thunderstorm	Town of Randolph	Downed trees and power lines. $5,000 in property damage. (To demonstrate power of winds caused by this event: microburst near North Pawlet produced straight-line winds estimated at 70-90 mph).
05/09/2009	High Winds with thunderstorm	East Randolph, South Randolph	South Randolph: trees reported down. Magnitude: 50 knots, $5,000 in property damage. East Randolph: State Police report trees downed by thunderstorm winds. Magnitude 50 knots. $5,000 in property damage.
07/09/2007	High Winds with thunderstorm	Randolph Center, East Randolph, The Town of Randolph	2 reports for Randolph Center: Wind gust of 50 knots and wind gust of 58 mph reported, very minimal damage (nickel sized hail also reported). In East Randolph, numerous trees reported down, wind magnitude at 50 knots. $10,000 in damage.
06/27/2007	High Winds with thunderstorm	Randolph, region/state wide	Trees blown down on power lines. 1000's of customers without power within the region/state. Magnitude: 50 knots.
03/06/2007	High Winds with extreme cold	County-wide	Frigid temperatures (-5 to -20 degrees) combined with 15-30 mph winds. Wind chill: -20 to -40 degrees.
02/14/2007	High Winds with snow storm	Town of Randolph, county/ region-wide	Snowfall and brisk winds of 15-25 mph created white-out conditions. Wind chill: -10 degrees and below.
08/01/2005	High Winds with thunderstorm	Town of Randolph	Numerous trees were blown down on cars. Power was out with power wires blown down. Small hail was reported with the storm. $50,000 in property damage.
07/06/1999	High Winds with thunderstorm	Town of Randolph	Numerous trees and power lines blown down. $5,000 in property damage
08/24/1998	High Winds with thunderstorm	Town of Randolph, county/ region-wide	Numerous trees and power lines blown down.
06/22/1997	High Winds with thunderstorm	Randolph Center, Town of Randolph	An individual was injured in Randolph Center due to a tree limb being blown down and striking them in the head. In addition, hundreds of trees were blown down and/or uprooted in Randolph Center with a silo damaged.

The utility company is required to trim around the power lines regularly. This practice helps to reduce the number of customers who lose power and the amount of damage to power lines caused by falling trees and tree limbs.

The town also clears low hanging branches, dead or dying trees, etc. from their right-of-way.

Hazard	Location	Vulnerability	Extent	Observed Impact	Likelihood/ Probability
High Wind	Town wide	Private and public property, power, and utility infrastructure.	Winds have often been 50-55 knots (57-64 mph) causing downed trees/power lines and power outages.	Damage costs as high as $50,000, but more typically in the $5,000 to $10,000 range.	Highly likely

4. Flash Flood/Flood/Fluvial Erosion

Flooding is one of the worst threats to Randolph's residents and infrastructure. Past instances of flooding in Randolph have included rain and/or snowmelt events that cause flooding in the major rivers' floodplains, and intense rainstorms over a small area that cause localized flash flooding. Both kinds of events can be worsened by the build-up of ice or debris which can contribute to the failure of important infrastructure (such as culverts, bridges, and dams).

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 **Flash Flood/Flood/Fluvial Erosion**.

The worst flood disaster to hit the Town of Randolph, as well as the overarching region and the State of Vermont, occurred on November 3, 1927. This event was caused by nearly 10 inches of heavy rain from the remnants of a tropical storm that fell on frozen ground. 84 Vermonters, including the Lieutenant Governor, were killed. The flooding in the White River valley was particularly violent, with an estimated 120,000 to 140,000 cubic feet per second (cfs) recorded at West Hartford, Vermont. Like many towns in the region, the Town of Randolph received heavy precipitation.

A more recent flood that devastated the region and the state was the result of Tropical Storm Irene, which occurred on August 28, 2011. Record flooding was reported across the state and was responsible for several deaths, and hundreds millions of dollars of home, road and infrastructure damage. Due to the strong winds, 50,000 Vermont residents were initially without power, and many did not have electricity restored to their homes and businesses for over one week. Despite the damage wrought, the flooding caused by Tropical Storm Irene is considered to be the second greatest natural disaster in 20th and 21st century Vermont, second only to the Flood of 1927.

The Town of Randolph suffered major damage to property and infrastructure during Tropical Storm Irene (DR-4022 VT), although no lives were lost. It is estimated that Tropical Storm Irene dropped 5-7 inches of rain over the Town of Randolph (7.28" in Randolph Center, and 5.53" in northeast Randolph) in a very short span of time, and 5-7 inches across the county. Many of Randolph's roads and culverts were damaged by the storm, including parts of: Thayer Brook Road, Brook Street, Beanville Road, Prince Street, Howard Hill Road, West Street, Hillside Lane, Menard Road, Harlow Hill Road, Tatro Hill Road, Seymour Road, Leonard Road, Vermont 14 in East Randolph, and Vermont 12A. The county-wide damage for Orange County totaled $5 million. According to FEMA's Public Assistance Database, the

Town of Randolph sustained $814,956.12 in damages as a result of the flooding caused by Tropical Storm Irene.

The flooding in 1998 (DR-1228 VT) caused more damage in the Town of Randolph than Tropical Storm Irene. Mason Road, Howard Hill Road, Braintree Hill Road, North Randolph Road (multiple locations), Crocker Road, and Route 66 were all extensively damaged. Many of the same roads were damaged during the 1998 flooding and the Tropical Storm Irene flooding. However, the damage was reduced during the Irene flooding due to the repairs and upgrades that were made after the 1998 flooding.

Between the flooding events in 1998 and 2011, the Town of Randolph was hit by a series of July storms in 2007 that caused flooding throughout the Town (DR-1715 VT). In particular, the flooding that occurred on July 11, 2007 damaged the following areas and roads in the Town: Mason Road, Howard Hill (closed), West Street, Tatro Hill, Seymour Road, West Hill (closed), Peth Road, North Randolph Road, Fish Hill, Hebard Hill (damage in two locations), Scenic Drive, Jackson Road, and Pinnacle Road. The two main projects that arose out of the July 2007 events were Howard Hill, with a cost of repairs totaling $492,800.00, and West Street, with a repair bill of approximately $80,000.00. The damage total for the 2007 flooding was approximately $750,000.00.

Unfortunately, flooding is very common across the region, with many events impacting the Town of Randolph specifically. Flooding is a great threat to Randolph's residents and infrastructure. The following list indicates the history of occurrence with regard to this hazard in Orange County. Given the relatively small population of Randolph, 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.

