

For Selectmen Adoption  
02-24-14

# TOWN OF SUTTON NEW HAMPSHIRE

## HAZARD MITIGATION PLAN UPDATE 2014



*Sutton Police Cruiser, December 2008 Ice Storm  
Photo Courtesy of Sutton Police Department*

Adopted by the Sutton Board of Selectmen  
February 24, 2014

FEMA APPROVED \_\_\_\_\_, 2014

# TOWN OF SUTTON NEW HAMPSHIRE

## HAZARD MITIGATION PLAN UPDATE 2014

Adopted **February 24, 2014**

**FEMA APPROVED \_\_\_\_\_, 2014**



### Town of Sutton

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Sutton, NH 03260  
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Fire Department Phone: (603) 927-4740  
Web: [www.sutton-nh.gov](http://www.sutton-nh.gov)

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### NH Homeland Security and Emergency Management

33 Hazen Drive  
Concord, NH 03305

*Homeland Security  
and Emergency Management*

### Incident Planning and Operations Center

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**CERTIFICATE OF ADOPTION**

**TOWN OF SUTTON, NEW HAMPSHIRE  
BOARD OF SELECTMEN  
A RESOLUTION ADOPTING THE SUTTON HAZARD MITIGATION PLAN UPDATE  
February 24, 2014**

WHEREAS, the Town of received assistance from the Central New Hampshire Regional Planning Commission, through funding provided by the NH Homeland Security and Emergency Management, to prepare the Sutton Hazard Mitigation Plan Update; and

WHEREAS, several public planning meetings were held between March 2013 to July 2013 regarding the development and review of the Sutton Hazard Mitigation Plan Update; and

WHEREAS, the Sutton Hazard Mitigation Plan Update contains several potential future projects to mitigate hazard damage in the Town of Sutton; and

WHEREAS, a duly noticed public hearing was held by the Sutton Board of Selectmen on February 24, 2014 to formally approve and adopt the Sutton Hazard Mitigation Plan Update.

NOW, THEREFORE BE IT RESOLVED that the Sutton Board of Selectmen adopts the Sutton Hazard Mitigation Plan Update.

ADOPTED AND SIGNED this 24<sup>th</sup> day of February, 2014.

\_\_\_\_\_  
Daniel Sundquist, Jr., Chair  
Sutton Board of Selectmen

ATTEST

\_\_\_\_\_  
Patricia McMahon, Selectwoman

\_\_\_\_\_  
Linda Ford, Town Clerk

\_\_\_\_\_  
Walter Baker, Jr., Selectman

## ACKNOWLEDGEMENTS

The Sutton Hazard Mitigation Committee was comprised of the following individuals who met from March 2013 to July 2013 to develop this Plan:

- Matt Grimes, Sutton Emergency Management Director
- Wendy Grimes, Sutton Rescue Department Chief, Kearsarge School District Staff Member (*Warner Simonds School Office Manager*)
- Elly Phillips, Sutton Town Administrator
- Steve Enroth, Sutton Fire Department Member
- Chris Rowe, Sutton Fire Department Chief
- Jonathan Korbet, Sutton Police Department Chief
- Carole O'Connell, Sutton Historical Society President\*
- Paul Parker, Sutton Highway Department Road Agent
- Laurie Hayward, Sutton Land Use Coordinator
- Ricia McMahon, Sutton Board of Selectmen Member and Sutton Budget Committee Member

The following Central NH Regional Planning Commission (CNHRPC) staff contributed to the development of the Hazard Mitigation Plan Update:

- Stephanie Alexander, CNHRPC Senior Planner
- Craig Tufts, CNHRPC Regional Planner (GIS)

\* *member of the public*

Others attended one or more Committee meetings or Work Sessions and offered contributions to the Plan:

- Robert DeFelice, Sutton Planning Board Member, Sutton Budget Committee Member, and Vernondale Store Owner (*Sutton*)
- Pete Thompson, Sutton Fire Department Member
- David Burnham, Sutton Health Officer and Sutton Planning Board Member
- Charles Whittemore, Sutton Muster Field Farm Museum\*
- Marilyn Thompson, Sutton Citizen\*
- Nancy St. Laurent, NH Homeland Security and Emergency Management Field Representative

Committee members and participants of the 2008 Plan included:

- |  |   |
|--|---|
| • Richard DeFelice, Fire Department          | • Paul Parker, Highway Department               |
| • A. Garrett Evans, Conservation Commission  | • Elly Phillips, Town Administrator             |
| • Matt Grimes, Emergency Management Director | • John Sims, Police Department                  |
| • Wendy Grimes, Fire and Rescue Department   | • Stephanie Alexander, CNHRPC Principal Planner |
| • Jack Noon, Historian                       | • Jill Cunningham, CNHRPC Planning Intern       |
|  | • Craig Tufts, CNHRPC Assistant Planner (GIS)   |

## CHAPTER 1. INTRODUCTION

### 2014 PLAN UPDATE

The Town's Hazard Mitigation Committee reformed in 2013 to develop an updated Hazard Mitigation Plan. This update incorporates the changes required by FEMA in addition to Town modifications over the last five years. A brief **COMMUNITY DEMOGRAPHICS** section, a **RECENT HAZARD EVENTS** section, and a **STRUCTURE OF THE HAZARD MITIGATION PLAN UPDATE** section were added. Compared to the 2008 plan **METHODOLOGY**, expanded public participation steps were taken, and a similar plan development procedure was used as documented in the revised **METHODOLOGY** section.

### BACKGROUND

The Hazard Mitigation Plan Update for Sutton is intended to provide information in the event of a natural disaster, to raise awareness of the vulnerability of facilities and structures of Sutton to such disasters, and to provide measures to help offset the damages of a future disaster.

In 2000, the President enacted the Disaster Mitigation Act 2000 (DMA) which requires states and municipalities to have local natural hazard mitigation plans in place in order to be eligible for disaster funding programs such as Hazard Mitigation Grant Program, Flood Mitigation Assistance Program, and Pre-Disaster Mitigation Program. New Hampshire is awarded funds based upon the completeness of its State Plan and upon the number of local plans in place.

As a result of the DMA, funding was provided to state offices of emergency management to produce local hazard mitigation plans. On **FEBRUARY 9, 2009**, Sutton received its first Hazard Mitigation Plan approval from FEMA. To remain in compliance with the DMA, the Town is required to submit for FEMA approval a revised Hazard Mitigation Plan Update every five years.

This Plan has been developed and revised in accordance with the Disaster Mitigation Act of 2000 and the FEMA *Local Mitigation Plan Review Guide* dated October 1, 2011 and effective one year later. The most recent Plan development standards provided by FEMA Region I have also been incorporated. The planning effort of the Town is a regular process and this Plan is considered to be a "living document."

