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Newfane, VT

Newfane Town-Specific Plan

INTRODUCTION AND PURPOSE

This appendix, when used with the appropriate sections of the basic plan, is an All Hazard Mitigation Plan for the Town of Newfane. The purpose of this plan is to assist the town of Newfane in identifying all of the hazards facing the town and to identify strategies to begin reducing risks from identified hazards.

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

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

- Flood-proofing structures
- Tying down propane/fuel tanks in flood-prone areas
- Elevating furnaces and water heaters
- 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
- Establish and enforce appropriate building codes
- Public information

Local Planning Process

The local planning process followed the steps listed in the Regional All-Hazard Mitigation Plan in Section 2. Work commenced with the Local Emergency Management Organization of Newfane, acting as the local Hazard Mitigation Planning Committee. A complete list of participants is listed in Annex B Page (3).

Community Involvement was minimal in this process as meeting times were difficult to establish where fire department representatives could sit down at the same time and not be on call. In the future, greater effort will be made coordinate emergency plan updates to involve public participants where meeting times can be more amenable to the process.

The Town of Newfane will continue to work with the Windham Regional Commission to monitor, evaluate, and update the plan throughout the next 5 year cycle. This will take active involvement on the part of the Town Emergency Management Director working with Windham Regional Commission staff to identify and plan for ongoing hazard mitigation work and coordination among stakeholders to identify structures and engineering projects that can help mitigate future hazardous events; e.g. bridge and culverts replacements, road replacements and grading, as well as any repetitive loss structures that may be in the Special Flood Hazard Area as identified on FEMA Flood Maps (e.g. FFBM and FIRM maps).

The following hazard mitigation planning meetings were held:

- July 15, 2008 Newbrook Fire Station in Newfane, VT
- September 10, 2008 Newbrook Fire Station in Newfane, VT
- There was also email and phone correspondence during drafting between Josh O'Neill and E.M.D. David Moore

Hazard Mitigation Goals

- Reduce the loss of life and injury resulting from all hazards.
- Reduce the impact of hazards on the town's waterbodies, natural resources, and historic resources.
- Reduce the economic impacts from hazard events.
 - Minimize disruption to the road network and maintain access
 - Mitigate financial losses incurred by municipal, residential, industrial, agricultural and commercial establishments due to disasters.
 - Ensure that community infrastructure is not significantly damaged by a hazard event.
- Encourage hazard mitigation planning to be incorporated into other community planning projects, such as the Town Plan, Capital Improvement Plan, Rapid Response Plan and Town Emergency Plan.
- Ensure that members of the general public continue to be part of the hazard mitigation planning process.

Acknowledgements

The following people were involved in the hazard mitigation planning process:

- (David Moore), Emergency Management Director, Newfane
- (Steve Jones), Chief, Williamsville/ South Newfane Fire Department WSNFD
- (Todd Lawley), Fire Chief, Newbrook Fire Department
- (Josh O'Neill), Windham Regional Commission; Planner

TOWN PROFILE

Community Background

The Town of Newfane covers approximately 24,500 acres in the West River Valley of Windham County. In terms of local settlement patterns there are three separate villages (Newfane Village, Williamsville and South Newfane) connected by a network of local roads. Each village is a uniquely clustered settlement, dominated by older, historic homes with small commercial and community-related services. These village centers are surrounded by a more rural, forested landscape which has experienced residential growth over the years. Housing development has been targeted most significantly in many of the more rural, back-road areas of the community, including areas on and around Parish Hill Road, South Wardsboro Road, Timson Hill Road, and Newfane Hill Road. Little new development has occurred in the villages of Williamsville and South Newfane or in the more inaccessible, western-central geographic areas of Newfane.

Newfane is located at the crossroads for a significant portion of the traffic that moves throughout the region. The Town is located between Brattleboro, the region's economic center of activity, and the various ski areas and bedroom communities to the north and west. These areas are linked by two major roadways, Route 30 which travels through the eastern portion of Newfane, and the Depot and Dover Roads, which pass through Williamsville and South Newfane and on to Route 100 where tourists can have access to several ski areas.