History of Occurrences:

Date	Event	Location	Extent
06/25/2013— 07/11/2013 (DR-4140 VT)*	Flash flooding & flooding	County-wide	Thunderstorms occurred across the region. Some storms brought very heavy precipitation and caused local flash flooding. Damage in Randolph to the following roads: Howard Hill Road, Stock Farm Road, Fish Hill Road, Braley Road, Tunbridge Road, North Randolph Road, and Hollyhock Road. Damage around $15,000.
08/28/2011* (DR-4022 VT for period of 8/26/2011 – 9/2/2011)	Severe Flash Flooding	Randolph, County-wide	5-7" of rain across region, 7.28" in Randolph Center, 5.53" in northeast Randolph. Significant damage to roads/culverts including many town roads, and Routes 12A, and 14. There was flooding at Rt. 66/Central Street and at Ayers Brook but no damage was reported. $814,956.12 in damages in the Town of Randolph according to FEMA's Public Assistance database (captures at least 70% of total damage).
05/26/2011 – 05/27/2011 (DR-4001 VT)	Flash & riverine flooding	County-wide	3-5+" of rain county-wide
10/01/2010*	Flood	Randolph	Caused by heavy rain. Route 14 was covered by water in South Randolph, reducing travel to one lane.
07/21/2008 - 08/12/2008 (DR 1790 VT)	Flooding	County-wide	Data unavailable.

Date	Event	Location	Extent
07/9/2007 - 07/11/2007 (DR-1715 VT)*	Flooding	Randolph, County-wide	Randolph one of hardest hit areas. Numerous roads washed out and flooded in Randolph and Randolph Center including Mason Road, Howard Hill, Tatro Hill, Seymour Road, Hebard Hill (in two locations), among others. Spotter reported over 6 inches of rainfall in Randolph Center. $750,000 in damage for event.
04/15/2007 - 04/21/2007 (DR-1698 VT)*	Flooding	County-wide	Snowfall in valleys 4-7" throughout the county; 13" fell in Randolph
07/21/2003 - 08/18/2003 (DR-1488 VT)	Flooding	County-wide	Data unavailable.
07/14/2000 - 07/18/2000 (DR-1336 VT)	Flooding	County-wide	Data unavailable.
09/16/1999 - 09/21/1999 (DR-1307 VT)	Flooding	County-wide	Data unavailable.
06/27/1998*	Flash flood	Randolph, County-wide	4-8" of rain across county; widespread flooding was reported in Randolph.
06/17/1998 - 07/13/1998 (DR-1228 VT)	Flooding	Randolph, County-wide	Extensive flooding damage in the Town of Randolph to Route 66, Mason Road, Howard Hill Road and Braintree Hill Road.
06/28/1973 - 06/30/1973	Flooding	Randolph, County-wide	5-8" region-wide. 7.68" in Bethel, located immediately south of Randolph.
11/02/1927 – 11/04/1927 ("The 1927 Flood")	Flash flood	Randolph, County-wide	6-7" region-wide. Widespread damage to roads and bridges.
03/1925	Flooding	Randolph, County-wide	Spring freshet. Caused significant structural damage to a log dam, bridges and an apartment building, and caused significant erosion.

The Town of Randolph Flood Protection District prohibits new structures in the floodplain and places restrictions on other types of activities within the floodplain. It also specifies land, area and structural requirements in the Flood Protection Districts. The Town's Zoning Regulations have set a 50-foot stream buffer in their Conservation Zone on either side of the Second and Third Branches of the White River, which does not allow structure development, paving or filling. These buffers seek to protect the fragile riparian habitat, improve or maintain water quality and prevent soil erosion.

Based on the results of overlaying the FIRM flood maps with the location of the E911 points, there are 26 residences and 8 commercial and industrial structures within the 100-year floodplain (also known as the Special Flood Hazard Area), which equals $7,020,210, if all properties were damaged/destroyed in a severe flooding event. There are no critical facilities for the town located in the floodplain. Some of the Town's recreational facilities are located in the Special Flood Hazard Area. For example, Randolph's summer camps are held at the Randolph Recreation Building/Randolph-Town Recreation Center complex, on Park Street, which is located on the White River. The town pool is located on School Street and on Prince Street there is a small recreational area, both of which are vulnerable to flooding. The

Ayers Brook pump station and Wastewater Treatment Facility are located just outside of the Special Flood Hazard Area.

In recent years, there have been a number of water rescues events or near events, at least eight in the last two years. At least half of these rescues were due to flooding, with many rescues during and after the flooding caused by Tropical Storm Irene. The Town of Randolph has responded to East Granville for a number of high water rescues due to flooding. With more frequent flooding events, this number seems to be and in the future will likely be on the rise. The Town of Randolph currently relies on the swift water rescue based in the adjacent Town of Bethel for assistance. The Randolph Fire Departments currently do not have basic equipment or the training necessary to perform its own swift water rescues.

Due to the development restrictions mountainous terrain places on an area, "at-risk populations" (such as children or the elderly), low-income housing and critical infrastructure may be located in flood hazard areas. Across Vermont, most child and elder care facilities are not registered with the State. There are six child care facilities that are licensed with the State of Vermont in the Town of Randolph. Four of these facilities are located well outside of the floodplain. However, two facilities are located on the edge of the floodplain. Both of the licensed child care providers operate out of the Randolph Elementary School, but it is located on top of a hill and is safe from inundation risk. In the event of severe flooding, the Elementary School would be evacuated.

There are three elder care facilities in the Town of Randolph, the Pleasant Street House (located on South Pleasant Street) and the Windover House (located on Vermont Route 66) and Joslyn House (located on Maple Street). However, none of these facilities are located in the floodplain. Finally, in general, low income housing is not registered with the State, but there are five mobile home parks that are located within the Town of Randolph. All are located outside of the floodplain; however, the mobile home park located on Park Street is just barely outside of the floodplain.

Risks also occur outside of mapped flood areas. Recent studies have shown that the majority of flooding in Vermont is occurring along upland streams, as well as along road drainage systems that fail to convey the amount of water they are receiving. These areas are often not recognized as being flood prone, and property owners in these areas are not typically required to have flood insurance (DHCA, 1998). It should be noted that, although small, mountainous streams may not be mapped by FEMA in NFIP FIRMs (Flood Insurance Rate Map), flooding along these streams is possible, and should be expected and planned for. Flash flooding in these reaches can be very erosive, causing damage to road infrastructure and to topographic features, including stream beds and the sides of hills and mountains. The presence of undersized or blocked culverts can lead to further erosion and stream bank/mountain side undercutting. Furthermore, precipitation trend analysis suggests that intense, local storms are occurring more frequently. There are 18 residential structures and 3 commercial structures in the fluvial erosion hazard zone. Roads and some residences in Randolph next to steep small streams could be and have been damaged in the past, such as West Street, Tunbridge Road, Braley Road, and Howard Hill Road. Currently, the Town of Randolph has Fluvial Erosion Hazard zones mapped for Ayers Brook.

The Town of Randolph completed an extensive culvert inventory for the entire Town, which includes private driveways in the fall of 2013. TRORC assisted the Town in the culvert inventory.

A bridge separates the Randolph Village Fire Department from the main body of the Village. In the event of a severe flood, this bridge could wash out, causing the Village to be cut off from its own fire suppression equipment and firefighters, as well as from electrical, telephone (including Emergency Response lines), and possibly sewer and water service. Bethel and Royalton could provide limited fire service for this area.

