

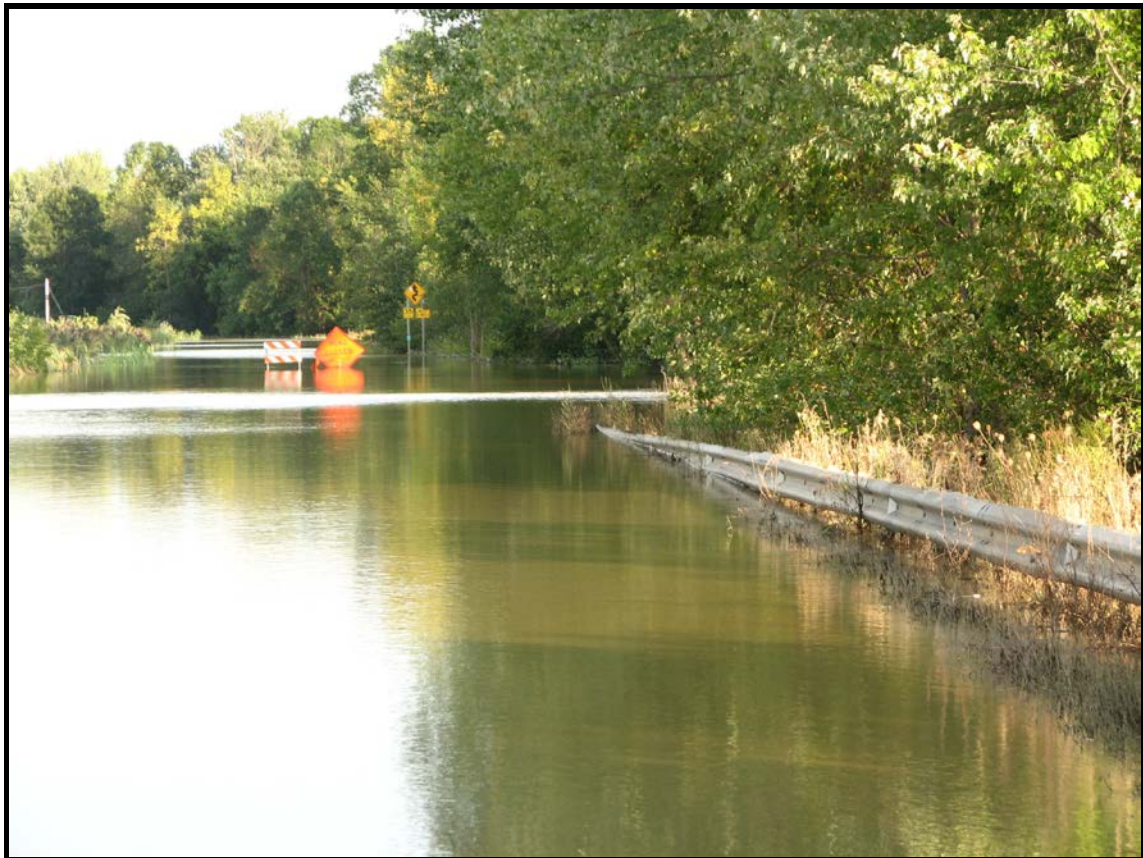
TOWN OF SUDBURY, VERMONT LOCAL HAZARD MITIGATION PLAN

PREPARED BY THE TOWN OF SUDBURY AND
THE RUTLAND REGIONAL PLANNING COMMISSION

FEMA Approval Pending Adoption Date: September 8, 2015

Municipal Adoption Date: September 14, 2015

FEMA Formal Approval Date: October 16, 2015



Flooding on a local road in Sudbury

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1. INTRODUCTION

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

Hazard Mitigation is any sustained action that reduces or eliminates long-term risk to people and property from natural and human-caused hazards and their effects. FEMA and state agencies have come to recognize that it is less expensive to prevent disasters than to repeatedly repair damage after a disaster has struck. This plan recognizes that communities have opportunities to identify mitigation strategies and measures during all of the other phases of Emergency Management – Preparedness, Response and Recovery. Hazards cannot be eliminated, but it is possible to determine what the hazards are, where the hazards are most severe and identify local actions that can be taken to reduce the severity of the hazard.

Additionally, the Disaster Mitigation Act of 2000 establishes a national program for Hazard Mitigation that includes mitigation planning and eligibility requirements for state and local governments. The Act is aimed at reducing loss of life and property, human suffering, economic disruption and disaster costs. High priority should be given to mitigation of hazards at the local level with increased emphasis on assessment and avoidance of identified risks, implementing loss reduction measures for existing exposures and ensuring critical services/facilities survive a disaster.

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

- Flood-proofing structures
- Planting stream buffers
- Tying down propane/fuel tanks in flood-prone areas
- Elevating furnaces and water heaters
- Identifying and modifying high traffic incident locations and routes
- Ensuring adequate water supply
- Elevating structures or utilities above flood levels
- Identifying and upgrading undersized culverts
- Proactive land use planning for floodplains and other flood-prone areas
- Proper road maintenance and construction
- Ensuring critical facilities are safely located
- Buyout and relocation of structures in harm's way
- Establish and enforce appropriate building codes
- Public information

2. PURPOSE

The purpose of this Hazard Mitigation Plan is to assist the Town of Sudbury in identifying all hazards facing the community and identify strategies to begin reducing risks from identified hazards. Once adopted, the local mitigation plan is not legally binding; instead, it outlines goals and actions to prevent future loss of life and property.

Adopting and maintaining this Local Hazard Mitigation Plan will provide the following benefits:

- Make certain funding sources available to complete the identified mitigation initiatives that would not otherwise be available if the plan was not in place.
- Ease the receipt of post-disaster state and federal funding because the list of mitigation initiatives is already identified.
- Support effective pre- and post-disaster decision making efforts.
- Lessen the Town's vulnerability to disasters by focusing limited financial resources to specifically identified initiatives whose importance has been ranked.
- Connect hazard mitigation planning to community planning where possible.

3. COMMUNITY BACKGROUND

Land Use and Development Patterns

The Town of Sudbury has a unique and special character that is principally derived from the historical rural character of the community and the natural beauty of its mountain setting, containing large areas of wooded and open land, wetlands, streams, ponds and other habitat. The town is still relatively undeveloped, with population clustered along the roads which traverse the town, and along the perimeter of the Lake Hortonia and Burr Pond. Any business activity in the Town is located either at the Town Offices or in conjunction with residences (i.e. home-based businesses), as no stores are currently in operation.

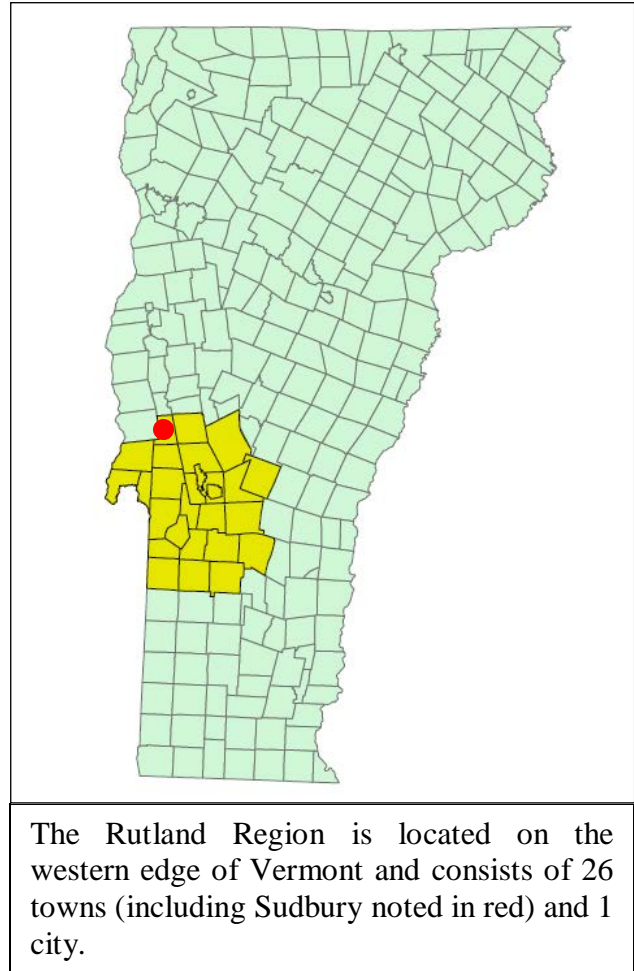
A major proportion of Sudbury's land is forested. Just under one-fifth of the land is conserved or in an agricultural protected district. The Town's woodlands are an important resource for aquifer recharge, plant and wildlife habitat, and recreation, as well as timber production. Sand and gravel resources are also scattered throughout Sudbury. Please refer to the Town Map (Appendix B) to see the development patterns and further information.

Demographics and Growth Potential

According to U.S. Census data from 2010, Sudbury's population is 560 residents, which represents a growth rate of 13% from 1990 to 2010. Residential land use in town is predominantly single-family, both permanent and vacation, with approximately one-third being seasonal units. Commercial and industrial land use in Sudbury is limited to cottage industries and most employed persons work in Rutland City and Addison County. Agricultural land use, excluding small-scale operations such as small kitchen gardens and pasturage for domestic animals, shows a drastic decline since the turn of the century, comparable to the agricultural downtrend in many southern Vermont hill towns. With the decline in agriculture-based businesses, the majority of residents working within the town boundaries are employed in independent home-based businesses.

Land Features

While the Champlain Valley characterizes much of Sudbury, the most northern reaches of the Taconic Mountains also are located in the Town, creating the diverse natural resources.



Elevation ranges from about 1213 feet in the southeast corner at Stiles Mountain, to 378 feet at Brandon Swamp. The most prevalent soil association formed is loamy glacial till and is found on gentle slopes as well as steep mountainsides. As these are very well drained, on-site septic suitability is limited. Other soils, formed in water-deposited and organic material, are gently sloping and very deep. These soils support forests, and agriculture. Significant clayplain soils have also been sited.

