

## Brookfield Annex

### Introduction

This appendix, when used with the Regional (multi-jurisdictional) PDM Plan, is an All-Hazard Pre-Disaster Mitigation Plan for the Town of Brookfield.

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. Previous FEMA, State and Regional Project Impact efforts demonstrate the fact 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. 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 Mitigations strategies and measures **avert** the hazard by redirecting its impact by means of a structure or land treatment, **adapt** to the hazard by modifying structures or standards or **avoid** the hazard through improved public education, relocating/removing buildings in the flood zone, or ensuring development is disaster resistant. Measures and strategies could include projects such as:

- Flood-proofing structures
- Tying down propane/fuel tanks in flood-prone areas
- Elevating furnaces and water heaters
- Identifying & modifying high traffic accident locations and routes
- Ensuring adequate water supply
- Identifying & 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 & relocation of structures in harms way
- Establish & enforce appropriate building codes
- Public information and education

### Purpose

The purpose of this Pre-disaster Mitigation Plan is to assist Brookfield in identifying all hazards facing the town and list strategies to begin reducing risks from known hazards.

## **Two Rivers-Ottawaquechee Regional Hazard Mitigation Goals**

- Reduce the loss of life and injury resulting from all hazards.
- To lessen financial losses and property damage incurred by municipalities, businesses and private citizens due to disasters.

These overarching goals can be further refined as follows:

- The impacts of hazards should be first avoided, then reduced where they cannot be reasonably avoided. For flooding and riverine erosion, this can best be achieved by precluding development from hazard areas, and where development exists through property buyouts or flood protection sympathetic to the natural and human resources of the area.
- The connections between land use, development siting, drainage systems, building standards, and road design and maintenance and the effects of disasters on the Region should be recognized and incorporated into policy so that there is no adverse impact (increased hazard) from development.
- Mitigation actions should be part of larger, systematic efforts at disaster reduction based on the highest threats. Flooding should be addressed on a watershed scale. Structural fire and technological hazards should be lessened through statewide safety education and code compliance.

## **Brookfield Town Plan (adopted 9/12/05) – Objectives/Goals that support Hazard Mitigation**

- To promote a safe, healthy, pleasant and manageable environment. In doing so, the Plan considers public health and safety issues, including water resources, sewage and solid waste disposal, and comprehensive transportation needs (page 1).
- To conserve the Town's natural, historic and cultural resources. In doing so, the Plan considers measures to assure that future residential, commercial and recreational development is located in appropriate areas and the Plan follows the development of an organizational framework for the management and control of existing and future historic sites and areas (page 2).

## **Community Background**

Brookfield is a predominantly rural and agricultural community of 24,472 acres located in the southwestern corner of Orange County. The Town's topography is quite typical of the area east of the Green Mountains. It ranges from hills up to about 1,800 feet elevation on the easterly border of the Town through brook valleys slightly below 700 feet elevation, to Bear Hill, the Town's highest point, on the west at just over 2,100 feet. Ayers Brook and its tributaries and upper Sunny Brook are the major streams in the western part of the Town.

The Second Branch of the White River drains the eastern valley. Five ponds are designated as state waters because they are over 25 acres in size: Sunset Lake and Baker, Lamson, North and Rood Ponds. In addition to approximately 6 miles of I-89, Brookfield has over 20 miles of State highway (Routes 12, 14, and 65) and nearly 75 miles of Town roads: Class II - 15.85 miles, Class III - 37.80 miles, and Class IV - 22.27. A portion of Pond Village is designated a State Historic District with smaller historic districts located around the churches in East and West Brookfield.

Brookfield's Floating Bridge spans Sunset Lake, formerly Colt's Pond, in Pond Village. The bridge is supported by floating barrels because the lake is too deep for traditional pilings. An earthen dam impounds Sunset Lake called the Sunset Lake Dam. The dam was rebuilt in 2000 to provide a safe, low-maintenance structure. The dam now has rehabilitated primary and auxiliary masonry spillways to improve hydraulic performance, a concrete cutoff wall along the upstream face of the dam to inhibit seepage, and a concrete slab over the dam to provide overtopping protection.

Sunset Lake Dam is inspected routinely by the Vermont Department of Environmental Conservation, and during the 2008 inspection, the dam was found to be in good condition. An Emergency Action Plan was written in 2001 for the dam and it is filed with the Town and the Dam Safety Section of the Vermont Agency of Natural Resources. The EAP contains an emergency notification chart. Dam failure is considered improbable, and thus is not addressed in this annex.