No development projects are planned in Randolph in areas that would be vulnerable to flooding. There are no repetitive loss properties in the Town of Randolph on FEMA's NFIP list.

Finally, in an effort to help reduce the Town's vulnerabilities to flooding and protect structures and road infrastructure, it is important to restore floodplain, improve areas and/or increase the number of areas for retention wherever possible. Equally important to reduce vulnerabilities to flooding is the process of stabilizing river banks in areas that are vulnerable to slides and/or have the potential to damage critical or important infrastructure. In Randolph, this could be accomplished in part by proceeding with the acquisition of properties vulnerable to flood damage. As a condition of the acquisition process, the land will be returned to open space with no or minimal development (ex. park or river access), which will help reduce the vulnerabilities to flooding elsewhere.

Hazard	**Location**	**Vulnerability**	**Extent**	**Observed Impact**	**Likelihood/ Probability**
Flash Flood/ Flood/ Fluvial Erosion	Several roads for flooding: Thayer Brook Road, Palmer Road, Brook Street, Beanville Road, Prince Street, Hillside Lane (connected to Howard Hill and the erosional flooding there), Dugout Road, Menard Road, Harlow Hill Road, Tatro Hill Road, Seymour Road, Leonard Road, Crocker Road, Hyde Road, Kingsbury Road, Vermont 14 in East Randolph, and Vermont 12A. For erosional flooding: West Street, Howard Hill Road, Tunbridge Road, and Braley Road.	Culverts, bridges, road infrastructure, utility infrastructure, structures. There are 26 residences and 8 commercial and industrial structures within the 100-year floodplain.	Most recent, Tropical Storm Irene- 5-7" across county (7.28" in Randolph Center).	From TS Irene: $814,956.12 in damages in the Town of Randolph according to FEMA's Public Assistance database.	Highly likely

5. Tornado

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 **Tornado**.

Thunderstorms can generate high winds, such as hit the region on July 6, 1999, downing hundreds of large trees in a few minutes. The region can also experience tornadoes, which are capable of damaging or destroying structures, downing trees and power lines and creating injuries and death from collapsing buildings and flying objects. Tornadoes are less common than hail storms and high winds, but have occurred throughout Vermont. In fact, 45 tornadoes were recorded between 1953 and 2012, injuring 78 people and causing over $5 million dollars in estimated property damage. Nearly all of these occurred from May through August, and most of these occurred in the afternoon when thunderstorm activity is highest due to heating of the atmosphere. Tornadoes are classed by wind speeds from 40 – 318 miles per hour (mph) and placed into five categories (F0-F5). All recorded tornadoes in Vermont have either been FO (40-72 mph winds), F1 (73-112 mph winds) or F2 (113-157 mph winds). Interestingly, F2 tornadoes are the most common of the three classes recorded in the state.

The following list indicates the history of occurrence of tornados in Orange County.

History of Occurrences:

Date	Event	Location	Extent
07/16/2009	Tornado	Towns of Brookfield and Chelsea	F0 tornado. Caused $50,000 in damage, $25,000 in crop damage.
05/09/2009	Tornado	Town of Washington, VT town line (two towns north of Randolph).	F1 tornado developed in advance of the squall line and touched down—some structural damage to apartment roof, school awning and destroyed a 60 foot hoop barn made of fabric/steel tubing. $125,000 in damage. See same event listing in the **High Wind** section for Randolph-specific damage.
07/04/2002	Funnel Cloud	Town of Brookfield (town directly north of Randolph).	Funnel cloud reported.
08/09/1972	Tornado	Towns of Bradford and Fairlee	F1 tornado path approximately along I-91. $5,000-$50,000 in damage.

To date, there have been no reported and documented tornados in the Town of Randolph, however, tornadic events have occurred across Orange County. Thus, all that is needed for a tornado to occur in the Town of Randolph are the "right" conditions.

In an attempt to help protect against downed trees and power lines that can lead to power outages, the Town of Randolph has entered into an agreement with the utility company to regularly trim tree limbs that are close to the power lines. Town also clears overhanging branches, etc. out of their town right-of-way.

Hazard	Location	Vulnerability	Extent	Anticipated Impact	Likelihood/Probability
Tornado	Town wide	Utility lines, public and privately owned structures.	Unknown/data gap—depends on individual event.	As evidenced by tornados occurring in nearby towns, damage could be $50,000 to well over $100,000.	Occasionally (But has not occurred in the Town of Randolph to best-available local knowledge.)

VI. Mitigation

A. Mitigation Goals

1. To reduce injury and losses, including to infrastructure, structures and businesses, from the hazard of structure fire(s).
2. To reduce injury and losses, including to infrastructure, structures and businesses, from the hazard of hazardous material spills.
3. To reduce injury and losses, including to infrastructure, structures and businesses, from the natural hazard of high wind, caused by multiple weather events such as severe rainstorms, downbursts, hurricanes and tropical storms.
4. To reduce injury and losses, including to infrastructure, structures and businesses, from the natural hazard of flash flooding, flooding, and fluvial erosion caused by multiple weather events such as severe rainstorms, hurricanes and tropical storms.
5. To reduce injury and losses, including to infrastructure, structures and businesses, from the natural hazard of tornadoes.

B. Excerpted Town Plan Goals & Objectives Supporting Local Hazard Mitigation

- To minimize the loss of life and property, disruption of commerce, and demand for extraordinary public services and expenditures which result from flood damage (p. 24).
- To conserve Randolph's floodplains and floodplain forests, through regulatory and non-regulatory methods, for their beneficial natural functions (p. 24).
- To maintain and improve the quality and quantity of both surface and groundwater water resources, such as the White River and tributaries, through careful management, and through education about the threats to water resources (p. 27).
- To reduce the likelihood of contamination from spill events, or pollution of water resources (p. 27).
- To evaluate the town's physical infrastructure and the various entities in town which provide services, with the objective of improving these in an efficient and cost-effective manner as Randolph grows into the future (p. 49).
- To provide quality service from all three fire departments in terms of both qualified and adequately trained personnel and adequate equipment (p. 52).
- To maximize the potential of existing transportation facilities and to increase efficient, safe, and diverse transportation options for Randolph residents and businesses (p. 69).

The Randolph Town Plan was adopted on February 16, 2010. It has a 5-year lifespan.

C. Hazard Mitigation Strategies: Programs, Projects & Activities

Vermont's 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.

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, the Randolph'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.

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).