Precipitation and Water Features

Precipitation in Sudbury is average for the region. Several significant water features are within Sudbury's boundaries including parts of Lake Hortonia, Otter Creek, Burr Pond, Huff Pond, and Hinkum Pond. In addition, a number of sites in Sudbury have been designated wetlands. These play an important function in water absorption and holding capacity that thereby reduces the hazards of flooding and replenishes the groundwater supplies.

Water Supply

All of the homes in Sudbury draw their water from dug and drilled wells.

Sewer Services

All sewer service is through individually owned on-site septic systems.

Transportation

Vermont Routes 30 and 73 provide access into and out of Sudbury. The present network of 31.5 miles of roads in Sudbury serves the needs of current residents. The local road network is maintained by the Road Commissioner and a VTrans Maintenance Facility is located on Route 30, south of Route 73.

Sudbury has a total of 5 bridges, 2 on the state system, and 3 are on the town system. One of the bridges on the state system measures over 20 feet in length. Under new Federal regulations, any bridge 20 feet or over is eligible for Federal funding assistance. Please refer to the Town Map (Appendix B) for greater information on the transportation network.

Emergency Response Resources

Sudbury has no fire station – service is provided by the Whiting Volunteer Fire Department. The Brandon Area Rescue Squad provides rescue services for residents. Response time could be a problem, depending on the condition of Route 73, which is prone to flooding and subsequent closure. This Route has been closed an average of 15 days per year during the last 10 years.

Law Enforcement in Sudbury is provided by two Town Constables with assistance from the Vermont State Police as needed.

The nearest hospital is the Porter Hospital. Other medical assistance is provided by the Rutland Area Visiting Nurse Association, which assists with home health care and preventative and long-term care services.

Please refer to the Hazard Analysis Map (Appendix C) for the locations of town emergency operations centers and emergency shelters.

Emergency Management Planning

Due to the lack of organized emergency service providers in town, emergency management planning has been somewhat minimal. The town maintains a Local Emergency Operations Plan (LEOP) that is updated annually, and was last adopted on April 17, 2015. Sudbury also works closely with the Town of Whiting on emergency management and other issues. Sudbury contracts with Whiting for fire and first response services.

4. PLANNING PROCESS

The Rutland Regional Planning Commission (RRPC) and the Town of Sudbury coordinated Sudbury’s Local Hazard Mitigation Plan process. A Pre-Disaster Mitigation (PDM) grant from FEMA supported this process. Work on the preparation of the plan began in December of 2013 and continued until May 2015.

RRPC staff discussed updating the plan with Town officials at a Selectboard meeting on December 2, 2013. The Sudbury Selectboard identified local officials and stakeholders to serve on a committee to review the previous Annex and prepare a new single jurisdictional local hazard mitigation plan. The Selectboard passed a motion in support of preparing the Local Hazard Mitigation Plan.

Hazard Mitigation Committee Members

Name	Affiliation
Arthur Keefe	Selectboard
Shaun Ketcham	Selectboard
Steve Sgorbati	Town Clerk
Karen Sommerlad	Regional Planning Commission Rep. Sudbury Planning Commission
Mike Wilbur	Whiting Fire Department
Thomas Williams	Selectboard

In addition to the local knowledge of committee members and other stakeholders, the following documents and resources were consulted in the preparation of this plan:

- National Oceanic and Atmospheric (NOAA) National Climatic Data Center’s Storm Events Database (<http://www.ncdc.noaa.gov/stormevents/>)
- National Weather Service (Burlington, VT) Recent Weather Event Summaries (<http://www.weather.gov/btv/recentwx>)
- Vermont Department of Environmental Conservation Waste Management Interactive Database (http://www.anr.state.vt.us/dec/wastediv/SMS/WMID_Intro.htm)
- FEMA Disaster Declarations for Vermont (http://www.fema.gov/disasters/grid/state-tribal-government/35?field_disaster_type_term_tid_1=All)
- OpenFEMA Dataset: Public Assistance Funded Project Summaries for Vermont
- Phase 1 Geomorphic Assessment of Lower Otter Creek
- United States 2010 Census
- Rutland Region All Hazards Mitigation Plan (2012)
- State of Vermont Hazard Mitigation Plan (2013)
- Sudbury Unified Development Ordinance (2008)
- Sudbury Town Plan (2013)

Utilizing these resources, a thorough update of data was conducted by RRPC staff to take advantage of new data that may not have been available during the original development of the plan. The State of Vermont also recently adopted an updated Hazard Mitigation Plan in November of 2013 (Vermont HMP 2013), which was consulted during this plan preparation. As

discussed in the following section, the plan was also restructured to a single jurisdictional format. RRPC staff revised the plan throughout the planning process, circulating multiple draft plans to committee members and others.

The hazard mitigation committee meetings were publicly warned in the following locations: town clerk's office, Rutland Herald community calendar, RRPC website, and the RRPC Facebook page. The first committee meeting was held on January 28, 2014 at the town clerk's office. Participants discussed the purpose and timeline for updating the plan, other groups/individuals that should be aware of the plan, and damages that occurred in town from Tropical Storm Irene. Town maps were reviewed and the town's hazards were ranked according to their probability, impact, and risk level. The committee discussed high risk hazards in further detail. After this meeting a draft plan was developed by RRPC staff and circulated to committee members.

A second committee meeting was held on March 11, 2014 at the town clerk's office. The committee reviewed the updated draft plan and made changes as necessary. The committee discussed and agreed upon the town's mitigation goals. Then committee members discussed the status of each mitigation action from the town's last plan, and identified new mitigation actions for the town. After this final committee meeting, RRPC staff communicated with committee members on an individual basis to gather final pieces of information, and the draft plan was finalized. RRPC staff attended a Selectboard meeting on July 7, 2014 to complete the Action Evaluation and Scoring Matrix with committee members. The final draft plan was distributed to the entire committee for their review.

The draft plan was submitted first to Northwest Regional Planning Commission on July 24, 2014, for review as part of the PDM grant agreement between RRPC and NRPC. Then the plan was submitted to the State Hazard Mitigation Committee through the State Hazard Mitigation Officer (SHMO) on July 25, 2014 for review and comment. However, as noted below, the public comment period was held from July 29 to August 12, 2014, during the time that State review of the plan also occurred. As such, it was requested that the State wait to forward the plan to FEMA Region 1 until the public comment period ended, so that any public comments could be addressed. This timeline was recommended by the State Hazard Mitigation Officer as a way to make the process more efficient.

A 15 day public comment period for the draft plan was held from July 29 to August 12, 2014. The comment period was warned by posting at the Sudbury town clerk's office, the RRPC office and website, and in the Rutland Herald. The following neighboring towns were invited by email on July 28, 2014, to review and comment on the plan: Brandon, Pittsford, Hubbardton, Benson, Orwell, Whiting, and Leicester. The draft plan was also sent to the Sudbury Country School for review and comment. The Rutland Regional Planning Commission, a regional entity active in hazard mitigation planning, was involved throughout the drafting of the plan. The Sudbury Selectboard, a local agency with the authority to regulate development in Sudbury, was also involved in the plan preparation throughout the process. These organizations and towns were encouraged to submit comments by email or mail. No public comments were received.

The plan was then sent to FEMA Region I on July 10, 2014 for review; after receipt of comments from FEMA Region I, changes were made until conditional approval was achieved. The final plan went to the Sudbury Selectboard for adoption. The adopted plan was forwarded to FEMA Region I and the State Hazard Mitigation Officer, for final FEMA approval.

4.1 Plan Changes

The Sudbury Local Hazard Mitigation Plan was originally adopted by the town as an Annex to the Rutland Region All Hazards Mitigation Plan in 2004 and received FEMA final approval in 2004. In 2009, RRPC staff worked with the town to update the plan and submitted an update draft to FEMA; in March of 2011 FEMA returned comments on the plan, revisions were made by RRPC staff and the town, and the plan was resubmitted to FEMA in early August of 2011. FEMA returned comments on the plan in September of 2011.

In the fall of 2013 the RRPC was awarded a PDM grant to help the town prepare a single jurisdictional hazard mitigation plan. As noted in the State Hazard Mitigation Plan, regional planning commissions throughout Vermont are now mainly encouraging towns to create local mitigation plans as single jurisdictional documents rather than annexes, due to the issue of plan expiration being based on the first town that is approved in a regional effort. This plan is a single jurisdictional local hazard mitigation plan.

The plan has been reorganized from the previous Annex format, with the following sections updated/added during the plan preparation:

Section of Plan	Changes Made
1. Introduction	Information on the Disaster Mitigation Act added.
2. Purpose	Benefits of plan listed.
3. Community Background	Census data updated.
Community Disaster History	Section deleted and incorporated into Community Hazard Inventory and Risk Assessment section
4. Planning Process	Section moved from end of document, additional details on process including: names of individuals involved, meeting locations and dates, list of sections updated, and table on status of the town's current mitigation actions added.
5. Community Hazard Inventory and Risk Assessment	List of hazards was consolidated/changed as necessary, risk assessment table added, organized discussion into high and low risk hazards, hazard information from regional and state hazard mitigation plans added, local hazard information updated, tables added on hazard history and hazard summary for high risk hazards.
6. Hazard Mitigation Strategy	Town mitigation goals updated, goals from Regional and State Hazard Mitigation Plans added, additional information on NFIP, mitigation actions and projects reviewed and updated, tables reformatted.

7. Plan Maintenance Process	Added details on routine plan maintenance and methods to continue public involvement.
Appendices	Maps updated with new data, certificate of adoption added, materials added documenting the planning process.

The following table is an overview of Sudbury’s local hazard mitigation actions from the 2004 Annex along with their current status. Note that mitigation actions which are completed have been removed from the Mitigation Actions & Projects Table in Section 6.5 of this plan.