Between 1970 and 1980 the Town's population grew from 606 to 969 and by 1990 the population had risen to 1,089. In 1990 there were 25-30 farms concentrating on dairy, beef, sheep, horse, deer, small fruits and vegetables. There are also tree farms producing Christmas trees, hardwoods & conifers for timber, pulp and fuel wood and a number of sugar bushes with sugarhouses producing syrup for owners and surplus for sale. The Farmers' Market in Randolph provides an outlet for growers of small fruits and vegetables.

The population consists of families whose wage-earners are employed out of town, chiefly in the Randolph-Bethel corridor, but as far south as White River Junction and to the north in Barre, Montpelier and Waterbury; retired people who reside full time or part time in the Town; second home owners who reside in Brookfield a few months a year; and families who earn their livelihood in the Town.

Electric power and telephone services are provided by Central Vermont Public Service Corporation, Washington Electric Cooperative, Verizon and other competitive Telecommunications carriers. All water and sewage facilities are privately owned. In 1992 Brookfield joined Braintree and Randolph in establishing a separate district and requiring mandatory mechanisms for recycling. Trash is now collected in Randolph and trucked by a contractor to a landfill outside the district.

Primary fire protection is provided by the voluntary fire company based in East Brookfield and by the Randolph Fire Department for West Brookfield. Law enforcement services are provided by the Town Constable, the County Sheriff, and the State Police.

Medical emergencies are handled well by the private, non-profit White River Valley Ambulance, Inc. located in Bethel. They have three ambulances and a rescue truck with extraction equipment that are fairly new. The closest hospital is Gifford Medical Center, located in Randolph. Medivac services are available by the DHART helicopter.

### **Community Hazards Inventory and Risk Assessment**

In Brookfield, interviews with the town Selectboard and municipal Emergency Management officials, and hazards analysis indicate that the following hazards are listed as probable (frequent to unusual) – Flash Flood, HAZMAT (Transportation Accidents), Winter Storm/Ice Storm, and Structural Fire. In terms of potential severity of damage, the following hazards are rated as having the potential to produce serious to locally catastrophic damage – Dam Break, Flash Flood, HAZMAT, Drought, Structural Fire, and Winter Storm/Ice Storm. Hazards to which the town is vulnerable (probable and damaging) include Flash Flood, HAZMAT, Fire, and Winter Storm. Therefore, the mitigation measures in this Plan focus on these four hazards

#### Flash Flood (Risk = Med-High/High)

Based on the results of overlaying the FIRM flood maps with the location of the E911 points, there are 20 residences and 1 commercial business in the town that are vulnerable to potential flooding. The estimated loss for damage to these properties from the 100 year flood, assuming average residential and commercial values (derived from 2008 Annual Report by the Vermont Department of Taxes, Division of Property Valuation and Review) would be \$3,683,359. This is about 2% of the grand list.

Recent flooding that had led to federal disaster declarations for Orange County occurred from June 17, 1998 to July 13, 1998 (DR 1228 VT), Sept. 16 through Sept. 21, 1999 (DR 1307 VT), July 14, 2000 through July 18, 2000 (DR 1336 VT), July 21, 2003, through August 18, 2003 (DR 1488 VT), April 15-21, 2007 (DR 1698 VT), July 9-11, 2007 (DR 1715 VT) and July 21 through August 12, 2008 (DR 1790 VT). This list does not include flood events that were not federally declared. Flooding and flash flooding are the most likely and most frequently recurring natural disaster events in Vermont.

No development projects are planned in Brookfield in areas that would be vulnerable to flooding. There are no repetitive loss properties in Brookfield on FEMA's NFIP list. Areas subject to flooding are shown on the NFIP map of Brookfield.

#### Hazardous Materials (HAZMAT) - Transportation Accidents (Risk = Med-High/High)

Based on available VT Tier II data, there is 1 site in town that has sufficient types and/or quantities of hazardous materials to require reporting. Brookfield's village is located on

Route 65 which sees a limited amount of truck traffic even by Vermont standards. There are 226 residential and 5 commercial buildings within 1,000 feet of a potential HAZMAT spill on Interstate 89 and Route 65. In the event that 5% of these structures were involved in a HAZMAT incident, the estimated damage would be \$2,009,089. It should also be noted that the State of Vermont currently has one fully trained HAZMAT response team, with vehicles located in Essex Junction, Brandon, and Windsor. The HAZMAT crew chief is available within minutes of a call for the team but on-scene response would be a matter of hours. In the event of a serious accident in town, there would be little time for evacuation and response would be difficult.