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 Randolph 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 would 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 Randolph'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 Actions	Local Leadership	Prioritization (Mitigation Plan Status)	Possible Resources**	Time Frame
All hazards	*Ensure that Randolph's Local Emergency Operations Plan (LEOP) is kept up-to-date and identifies vulnerable areas and references this Plan.*	Town Manager	High (new)	Local Resources	1 year from date of Plan Approval
	Create an outline of events to which the Town is susceptible and brainstorms unique solutions to such events. Review and revise the outline regularly.	Town Manager, Fire Departments	High (new)	Local Resources	1 year from date of Plan Approval
	Develop a program to consistently document infrastructure damage after weather events.	Fire Departments, Highway Department	High (new)	Local Resources	1 year from date of Plan Approval
Structure Fire	*Enact ordinances to enhance fire protection of new or existing structures which will improve fire safety and prevention (such as, warning plaques for buildings with trusses).*	Fire Advisory Committee, Fire Departments, Zoning Administrator	Medium (new)	Local Resources	2-4 years from date of Plan Approval
	Develop a program to install and maintain dry hydrants in strategic locations around town for structure and wildfire protection.	Fire Advisory Committee, Fire Departments	High (6^{th} in priority of 6 nat. haz. mit. projects in 2009 plan, as a wildfire strategy)**	Local Resources	1-2 years from date of Plan Approval
High Wind/ Tornado	*Develop a program to perform tree-trimming along the Town's right-of-way.*	Highway Department	High	Local resources	1-2 years from date of Plan Approval
High Wind/ Tornado	*Maintain the agreement with the utility company to regularly trim tree limbs that are close to power lines.*	Highway Department	On-going	Local resources	1 year from date of Plan Approval

Hazard(s) Mitigated	Mitigation Actions	Local Leadership	Prioritization (Mitigation Plan Status)	Possible Resources**	Time Frame
Flash Flood/ Flood/ Fluvial Erosion	*Update and expand flood hazard area regulations to address fluvial erosion hazards, and to prohibit development, including new critical public facilities, in high hazard areas.*	Zoning Administrator, Planning Commission	Medium (2nd in priority of 5 nat. haz. mit. projects in 2009 plan)**	Local resources, municipal planning grants	2-4 years from date of Plan Approval
	Replace bridge #51 on Thayer Brook Road (cannot pass high flood waters).	Highway Department	Medium	Local resources, Better Back Roads grant program, Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (Competitive) grant program (PDM-C)	2-4 years from date of Plan Approval
	Develop a program to maintain and update town bridge and culvert inventories. Regularly inspect and maintain town bridges and culverts.	Highway Department	High (1st and 4th in priority of 6 nat. haz. mit. projects in 2009 plan)**	Local Resources, Better Back Roads grants	1 year from date of Plan Approval
	Develop a program and schedule to replace undersized culverts (see Appendix B for suggestions).	Highway Department	High (1st in priority of 6 nat. haz. mit. projects in 2009 plan)**	Local Resources, Better Back Roads grants	1 year from date of Plan Approval
	<u>The following projects were identified in the Town's Better Back Roads 2012 Class III Road Inventory:</u> *Stabilize streambank and road embankment on North Randolph Road.*	Highway Department	Medium (new)	Local resources, Better Back Roads grant program, Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (Competitive) grant program (PDM-C)	2-4 years from date of Plan Approval
	Replace undersized and perched culvert on Whalen Road with a hydrologically-appropriate culvert.	Highway Department	Medium (new)	Local resources, Better Back Roads grant program, Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (Competitive) grant program (PDM-C)	2-4 years from date of Plan Approval

Hazard(s) Mitigated	Mitigation Actions	Local Leadership	Prioritization (Mitigation Plan Status)	Possible Resources**	Time Frame
Flash Flood/ Flood/ Fluvial Erosion	*Replace two undersized cross culverts with hydrologically-appropriate culverts and remove berm on Dugout Road.*	Highway Department	Medium (new)	Local resources, Better Back Roads grant program, Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (Competitive) grant program (PDM-C)	2-4 years from date of Plan Approval
	Replace undersized bridge on Dugout Road with a hydrologically-appropriate structure.	Highway Department	Medium (new)	Local resources, Better Back Roads grant program, Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (Competitive) grant program (PDM-C)	2-4 years from date of Plan Approval
	Restore Thayer Brook floodplain, as the brook has lost access to its active floodplain and is incised. (located immediately upstream of the most downstream of the three Thayer Brook bridges).	Highway Department	Medium (new)	Local resources, Better Back Roads grant program, Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (Competitive) grant program (PDM-C)	2-4 years from date of Plan Approval
	Determine the appropriate solution to solve/reduce the flooding issues on Howard Hill Road.	Highway Department	Medium (5th in priority of 6 nat. haz. mit. projects in 2009 plan)	Local resources, Better Back Roads grant program, Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (Competitive) grant program (PDM-C)	2-4 years from date of Plan Approval

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

** Fluvial erosion mapping was the 3rd natural hazard mitigation project listed in 2009 Plan.

VII. Preparedness Strategies

Although the focus of this Plan is on mitigation, preparedness actions and activities can help supplement the Town of Randolph's mitigation efforts going forward. These "Preparedness Strategies" can be found in the table below.

Hazard	Preparedness Action	Local Leadership	Prioritization	Possible Resources	Time Frame
All hazards	*Create a Task Force to study the impact of an accident or other emergency that severs the use of roads though Randolph's downtown, addressing the need for alternative access means or location of facilities to ensure emergency responders are not blocked in the village or along VT 12.*	Town Manager, Emergency Director	High	Local Resources	Yearly
	Develop emergency communication framework for the Town of Randolph.	Town Manager	High	Local Resources	1 year from date of Plan Approval
	Create a master list/database of townspeople, noting the skills/equipment they possess that may be utilized to respond to an event.	Town Manager	High	Local Resources	1 year from date of Plan Approval
	Ensure all emergency personnel have access to the HEAR radio frequency network, and that all radios are upgrade to ensure emergency response units are properly coordinated.	Town Manager, Emergency Director	High	Local Resources, VT DEMHS grants	1 year from date of Plan Approval
	Create or acquire a mobile command center/ command post to be used during emergencies.	Fire Department, Police Department	Medium	Local Resources, Fundraising, VT DEMHS grants	2-4 years from date of Plan Approval
	Set a goal of improving metrics through a continuous quality improvement program, which will seek to enhance emergency services over time.	Fire Departments	Medium (new)	Local Resources	2-4 years from date of Plan Approval

Hazard	Preparedness Action	Local Leadership	Prioritization	Possible Resources	Time Frame
Structure Fire	*Update and revise the Policy and Procedures Manual used by the Randolph Fire Services Advisory Committee.*	Fire Advisory Committee, Fire Departments	High	Local Resources	1-2 years from date of Plan Approval
Hazardous Material Spill	*Ensure that all emergency response and management personnel (police, EMS, and Highway Dept.) continue to receive HAZMAT Awareness level training at a minimum. Ensure Fire Department personnel obtain Operations level training. Routinely train with the State HAZMAT Team so that events are coordinated in a seamless manner.*	Fire Departments	High	Local Resources	Yearly
	Develop emergency access points to the railroad corridor in locations where access is presently difficult in the event of a derailment.	Village Fire Chief	Medium	Local Resources	2-4 years from date of Plan Approval
	Provide outreach to staff at gas stations and other sites prone to HAZMAT spills to have crash buckets (collection pails) at their facilities. Train staff on how to mitigate spills and assist in clean-up efforts.	Town Manager	High	Local Resources	1-2 years from date of Plan Approval
Flood/ Fluvial Erosion	*Acquire basic and essential swift-water rescue equipment to better respond to swift-water emergencies and to help meet the regional need for such emergencies.*	Fire Departments	Medium	Local resources	2-4 years from date of Plan Approval