Status of Hazard Mitigation Actions

Mitigation Action	Status
Update Rapid Response Plan to ensure procedures are in place for dealing with any major emergencies.	Completed: Basic Emergency Operations Plan (which replaced the Rapid Response Plan) was updated and adopted in June 2011.
Assess issues and repair needs for Burr Pond Dam.	In Progress: The town provides \$500 each year for dam maintenance. A structural analysis by an engineer and possible rebuilding of the dam should be pursued.
Incorporate proposed strategies into Annual Budget and Capital Improvement Plan.	Removed: The town does not have a Capital Improvement Plan. Mitigation actions included in this plan will be incorporated into the Annual Budget in the regular course of completing projects.
Examine current zoning and ensure that identified hazard areas are addressed.	Completed: Sudbury’s Unified Development Ordinance was adopted in 2008. It includes new flood hazard district requirements.
Examine current Town Plan and ensure that identified hazard areas and needed strategies are addressed.	Completed: The Town Plan adopted in 2013 addresses hazards in the following objectives: discouragement of development on steep slopes, road maintenance to prevent soil erosion, improvement to Route 73 to solve flooding problem, and maintenance of a culverts, roads, and bridges inventory.
Improve Route 73 to resolve issues with flooding.	Completed: In 2013 the Agency of Transportation raised Route 73 roughly 18 inches.
Adopt Flood Hazard Regulations to qualify for additional funding in the future.	Completed: Flood hazard regulations were adopted in 2008, which allowed the town to join the NFIP and receive funding after Tropical Storm Irene in 2011.

5. COMMUNITY HAZARD INVENTORY AND RISK ASSESSMENT

What follows is an analysis of local natural hazards and human-caused hazards based upon review of the Hazard Analysis Map produced for the town (see Appendix C), review of existing data, and information provided by local officials and stakeholders. Whenever possible, the issues identified below are represented on the Areas of Local Concern Map (see Appendix D).

The Risk Assessment table below lays out all the hazards identified for the town and covered in this plan. Each hazard was discussed by committee members and ranked in terms of its Probability and Impact, and then given an overall Risk Level (see table footnotes). This assessment resulted in the categorization of Medium and Low risk level hazards for the town. Following the Risk Assessment table is a brief discussion of Low risk hazards, and then a more detailed discussion of Medium risk hazards including tables on Hazard History and Hazard Summary.

Risk Assessment

Hazard	Probability ¹	Impact ²	Risk Level ³
Dam Failure	Medium	Minor	Medium
Drought	Low	Minor	Low
Earthquakes	Low	Minor	Low
Floods, Fluvial Erosion, and Ice Jams	Medium	Minor	Medium
Hazardous Materials	Medium	Minor	Low
Landslides and Rockslides	Low	Minor	Low
Radiological, Chemical, and Biological Incidents	Medium	Minor	Low
Severe Thunderstorms, Hurricanes, and Tornadoes	Medium	Moderate	Medium
Terrorism	Low	Minor	Low
Wildfires and Forest Fires	Low	Minor	Low
Snow and Ice Storms	Medium	Moderate	Medium

¹ **High** likelihood of happening: Near 100% probability in any given year.

Medium likelihood of happening: 10% to 100% probability in any given year (at least once in the next 10 years).

Low likelihood of happening: 1% to 10% probability in any given year (at least once in the next 100 years).

² **Minor** impact: Isolated occurrences of minor property damage, minor disruption of critical facilities and infrastructure, and potential for minor injuries.

Moderate impact: Occurrences of moderate to severe property damage, temporary shutdown of critical facilities, and/or injuries or fatalities.

Major impact: Severe property damage on a town-wide scale, shutdown of critical facilities, and/or multiple injuries or fatalities.

³ Based on Probability and Impact, is the risk level: **High** or **Low**? Risk is defined as the potential for damage, loss, or other impacts created by the interaction of hazards with community assets.

5.1 Low Risk Hazards

Low risk hazards that are not considered a major threat to the community are not profiled in detail in this plan with history, extent, location information. Also, the hazard of **extreme temperatures** has been omitted from this plan, as it is not considered a significant hazard in the town of Sudbury (despite its presence in the State of Vermont Hazard Mitigation Plan). Extremely cold temperatures can accompany snow and ice storms, which are addressed in this plan.

Drought

There have been dry spells in Vermont and in the region, though they are commonly moderate or mild. The last protracted drought in Vermont occurred between 1964 and 1966. More recently, two statewide droughts were declared in June and July 1995 due to lack of rainfall. The state also experienced severe drought conditions in the summer of 2003 (State HMP 2013: 4-76). When dry spells occur, individual water wells are often affected and agricultural producers experience the greatest impact. On the whole, these problems have been sufficiently dealt with on a town and individual basis.

Drought can be a problem during late summer with local springs and private well levels reduced to minimal flows. Water tables reached an all-time low during the nationwide drought of 1988. However, Sudbury's water supply is good and this has not posed major problems for the town.

Earthquakes

Vermont is considered to be an area with low to moderate seismic activity. The two strongest recorded quakes measured in Vermont were of a magnitude 4.1 on the Richter scale. One was centered in Swanton and occurred in 1943, and the second occurred in 1962 at Middlebury. The Swanton quake caused little damage, but the Middlebury quake did result in broken windows, cracked plaster and falling objects. Earthquakes centered outside the state have also affected Vermont. Two quakes of 5.5 magnitude occurred in New Hampshire in 1940. In 1988, an earthquake with a magnitude 6.2 was centered in Saguenay, Quebec and caused shaking in the northern two thirds of Vermont (State HMP 2013: 4-91).

Thrust faults can be found throughout the Rutland Region. These fault lines generally run north/south. On the western side of the region, a fault line cuts through the center of Benson and West Haven. Despite the presence of these fault lines, there have been no incidences of reported damages due to earthquakes in the region or in Sudbury.

Hazardous Materials

Hazardous materials accidents can occur anywhere there is a road, rail line, pipeline or fixed facility storing hazardous materials. Almost the entire region is at risk of an unpredictable accident of some type. Most accidents are small spills and leaks, but some result in injuries, property damage, environmental contamination and other consequences. These materials are poisonous, corrosive, flammable, and radioactive or pose other hazards. Major accidents may result in an off-site release of hazardous or toxic materials. The overall objective of chemical emergency response planning and preparedness is to minimize exposure from a wide range of accidents that could produce off-site levels of contamination in excess of Levels of Concern (LOC) established by the U.S. Environmental Protection Agency. Minimizing this exposure reduces the consequences of an emergency to people in the area near facilities which manufacture, store, and process hazardous materials.

Large volumes of hazardous materials are transported daily to and through the region by railroad and highway. Within Rutland Region, there are a number of public and private fixed facilities that produce or use hazardous materials. These facilities must report annually to the Department of Public Safety under the Community Right-To-Know Program. Some typical examples include diesel fuel, gasoline or propane in quantities larger than 10,000 lbs; greater than 100 lbs of oxygen, carbon dioxide, paint, lead, ammonia, chlorine, sawdust, sand, road salt, battery acid, hydraulic oils, cement, pesticides, and fertilizers; and explosives in amounts requiring a license from DPS. A more complete list can be found on the Vermont Emergency Management EPCRA website (<http://vem.vermont.gov/programs/epcra>).

Coordinating procedures for hazardous materials response are found in the Region's Emergency Operations Plan for Hazardous Materials. (The Region's Emergency Operations Plan for Hazardous Materials is a plan for use in responding to and recovering from a release of hazardous materials or toxic materials. In 2005, the Rutland Region Local Emergency Planning Committee—LEPC #2—expanded the plan into a DRAFT Rutland Region All Hazard Emergency Response Guide dated Dec. 12, 2005; the draft plan is currently in the process of being updated and adopted.) This plan addresses the range of potential emergency situations and the appropriate measures to be implemented to minimize exposure through inhalation, ingestion or direct exposure.

There are currently no facilities in Sudbury that report having hazardous materials on site, however there are likely facilities in town that store such materials but are not reporting. Hazardous materials are likely transported along VT Routes 30 and 73. Please refer to the Hazard Analysis Map for the location of Tier II facilities and the surrounding structures potentially affected by a hazardous material incident.

Landslides and Rockslides

According to USGS maps, the central part of the Rutland Region has a low susceptibility to landslides with less than 1.5% of the mapped area likely to experience one. On the other hand, the eastern and western parts of the region have a high susceptibility to landslide events, and a moderate level of actual occurrences. These higher risk areas coincide with the Green Mountains and parts of the Taconic Mountain ranges. The far western part of the region is characterized by clay soils and the shores of some major lakes. Nothing found through research or interviews

indicates a regional significance for this hazard, other than a 1983 landslide event that resulted in \$11,300 in damages in Rutland (State HMP 2013: 4-89).

Using USGS information, FEMA maps indicate that Sudbury has a high susceptibility and moderate incidence of reported landslides. While landslides have a higher susceptibility in Sudbury than other areas, these would likely occur on the hillsides in areas unlikely to cause damage to structures or infrastructure. Detailed local records on past landslide incidents are not available.

Radiological, Chemical, and Biological Incidents

Mishandling and improper disposal or storage of medical wastes and low-level radioactive products from medical use are a hazard to the Rutland Region. However Sudbury is not within a critical distance of Vermont Yankee Nuclear Power Station. Chemical and biological incidents are considered unlikely hazards in Sudbury.

Terrorism

Terrorism and civil hazards include actions that people *intentionally* do to threaten lives and property. They may range from a single person on a shooting rampage to a cyber-attack that harms computer systems to the organized use of weapons of mass destruction (WMD). According to the State Hazard Mitigation Plan (2013), the most probable (though unlikely) attack is still a conventional bombing, hostage taking, kidnapping or shooting. A WMD attack must still be considered a rare event, but with the potential for catastrophic consequences. The most likely scenario of a WMD event in Vermont would involve the detonation of an improvised explosive device at a chemical facility (such as bulk liquid propane storage or manufacturing facility) near a large population center proximate to the Vermont/Canadian border. Within Sudbury, there are currently no Tier II facilities reporting the presence of hazardous materials on-site that hypothetically could be subject to this type of hazard. Since Sudbury is such a small community, the town feels that terrorism is an unlikely hazard.

Wildfires and Forest Fires

The Rutland Region is heavily forested, particularly in the mountainous areas. Many towns have reported incidences of forest fires, particularly during periods of dry conditions, but in the last half century no major wildfires/forest fires or damages due to such have been reported in the region. However, drought conditions in 1999, 2000, 2001, 2005, and 2012 led to a statewide burning ban to reduce the risk of fire. The risk of wildfires and forest fires is considered to be statewide, with the exception of built-up areas like Rutland City (State HMP 2013: 4-83).