Newfane's major surface waters, depicted on the Natural Resources Map and the Existing Land Use Map, include the following rivers, brooks and ponds: West River, Rock River, Baker Brook, Smith Brook, Hunter Brook, Wardsboro Brook, Adams Brook, Joy Brook, Marlboro Branch, and Kenney Pond. There are a number of smaller privately developed ponds in the Town as well, some of which provide water for fire fighting. The majority of the local rivers, brooks and streams are classified by the State of Vermont as Class B Waters. This classification means that the water quality is suitable for bathing and recreation, irrigation and agricultural uses, has good fish habitat and aesthetic value, and is acceptable for public water supply with filtration and disinfection. There are some streams in the southeastern portion of Town near Lost Mile Road that are classified by the State of Vermont as A waters because they feed into the drinking water supply for the Town of Brattleboro.

The climate is generally temperate with moderately cool summers and cold winters; as in the rest of Vermont. Average annual precipitation is around (54) inches, snowfall averages (91) inches. The weather is unpredictable, and large variations in temperature, precipitation, and other conditions may occur both within and between seasons.

Development Trends

According to 2000 Census data, the number of persons living year-round in the Town of Newfane increased from 1,129 to 1,680 between 1980 and 2000. This represents a rate of growth of nearly 49% during that time period, nearly two and half times greater than that of either the State of Vermont (19%) or Windham County (20%). Census data indicated that Newfane is the tenth largest town in the Windham Region in 2000, down from ninth in 1990 (when the population was 1,555), but its growth rate over the decade, 8%, surpassed the region's growth rate of 5% in the same period. There are no large residential or commercial development projects planned in the immediate future that would affect municipal services or appreciably impact the Town's natural resources in a detrimental way.

COMMUNITY HAZARD INVENTORY AND VULNERABILITY ASSESSMENT

Methodology

A **vulnerability analysis** for each community begins with an inventory of possible hazards and an assessment of the risk that they pose. These are the questions to be answered. What hazards can affect your community? How bad can it get? How likely are they to occur? What will be affected by these hazards? How will these hazards affect you? The **magnitude** (percentage of the community affected) of the impact of the hazard can be classed as follows:

- Negligible: < 10% of properties damaged/Minimal disruption to quality of life.
- Limited: 10% to < 25% of properties damaged/Loss of essential facilities/services for up to 7 days/few (< 1% of population) injuries possible.
- Critical: 25% to 50% of properties damaged/Loss of essential facilities/services for > 7 days < 14 days/Major (< 10% of population) injuries/few deaths possible.
- Catastrophic: > 50% of properties damaged/loss of essential facilities/services for > 14 days/Severe (> 10% of population) injuries/multiple deaths possible.

The **frequency** of occurrence (Likelihood) is classified as shown:

- Unlikely: < 1% probability in the next 100 years.
- Possible: 1% to 10% probability in the next year, or at least one chance in the next 100 years.
- Likely: 10% to 100% probability in the next year, or at least one chance in the next 10 years.
- Highly Likely: Near 100% probability in the next year.

Additionally, seasonal patterns that may exist are considered, what areas are likely to be affected most, the probable duration of the hazard, the speed of onset (amount of warning time, considered with existing warning systems).

The combination of the **magnitude** of the hazard and the **frequency** was used to determine the **community vulnerability** as HIGH, MODERATE or LOW. For example, a flood event is highly likely (nearly 100% probability in the next year) in many communities but the degree of impact varies. A highly likely flood with critical or catastrophic impact rates the community vulnerability as HIGH. Another community with a highly likely or likely (at least one chance in the next 10 years) flood with a limited impact would receive a vulnerability rating of MODERATE. The vulnerability of a community having the occurrence of an event as possible or unlikely with limited or negligible impact would be LOW.

Likelihood:

- U = unlikely
- P = possible
- L = likely
- HL = highly likely

Impact:

- N = negligible
- L = limited
- CR = critical
- CA = catastrophic

Possible Hazard	Likelihood	Impact	Community Vulnerability	Most vulnerable facilities and populations
Tornado/Microburst	Likely	Limited	Moderate	Villages
Flood	HL	CR	High	Whole Town, Roads, and Bridges
100-year flood	HL	CR	High	Whole Town, Roads, and Bridges
Flash flood	HL	Cr	High	Whole Towns, Roads, and Bridges
Hazardous materials	P	L	Moderate	Various Businesses + Route 30
Radiological Incident	U	L	Moderate	Route 30, Schools, Villages
Structure Fire	HL	CR	High	All facilities
Power Failure	HL	CR	High	All facilities
Winter & Ice Storm	HL	CR	High	All facilities
High Wind	HL	CR	High	All facilities
Air crash	U	L	Low	Newfane Elementary, Onion Field
Water Supply Contamination	U	L	Low	Unknown
Hurricane	P	CR	High	All Facilities
Earthquake	P	CR	High	All facilities
Dam Failures	P	L	Moderate	Cushing Flats, Jone Hill Rd., and Dover Rd.
Drought	U	L	Low	All facilities
Highway Accidents	HL	L	Low	Traveling public
Railroad Accidents	HL	L	Low	No Railroad in Town
Wildfire	HL	CR	Moderate	Affected Area
Landslide	L	L	Moderate	Steep Slopes and Ridgelines
School Safety Issues	H,L	H	Low	School
Terrorism	U	L	Low	Potentially, everyone in Town