The **SUTTON HAZARD MITIGATION PLAN UPDATE 2014** Committee was established and guided the development of the Plan. The Central NH Regional Planning Commission, of which the Town Sutton is a member, contributed to the development of this Plan by facilitating the process and preparing the document and maps.

From the Town, the Emergency Management Director, Rescue Department, Fire Department, Police Department, Highway Department, Planning and Zoning Department, Town Administrator, Conservation Commission, Building Inspector, Planning Board, Board of Selectmen, and Health Officer were invited to be represented on the Hazard Mitigation Committee.

With an invitation, members of the public invited to participate include representatives from the Sutton Historical Society, Vernondale Store, Country Club of NH, and Muster Field Farm Museum. Several other citizen representatives were specifically invited to attend. Lastly, the participation of Emergency Management Directors of the neighboring communities of Wilmot, New London, Warner, Newbury, and Bradford was solicited. The invitation of participants is located in **CHAPTER 12. APPENDIX**. General public noticing and solicitation to attend the meetings was posted in multiple locations. The list of the Hazard Mitigation Committee and other meeting attendees is in the **ACKNOWLEDGEMENTS**.

## COMMUNITY DEMOGRAPHICS

The Town of Sutton is located in the northwestern corner of Merrimack County in south-central New Hampshire. It is bordered by the Town of New London to the north, the Town of Wilmot to the northeast, the Town of Warner to the east, the Town of Bradford to the southwest, and the Town of Newbury to the west. Interstate 89 bi-sects the community in a southeast-northwest pattern, with Exits 10 and 11 available as primary access to this rural community. Route 114 also bisects the community, but runs in the opposite direction, in a southwest-northeast pattern.

The current US Census 2010 population of Sutton is **1,837** citizens, an increase of **19%** since 2000. Housing units are almost exclusively single family at a total of **985** units in 2010, a **19%** increase from 2000.

The total land area contained within Sutton is approximately **42.5** square miles. Roughly **66%** of Sutton is forested land and an additional **5%** is under conservation. Residential acreage is **19%** of the community and commercial use is only **2%**; the remaining land uses are less than **2%** each.

As a forested community, Sutton has very few small businesses but several higher-density residential areas. Villages known as Sutton Mills, North Sutton, and South Sutton, and the seasonal and permanent settlements around Kezar Lake, Blaisdell Lake, and Billings Pond are population centers. Other dwellings are dispersed throughout Sutton. Population density is now at **43** people per square mile, up from **36** people in 2000.

New construction permits have decreased in Sutton since the 2008 Plan to total **19**, all of which were for single family housing, between the four years of 2009 - 2012. In 2011, two (**2**) new housing permits were issued, and in 2012, five (**5**) new housing permits were issued. Zero (**0**) non-residential permits were issued over an eight year-period between 2005-2012. The low number of new permits for housing follows a region-wide trend toward fewer developments and homes being built.

Further information on the demographics of the community is found in **CHAPTER 5. DEMOGRAPHICS**.

## RECENT HAZARD EVENTS IN SUTTON

The Town has been affected by several significant natural disasters within the last decade. Natural hazard events are now occurring more frequently than in the past. The October 2005 Columbus Day Flood, May 2006 Mother's Day Flood, April 2007 Spring Flood, December 2008 Ice Storm, February/March 2010 Severe Winter Storm, August/September, 2011 Tropical Storm Irene, October 2011 Halloween Snow Storm, and February 2013 Winter Storm Nemo have been federally-declared disasters impacting Merrimack County, the Central NH region, and the Town of Sutton.

Damages included washed out roads; fallen tree branches and limbs; wind-blown debris; pulled down power lines resulting in power and internet outages; snapped off trees; debris-blocked roadways; flooded or iced over roads; washed out culverts, and gravel and asphalt roads; damaged bridges and dams; and vehicle and property damage from wind and water actions. These disasters and resultant damages often sequestered residents in their homes for many days without electricity. While these events severely disrupted the community, their impact was relatively mild as few injuries were reported. FEMA provided funding to the Town for many declared disaster events for emergency needs or recovery projects such as debris removal, road repairs, tree and brush cutting, and culvert replacements.

### **October 2005 Columbus Day Flood**

Stevens Brook impacted a bridge on North Road. A beaver dam at the Bumcarter Road swamp area opened, and culverts could not support the water load. The Town received over \$25,000 in damages from FEMA for severe storm flooding.

### **May 2006 Mother's Day Flood**

Stevens Brook again flooded a bridge on North Road. On Kearsarge Valley Road, riprap came up over the road and the culvert could not carry any more water. A reoccurrence of heavy rains impacted the bridge at the Country Club of New Hampshire with a great deposit of gravel stones and rocks. The water cascading down the mountain was so powerful that the road was closed due to high water and the potential for the bridge to washout. The Town received over \$79,000 in damages from FEMA for extensive road damage from severe flooding.

### **April 2007 Spring Flood**

Stevens Brook impacted a bridge on North Road for the third flood in a row. On Kearsarge Valley Road, riprap again came up over the road and the culvert could not carry any more water. Lane River, which flows out of Kezar Lake at the Route 114 bridge, flooded at the Cressey House which was later purchased by the Historical Society. Cascade Brook regularly floods and causes damages to roadways. The Town received over \$172,000 in damages from FEMA.

The Pillsbury Memorial Hall flooded during the April 15, 2007 storm. The Town received \$6,360 in FEMA Funding because the building is on the National Register of Historic Places. The Town was able to install a sump pump in the area where it was determined the seepage occurred. It also remediated and replaced (through Property Liability insurance) an asbestos floor with a tile floor.

**December 2008 Ice Storm**

The Emergency Management Director opened the Emergency Operations Center (EOC). The ice storm began with low 30 degree temperatures. Rain became heavy ice buildup on trees and wires. Tree branches fell throughout Town. Wide spread loss of power was experienced and many roads closed. Numerous Fire Department callouts were received. Many residents were without power for over a week. The Sutton Fire Department conducted house to house welfare checks. The Town received \$27,590 from FEMA and an additional \$4,600 from the State of NH for damages.

**February/March 2010 Severe Winter Storm**

This severe winter storm event between February 23 to March 13 started with a big windstorm, and followed through with heavy rain and 6-10" of snow over a week long period which led to road washouts. During this severe winter storm, trees were downed and power was lost for three days in most of the community. Fire Department personnel were undertaking a door-to-door check, trying to reach and check on people to ensure safety. More than 10+ fire callouts were received during this time.

**August/September 2011 Tropical Storm Irene**

The Emergency Management Director opened the Emergency Operations Center (EOC). The Fire station was staffed in anticipation of this event, August 26-September 6. Tropical Storm Irene started with heavy rains, and quickly followed with downed trees and branches. Most damage was done on August 28 with 5" of rain. Numerous fire call outs for flooded basements were received. Power outages occurred. There was minor property damage from fallen or wind-blown debris. The Town received \$12,762 predominantly for cleanup of debris and emergency welfare checks. School was not in session for a day or two as a result of the storm.