Appendices

Appendix A: Hazard Ranking Methodology

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

Appendix B: Critical Stream Crossings

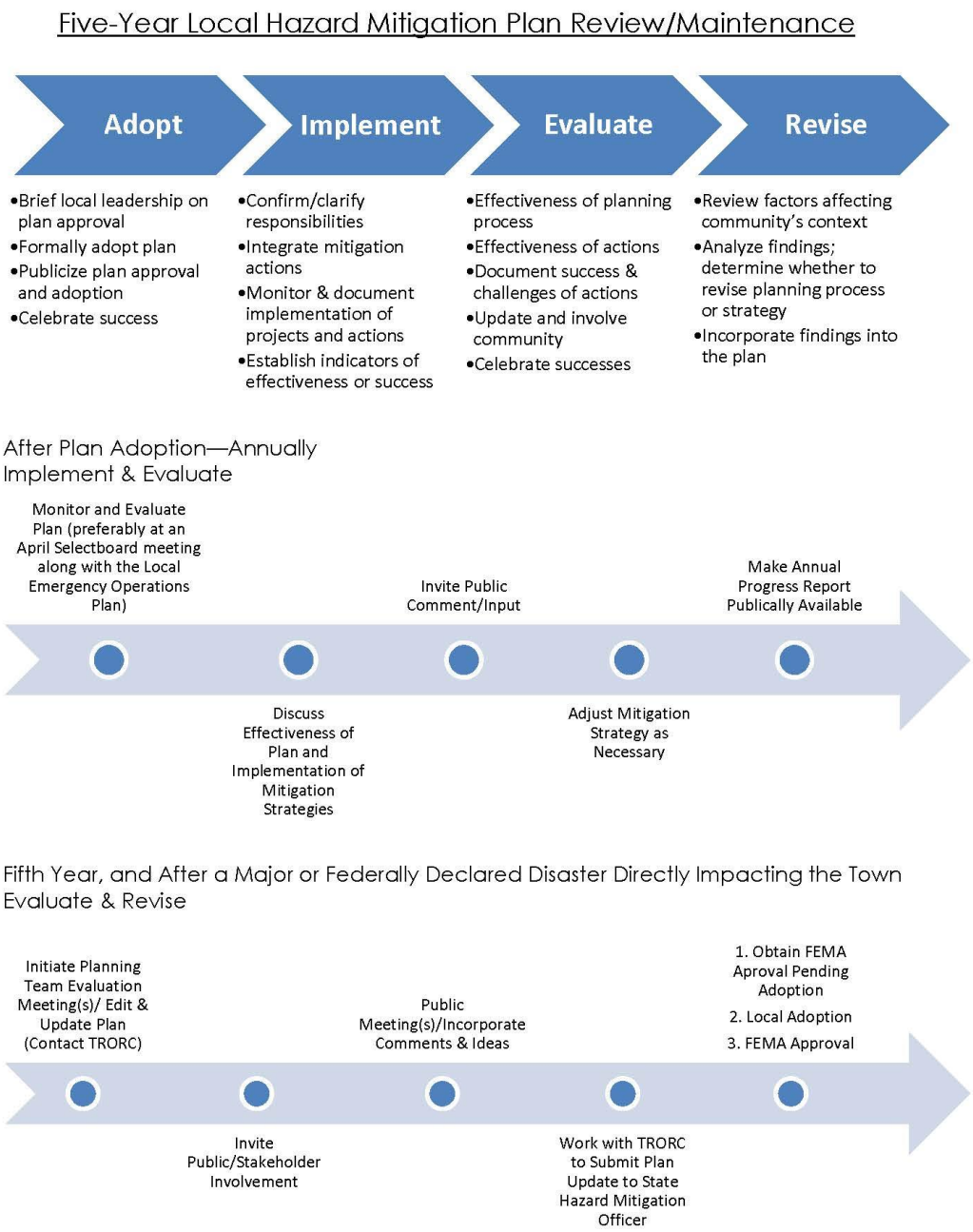
The critical crossings table below includes stream crossing structures on town highways that cross third order streams or larger. Headwater streams generally include first through third order. Third order was included as these headwater streams will have larger drainage areas and may have larger structures that are more difficult to replace and have a larger impact on the road network. Most of these are bridges.

RDFLNAME	STRUCT_NUM	CATEGORY	STRUCTYPE	STRC_LBL	X_COORD	Y_COORD	STR_TYPE	CONDCOMMN	CUL_WIDTH	CUL_HEIGHT	CUL_LEN
CROCKER RD		B			-72.5922	43.8809			0	0	0
BEANVILLE RD		C			-72.6556	43.9119	30	2 rip rap	64	64	80
THAYER BROOK RD		B			-72.6834	43.9237			0	0	0
TUNBRIDGE RD		C			-72.5513	43.934	31	summer install	15	15	30
Hebard Hill RD		B			-72.6342	43.9415	1	bridge	21	25	19
N Randolph RD		C			-72.5637	43.9753	30	stone header	84	84	70
Kibbee RD		C			-72.5631	43.9758	30	stone header	84	84	40
Kibbee RD		C			-72.5672	43.9804	31	concrete slab	75	60	0
PALMER RD	100909003509091	B	TL	B35	-72.5555	43.9232			0	0	0
N RANDOLPH RD	100909003609091	B	TL	B36	-72.5619	43.975			0	0	0
PETH RD	100909003709091	B	TL	B37	-72.6515	43.9605			0	0	0
DUGOUT RD	100909003909091	B	TL	B39	-72.5656	43.9021			0	0	0
THAYER BROOK RD	100909005209091	B	TL	B52	-72.6809	43.9239			0	0	0
THAYER BROOK RD	100909005309091	B	TL	B53	-72.6883	43.9222			0	0	0
BROOK ST	100909005409091	B	TL	B54	-72.6764	43.925			0	0	0
HYDE RD	100909003409091	B	TL	CB34	-72.555	43.9162			0	0	0
BRALEY RD	100909003809091	B	TL	CB38	-72.5552	43.9285			0	0	0
KINGSBURY RD	100909004009091	B	TL	CB40	-72.582	43.8809			0	0	0

The critical crossings in the table below includes significantly undersized structures, usually culverts, which were identified from the ANR-DEC stream geomorphic assessment survey with openness ratios less than 50%. This measure refers to when structure's width is less than half of the stream bankfull width. Several of these structures may been damaged during TS Irene or other events and may have been replaced. The town, at some point, should look at these sites and assess their status and need for repair/upgrades.