Detailed Hazard Analysis - Highest Hazards

Flash Floods

There are no recent records of ice jams or 100-year flood events in Newfane; however, flash floods are a locally probable hazard event. Flash floods typically occur during summer when a large thunderstorm or a series of rain storms result in high volumes of rain over a short period of time. Flood damage has been most commonly associated with Smith Brook which runs through the Village area of Newfane along Route 30. In 2001 there was a summer flood associated with a microburst which caused some damage to Route 30. In April of 2007 many Town roads throughout Newfane were washed out after flooding and severe storms rolled through the State. In Town, dirt roads were especially hard hit and limited access to residents attempting to drive throughout Town. This storm event became a presidentially declared disaster on May 5, 2007 FEMA Disaster # 1698. The total period of severe storms and flooding was during the period of April 15-21, 2007.

There has also been concern raised about Beaver Dams near Cushing Flats and the need to stay on top of the impact that Beaver Dams are having on altering stream flows during flood events.

Newfane participates in the NFIP. The Newfane Flood Hazard Bylaw was adopted February 15, 2007. The local NFIP Administrator is the Zoning Administrator who enforces the Flood Hazard Bylaw. In Vermont all applications for a permit under the town Flood Hazard Bylaw is first reviewed by the State Agency of Natural Resources. Other town ordinances that support flood hazard protection include; the Newfane Town Plan, zoning, subdivision regulations and a sewage ordinance. The Windham Regional Commission has provided a critical facilities map to the town, which includes the location of the 100 year flood plan and is provided with this local plan update as an appendix

Newfane does not have any NFIP repetitive loss properties. Based on the regional and local hazard assessment and analysis, the Newfane annex identified actions related to continued compliance with the NFIP, These actions were prioritized along with other actions developed for this annex using the method described in the Regional Plan and p. 12 of this annex. The actions are included in the Implementation Schedule for Prioritized Mitigation Projects found on P. 13-14

Winter Storms

Winter storms, with snow, ice and freezing temperatures in varying combinations, are fairly commonplace in Newfane and occur townwide. Heavy wet snows of early fall and late spring, as well as ice storms, often result in loss of electric power, leaving people without adequate heating capability. The other threat from these storms is downed trees, resulting in power failures and impassable roads or driveways.

Wildfire / Structure Fire

Wildfires can spread to residential areas, thus forcing whole communities to evacuate. When fires are followed by heavy rains, the potential for mudslides and flooding is increased. Most of Newfane is heavily forested. Hence, the potential, given the right conditions, for widespread forest fires is great. Downed trees, as result of the 1998 ice storm, greatly increase the potential for a large, devastating forest fire in this area. However, wildfire conditions do not occur frequently due to the relatively high annual precipitation level. Northern New England did experience some large forest fires in the late 1940s. Portions of the Vermont forest are now beyond the natural burn cycle. Communities or residents located in or along the edges of forested areas are particularly at risk. Wildland fires are most likely in the summer and fall months.

Structure fires are highly likely but not common in Newfane. Structure fires can result in loss of property and/or life. They can affect a single residential structure or spread to other homes,

businesses or apartment complexes. Residential fires kill more people in the U.S. each year than all natural disasters combined. In Vermont, 12 fatal fires resulting in 22 civilian deaths occurred in 2000. The most significant common factor in fire fatalities in Vermont continues to be the absence of a functioning smoke detector in the sleeping area of residential structures. Fires can be caused by improperly disposing of ashes with live coals from wood stoves or faulty electrical wiring.

Power Failure

Power failure is a common event in Newfane and can occur anywhere in town. Power failures are typically the result of power lines damaged by high winds or heavy snow/ice storms. Power failures may also result from disruptions in the New England or national power grid, as indicated by the widespread power outages in 2003. Dead or dying trees in close proximity to power lines pose a particular threat for power failure.