Forest fires are possible in the forested area of town during late summer and early fall, particularly related to campfires that get out of control during dry conditions. The forests contain potential fuel for a serious conflagration, though typically the timber is not very dry so it doesn't spread very fast or far. In the past fires have been handled with local resources, including mutual aid. Detailed local records on past wildfire incidents are not available.

5.2 Medium Risk Hazards

A discussion of each medium risk hazard is included in the proceeding subsections, and the Areas of Local Concern Map identifies the location of these hazards (see Appendix D). Each medium risk hazard below includes a table of the Hazard History based on County-wide FEMA Disaster Declarations (DR-#) plus information from local records, a narrative description of the hazard, and a comprehensive Hazard Summary table. Since detailed local information is not available for some historical hazard events, those events are summarized in the Hazard History tables with state or countywide impacts using information from the US Geological Survey and the 2013 State Hazard Mitigation Plan.

Dam Failure

Dams can fail for various reasons, including structural failure, poor maintenance, overtopping due to flooding, movement of the dam foundation or soil erosion, and intentional acts of destruction (State HMP 2013: 4-95). The Vermont Agency of Natural Resources Dam Safety Section conducts periodic inspections of non-federal dams, categorizing dams based on the potential loss of life and property damage downstream in the event of failure.

No major dam failures have occurred to date (and thus a hazard history table has been omitted), but the town does have concerns about its three dams. Burr Pond dam is located on private lands, and it is unclear who is ultimately responsible for maintaining this dam. In recent years the town began setting aside money (around \$500) from each year's budget to help the Burr Pond Association to keep the dam in decent shape. Long-term, a strategy may be needed that includes a structural analysis by an engineer and possible rebuilding of the dam.

There is also concern about dams on Hinkum Pond and Huff Pond. According to the ANR Dam Safety Section, the status of Huff Pond dam is partially breached. Issues at Huff Pond are mitigated through volunteer actions such as periodic lowering of dam levels to minimize potential damage. These dams are also privately owned, so there is little the town can do regarding their maintenance.

While the town's dams are in poor condition, the impact of a dam failure would not be major since little development is located downstream. Please refer to the Hazard Analysis Map (Appendix C) for the location and level of damage that could be caused should the dams fail. As there are not any published studies on these three dams, a precise inundation depth resulting from dam failure could not be found for the hazard summary table.

Hazard Summary

Hazard	Location	Vulnerable Assets	Extent¹	Impact²	Probability³
Dam Failure	Huff Pond Road, Burr Pond Road, and possibly Route 30	Homes around Burr Pond, culverts, roads (Route 30)	Several feet of water	\$5k to \$20k in road damages, roughly 4 houses with minor damages (e.g. basement flooding)	Medium

¹ **Extent:** The strength, magnitude, or characteristics of the hazard regardless of the people and property affected. Note that for many past and anticipated events, extent information is described in general terms since specific data is often not available.

² **Impact:** The effect of the hazard on people and property, including infrastructure damaged, fatalities, and dollar value of damage.

³ **Probability:** Likelihood of hazard occurring based upon past events.

High: Near 100% probability in any given year.

Medium: 10% to 100% probability in any given year (at least once in the next 10 years).

Low: 1% to 10% probability in any given year (at least once in the next 100 years).

**Floods, Fluvial Erosion, and Ice Jams
Hazard History**

Date	Event	Location	Extent	Impact
Spring 2013	Flooding	Statewide	Heavy rains	Willowbrook Road and Burr Pond Road flooded, \$15,209+ in damages
August 2011	Tropical Storm Irene	Statewide	5 to 7 inches of rainfall, widespread flooding	\$58,000 in town road damages
June 28 – 30, 1973	Flooding and Fluvial Erosion	Statewide	Up to 6 inches of rainfall	Statewide damages estimated at \$64 million
March 11-21, 1936	Flooding and Fluvial Erosion	Statewide	First due to rain and snowmelt, second due to intense rain	\$1 million in damages in Vermont
November 3, 1927	Flooding and Fluvial Erosion	Statewide	5-10 inches of heavy rain fell on frozen ground, the remnants of a tropical storm	Statewide damage of \$35 million including 1,000 + bridges, 100s of miles of roads and railroad, and 84 deaths

¹ **Extent:** The strength, magnitude, or characteristics of the hazard regardless of the people and property affected. Note that for many past and anticipated events, extent information is described in general terms since specific data is often not available.

² **Impact:** The effect of the hazard on people and property, including infrastructure damaged, fatalities, and dollar value of damage.

Flooding is the overflowing of rivers, streams, drains and lakes due to excessive rain, rapid snow melt or ice as well as overflow of banks caused by sudden high water flow due to breaching of dams (both human-made and natural dams caused by beavers or debris build-up). Flooding of land adjoining the normal course of a stream or river has been a natural occurrence since the beginning of time. If these floodplain areas were left in their natural state, floods would not cause significant damage. Development has increased the potential for flooding because rainfall that used to soak into the ground or take several days to reach a river or a stream via a natural drainage basin now quickly runs off streets, parking lots and rooftops and through human-made channels and pipes.

Floods can damage or destroy public and private property, disable utilities, make roads and bridges impassable, destroy crops and agricultural lands, cause disruption to emergency services, and result in fatalities. People may be stranded in their homes for a time without power or heat or they may be unable to reach their homes. Long-term collateral dangers include the outbreak of disease, loss of livestock, broken sewer lines or wash out of septic systems causing water supply

pollution, downed power lines, loss of fuel storage tanks, fires and release of hazardous materials.

While inundation-related flood loss is a significant component of flood disasters, the more common mode of damage is associated with fluvial erosion, streambed and streambank erosion, often associated with physical adjustment of stream channel dimensions and location during flood events. These dynamic and oftentimes catastrophic adjustments are due to bed and bank erosion, debris and ice jams, or structural failure of or flow diversion by human-made structures. An ice jam occurs when the ice layer on top of a river breaks into large chunks which float downstream and cause obstructions (State HMP 2013).

As noted in the State Hazard Mitigation Plan, “Flooding is the most common recurring hazard event in the State of Vermont” (2013: 4-7). Several major flooding events have affected the state, resulting in multiple Presidential Disaster Declarations. From 2003 to 2010, Rutland County as a whole experienced roughly \$1.4 million in property damages due to flood events (State HMP 2013). The worst flooding event in recent years came in August of 2011 from Tropical Storm Irene, which dropped up to 8 inches of rain in some areas of Rutland County (State HMP 2013: 4-61). This caused most streams and rivers to flood in addition to severe fluvial erosion. As of the writing of this plan, the total amount of FEMA Public Assistance funds disbursed throughout Rutland County for Tropical Storm Irene is \$11.8 million. FEMA has also disbursed Individual Assistance payments of \$1.6 million in home repair assistance, \$303,317 in rental assistance, and \$155,921 in other needs assistance throughout Rutland County (State HMP 2013).

In Sudbury, Tropical Storm Irene caused damages throughout town but the impact was not as detrimental as in other parts of the region. Several roads were washed out, in addition to some culvert washouts. Road damages from Tropical Storm Irene cost the town about \$58,000.

While no structures are located within the floodplains in Sudbury’s town limits, the Otter Creek that flows through Sudbury has been the cause of significant problems, particularly road closure. A Phase 1 Geomorphic Assessment has been done for the Lower Otter Creek. In the past Route 73 usually has been closed a few times per year, sometimes for the better part of a month. This leads to a serious disruption in travel affecting freight/truck traffic, people commuting to work, commercial activity, school bus transportation, and can impede emergency response from nearby Brandon. In the summer of 2013, the Agency of Transportation did major work on Route 73. The road was raised roughly 18 inches, and since that upgrade the town has not experienced fewer issues with flooding on Route 73.

While the Hazard History table above only shows five flooding events due to limited town records, USGS stream gage data for the Otter Creek at Center Rutland shows several high gage height events in recent years which likely affected Sudbury. The record gage height was 17.43 feet during Tropical Storm Irene on August 29, 2011. Other recent high gage events include the following: 9.84 feet on April 14, 1994; 9.66 feet on April 4, 2005; 9.14 feet on April 25, 2001.

Due to the significant damages caused by Tropical Storm Irene—in town, in the Rutland Region, and throughout Vermont—the Town of Sudbury now places a higher priority on flood

mitigation. Please refer to the Areas of Local Concern Map (Appendix D) for frequently flooded locations, and the Hazard Analysis Map (Appendix C) for floodplain information.

Hazard Summary

Hazard	Location	Vulnerable Assets	Extent	Impact	Probability
Floods, Fluvial Erosion, and Ice Jams	Burr Pond, Route 30, Willowbrook and Burr Pond intersection, Willowbrook and Route 73	Culverts, homes around Burr Pond	Tropical Storm Irene resulted in roughly 5 to 7 inches of rainfall and widespread flooding	\$10k to \$60k in road damages, a few houses with minor damage	Medium

**Severe Thunderstorms, Hurricanes, and Tornadoes
Hazard History**

Date	Event	Location	Extent	Impact
September 2013	Severe thunderstorms	Statewide	High winds and hail	
July 2010	Severe thunderstorms	Statewide	High winds, hail, and heavy rainfall	
May 2004	Severe thunderstorms	Countywide	Straight-line winds and large hail	
June 12, 2005	Severe thunderstorms	Isolated storms across Vermont	Warm and humid air mass, produced winds 50 knots	Tree blown down, \$5,00 in damages
July 6, 1999	Severe thunderstorms	Sudbury, Pittsford, and Rutland	Storms and heavy wind	\$8,300 in town damages

Severe thunderstorms can produce high winds, lightning, flooding, rains, large hail, and even tornadoes (State HMP 2013). Hurricanes, including named tropical storms, also pose high wind hazards. For a discussion of the damages that resulted from Tropical Storm Irene in 2011, see the Floods, Fluvial Erosion, and Ice Jams subsection on pages 17 and 18. Rutland County experienced severe thunderstorms on May 18, 2004 which included large hail (near one-inch diameter) and damaging winds up to ninety miles per hour (National Weather Service). From 2004 to 2010, for thunderstorms that caused more than \$200,000 in damage, Rutland County experienced nearly \$2 million in property damages. The state can also experience tornadoes that 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. According to the National Climatic Data Center, from 1991 to 2010 Vermont experienced an average of one tornado each year (State HMP 2013: 4-55).