RDFLNAME	GROUP_TWO	CATEGORY	X_COORD	Y_COORD	CUL_WIDTH	CUL_HEIGHT	CUL_LEN	OpennesssR	ChannelWid
BOUDRO RD	Y	C	-72.5803	43.9539	36	36	30	0.3	5
CHELSEA MTN RD	Y	C	-72.5334	43.9517	36	48	100	0.133333	14
CLAY WRIGHT RD	Y	C	-72.5731	43.8838	0	0	0	0	0
DAVIS RD	Y	C	-72.5703	43.9065	36	36	59	0.152542	3
E BETHEL RD	Y	C	-72.6064	43.8992	48	48	37	0.432432	5
E BETHEL RD	Y	C	-72.6024	43.8846	60	36	36	0.339506	10
E BETHEL RD	Y	C	-72.605	43.9254	60	60	59	0.423729	3
FARRINGTON RD	Y	C	-72.6308	43.8919	60	60	58	0.431034	12
FERRIS RD	Y	C	-72.5483	43.9672	36	36	32	0.270833	5
FURNACE ST	Y	C	-72.6002	43.943	60	48	79	0.28481	4
GIFFORD HILL RD	Y	C	-72.5737	43.8812	36	36	30	0.3	4
HARVEY RD	Y	C	-72.6227	43.9475	60	60	55	0.454545	8
HOWARD HILL	Y	C	-72.6478	43.9829	48	48	37	0.470588	0
HYDE RD	Y	C	-72.5504	43.9115	72	72	75	0.446667	12
MASON RD	Y	C	-72.6673	43.9456	48	48	50	0.32	7
N RANDOLPH RD	Y	C	-72.6038	43.977	72	60	60	0.458333	5
ROGERS RD	Y	C	-72.5813	43.9674	36	36	42	0.214286	5
ROUTE 12A	Y	C	-72.6813	43.9315	60	60	89	0.360487	11
S RANDOLPH RD	Y	C	-72.5853	43.9022	60	48	40	0.458333	10
SALT BOX RD	Y	C	-72.5652	43.9516	60	60	86	0.372093	13
SEYMOUR RD	Y	C	-72.6867	43.911	36	36	27	0.333076	6
SILLOWAY RD	Y	C	-72.5875	43.9335	72	72	68	0.485294	10
SILOWAY RD	Y	C	-72.5809	43.9347	48	48	40	0.4	4
STOCK FARM RD	Y	C	-72.6384	43.8987	60	60	55	0.454545	10
TATRO HILL RD	Y	C	-72.6879	43.9117	36	36	40	0.225	5

Appendix C: Five-Year Review and Maintenance Plan

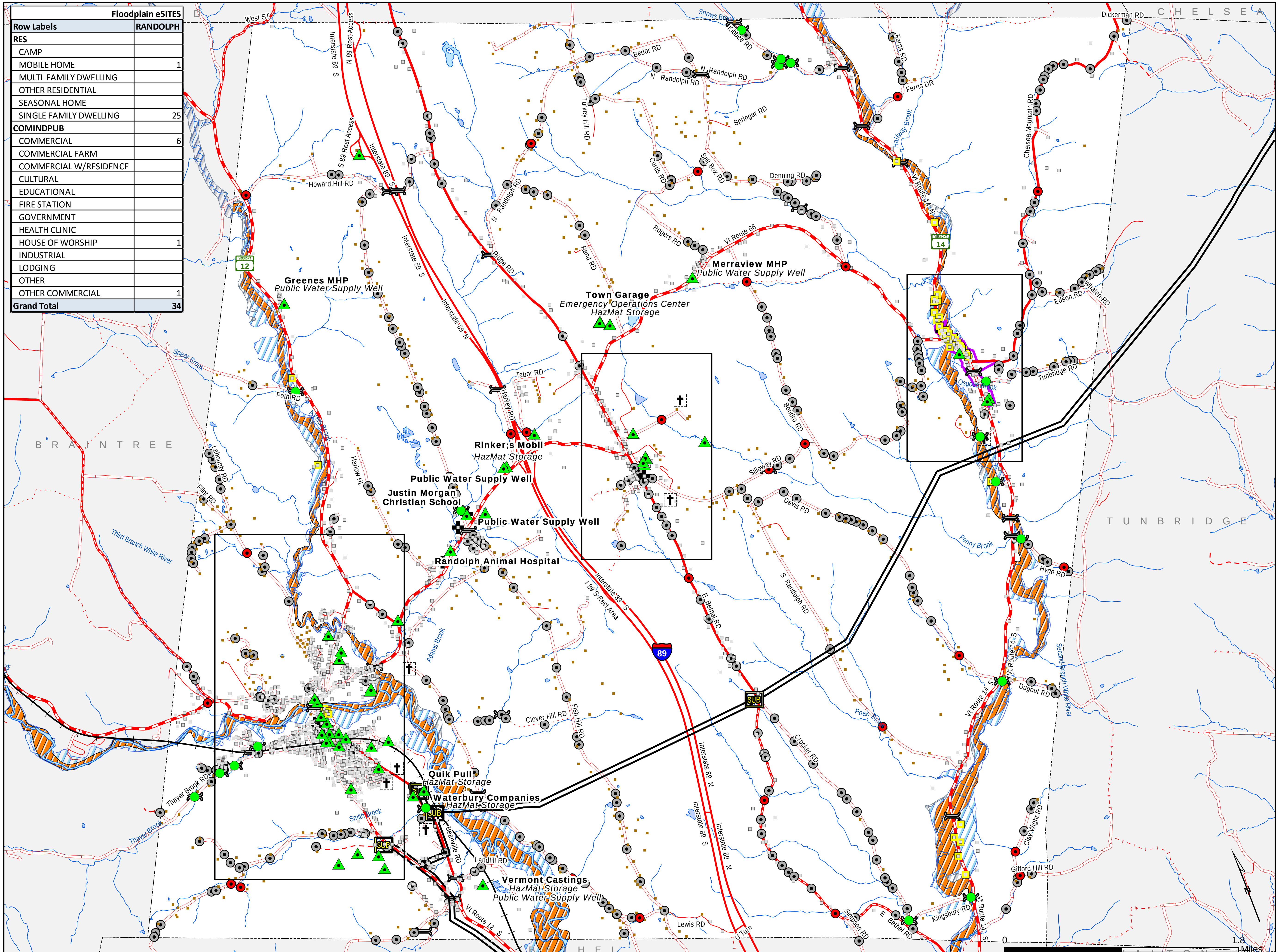


Attachments

Attachment A: Maps of the Town of Randolph

Hazard Mitigation Plan Essential Services Map
Randolph, Vermont

Floodplain eSITES	
Row Labels	RANDOLPH
RES	
CAMP	
MOBILE HOME	1
MULTI-FAMILY DWELLING	
OTHER RESIDENTIAL	
SEASONAL HOME	
SINGLE FAMILY DWELLING	25
COMINDPUB	
COMMERCIAL	6
COMMERCIAL FARM	
COMMERCIAL W/RESIDENCE	
CULTURAL	
EDUCATIONAL	
FIRE STATION	
GOVERNMENT	
HEALTH CLINIC	
HOUSE OF WORSHIP	1
INDUSTRIAL	
LODGING	
OTHER	
OTHER COMMERCIAL	1
Grand Total	34