**October 2011 Halloween Snow Storm**

Heavy, wet snow started at 4 PM on October 29, finishing with 15" in Sutton by morning. Temperatures rose to 40 degrees by next day.

**October 2012 Hurricane Sandy**

Emergency personnel staffed the Fire House, which is also the Emergency Operations Center (EOC). The Town ensured that everything was made ready. Hurricane Sandy hit with high winds and rain in Sutton. There were downed trees and branches and as well downed power lines. Business was affected due to Town-wide internet loss by local provider (TDS Telecom). School was not in session for a day in preparation for the storm. However, the overall damage was not significant and Hurricane Sandy impacted the Town little.

**February 2013 Winter Storm Nemo**

Beginning in the afternoon of February 8, the Town of Sutton received over 10" of snow over a 24-hour period from the federally-declared disaster Nor'easter named Nemo. No damage occurred and the storm acted like a normal snow storm in Sutton. However, the Town had been ready to respond and activate the EOC if these had been necessary.

## STRUCTURE OF THE HAZARD MITIGATION PLAN UPDATE

The overall purpose of this Plan is to reduce future life and property losses caused by hazard events before they occur by the identification of appropriate Actions that are implemented during the five-year duration of this Plan. In order to achieve this purpose, the Hazard Mitigation Plan Update contains chapters for methodology, hazard and risk inventory, potential losses for natural disasters, demographics, floodplain management, objectives, existing mitigation support strategies and new strategies, Action implementation, Plan evaluation, and an appendix.

The Plan includes tables of data, narrative descriptions, photographs, and maps to both discuss and graphically display Sutton's inventory components, including hazard event impact and potential, sites, existing strategies, and Actions. All of this information is reviewed and updated where necessary during the Plan update process. Further information about the individual chapters follows.

A brief overview of the Hazard Mitigation Plan history and demographics in the Town, a summary of the most recent hazard events, and the precise methodology used to develop the Plan are detailed in **CHAPTER 1. INTRODUCTION**.

Review of **39** different past and potential natural, technological, and human hazards which could occur in Town is documented in **CHAPTER 2. HAZARD IDENTIFICATION**. Included are the hazards' magnitude, likelihood for impacting the community in the future, and overall risk in numerical and qualitative format, with the accompanying matrices in the Appendix. Areas and sites where each hazard might impact the Town in the future are discussed.

An inventory of the critical and vulnerable facilities of the community along with the hazards the sites are most susceptible to are discussed in **CHAPTER 3. ASSET IDENTIFICATION**. Included is the potential for future development in hazard areas.

Potential dollar losses for structures only are provided for buildings in the Special Flood Hazard Areas. Losses are provided for other natural hazards by using a percentage range of the net valuation of structures in the Town. Technological and human hazards are addressed, although there is no standard for obtaining potential losses. These are all found in **CHAPTER 4. POTENTIAL LOSSES**.

The past and current population and housing trends in the community are detailed in **CHAPTER 5. DEVELOPMENT TRENDS**. Residential housing start trends are provided in addition to the currently available land use data, which is compared, if possible, to previous land use data. Areas vulnerable to specific hazards are addressed in this Chapter.

Floodplain vulnerabilities, including repetitive road washout areas, are described in **CHAPTER 6. FLOODPLAIN MANAGEMENT**. The number of buildings in the floodplain are identified, as are the number of National Flood Insurance Policies and claims. Repetitive losses, if any, are discussed. An overview of the Town's Floodplain Ordinance and latest Community Assistance Visit are discussed as is how the Town might better manage their regulations.

Objectives of the Plan are provided in **CHAPTER 7. LOCAL HAZARD MITIGATION OBJECTIVES**. Both General and Hazard-Specific Objectives are developed. These guide the Committee to develop Actions to meet the mitigation needs of the community.

Existing plans, policies, procedures, programs, training, and strategies are listed by Town Department in **CHAPTER 8. EXISTING MITIGATION SUPPORT STRATEGIES**. These support strategies support the overall hazard mitigation programs and specific Actions of the community.

Actions are identified by primary hazard type under Life and Property Protection, Emergency Services, Public Information and Involvement, Training and Preparation, and Planning and Implementation categories in **CHAPTER 9. NEWLY IDENTIFIED ACTIONS** which have the potential to meet the Town's Objectives.

Actions that have been completed, deleted, or deferred from the previous Plan are identified in **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS** along with the new Actions prioritized and identified from the previous chapter in an Action Plan. A brief cost to benefits analysis is developed.

How the Plan will be regularly evaluated and maintained by the Town on both an annual basis for the Action Plan and the five-year update cycle are described in **CHAPTER 11. PLAN MONITORING, EVALUATING, AND UPDATING**. The agendas for quarterly meetings and the tasks for the both types of update are identified. The Town's mechanisms for incorporating the Plan and its Actions and how the Committee will accomplish this are discussed. The commitment to future public involvement is included.

**CHAPTER 12. APPENDIX** contains various information on disaster declaration, grant programs, and includes the supporting hazard vulnerability and Action prioritization tables, photographs of disasters, and the supporting paperwork of the Plan update process.

This Hazard Mitigation Plan Update follows the FEMA *Local Mitigation Plan Review Guide* of October 1, 2011 and incorporates all requirements to develop a comprehensive and compliant Hazard Mitigation Plan Update for the community.

## METHODOLOGY

The **HAZARD MITIGATION PLAN UPDATE 2014** was developed over several months with a group of Town staff members and volunteers, members of the public, and the CNHRPC comprising the Hazard Mitigation Committee. The 2014 methodology for Plan development, which is identical to the 2008 Plan update methodology, is summarized in this section.

### Meetings and Duties

The Hazard Mitigation Committee met on March 20, April 30, May 29, and July 17, 2013. The Committee also met for Work Sessions on April 10, May 15, and June 12, 2013. For each Meeting and Work Session, Town staff prepared attendance sheets and meeting summaries for the Hazard Mitigation Committee. The agendas and meeting materials were prepared by Central New Hampshire Regional Planning Commission staff. The agendas, attendance sheets, and meeting summaries are included in **CHAPTER 12. APPENDIX** of the Plan.

For each meeting, Town staff prepared attendance sheets and meeting summaries for the Hazard Mitigation Committee, and during Work Sessions they developed information to provide to CNHRPC for incorporation into the Plan. Town staff and volunteers documented their time on match tracking timesheets. CNHRPC staff facilitated the regular Committee meetings and Town staff facilitated the Work Sessions. CNHRPC worked on the Plan document and revised the maps per Committee direction.