Despite the low incidence of tornadoes and hurricanes within the Rutland Region, there have been numerous high wind events in the region, particularly in the towns bordering Lake Bomoseen and the mountain towns of the region.

Violent windstorms and thunderstorms are possible in Sudbury, however tornadoes have not been witnessed. Most windstorms result in downed trees as well as damaged phone and power lines. Sudbury’s road crew is prepared to handle issues related to road clearing and debris clean-up. Typically, utility companies respond quickly to handle issues related to utility lines.

Hazard Summary

Hazard	Location	Vulnerable Assets	Extent	Impact	Probability
Severe Thunderstorms, Hurricanes, and Tornadoes	Throughout town	Private property, utility lines, public infrastructure including roads, culverts, bridges	Up to 90 mph winds, one inch hail, heavy rainfall	Varying damages mostly to private property, roughly \$5k to \$8k	Medium

Snow and Ice Storms

Hazard History

Date	Event	Location	Extent	Impact
January 2010	Snow storm	Statewide	13+ inches of snow reported in Sudbury	Town costs to clear roads
March 2001	Snow storm	Statewide	Heavy snow	Town costs to clear roads
December 2000 (DR 1358)	Snow storm	Rutland and Bennington County	Heavy snow and prolonged cold	Town costs to clear roads
January 1998 (DR 1201)	Ice storm	Statewide	3 inches of ice accumulation	Power outages up to two weeks, many downed trees

In the Rutland Region, most winter weather events occur between the months of December and March. Throughout the season, winter weather events can include snowstorms, mixed precipitation events of sleet and freezing rain, blizzards, glaze, extreme cold, and the occasional ice storm or a combination of any of the above. Events can also be associated with high winds or flooding, increasing the potential hazard.

Total regional damages due to winter weather events peak at over \$1,000,000 per month in January, February, and March. The costs of these storms come in the form of power outages due to heavy snow or ice accumulations, damaged trees, school closings and traffic accidents. From 2002 to 2010, Rutland County experienced \$1.1 million in property and crop damages from winter storms (State HMP 2013). There have only been two winter storm related Federally declared Disasters in the county (the ice storm of January 1998 – DR 1201, and the severe winter storm of December 2000 – DR 1358). Historically, the winter storm of December 1969 brought record snowfall amounts and snowdrifts to Vermont, and later freezing rain caused prolonged power outages (Dipugny-Giroux 2002:26).

Winter storms with snow, ice and freezing temperatures in various combinations, are fairly commonplace in Sudbury. The town is geared to handle most winter emergencies. Ice storms are another concern which can cause power outages and impassable roads. Although power outages have lasted as long as two weeks (during 1998 Ice Storm), historically, this has not posed a major problem that exceeded local resources to deal with it.

Hazard Summary

Hazard	Location	Vulnerable Assets	Extent	Impact	Probability
Snow and Ice Storms	Throughout town, likely spotty	Private property, utility lines, roads	13+ inches of snow, 3 inches of ice, sub-zero temperatures	Prolonged power outages, cost of snow removal	Medium

6. HAZARD MITIGATION STRATEGY

The town's mitigation strategy outlined in the following pages, along with other relevant information from this plan, will be integrated into the next update of the Sudbury Town Plan (anticipated adoption in 2016).

6.1 Mitigation Goals

The hazard mitigation committee discussed mitigation goals, and recognized that due to the significant impacts of Tropical Storm Irene in 2011 the town now puts a higher priority on flood mitigation. The committee identified the following as Sudbury's main mitigation goals:

- Reduce the loss of life and injury resulting from all hazards.
- Reduce the damage to public and private infrastructure resulting from all hazards, especially flooding and fluvial erosion.

Sudbury strives to be in accordance with the Rutland Region All Hazards Mitigation Plan's goals, which includes the following goals for the entire region as well as individual communities:

- Mitigate financial losses incurred by municipal, residential, industrial, agricultural and commercial establishments due to disasters.
- Encourage hazard mitigation planning as a part of the Municipal Planning Process.
- Encourage the adoption and implementation of existing mitigation resources, such as River Corridor Plans and Fluvial Erosion Hazard Maps, if available.
- Recognize the connections between land use, storm-water road design and maintenance and the effects from disasters.
- Ensure that mitigation measures are sympathetic to the natural features of Community Rivers, streams and other surface waters; historic resources; character of neighborhoods; and the capacity of the community to implement them.

Sudbury also strives to align with the overarching priorities of the State of Vermont Hazard Mitigation Plan:

- Local jurisdictions should use the State Hazard Mitigation Plan as a source of information and guidance.
- The state must prepare for the impacts of climate change on natural hazards.
- Private and public sector agencies should partner to mitigate hazards.

6.2 Existing Hazard Mitigation Programs, Projects and Activities

The town's ongoing and recently completed hazard mitigation programs, projects, and activities are listed below and in the chart outlining policies and plans.

- The town regularly lowers Huff Pond to reduce risk of overflow/flash flooding.
- The town has worked with the State to fix issues with Route 73 E and elevate the road in 2013.
- The town road commissioner conducts regular maintenance (along with help from volunteers) to minimize the effects of erosion and flooding.

- In November 2008 the town adopted a Unified Development Ordinance Flood Hazard components and associated regulations that restrict new development in high-risk areas.
- The town provides informational materials for residents on flood insurance and public safety at Town Meeting.

Town Policies and Plans that Mitigate Hazards

Existing Policies	Description	Gaps in Existing Policies
Town Plan	Town Plan adopted December 2013. Policies provide protection and limited development in these areas: Shallow Soils, Steep Slopes, High Water Table, Floodplain, Elevations above 2,000 Feet, Wetlands, Water Resources, Aquifer Recharge Areas.	Ensure that hazard mitigation information and projects are incorporated into the next town plan update
Zoning Ordinance	Adopted a Unified Development Ordinance in November 2008, which includes: <ul style="list-style-type: none"> • 50’ vegetation buffer strip between development and all wetlands, rivers, streams, and bodies of water. • Lakeshore Residential District- setbacks from mean water line of land abutting Lake Hortonia, Burr Pond and Echo Lake. • Agricultural Preservation District- prohibits development of good agricultural land. • Conservation District- prohibits development on steep slopes. 	No improvement needed at this time
School Emergency Response Plan	The school has an emergency response plan that was last updated in 2013.	No improvement needed at this time
Local Emergency Operations Plan (LEOP)	LEOP adopted April 2015. Identifies emergency shelters, emergency operations centers, high risk populations, high hazard sites, emergency contacts, etc.	Update annually by May 1 st .
Fire Mutual Aid	Primary fire protection comes from Whiting, supplemental protection as needed from surrounding towns.	No improvement needed at this time
Maintenance Programs	Road crew does regular maintenance, including work on culverts, ditching, and removal of dead/weak trees around structures.	No improvement needed at this time
Subdivision Regulations	Subdivision Regulations adopted November 2008. Contains standards pertaining to Drainage and Erosion Control, and Buffer Areas.	No improvement needed at this time
Emergency Shelters	Emergency Operations Plan identifies two shelters in town: Sudbury Country School and Sudbury Town Hall.	Obtain Red Cross approval

		of shelters
Floodplain Ordinance	Floodplain ordinance adopted November 2008. Flood Hazard Overlay District limits development to minimize flood damages, and requires any development to be sufficiently flood proof. The town’s zoning administrator works with the Planning Commission to implement the floodplain ordinance.	Town should consider adopting river corridor protection that limits development in fluvial erosion hazard areas.
Road & Bridge Standards	The 2014-2016 Road and Bridge Standards were adopted by the town in 2013.	Ensure adoption of new state standards when next released

6.3 Changes in Development

Sudbury’s rural and agricultural character, along with its small population of 560 (2010 Census), mean that there are few development changes in town. Most new Sudbury residents build new houses since the stock of existing homes is limited and aged. New construction also comes from seasonal camp owners adding onto or improving their buildings, and occasionally camps are converted to year-round residences. Ten-acre zoning in the large rural residential district of town limits high density housing developments. The small village residential district of town is zoned for one-half acre and there is developable acreage along the Route 30 corridor. Overall in the past decade there have been no significant changes in development in Sudbury. Any limited development in recent years has not occurred in hazardous areas – including floodplains – thus the vulnerability of the town has not increased due to development.

6.4 National Flood Insurance Program (NFIP) Compliance

The National Flood Insurance Program (NFIP) is a voluntary program organized by FEMA that includes participation from 20,000 communities nationwide and 231 Vermont towns and cities. Combined with floodplain mapping and floodplain management at the municipal level, the NFIP participation makes affordable flood insurance available to all homeowners, renters, and businesses, regardless of whether they are located in a floodplain.

The NFIP was instituted in 1968 to make flood insurance available in those communities agreeing to regulate future floodplain development. As a participant in the NFIP, a community must adopt regulations that: 1) require any new residential construction within the 100 year floodplain to have the lowest floor, including the basement, elevated above the 100 year flood elevation; 2) allow non-residential structures to be elevated or dry flood proofed (the flood proofing must be certified by a registered professional engineer or architect); 3) require anchoring of manufactured homes in flood prone areas. The community must also maintain a record of all lowest floor elevations or the elevations to which buildings in flood hazard areas have been flood proofed.

In return for adopting floodplain management regulations, the federal government makes flood insurance available to the citizens of the community. In 1973, the NFIP was amended to mandate the purchase of flood insurance as a condition of any federally regulated, supervised or insured

loan on any construction or building within the 100-year floodplain. In 2012, Congress passed the Biggert-Waters Flood Insurance Reform Act to reduce subsidies for structures built before the NFIP was instituted (called pre-FIRM structures). Over 50 percent of Vermont's NFIP policies are pre-FIRM, which means that flood insurance premiums for many will increase over the ensuing years.

While the NFIP floodplain management criteria are administered by states and communities through their floodplain management regulations, FEMA's role is to provide technical assistance and to monitor communities for compliance with the minimum NFIP criteria. Sudbury's floodplain management responsibilities fall to the zoning administrator and the planning commission. The town joined the NFIP on September 28, 2010. Currently there are three flood insurance policies in town, covering \$584,700 in value. There are no repetitive loss properties in town.