High Wind

High wind events are highly likely in Newfane, with the potential for limited resulting damage. The mostly likely local threats for high winds are from nor'easters, hurricanes, downbursts or wind shear. Trees downed by high winds can block roads, and down power and communications lines. Mobile home parks and houses on ridge lines are at greater risk from wind damage. Most high winds events in Newfane have resulted in minor damage from downed trees and power lines.

Risk Assessment - Potential Loss Estimates

In order to determine potential dollar losses to vulnerable structures due to natural and man-made hazards, each higher-risk hazard type was analyzed below. Human losses are not calculated during this exercise, but could be expected to occur depending on the type and severity of the hazard. Potential loss estimates are based on vulnerability and risk discussions held during Newfane Hazard Mitigation Committee meetings.

Flash floods

Flash floods typically occur during the spring snowmelt or as a result of summer thunderstorm activity. Damage from flash floods is difficult to predict since, flash flood areas are not mapped at this time. Smith Brook has been identified by the local volunteer fire department to be a water body of great concern since it flows through the village area and is prone to overbank flow during storm events. The residential area of Rolling Meadows is a concern for evacuation during high rain events due to drainage issues and a need for erosion control on bank areas, possibly a need for riprap due to soil types. Three to four private residences are directly affected in this area during flood events. Smith Brook in the village area flows along a commercial enterprise (WW lumber) which has the potential of becoming a total loss during a severe flooding event. The associated bridge (bridge #64) is also a concern in the area and if completely destroyed has a potential replacement cost between \$300,000 - \$500,000.

Newfane participates in the NFIP. The Newfane Flood Hazard Bylaw was adopted February 15, 2007. The local NFIP Administrator is the Zoning Administrator who enforces the Flood Hazard Bylaw. In Vermont all applications for a permit under the town Flood Hazard Bylaw is first reviewed by the State Agency of Natural Resources. Other town ordinances that support flood hazard protection include; the Newfane Town Plan, zoning, subdivision regulations and a sewage ordinance. The Windham Regional Commission has provided a critical facilities map to the town, which includes the location of the 100 year flood plan and is provided with this local plan update as an appendix

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Wildfires / Structure Fires

Damage from wildfires is difficult to project. Forest fires are more likely during years of drought or during drier seasons (late summer or fall). Fire danger is generally universal and can occur practically at any time. Damage would depend upon the extent of the fire, the number and type of buildings damaged and the contents destroyed within the structures.

Structure fires are highly likely, but are typically not an annual event in Newfane. With an average assessed residential value of \$277,224.98 in April 2007, and assuming one structural fire resulting in the total loss of a structure happens on average once every two years, structural fires could result in \$138,622.49 in damage in an average year.

Winter / Ice Storms

Damage from heavy snow and ice storms can vary depending upon wind speeds, snow or ice accumulation, storm duration, and structural conditions (such heavy snow and ice accumulation on large, flat roofed structures). The assessed value of all residential and commercial property is \$250,809,281. Assuming a range of town-wide damage of 1% to 5%, a heavy snow or ice storm could result in \$2,531,417.00 to \$12,540,464.05 of total damage.

Power Failure

Potential loss estimates are difficult to predict for power failures, which typically are isolated in geographic area and short in duration. Therefore, they often have only minimal impact to people and property. Power failures usually result in minor inconveniences to residents; however, longer duration events might result in the loss of perishable items and business losses. Power outages in winter months could result in the loss of home heating, bursting water pipes and resulting structural water damage.

Existing Hazard Mitigation Programs, Projects and Activities

The following policies, programs and activities related to hazard mitigation are currently in place and/or being implemented in the town of Newfane. The Committee analyzed these programs for their effectiveness and noted improvements needed.