### Opportunity for Public Participation

**Press releases** inviting the public to participate in the Hazard Mitigation Plan Update process were provided to the InterTown Record, a weekly paper serving the Lake Sunapee area. All interested parties were invited to participate, including media, residents, businesses, organizations, local communities, non-profits, and State agencies. The colorful **public meeting notice schedule** announcements were posted on the Town's website at [www.sutton-nh.gov](http://www.sutton-nh.gov), in the Town Office, North Sutton Post Office, South Sutton Post Office, Sutton Library, and in the Solid Waste Facility, so all local interests had an opportunity to be present and participate in the meetings. **Personal invitations** to attend and participate were sent by the Town to area Emergency Management Directors, non-profits in Sutton, and local businesses. Copies of publicity for the Plan are included in **CHAPTER 12. APPENDIX**.

### *How and Where Public Input Was Incorporated into the Plan*

Three (**3**) members of the public attended one or more of the meetings as indicated in the **ACKNOWLEDGEMENTS** and by the Attendance Sheets in **CHAPTER 12. APPENDIX**. In this instance, the "public" means a person who is not a local, state, or federal government staff member or other staff person paid for by tax dollars, nor is a recognized Town-affiliated volunteer. One (**1**) of the three (**3**) individuals participated by serving on the Hazard Mitigation Committee as a full member to work on the Agenda items needed to develop this Plan. The remaining two (**2**) members of the public attended **Committee Meeting 1** on March 20, **Work Session 1** on April 10, and **Meeting 2** on April 30.

The public included a Sutton Historical Society member, a non-profit member, and two citizens. Several of these individuals participated by serving on the Hazard Mitigation Committee as full members as noted above. Other members of the public provided photographs or data for the Plan, or simply provided different perspectives to consider at one or more meetings. All members of the public dedicated themselves to working at the

meetings with the Committee to ensure the Plan contained updated information and Actions which benefited different sectors of Sutton society.

### Overall Tasks

At meetings, information on the Chapters was collected during discussions among Committee members. The new and updated information was described in each Chapter under the **2014 PLAN UPDATE** section. In between meetings, Town staff and volunteers and CNHRPC staff researched and collected information for the Chapters and CNHRPC rewrote sections as appropriate. The Chapters were also updated by revising the document to the current FEMA standards. Maps were reviewed by the Committee and updated as needed by CNHRPC.

### Completion of the Plan

On July 31, 2013, the Committee made a final draft of this Plan available to Town Departments and Board Chairs for specific review and comment, although they have had the opportunity to participate in the process. Included with the draft was a support letter which was signed by these individuals on behalf of their respective Department or Board to acknowledge that they have read and support the document. The signed support letters received are included in **CHAPTER 12. APPENDIX**.

On August 26, 2013, the Committee held a **Public Information Meeting**. The purpose of the meeting was to obtain review and comment from the public for the Plan. The **news press release** was sent to the InterTown Record, a weekly paper. The **public meeting notice schedule** announcements were posted on the Town's website at [www.sutton-nh.gov](http://www.sutton-nh.gov), in the Town Office, North Sutton Post Office, South Sutton Post Office, Sutton Library, and in the Solid Waste Facility. Copies of the **draft Plan** were available for public inspection at the Town Office. Copies of publicity for the Plan are included in **CHAPTER 12. APPENDIX**.

### *How and Where Public Input Was Incorporated into the Plan*

Other than the Committee members, a Town Planning Board member, Town Selectman, and State Representative were present at the Public Information Meeting. Comments included Sutton Planning Board comments on the Maps regarding the location of the high density population areas and the colors of the floodplains. The Maps were subsequently changed to reflect these comments. Overall discussion occurred about funding some of the Actions.

On September 27, 2013, copies of this Plan were submitted to the NH Homeland Security and Emergency Management (NHHSEM)/FEMA for FEMA's approval of the **SUTTON HAZARD MITIGATION PLAN UPDATE 2013**.

On January 23, 2014, Sutton received an **Approvable Pending Adoption (APA)** notification from FEMA, stating the Plan will be approved by FEMA after proof of adoption by the local governing body, which is the Board of Selectmen, is submitted.

On **February 24, 2014**, the Board of Selectmen **adopted the Hazard Mitigation Plan Update** for the Town at a duly noticed public meeting. The **press release** was sent to the InterTown Record, a weekly paper. The colorful **public meeting notice adoption announcement** posters were posted on the Town's website at [www.sutton-nh.gov](http://www.sutton-nh.gov), in the Town Office, North Sutton Post Office, South Sutton Post Office, Sutton Library, and in the Solid Waste Facility. Copies of the **draft Plan and Maps** were available for public inspection at the Town Office and the

Library on February 5. Copies of the publicity are included in **CHAPTER 12. APPENDIX**. The signed Certificate of Adoption was sent to NHHSEM/FEMA.

*How and Where Public Input Was Incorporated into the Plan*

No input from the public was received during the Board of Selectmen Public Adoption Meeting. At this point in the process, it would have been too late to incorporate comments since the APA had already been issued.

On **date, 2014**, Sutton received a **Letter of Approval** from FEMA, with the Plan approval granted on **date, 2014**. The next Hazard Mitigation Plan update is due five (5) years from this date of approval, on **date, 2019**.

**Final Plan Dates**

The following is a summary of the required dates which guide the adoption and update of the Sutton Hazard Mitigation Plan. Included is the history of the Plan approvals and expiration dates.

*Original Hazard Mitigation Plan 2008*

Date of Adoption Sutton Board of Selectmen: **September 8, 2008**

Date of FEMA Final Approval: **February 12, 2009**

Plan Expiration Date: **February 12, 2014**

*Hazard Mitigation Plan Update 2014*

Date of Adoption Sutton Board of Selectmen: **February 24, 2014**

Date of FEMA Final Approval: **date, 2014**

Plan Expiration Date: **date, 2019**

## CHAPTER 2. HAZARD IDENTIFICATION

### 2014 PLAN UPDATE

The **39** identified natural, technological, and human hazards that had the potential to impact the Town were reviewed, and new *Area Events* were added as applicable. *Events in Sutton* were added to reflect recent or recalled hazard events. The *Potential Future Hazards* sections were reviewed and updated to identify locations where the risks may be greater. The probability, magnitude, and overall risk criteria for each hazard were developed and evaluated on a point-system basis.

### INTRODUCTION

The 2010 State of New Hampshire's Hazard Mitigation Plan recommends that municipalities examine the following natural hazards. Two hazards, coastal flooding and snow avalanche, are not discussed in Sutton's Plan. Other natural hazards, including separate categories of flooding (rapid pack snow melt, river ice jams, stream bank erosion and scouring, debris impacted infrastructure) and biological (epidemic) hazards have been incorporated into this Plan.