For Sudbury's continued compliance with NFIP requirements, the following actions will be taken (these NFIP compliance actions are also included in the Mitigation Actions and Projects table, with prioritization scores):

- Monitor flooding issues at the four corners intersection.
- Upgrade and/or add culverts on Burr Pond Road and Long Swamp Road.
- Being work to build a culvert on St. Johns Road, which would partly be on private land.

6.5 Other Incentives for Disaster Mitigation

Vermont's Emergency Relief Assistance Funding (ERAF) provides state funding to match federal Public Assistance after federally-declared disasters. Eligible public costs are reimbursed by federal taxpayers at 75%. For disasters after October 23, 2014, the State of Vermont will contribute an additional 7.5% toward the costs. For communities that take specific steps to reduce flood damage the State will contribute 12.5% or 17.5% of the total cost.

New funding criteria for ERAF:

12.5% for eligible communities that have adopted four mitigation measures:

1. National Flood Insurance Program (participate or have applied);
2. Town Road and Bridge Standards – (annually certify adopted standards that meet or exceed the standards in the current: 2014-2016 *VTrans Orange Book: Handbook for Local Officials*);
3. Local Emergency Operations Plan (adopt annually after town meeting);
4. Local Hazard Mitigation Plan - Adopt a FEMA- approved local plan (valid for five years) or, submit a draft plan to FEMA Region 1 for review.

17.5% ERAF funding for eligible communities that also have adopted:

1. Maintenance of an active rate classification (class #1 through 9) under FEMA's Community Rating System (CRS) that includes activities that prohibit new structures in mapped flood hazard zones, OR;
2. Adoption of a Fluvial Erosion Hazard (FEH) or other river corridor or floodplain protection bylaw that meets or exceeds the Vermont Agency of Natural Resources FEH model regulations and scoping guidelines.

Sudbury has already completed three actions on this list: NFIP participation, adoption of Town Road and Bridge Standards, and adoption of a Local Emergency Operations Plan in May of 2014. The town is currently working towards having a FEMA approved Local Hazard Mitigation Plan, and since this plan is under FEMA review, this qualifies the town for the 12.5% ERAF rate.

6.6 Mitigation Actions and Projects

The Sudbury hazard mitigation committee discussed each mitigation strategy and carefully reviewed the town Action Evaluation and Prioritization Matrix (see Appendix E).

General Mitigation Strategies for Consideration:

- Building Design/Codes/Use Regulations
- Community Preparedness Activities
- Financial & Tax Incentives
- Hazard Control & Protective Works
- Insurance Programs
- Land Use Planning/Management
- Science & Technology
- Mitigation Committee
- Protection/Retrofit of Infrastructure & Essential Facilities
- Public Awareness/Training & Education
- Public Health/Emergency Medical Care/Education
- Public Protection
- Laws/Ordinances/Inspection

The following identified programs, projects and activities are future mitigation strategies for the Town of Sudbury. These mitigation strategies have been chosen by the town as the most appropriate policies and programs to lessen the impacts of potential hazards. Using the Action Evaluation and Prioritization Matrix (see Appendix E), each potential project was scored and ranked according to priority. The scoring matrix includes STAPLEE criteria, which includes benefit-cost considerations. Mitigation actions and projects proposed in this plan should undergo more rigorous benefit-cost analysis by the town before action is taken. Note that Sudbury is a very rural community with little new development, thus the mitigation actions below focus on reducing risks to existing infrastructure rather than new structures.

Mitigation Actions and Projects

Priority Score	Hazards Mitigated	Mitigation Action	Local Leadership	Funding Resources	Target Start	Target End
33	Flooding, Fluvial Erosion	Monitor flooding issues at the four corners intersection, and take action to reduce risks and/or study the issue further as necessary.	Road Commissioner	Town Budget	2015	2020
32	Flooding, Fluvial Erosion	Upgrade and/or add culverts on Burr Pond Road and Long Swamp Road.	Road Commissioner	HMGP, PDM, FMA, Town Budget	2016	2018
30	Flooding, Fluvial Erosion	Begin work to build a culvert on St. Johns Road, which would partly be on private land.	Road Commissioner, Selectboard	HMGP, PDM, FMA, Town Budget	2016	2018

Preparedness Actions and Projects

Priority Score	Hazards Prepared For	Preparedness Action	Local Leadership	Funding Resources	Target Start	Target End
36	Multiple Hazards	Install a generator at the town garage.	Road Commissioner, Selectboard	HMGP, PDM, Town Budget	2016	2018
35	Multiple Hazards	Obtain Red Cross approval of town's emergency shelters.	Emergency Management Director	Town Budget, Red Cross	2016	2018

Acronyms

AFG	Assistance to Firefighters Grant	HMGP	Hazard Mitigation Grant Program
AOT	Vermont Agency of Transportation	HRRR	High Risk Rural Roads Program
BBR	Vermont Better Back Roads Program	HSU	Vermont Homeland Security Unit
CDBG	Community Development Block Grant	MPG	Municipal Planning Grant
DEMHS	Vermont Division of Emergency Management & Homeland Security	PDM	Pre-Disaster Mitigation Program
EOC	Emergency Operations Center	USDA	United States Department of Agriculture
FMA	Flood Mitigation Assistance Program		

7. PLAN MAINTENANCE PROCESS

7.1 Routine Plan Maintenance

The Hazard Mitigation Plan is dynamic. To ensure that the plan remains current and relevant, it is important that it be updated periodically. The plan will be reviewed annually at an April Selectboard meeting along with review of the town's Local Emergency Operations Plan (LEOP). This meeting will allow town officials and the public to discuss the town's progress in implementing mitigation actions, identify future activities, and revise the plan as needed.

The plan will be thoroughly updated at a minimum every five years in accordance with the following procedure:

1. The Sudbury Selectboard will appoint a team to convene a meeting of the hazard mitigation committee. Committee members should include local officials such as Selectboard members, Fire Chief, Constables, Highway Department, Planning Commission, Emergency Management Director, Zoning Administrator, Rutland Regional Planning Commission Representative, and the Town Clerk.
2. The committee will discuss the process to determine if the evaluation criteria is still appropriate or modifications or additions are needed due to changing conditions since the last update occurred. Data needs will be reviewed, data sources identified and responsibility for collecting information will be assigned to members. The committee will also discuss incorporating mitigation requirements into other planning mechanisms, such as comprehensive .
3. A draft report will be prepared by the committee based on these evaluation criteria and in conformance with the FEMA Region 1 *Local Hazard Mitigation Plan Review Crosswalk* document.
 - Changes in community and government processes, which are hazard-related and have occurred since the last review.
 - Progress in implementation of plan initiatives and projects.
 - Effectiveness of previously implemented initiatives and projects.
 - Evaluation of unanticipated challenges or opportunities that may have occurred between the date of adoption and the date of the report.
 - Evaluation of hazard-related public policies, initiatives and projects.
 - Review and discussion of the effectiveness of public and private sector coordination and cooperation.
4. The Selectboard will review the draft report. Consensus will be reached on changes to the draft.
5. Changes will be incorporated into the plan. The draft plan will be made available for public comment by posting at the town office. Any public feedback received will be addressed appropriately in the plan.

6. The plan will be submitted to the State Hazard Mitigation Officer (SHMO). Any SHMO comments will be addressed in the plan.
7. The plan will be submitted to FEMA Region 1, and FEMA comments will be addressed in the plan until FEMA Approval-Pending-Adoption (APA) is achieved.
8. The Selectboard will notify and schedule a public meeting and the hazard mitigation committee will prepare a presentation.
9. A public meeting will be held where the public will review the plan update.
10. The Selectboard will adopt the plan and distribute to interested parties.
11. The final plan (with adoption certificate) will be submitted to FEMA Region 1 for final approval.

7.2 Post-Disaster Review Procedures

Should a declared disaster occur, a special review will occur in accordance with the following procedures:

1. Within six months of a declared emergency event, the town will initiate a post disaster review and assessment. Members of the State Hazard Mitigation Committee will be notified that the assessment process has commenced.
2. This post disaster review and assessment will document the facts of the event and assess whether existing Hazard Mitigation Plans effectively addressed the hazard.
3. A draft After Action Report of the review and assessment will be distributed to the hazard mitigation committee.
4. A meeting of the committee will be convened by the Selectboard to make a determination of whether the plan needs to be amended. If the committee determines that NO modification of the plan is needed, then the report is distributed to local communities.
5. If the committee determines that modification of the plan IS needed, then the committee drafts an amended plan based on the recommendations and forwards to the Selectboard for public input.
6. The Selectboard adopts the amended plan after receiving Approval-Pending-Adoption notification from FEMA.

7.3 Continued Public Participation

Maintenance of this plan and implementation of the mitigation strategy will require the continued participation of local citizens, agencies, and other organizations. To keep the public aware of and involved in local hazard mitigation efforts, the town will take the following measures:

- Provide hazard mitigation information at Town Meeting.
- Include hazard mitigation information in the Town Report.
- Selectboard will review past plan hazard mitigation committee members and consider whether new members should be added. Representatives of local businesses, nonprofits, academia, etc. should especially be considered.
- Notify the public of committee meetings through town bulletin boards, newspaper, etc.

APPENDIX A

**CERTIFICATE OF ADOPTION
Town of Sudbury, Vermont
Selectboard**

A Resolution Adopting the Town of Sudbury, Vermont Local Hazard Mitigation Plan

WHEREAS, the Town of Sudbury has worked with the Rutland Regional Planning Commission to identify natural and human-caused hazards, analyze past and potential future damages due to disasters, and identify strategies for mitigation of future damages; and

WHEREAS, the Town of Sudbury, Vermont Local Hazard Mitigation Plan analyzes hazards and assesses risks within the community; and

WHEREAS, the Town of Sudbury, Vermont Local Hazard Mitigation Plan recommends the implementation of actions specific to the community to mitigate against damage from hazard events; and

NOW, THEREFORE BE IT RESOLVED that the Town of Sudbury adopts the Town of Sudbury, Vermont Local Hazard Mitigation Plan.