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 primitive
TH cls 4 impassable
VT forest hwy
trail
private
VT route
US route
US interstate

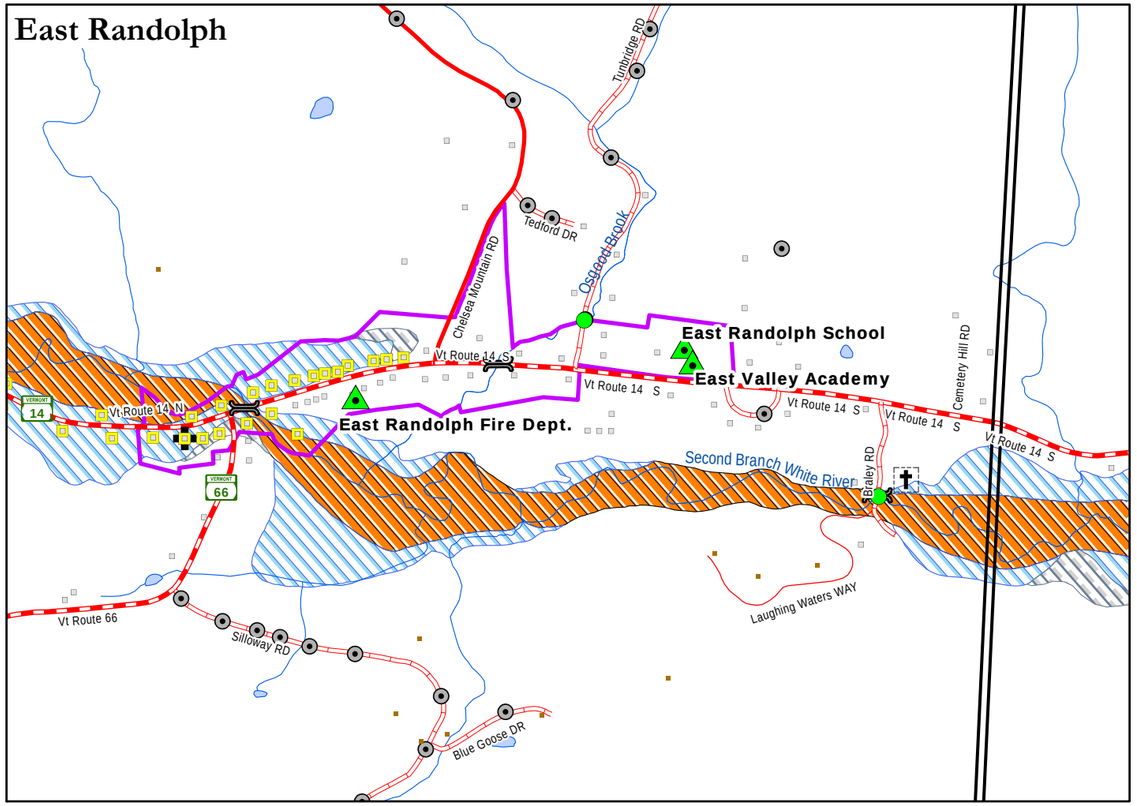
Critical Facility
Church
Cemetery
e911 in Floodplain
e911 Within 1000' of Major Route
e911 Address
Electric Substation
Culverts Under 18" Wide
Critical Stream Crossing
Significantly Undersized Structure
Bridge

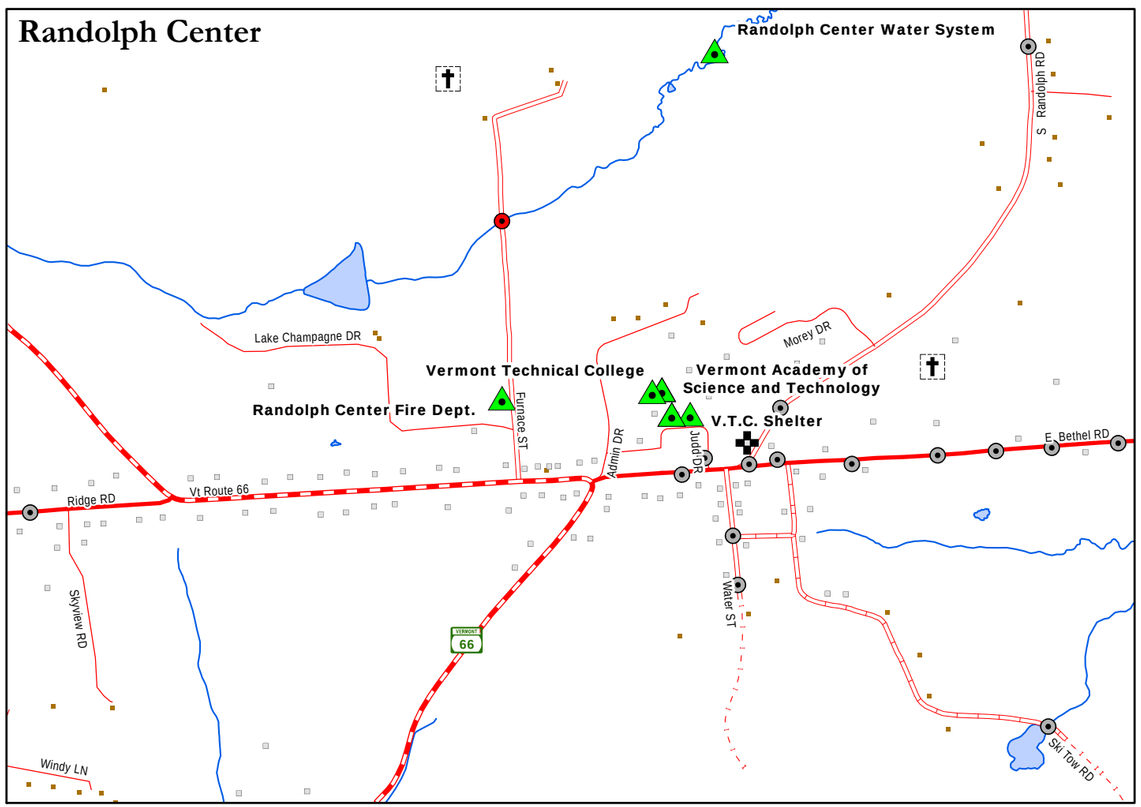
Electric Transmission
Village Center
500 Year
100 Year
Floodway
Village Inset Map