Technological hazards including hazardous materials spills, transportation accidents, and power utility failure have the ability to impact Sutton. Other technological hazards considered include explosion, building collapse, communication systems interruption, and more. Human hazard events in Sutton could be sabotage, terrorism, hostage situations, civil disturbance, etc, and have also been addressed.

This Chapter seeks to identify hazard events of all three types (natural, technological, and human) that have occurred within the Town and the surrounding area. Narrative descriptions are provided, and additional research has uncovered historical data and data which may indirectly refer to Sutton from a county- or state-wide context; all of the findings are then summarized in tabular form. The potential for such hazards to recur in Sutton is offered as well as their likely magnitude.

Many of these **39** hazards discussed will pose little to no threat to the Town. The Town wanted to acknowledge their possibility as opposed to focusing on simply three or four top hazards which will certainly impact the community. Using this broad vision allows Sutton to contemplate the impact of a variety of hazards and design emergency planning programs as appropriate. Only the most predominant hazards, or even multiple hazards, will have mitigation actions designed to try to reduce the hazards' impact. These are discussed in **CHAPTER 9. NEWLY IDENTIFIED MITIGATION ACTIONS** and prioritized in **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS**.

## RATINGS OF PROBABILITY, MAGNITUDE, AND RISK

Thirty-nine (39) natural, technological, and human hazards are evaluated within this Plan. The hazards could be primary, such as a winter snow storm, or secondary as a result of the event, such as utility failure or traffic accidents from that snow storm, with no distinction made in the Plan. Some hazards will be more likely to occur in the community than others based on past events and current conditions, and some hazards will have a greater impact than other hazards. How vulnerable Sutton could be to each of the 39 hazards can be measured in terms of **Overall Risk**.

To obtain the **Overall Risk** numerical score of a hazard, scores for **Probability of Occurrence** and **Magnitude of Impact** of an event are estimated using a corresponding scale/numerical system of **HIGH/3**, **MODERATE/2**, and **LOW/1** which are then multiplied together.

### Probability of Occurrence

The first score is calculated by gauging the likelihood of a particular hazard occurring in the Town of Sutton within the next 25 years. The **Probability of Occurrence** score is based on a Committee consensus, a limited objective appraisal using information provided by relevant sources, observations, and trends. The score is expressed using the scale system of **HIGH**, **MODERATE**, or **LOW**.

- **HIGH:** There is a high likelihood that a hazard event will occur within the next 25 years. **Score = 3**
- **MODERATE:** There is moderate likelihood that a hazard event will occur within the next 25 years. **Score = 2**
- **LOW:** There is a low likelihood that a hazard event will occur within the next 25 years. **Score = 1**

### Magnitude of Impact

A set of scores is calculated and averaged to obtain the second score, which is the hazard's **Magnitude of Impact** on the likelihood of human population injury or death, on business interruption, and on property damage within the next 25 years. The final, ranged numeric score indicates the likelihood of impact a hazard could have on Sutton from these three categories. **Magnitude of Impact** score is based on a Committee consensus, a limited objective appraisal using information provided by relevant sources, observations, and trends. The score is expressed using the scale system of **HIGH**, **MODERATE**, or **LOW**.

- **HIGH:** The likelihood of human population injury or death, business or service interruption, and property damage in the Town is based on the effects of a hazard of potentially extreme magnitude. In a worst case scenario, there could be a disaster of major to catastrophic proportions. **Score = 3**
- **MODERATE:** The likelihood of human population injury or death, business or service interruption, and property damage in the Town is based on the effects of a hazard of potentially great magnitude. In a worst case scenario, there could be a disaster of moderate to major, though not catastrophic, proportions. **Score = 2**

- **Low:** The likelihood of human population injury or death, business or service interruption, and property damage in the Town is based on the effects of a hazard of potentially limited magnitude on a smaller scale. In a worst case scenario, there could be a disaster of minor to moderate proportions. **Score = 1**

After averaging the three individual scores (human, property, and business impacts), the score ranges established to determine the conversion from the numerical system to the scale system are:

>2.5	<b>HIGH</b>
1.6 - 2.5	<b>MODERATE</b>
<1.6	<b>LOW</b>

### Overall Risk

The **Overall Risk** numeric score is one which can help the community weigh the hazards against one another to determine which hazards are most detrimental to the community and which hazards should have the most Actions developed to try to mitigate those hazards. The **Overall Risk** is calculated by multiplying the **Probability of Occurrence** numeric score by the average (of human, property, and business impacts) of the **Magnitude of Impact** numeric score. The highest numeric **Score** is **9.0**, which indicates that the **Overall Risk** is the greatest. The score is expressed using the numerical system.

The display of the **Probability of Occurrence**, **Magnitude of Impact**, and **Overall Risk** scores is illustrated in **Figures 1, 2, and 3** in **CHAPTER 12. APPENDIX** and beside each of the **39** hazards evaluated within this **CHAPTER 2. HAZARD IDENTIFICATION**.

### **NATURAL HAZARD EVENTS IN SUTTON**

Hazard events were researched using a wide variety of sources for the original **SUTTON HAZARD MITIGATION PLAN UPDATE 2008**. Sources and techniques included interviewing local townspeople, researching Town Histories and related documents, and collecting information from the 2010 State of New Hampshire Hazard Mitigation Plan and from governmental or non-profit websites.

A compilation of hazards that have impacted Sutton in the past appears in the following section. Within Sutton, the risk of each hazard has been identified as a **HIGH**, **MODERATE**, or **Low Probability of Occurrence** based on past and potential events as indicated in the following Chapters and as mapped on *Map 1: Potential Hazards* and *Map 2: Past Hazards*. Potential **Magnitude** of each hazard based upon the same assumptions through the research and indicated by the **HIGH**, **MODERATE**, or **LOW** scale is also provided.

Committee member experiences, knowledge, and recollections generally comprise the local *Events in Sutton* sections. While additional hazards might have occurred in Town, those events in the Plan are what the Committee chose to list, or were familiar with to list, to comprise the hazard events listed within the local *Events in Sutton* sections over the various versions of the Hazard Mitigation Plan. The same is true for the *Potential Future Hazards* sections.

## Flooding

Floods are defined as a temporary overflow of water onto lands that are not normally covered by water. Flooding results from the overflow of major rivers and tributaries, storm surges, and/or inadequate local drainage. Floods can cause loss of life, property damage, crop/livestock damage, and water supply contamination. Floods can also disrupt travel routes on roads and bridges. However, floods can be beneficial to the low lying agricultural areas which are used for active farm lands by enriching the soil.