#### Fire (Risk = Med-High/High)

Limited water supply for firefighting outside the Village area, and distances of homes from the Fire Station are a few of the challenges that leave Brookfield vulnerable to the impacts of structure fires. Some recreational and retirement homes with single access roads and no fire-fighting water supply would be in jeopardy.

#### Winter Storm (Risk = Med-High/High)

These hazards have no specific damage estimate as their effect could occur anywhere in town. High wind coupled with heavy snow and ice are a particular concern for dropping large trees that will block roads and cut power lines, particularly at higher elevations.

### **Existing Hazard Mitigation Measures in the Community**

Ongoing efforts to mitigate hazards in the community include:

1. ditch and culvert maintenance.
2. administration of flood hazard regulations

### **National Flood Insurance Program**

The Town of Brookfield is an NFIP participant. Brookfield's initial Flood Hazard Boundary Map was identified on 12/13/74. The Town's initial Flood Insurance Rate Map (FIRM) was dated 9/29/78. The Town's FIRM has been updated, and the current effective map date is 9/9/08.

The Brookfield Administrative Officer serves as the NFIP Administrator. Brookfield is located in Orange County and has not completed an update of its flood hazard regulations. Beyond the Town's NFIP program, there are no additional erosion control or flood management regulations that apply in Brookfield. There are no plans to enroll the community in the CRS program.

Based on the regional and local hazard assessment and analysis, this Annex identifies actions related to continued compliance with the NFIP. These actions are prioritized, along with the other actions developed in this Annex, using the method described on

Page 21 of the Regional PDM Plan. The actions are included in the Implementation Schedule for Prioritized Mitigation Projects, which follows.

### **Areas of Local Concern**

1. The area of Interstate 89 that runs through Brookfield is served by local fire and rescue squads in the event of major accident or HAZMAT event. There is limited access to the length of the interstate. The level of truck traffic along this highway increases the likelihood of a HAZMAT event.
2. The rural nature of homes in Brookfield poses a problem with regard to water supply for fire suppression. There are a limited number of locations that Firefighters can refill pumper trucks, making it difficult to properly fight fires in more remote areas.
3. West Street, which runs through the towns of Brookfield, Braintree and Randolph, Vermont, was washed out in a flash flood in 2007. The road is currently being rebuilt by the three towns, and the project is expected to be completed in the very near term.

### **Implementation Schedule for Prioritized Mitigation Projects**

Tasks currently under way or under consideration – in order of priority:

MITIGATION ACTION	WHO (LEADERSHIP)	WHEN (TIMEFRAME)	HOW (FUNDING/ SUPPORT)	IMPLEMENTATION THROUGH EXISTING PROGRAMS
<u>ALL HAZARDS</u> 1. Ensure that BEOP is current	Selectboard	Yearly	With TRORC assistance	
2. Use PDM plan for Hazard Identification and Mapping.	Emergency Management Coordinator	Ongoing	Local resources	
3. Encourage the utilities to continue a regular schedule of tree trimming along power lines.	Emergency Management Coordinator	Yearly	Local resources	
<u>FLASH FLOOD</u> 4. Continue the planned road maintenance program that addresses culvert survey and upgrade and ditching	Highway Department	Ongoing	Local resources	
5. Consider adopting Fluvial Erosion Hazard regulations	Planning Commission and Selectboard	2009	Local resources, TRORC assistance	
6. Conduct routine inspection of dams on ponds.	Emergency Management Coordinator	Yearly	Local resources	
<u>HAZMAT</u> 7. Ensure that all emergency response and management personnel receive HAZMAT awareness training as a minimum.	Fire Department	2009	Funded by Fire Service Training Academy	
<u>FIRE</u> 8. Develop additional dry hydrant sites in rural locations.	Fire Department	Ongoing	Local resources, George Aiken RC&D	
<u>WINTER STORM</u> 9. Encourage utilities to continue regular tree trimming along power lines	Emergency Planning Coordinator	Yearly	Local resources	
10. Install generator at local emergency shelter (Brookfield Elementary School).	Emergency Planning Coordinator	2010	Local resources	