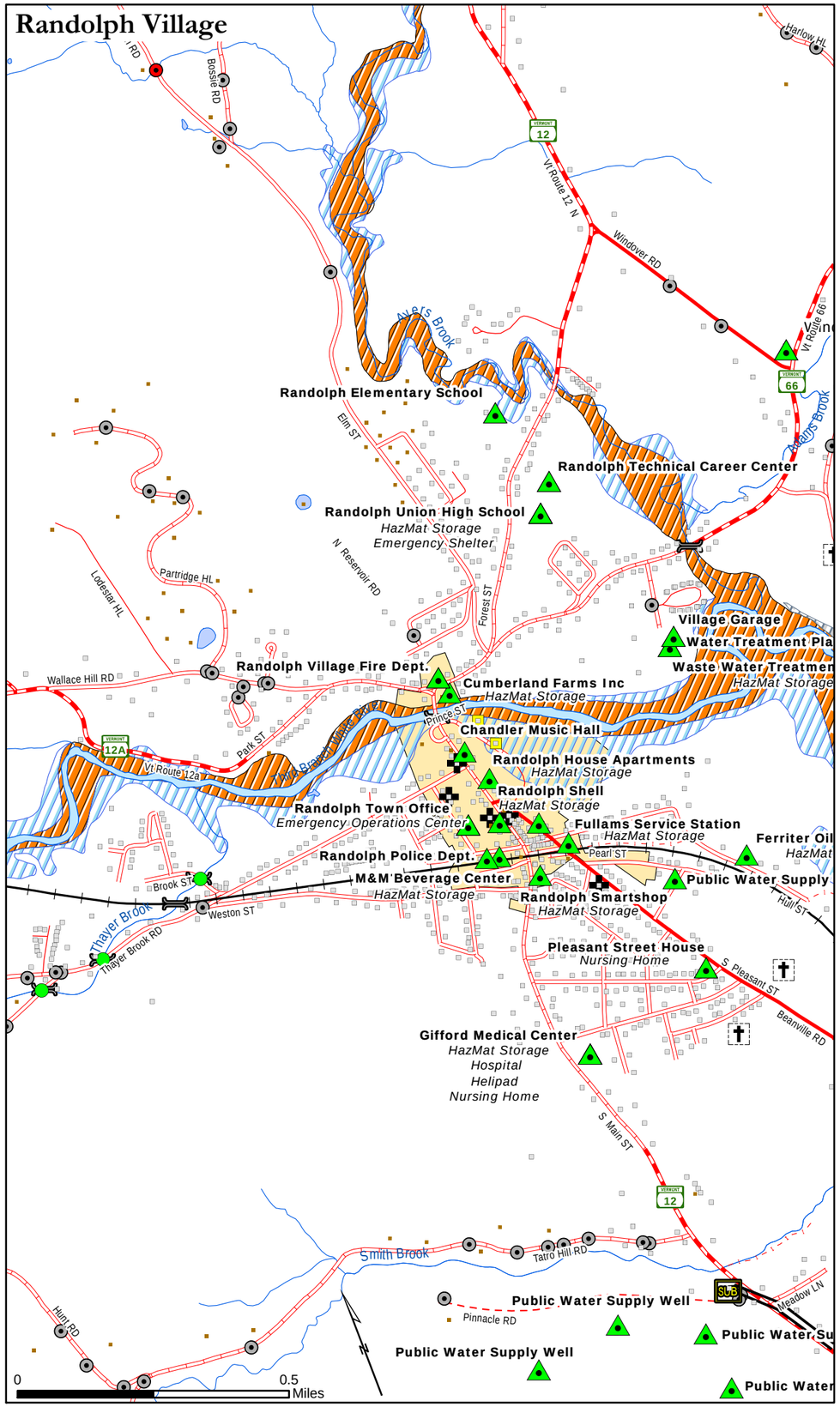
Flood Region: National Flood Insurance Program Digital Flood Insurance Rate Map Data
Stream Geomorphic Assessment Data: Obtained from the Data Management Sys. Maintained by the VANR River Management Program
Village Centers: Designated by the State for, historic tax credit and other benefits, pursuant to 24 VSA sections 2793a

Two Rivers-Ottauquechee Regional Commission
GIS Service Center
128 King Farm Rd
Woodstock, VT 05091
802-457-3188
trorc.org

Hazard Mitigation Plan
Essential Services Insets
Randolph, 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 primitive
TH cls 4 impassable
VT forest hwy
trail
private
VT route
US route
US interstate

Critical Facility
Church
Cemetery
e911 in Floodplain
e911 Within 1000' of Major Route
e911 Address
Electric Substation
Culverts Under 18" Wide
Critical Stream Crossing
Significantly Undersized Structure
Bridge
Electric Transmission

Downtown District
Village Center
500 Year
100 Year
Floodway
Village Inset Map

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

Village Centers:
Designated by the State for,
historic tax credit and other benefits,
pursuant to 24 VSA sections 2793a

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

Attachment B: Executive Summary of 2010 Better Back Roads Class III Roads Inventory

2010 Better Backroads Program Project Summary

DESCRIPTION OF PROJECT: A town-wide inventory of structure integrity and other road-related concerns will be conducted on the one hundred miles of Class III roads. Special consideration will be given to water quality related issues. From this data and an established evaluation criterion, a prioritized list of town roads and/or structures in need of repair or maintenance will be developed. The top 'Dirty Half Dozen' will also be accompanied by a capital budget plan – including photos, recommended solutions, and budgets.

EXPECTED EFFECTS (+ & -) (What water quality impact will the proposed project will have if approved): A prioritized list of road-related issues in need of town attention will result in identification of water quality concerns; development of a systematic approach to address the neediest structures or roads within the town; and raise awareness about Class III road-related issues. Indirectly, sediment from eroding road ditches will be addressed, undersized culvert will be identified for replacement, and aquatic organism passage concerns will be considered along with structure integrity.

PROJECT SUMMARY: Road foreman Robert Runnals along with TRORC staff and Jim Ryan from ANR inventoried the neediest structures within the town. The group identified a total of 3 sites that are prioritized in order below in addition to identifying 5 potential future project sites:

Site	Location	Description	Cost
1	North Randolph Road	Streambank/road embankment stabilization	$11,600
2	Whalen Road	Replace undersized and perched culvert	$17,729
3	Dugout Road	Replace 2 undersized cross culverts, remove berm	$3,814
A	Thayer Brook Bridges (3)	Replace and realign visibly poor condition structures	TBD
B	Thayer Brook floodplain	Floodplain restoration	TBD
C	Thayer Brook zoning/buyouts	Buyout properties on floodplain	TBD
D	Dugout Road Bridge	Replace undersized bridge	TBD
E	Tunbridge Road	Streambank/road embankment stabilization	TBD
Total Project Costs			**$33,143**

Individual project reports for each site identifying the erosion or water quality issue, recommended treatment, permits required for implementation, potential funding sources and estimated construction costs are enclosed. We have attached copies of the local match form, project photos, and press release to this memorandum. The original grant outlined that the Town match would include Robert's time, equipment and mileage. TRORC provided equipment (camera and GPS unit), while Jim Ryan used his vehicle for travel mileage during inventory. As a result, the deliverables were completed on time but with less Town match than anticipated since we were on a rush deadline. Next steps are for the Town to pursue identified potential funding sources for prioritized projects and continue coordination with ANR and TRORC.