SUTTON FLOODING EVENTS	
PROBABILITY -	HIGH
MAGNITUDE -	MODERATE
OVERALL RISK -	5.0

Floodplains are usually located in lowlands near rivers, and flood on a regular basis. The term *100-year flood* does not mean that a flood will occur once every 100 years. It is a statement of probability that scientists and engineers use to describe how one flood compares to others that are likely to occur. It is more accurate to use the phrase *1% annual chance flood*. This phrase means that there is a 1% chance of a flood of that size happening in any year.

Inland floods are most likely to occur in the spring due to the increase in rainfall and melting of snow; however, floods can occur at any time of year. A sudden thaw during the winter or a major downpour in the summer can cause flooding because there is suddenly a lot of water in one place with nowhere to go.

Second only to winter storms, riverine flooding is the most common natural disaster to impact New Hampshire. Floods are a common and costly hazard. They are most likely to occur in the spring due to the increase in rainfall and the melting of snow. However, they can occur anytime of the year as a result of heavy rains, hurricane, or a Nor'easter.

Homes and non-residential structures in the floodplain would be at risk during these types of events. Currently, there are **40** single family homes, **0** multi-family homes, **0** manufactured homes, and **1** non-residential building located within the Special Flood Hazard Areas in Sutton.

## Area Events

Numerous flooding events in recent history have occurred in the State, region, and the local area surrounding Sutton that may have also had an impact on the Town.

- March 11-21, 1936

In March, 1936, simultaneous high snowfall totals, heavy rains, and warm weather combined to impact Sutton and all of New England. These floods killed 24 people, caused \$133,000,000 in damage, and made 77,000 people homeless throughout New England. *Concord Monitor*

The New Hampshire State Board of Health requested health officers throughout New Hampshire to issue warnings that all water should be boiled before it be consumed (*The Union Leader, March 16, 1936*). Many private wells throughout the state were flooded; it is likely that some residents of Sutton had to boil their water before drinking it. *NH Homeland Security-Emergency Management*

- March 1936  
In Canterbury, J. Ralph Graham saved 60 head of cattle by putting them in his home during severe flooding; however, he lost 300 chickens. Canterbury and surrounding towns were significantly impacted. President Roosevelt ordered emergency relief be sent to New Hampshire. *History of Canterbury: 1933-1983*
- September 21, 1938  
New Hampshire and Southern New England were affected by the hurricane, which included isolated flooding.
- Spring 1976  
The entire region experienced spring flooding.
- July 1986 - August 10, 1986  
During severe summer storms with heavy rains, tornadoes, flash floods, and severe winds, the road network was impacted statewide.
- April 16, 1987  
Flooding caused by snowmelt and intense rain was felt in seven counties, including Merrimack County. Declared FEMA Disaster #789, nearly \$5 million in damage occurred. *NH Bureau of Emergency Management*
- August 7-11, 1990 (see also *Hurricanes and Severe Storms*)  
Flooding caused by a series of storm events with moderate to heavy rains impacted eight counties, including Merrimack County. Declared FEMA Disaster #876, over \$2 million in damage occurred. *NH Bureau of Emergency Management*
- October 1996 (see also *Hurricanes and Severe Storms*)  
Six counties experienced flooding due to heavy rains in FEMA Disaster Declaration #1144, causing \$2.3 million dollars in damage. *NH Bureau of Emergency Management*
- June 16, 1998  
One to three inches of rain caused already swollen rivers, streams and lakes to rise, flooding roads and homes and causing \$200,000 of property damage in the State. *National Climatic Data Center*
- July 1998  
Flooding from severe storms in six counties, including Merrimack County, resulted in \$3.4 million in damages in FEMA Disaster #1231. *NH Homeland Security and Emergency Management*
- October 7-18, 2005  
Extensive flooding caused by severe storms impacted five counties in FEMA Disaster Declaration #1610. *NH Bureau of Emergency Management and FEMA*
- May 13-17, 2006  
Extensive flooding caused by severe storms impacted seven counties in FEMA Disaster Declaration #1643. The USGS recorded the highest flows on record for several rivers

including the Contoocook River in Davisville village, Soucook in Concord, and Piscataquog in Goffstown. *FEMA*

- *April 13-27, 2007*  
Extensive flooding caused by severe storms impacted seven counties in FEMA Disaster Declaration #1695. *FEMA*
- *September 6-7, 2008, Severe Storms and Flooding*  
FEMA-1799-DR. In Merrimack County, damage to road systems by flooding totaled the equivalent of \$1.48 per capita (146,455 people in 2010) for town reimbursement. Hillsborough County's damage was much higher at \$6.90 per capita (400,721 people in 2010). *fema.gov*
- *February 23-March 3, 2010, Severe Winter Storm*  
FEMA-1892-DR. This severe weather event included high winds, rain, and snow over a week-long period. The primary impact was debris removal and repair reimbursement for fallen trees and powerlines. In Merrimack County, the reimbursement to communities was the equivalent of \$10.39 per capita (146,455 people in 2010), with Hillsborough County at \$3.68 per capita (400,721 people in 2010). In the Concord area, 21,000 Unitil customers were out of power at the peak outage period. *fema.gov, Unitil Energy Systems, 2010*
- *March 14-31, 2010, Severe Storms and Flooding*  
FEMA-1913-DR. Severe storms and flooding occurred over a two-week period which caused damage to roads and bridges. In Merrimack County, the reimbursement to towns for repair was \$0.28 per capita (146,455 people in 2010), and in Hillsborough County damages reimbursed were \$1.80 per capita (400,721 people in 2010). *fema.gov*
- *August 26- September 6, 2011, Tropical Storm Irene*  
*FEMA DR-4026. Carroll, Coos, Grafton, and Merrimack Counties suffered severe impacts to roads and bridges as a result of flooding from Tropical Storm Irene. In Merrimack County, the reimbursement to towns for repair was \$4.29 per capita (146,455 people in 2010). As of 07/18/12, over \$11 million of public assistance money was allocated, and over \$1.2 million of individual assistance money was allocated. fema.gov*
- *October 26-November 8, 2012, Hurricane Sandy*  
FEMA-4095-DR. Belknap, Carroll, Coos, Grafton, and Sullivan counties experienced severe damage from heavy winds and moderate flooding, although the entire state was affected. "Perfect storm" or "Superstorm" Sandy was the fourth-rated storm in NH in terms of power loss, with 218,000 customers in the dark at peak. Fallen trees and debris closed roads and caused building and vehicle damage. *FEMA, Nashua Telegraph*

### *Events in Sutton*

Currently, there are **41** buildings located within the Special Flood Hazard Areas (floodplains) in Sutton as detailed in **CHAPTER 4. POTENTIAL LOSSES**. The following events were found to have impacted Sutton.