Type of Existing Protection	Description	Effectiveness/Enforcement/Hazard that is addressed	Gaps in Existing Protection/Improvements Needed
Town Plan	Plan for coordinated town-wide planning for land use, municipal facilities, etc.	Flooding Addressed	Town Plan Adopted in 2006. No Improvements needed at this time
Emergency Operations Plan	Municipal procedures for emergency response	Part of Town Plan	Town Plan Adopted in 2006. No Improvements needed at this time
Town of Newfane Rapid Response Plan (RRP)	Basic municipal procedures for emergency response	RRP Updated in 2008	NIMS Compliant
School Emergency Response Protocol	School procedures for emergency response	School Crisis Plan	Needs Better Coordination With local First Responders
LEPC 6 Hazardous Materials Plan	Procedures for hazmat emergency response at regional level	LEPC 6 has the plan	Continued involvement with the LEPC
Mutual Aid – Emergency Services	Agreement for regional coordinated emergency services	Keene (NH) Mutual Aid – written agreement/contract for Fire/Ambulance and HazMat	None identified
Mutual Aid – Public Works	Agreement for regional coordinated emergency highway maintenance services	Public Works MAA signed 07/17/03	None identified
Road Standards	Design and construction standards for roads and drainage systems	Generally Vtrans Standards Bridge and Culvert Inventory work	No major gaps identified
Subdivision Regulations	Regulates the division of land, standards for site access and utilities	Adopted Subdivision Regulations, October 2007	None Identified
Sewage Regulations	Regulates on-site sewage systems	State Regulations apply	None Identified
Flood Hazard Area Regulations	Regulates development in FEMA flood hazard areas	FHR Adopted 4/24/07	None Identified
Site Plan Review (SPR)	Site development standards	Town Zoning and Subdivision Regs	None Identified

National Flood Insurance Program (NFIP)	Provides ability for residents to acquire flood insurance	Newfane participates	None Identified
Maintenance Programs	Bridge & Culvert Inventory	Updated in (2007) Completed annually	None Identified
Building Code	Regulates building construction standards	Through Labor and Industry	NA
Wetland protection – VT Wetland Rules	Protected by 1990 Vermont Wetland Rules	Protection of environment, water resources, wildlife, biota	None Identified

As part of the annual bridge and culvert inventory the Town Highway Department will continue to work with the Selectboard to identify infrastructure in need of imminent work and plan accordingly to include these works in the Town's capital needs budget. Some identified troubled spots for future spending include bridges and culverts associated with Smith Brook and Baker Brook.

Identified Hazard Mitigation Programs, Projects, and Activities

The Newfane Hazard Mitigation Committee identified the following new hazard mitigation activities based on an evaluation of hazard event vulnerability not addressed by existing hazard mitigation initiatives and the feasibility of new activities.

Engineering Projects

- Capital needs of the Town as listed in the Town of Newfane's Capital needs plan for Fiscal Year 2009 enumerate expenditures on Bridges totaling \$97,000.
- These expenditures include South Newfane Store (Bridge #14) \$72,000 and Robinson Bridge (Bridge #8) \$25,000

Equipment Purchase

- \$69,000 is planned to be spent on Highway equipment for Fiscal year 2009 including acquisition of a 1999 International 4900 and money spent on a plow and sander

Implementation Schedule for Prioritized Mitigation Projects¹

The following implementation schedule was developed by the Newfane Hazard Mitigation Committee. Mitigation actions are listed in priority order, with the most critical needs listed at the top of the list. The following criteria were used in establishing project priorities. Each criterion was rated according to a numeric scale, with each score indicating the potential benefits of each project:

“0”	Not Applicable
“1”	Poor
“2”	Average
“3”	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 reasonable benefits compared to its cost of implementation?
- Is the action environmentally sound?

The ranking of these criteria is largely based on the best available information and best judgment as many projects are not fully scoped out at this time. The actions are listed in the table below in order of how they scored based upon this ranking system (36 is the highest possible score). This is just a limited estimate of future projects and is subject to change varying with the needs of the Town and future hazardous events which could potentially change priorities from year to year. These projects are generally in concert with policies and goals of the Town’s Comprehensive Plan or Municipal Plan which guides growth and development.

¹ Adapted from Windham Regional Pre-Disaster Mitigation Plan

MITIGATION ACTION	WHO (LEADERSHIP)	WHEN (DEADLINE)	HOW (FUNDING SOURCE)	Project Priority
Replacement of Emergency Response Equipment through Capital Budget Planning	Selectboard, Volunteer Fire, Emergency Planning Committee	Ongoing	General Fund	29
Stream Geomorphic Assessment, Fluvial Erosion Mapping	WRC, Windham County Conservation District, Planning Commission	Ongoing	Grant	31
Annual Culvert program based on inventory	Selectboard, Road Foreman	Each year	General Fund	34
Install dry hydrant	Fire Department	On-going	Grant Funding	32
Emergency Services Personnel training	Fire and Fast Squad	Continuing	General fund to assist with costs	28
Hydraulic and Hydrology studies for culverts replaced with FEMA disaster Funds	Highway Dept and Emergency Planning committee	Continuing	VTrans engineering services	31
NIMS compliance and NIMS/ICS Training	Selectboard and Volunteer Fire Dept.	Continuing	N/A Free Trainings Offered	28