Duly adopted this 14th day of Sept. 2015

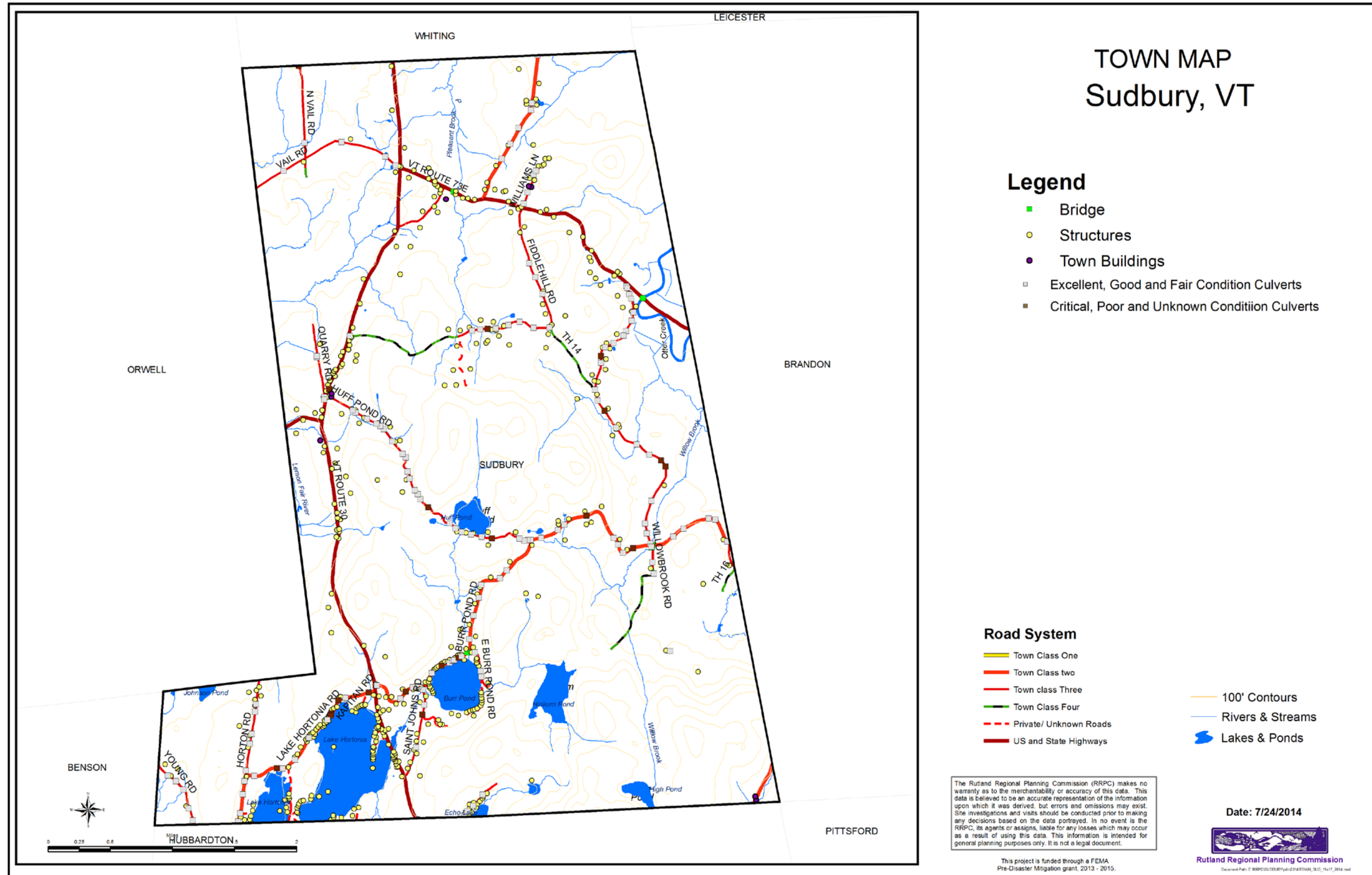
Arthur Keepe
Chair of Selectboard

Kevin Pittman
Member of Selectboard

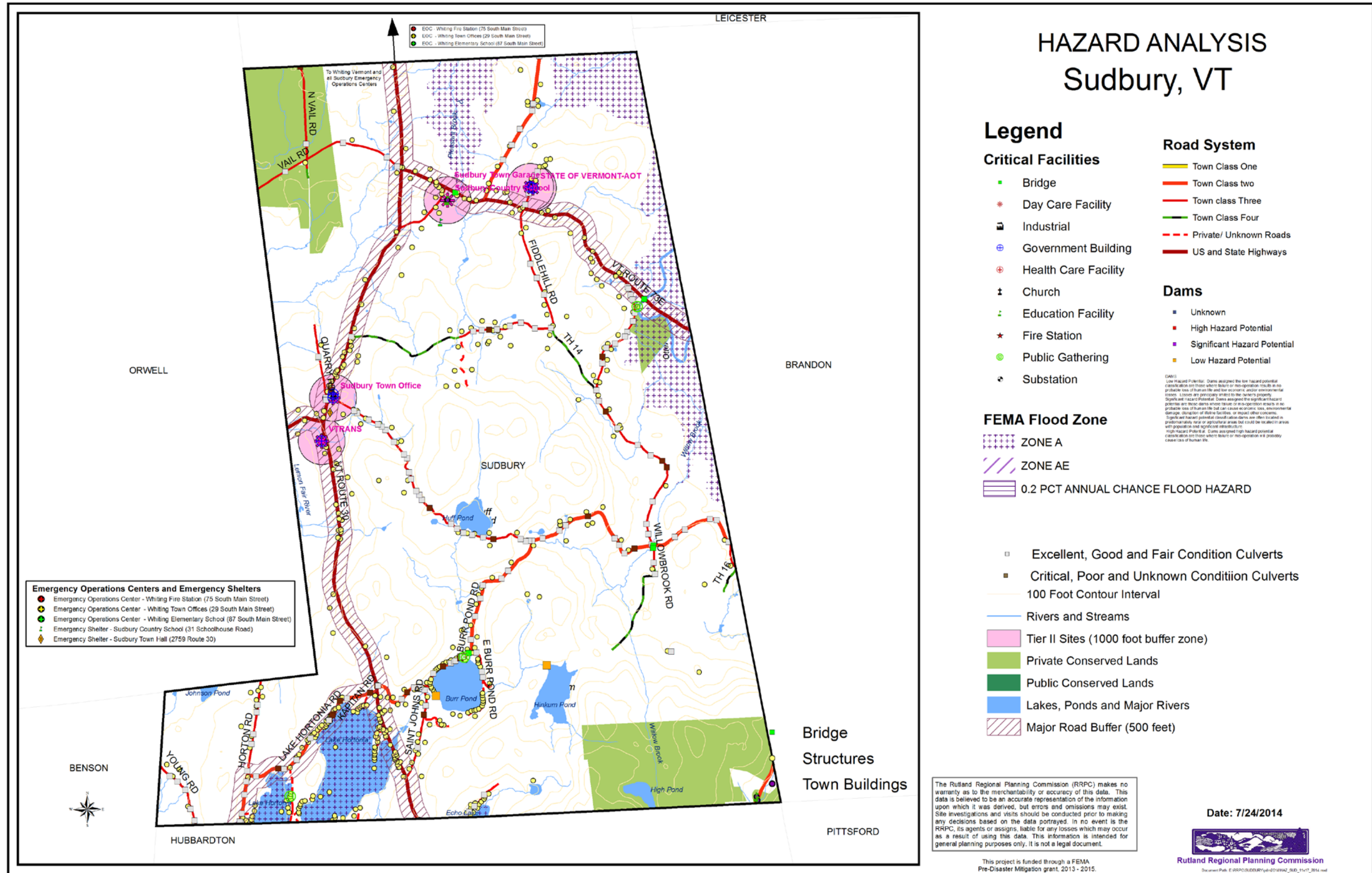
Charles Willard
Member of Selectboard

ATTEST
Steph Lamberti
Town Clerk

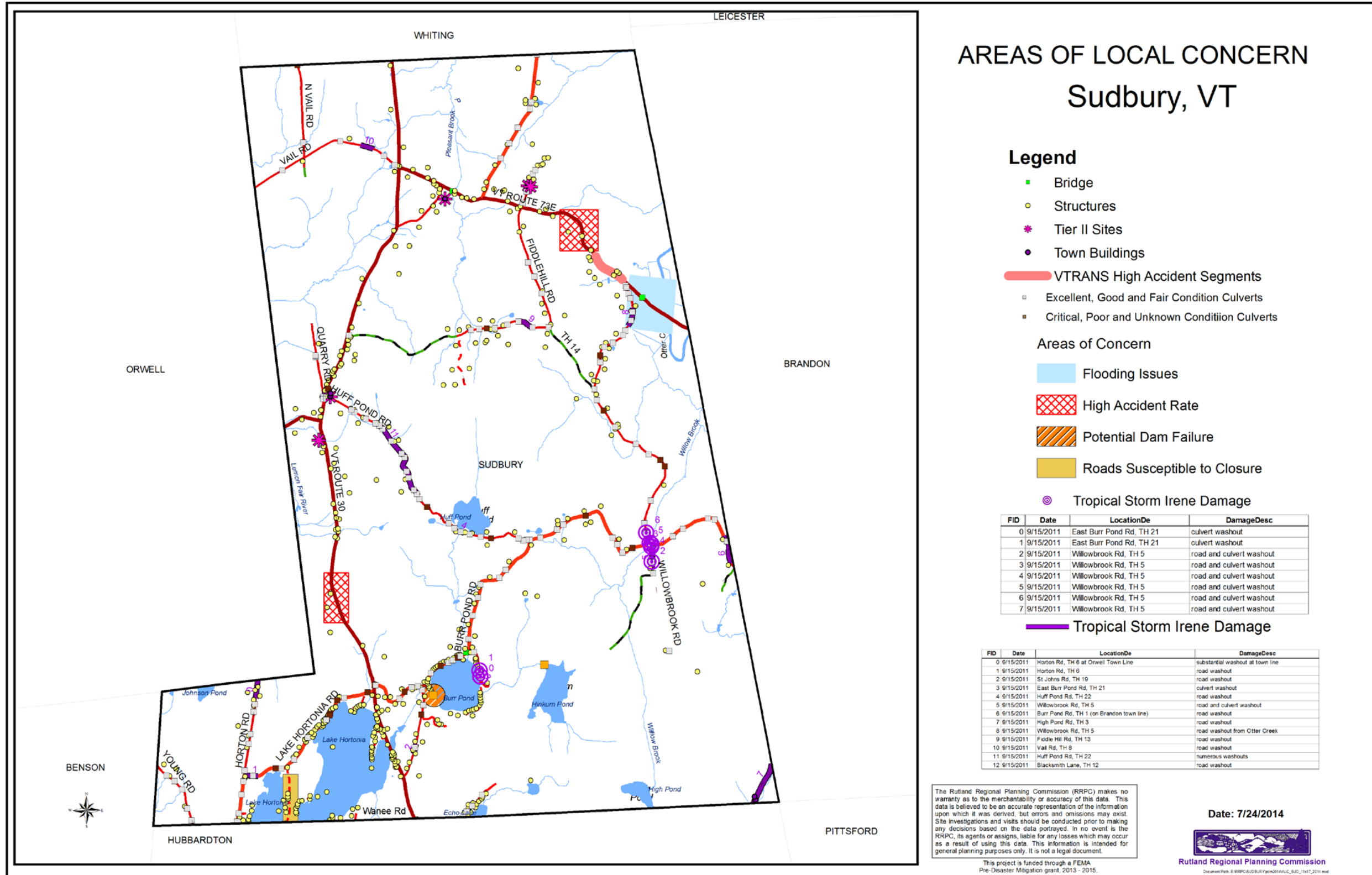
APPENDIX B- TOWN MAP



APPENDIX C- HAZARD ANALYSIS MAP



APPENDIX D- AREAS OF LOCAL CONCERN MAP



APPENDIX E- ACTION EVALUATION AND PRIORITIZATION MATRIX

New local hazard mitigation strategies were prioritized using the following scoring system: list documents the questions (criteria) considered in establishing an order of priority. Each of the following criteria was rated according to a numeric score of “1” (indicating poor), “2” (indicating average) and “3” (indicating good).

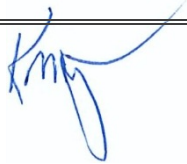
- Does the action reduce damage?
- Does the action contribute to community objectives?
- Does the action meet existing regulations?
- Does the action protect historic structures or structures critical to town operations?
- Can the action be implemented quickly?
- Is the action socially acceptable?
- Is the action technically feasible?
- Is the action administratively possible?
- Is the action politically acceptable?
- Is the action legal?
- Does the action offer economic benefits compared to its cost of implementation?
- Is the action environmentally sound?

See completed matrix on the following page.

APPENDIX F- DOCUMENTATION OF THE PLANNING PROCESS

MEMORANDUM

TO: Selectboard Members
FROM: Kristen Mark Hughes, Executive Director
SUBJECT: Update of Local Hazard Mitigation Plan
DATE: November 19, 2013
CC: Fred Nicholson, Chairman, Laura Keir, Barbara Noyes Pulling



This past August your Town was advised of its eligibility to participate in a Pre-Disaster Mitigation (PDM) grant that has been secured by the Rutland Regional Planning Commission (through the Northwest RPC). This grant, available through the Rutland RPC at no cost to the Town, will enable the RRPC to work with your community to update your Local Hazard Mitigation Plan (LHMP).

Your town's LHMP must be updated every 5 years. While this has been accomplished in the past by submission of 'an annex' to a Regional HMP, FEMA is now encouraging each Town to complete its own Plan. Having an updated "FEMA Approved" LHMP ensures accessibility to federal and state funds for disaster relief and mitigation projects. In addition, due to recent changes regarding Vermont's Emergency Relief and Assistance Fund (ERAF), an adopted LHMP makes you eligible to receive higher levels of state funding for response and recovery after disasters.

The RRPC is ready to begin the process of updating your Town LHMP. We would like to discuss starting this process with the Town at your next Selectboard meeting. We have enclosed sample language for a motion in support of the project for your use in preparation for this meeting.

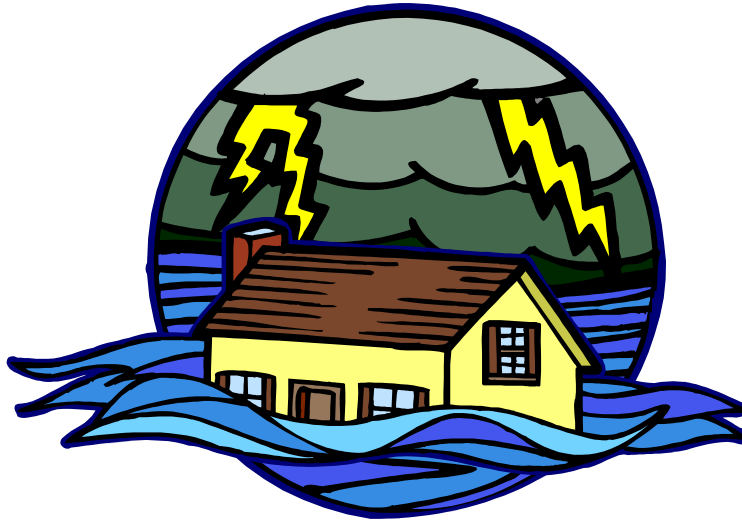
We would like your help identifying 4 or 5 individuals in your community to participate in an upcoming Plan review meeting. The involvement of local officials, including Selectboard members, emergency management directors, transportation/Road Supervisors, public works staff; other interested stakeholders; and the public is important to this planning process.

Please contact Laura Keir (x 205) or Barbara Noyes Pulling (x 202) at RRPC with any questions you may have. We look forward to working with your town to ensure that damages from future disasters can be minimized through mitigation planning.

RUTLAND REGIONAL PLANNING COMMISSION

www.rutlandrpc.org; 802-775-0871; FAX 802-775-1766
The Opera House, P.O. Box 965, Rutland, VT 05702

*When the next disaster strikes,
how will Sudbury fare?*