- August 1826  
A downpour of 12" of rain in seven hours caused flash flooding in town. A small brook on the side of Mastin Road was "as wide as the Connecticut River" and changed the brook's outlet from flowing into Stevens Brook (to the Sutton River) to Cascade Brook (to the Blackwater River). *Sutton Hazard Mitigation Committee 2008*
- March 11-26, 1936  
Photos of the flood of 1936 and of the hurricane of 1938 show the roadways at North Sutton and South Sutton underwater. Canoes and rowboats were used on Route 114. *Sutton Town Historian 2008*
- October 7-18, 2005 - Columbus Day Flood  
Stevens Brook impacted a bridge on North Road. A beaver dam at the Bumcarter Road swamp area opened, and culverts could not support the water load. The Town received over \$25,000 in damages from FEMA for severe storm flooding. *Sutton Administrative Assistant 2008, Sutton Hazard Mitigation Committee 2008 & 2014*
- May 13-17, 2006 - Mother's Day Flood  
Stevens Brook again flooded a bridge on North Road. On Kearsarge Valley Road, riprap came up over the road and the culvert could not carry any more water. A recurrence of heavy rains impacted the bridge at the Country Club of New Hampshire with a great deposit of gravel stones and rocks. The water cascading down the mountain was so powerful that the road was closed due to high water and the potential for the bridge to washout. The Town received over \$79,000 in damages from FEMA for extensive road damage from severe flooding. *Sutton Administrative Assistant 2008, Sutton Hazard Mitigation Committee 2008 & 2014*
- April 15, 2007 - Spring Flood  
Stevens Brook impacted a bridge on North Road for the third flood in a row. On Kearsarge Valley Road, riprap again came up over the road and the culvert could not carry any more water. Lane River, which flows out of Kezar Lake at the Route 114 bridge, flooded at the Cressey House which was later purchased by the Historical Society. Cascade Brook regularly floods and causes damages to roadways. The Town received over \$172,000 in damages from FEMA.

The Pillsbury Memorial Hall flooded during the April 15, 2007 storm. The Town received \$6,360 in FEMA Funding because the building is on the National Register of Historic Places. The Town was able to install a sump pump in the area where it was determined the seepage occurred. It also remediated and replaced (through Property Liability insurance) an asbestos floor with a tile floor. *Sutton Hazard Mitigation Committee 2008 & 2014*

- February 23-March 3, 2010 - (Flooding) Severe Winter Storm  
 This severe winter storm event between February 23 to March 13 started with a big windstorm, and followed through with heavy rain and 6-10" of snow over a week long period which led to road washouts. During this severe winter storm, trees were downed and power was lost for three days in most of the community. Fire Department personnel were undertaking a door-to-door check, trying to reach and check on people to ensure safety. More than 10+ fire callouts were received during this time. *Sutton Hazard Mitigation Committee 2014*
- August 26-September 6, 2011 - (Flooding) Tropical Storm Irene  
 The Emergency Management Director opened the Emergency Operations Center (EOC). The Fire station was staffed in anticipation of this event, August 26-September 6. Tropical Storm Irene started with heavy rains, and quickly followed with downed trees and branches. Most damage was done on August 28 with 5" of rain. Numerous fire callouts for flooded basements were received. Power outages occurred. There was minor property damage from fallen or wind-blown debris. The Town received \$12,762 predominantly for cleanup of debris and emergency welfare checks. School was not in session for a day or two as a result of the storm. *Sutton Hazard Mitigation Committee 2014*

### **Potential Future Hazards**

Stevens Brook impacted a bridge on North Road during the last three floods. Lane River, which flows out of Kezar Lake, at the Route 114 bridge, flooded in April 2007 at the Cressey House, which was later purchased by the Historical Society. Cascade Brook regularly floods and causes damages to roadways. These sites are likely to continue flooding if another significant rain event occurs.

Because of the broad, marshy meadows along Lane River, future flood events in the vicinity of North Sutton and South Sutton can be expected to affect travel along Route 114 but are not likely to result in destructive washouts or damage to buildings. Sutton Mills, however, is located at the end of a drop of about 160 feet of the Lane River and would be more susceptible to such damage.

Lane River beaver dams on Wadleigh Hill at Pressey Bridge have a flooding potential if they were to give way.

Many roads in Sutton are vulnerable to washouts and floods. The listing of the road washouts is also found in **CHAPTER 6. FLOODPLAIN MANAGEMENT**.

- Andrews Avenue
- Archie Sawyer
- Baker Hill
- Baker Road
- Barker Road
- Beaver Pond
- Birch Hill
- Blaisdell Hill Road
- Brown Road South
- Bull Bridge Road
- Camp Kemah Road
- Chalk Pond Road
- Corporation Hill
- Cotton Road
- Eaton Grange Road
- Foothills Road
- French Road East
- Gile Pond Road
- Gold Mine Road
- Harwood Road

- High Mowing Road
- Hominy Pot Road
- Johnson Hill Road
- Jolly Farm Road
- Kearsarge Valley Road
- King Hill Road
- Lovetts Road
- Main Street
- Mastin Road
- Meadow Brook Road
- Meetinghouse Hill Road
- Music Hill Road
- Nelson Hill North
- Newbury Road
- North Road
- North Sutton area
- Old Blaisdell Road
- Penacook Road
- Pound Road North
- Pound Road South
- Poor Farm Road
- Ridge Road
- Roby Road
- Rowell Hill Road
- Route 114 (sections)
- Shadow Hill Road
- Shaker Street
- South Sutton area
- Stevens Brook Road
- Stonehouse Road
- Wadleigh Hill Road
- Winslow Circle Road
- Winslow Road

### Hurricanes and Severe Wind Storms

A hurricane is a tropical cyclone in which winds reach speeds of 74 miles per hour or more and blow in a large spiral around a relatively calm center. Flooding is often caused from the coastal storm surge of the ocean and torrential rains, both of which accompany the storm. The floods and high winds can result in loss of life and property.

SUTTON HURRICANE/STORM EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	5.0

### Area Events

Hurricane season begins on June 1 and continues through the end of November. August and September are the most active hurricane months. It is not uncommon for New England to be impacted by a hurricane more than once in a season. River and flooding due to heavy rains is a risk to Sutton during hurricanes. Numerous hurricane events in recent history have occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town.