Sudbury is updating its Local Hazard Mitigation Plan to minimize damages from future disasters. **The public is invited to participate in a committee that will work on the plan.** The committee will meet twice in early 2014, with the first meeting on:

Tuesday, January 28th at 7pm
Sudbury Town Clerk's Office, 36 Blacksmith Lane

If you are interested in participating please contact Laura Keir at the Rutland Regional Planning Commission, 775-0871 x205 or lkeir@rutlandrpc.org.

Agenda for Jan. 28, 2014 - Sudbury Hazard Mitigation Committee Meeting

1. Introduction
 - a. Purpose, goals, and timeline
 - b. Any other people or groups in town who should be involved in/aware of the plan update?

2. What relevant things have happened in town since the last hazard mitigation plan?
 - a. Where is the most recent plan lacking/in need of updating?

3. Hazard analysis update:
 - a. Risk assessment table (attached for your reference, no need to fill in)
 - b. High risk hazards- tables (attached for your reference, no need to fill in)
 - c. Review maps

4. Wrap up
 - a. Next steps

January 28, 2014 Committee Meeting Attendance:

Group: Sudbury Hazard Mitigation Committee Topic: Hazard Mitigation Plan
 Meeting Location: Sudbury Town Clerk's Office Meeting Date: 1/28/14 Meeting Length: 2 hours Page 1 of 1

Name	Affiliation	Email or Phone	Miles Round Trip
ARTHUR KEEFE	Sudbury Selectboard	802-623-7531	10-
Steve Sgorbati	Clerk	Sudburytownclerk@gmail.com	—
Mike Wilbur	Whiting Fire Chief	802-989-1722	5
Shaun Ketcham	Sudbury Selectboard	ketchams@shereham.vt	5
Thomas Williams	Sudbury Selectboard	802-324-5985	16
Laura Keir	RRPC		—

Agenda for March 11, 2014 - Sudbury Hazard Mitigation Committee Meeting

1. Hazard Mitigation Grant Program funding is now available! Applications due May 2, 2014
2. Review draft plan update
3. Identify town's mitigation goals
4. Determine town's mitigation actions/projects
 - a. Status of projects from last plan
 - b. New projects for town
5. Next Steps

March 11, 2014 Committee Meeting Attendance:

Group: Sudbury Hazard Mitigation Committee Topic: Sudbury Hazard Mitigation Plan
 Meeting Location: Sudbury Town Clerk's Office Meeting Date: 3/11/14 Meeting Length: 1.75 hrs Page 1 of 1

Name	Affiliation	Email or Phone	Miles Round Trip
Laura Keir	RRPC		—
Arthur Keefe	Sudbury Select board		
Steve Spornati	Town Clerk		—
Sham Ketcham	Select board	Ketchams@shoreham.net	
Thomas McMillin	SELECT board		
Chuck Mulcahy	Road Commissioner	C.Mulcahy@shoreham.net	
Karen Sommerlad	RPC Rep & Ping Comm. Alt.	Karen.Sommerlad@gmail.com	5

Notice published in the Classifieds Section of the Rutland Herald on July 29, 2014:

**Notice of Public Comment Period
for Draft Local Hazard Mitigation Plans**

The Towns of Chittenden, Clarendon, Danby and Sudbury are preparing Local Hazard Mitigation Plans. A 15 day public comment period for each draft plan will be held from July 29, 2014 to August 12, 2014, pursuant to 44 CFR Chapter 1 Section 201.6(a). Each plan can be found for review on the Rutland Regional Planning Commission website: <http://www.rutlandrpc.org>. For those towns with official town websites, the plans are also available on those sites. To request a hard copy of a plan, contact Laura Keir at the Rutland Regional Planning Commission, (802)775-0871. Copies of the plans are available at the Rutland Regional Planning Commission, 67 Merchants Row in Rutland, as well as at the town offices of Chittenden, Clarendon, Danby and Sudbury. Please submit plan comments by email to lkeir@rutlandrpc.org, or by mail to Rutland Regional Planning Commission, P.O. Box 965, Rutland, VT 05702. Comments must be submitted by August 12, 2014 to be considered. Please direct questions to Laura Keir, Rutland Regional Planning Commission, (802)775-0871.