- August, 1635  
A hurricane struck portions of New Hampshire in 1635. *NH Homeland Security and Emergency Management*
- October 18-19, 1778  
Portions of New Hampshire experienced 40-75 mph winds. *NH Homeland Security and Emergency Management*
- October 9, 1804  
A hurricane struck portions of New Hampshire in 1804. It is unknown if Sutton was one of those areas hit. *NH Homeland Security and Emergency Management*
- September 23, 1815  
Portions of New Hampshire experienced the effects of a hurricane in 1815.
- September 8, 1869  
Portions of New Hampshire experienced winds over 50 mph. *NH Homeland Security and Emergency Management*
- September 21, 1938  
New Hampshire and Southern New England were affected by the Gale of 1938, including experiencing flooding events. Extensive flooding occurred throughout the region washing out roads and bridges, flooding homes and disrupting electrical, telephone and mail services. It is unknown how the events affected Sutton. *The Only Henniker on Earth by the Henniker History Committee*

Major hurricane caused millions of dollars worth of damage to northeast. Central New Hampshire was inundated with water. Downed trees caused extensive damage to homes, businesses and community infrastructure. Roosevelt ordered emergency aid be sent to New Hampshire, including Merrimack County. *Concord Monitor*

- June 14-15, 1942  
The upper Connecticut and Merrimack River basins flooded as a result of a small cyclonic disturbance accelerated by the convergence of warm, moist air from the Tropics and colder air from Canada. Nearly 5 inches of rain fell in a 3 hour period, damaging crops, telephone lines and power lines, highways, railroads, bridges, culverts and residences. *Timeline: Boscaawen, NH*
- 1954 - 1991 Hurricanes Carol, Edna, Donna, Doria, Bell, Gloria, and Bob  
Hurricanes on August 31, 1954 (Carol - tree and crop damage), September 11, 1954 (Edna), April 12, 1960 (Donna - heavy flooding), August 28, 1971 (Doria), August 10, 1976 (Bell), September 27, 1985 (Gloria), and 1991 (Bob) impacted New Hampshire and southern New England. *NH Bureau of Emergency Management*
- July/August 1986  
Severe summer storms with heavy rains, tornadoes, flash floods, and severe winds occurred in July/August 1986. These storms were a detriment to the road network Statewide. *NH Bureau of Emergency Management*
- August 7-11, 1990 (see also [Flooding](#))  
A series of storm events with moderate to heavy rains occurred on August 7-11, caused flooding in eight counties, including Merrimack County, and resulted in a disaster declaration. The damage totaled \$2,297,777 for all counties.
- October 1996 (see also [Flooding](#))  
In October 1996, heavy rains caused flooding in six counties, including Merrimack County. A disaster was declared and damage totaled \$2,341,273 for all counties.
- July 1998 (see also [Flooding](#))  
Severe storms in July 1998 caused heavy flooding in six counties, including Merrimack County. Damages of \$3.4 million were incurred for all counties.
- July 6, 1999  
Severe storms in July 1999 bring strong damaging winds. The roof of the Pill building in Concord is blown off during a storm. *Concord Monitor 7/7/99*
- February 23-March 3, 2010 - Severe Winter Storm  
FEMA-1892-DR. This severe weather event included high winds, rain, and snow over a week-long period. The primary impact was debris removal and repair reimbursement for fallen trees and powerlines. In Merrimack County, the reimbursement to communities was the equivalent of \$10.39 per capita (146,455 people in 2010), with Hillsborough County at \$3.68 per capita (400,721 people in 2010). In the Concord area, 21,000 Unitil customers were out of power at the peak outage period. *fema.gov, Unitil Energy Systems, 2010*
- August 26-September 6, 2011, Tropical Storm Irene  
FEMA-4026-DR. Tropical Storm Irene impacted New Hampshire and damaged four counties, including Merrimack County at the equivalent of \$4.29 per capita (146,455 people in 2010). Damages to roads and bridges from flooding were the primary impact,

but power outages from downed trees and lines also occurred during high winds throughout this week-long event. *fema.gov*

- October 28-29, 2012 - Hurricane Sandy  
FEMA 4095-DR-NH. Although this disaster event was not officially declared a disaster within the Central NH Region, Belknap, Carroll, Coos, Grafton, and Sullivan counties were eligible for federal aid. Other communities in the State suffered from more minor effects, including high winds, downed trees, power outages, and road washouts. *fema.gov*

### *Events in Sutton*

The following events were found to have impacted Sutton.

- September 23-25, 1815  
In 1815, the hurricane destroyed a great deal of standing timber and reportedly drenched apples, pears, and grapes with salt water so that they seemed "as if they had been dipped in brine." [1890 town history, page 219] *Sutton Town Historian 2008*
- September 21, 1938  
The 1938 hurricane in Sutton uprooted and toppled many trees. The ground was sodden from heavy rain before the wind arrived. Many roads were blocked by falling trees, which had to be cleared away by men using crosscuts saws and axes. *Sutton Town Historian 2008*
- February 23-March 3, 2010 - (High Wind) Severe Winter Storm  
This severe winter storm event between February 23 to March 13 started with a big windstorm, and followed through with heavy rain and 6-10" of snow over a week long period which led to road washouts. During this severe winter storm, trees were downed and power was lost for three days in most of the community. Fire Department personnel were undertaking a door-to-door check, trying to reach and check on people to ensure safety. More than 10+ fire callouts were received during this time. *Sutton Hazard Mitigation Committee 2014*
- August 26-September 6, 2011 - (High Wind) Tropical Storm Irene  
The Emergency Management Director opened the Emergency Operations Center (EOC). The Fire station was staffed in anticipation of this event, August 26-September 6. Tropical Storm Irene started with heavy rains, and quickly followed with downed trees and branches. Most damage was done on August 28 with 5" of rain. Numerous fire callouts for flooded basements were received. Power outages occurred. There was minor property damage from fallen or wind-blown debris. The Town received \$12,762 predominantly for cleanup of debris and emergency welfare checks. School was not in session for a day or two as a result of the storm. *Sutton Hazard Mitigation Committee 2014*
- October 28-29, 2012 - Hurricane Sandy  
Emergency personnel staffed the Fire House, which is also the Emergency Operations Center (EOC). The Town ensured sure everything was made ready. Hurricane Sandy hit with high winds and rain in Sutton. There were downed trees and branches and as well downed power lines. Business was affected due to Town-wide internet loss by local provider (TDS Telecom). School was not in session for a day in preparation for

the storm. However, the overall damage was not significant and Hurricane Sandy impacted the Town little. *Sutton Hazard Mitigation Committee 2014*

### ***Potential Future Hazards***

It is likely that hurricanes will impact Sutton in the future. Particularly vulnerable areas include the dams and the surrounding areas. The entire Town, covered by PSNH and the NH Electric Cooperative (10 homes), is prone to power outages. PSNH's response time to power outages is often long.

The power lines in Town may be compromised by overhanging trees during a hurricane or other severe wind storm. The communications equipment on Eaton Grange Road, Mastin Road, Shadow Hill Road and Kings Hill Road could be vulnerable to hurricane and wind events. The areas which frequently lose power include North Sutton and Sutton Mills Village, which are the same areas that regularly flood. Trees fall and power is lost.

### **Rapid Snow Pack Melt**

Warm temperatures and heavy rains cause rapid snowmelt. The water cannot seep into the frozen ground in early spring and so it runs off into streets and waterways. Quickly melting snow coupled with moderate to heavy rains are prime conditions for flooding.

<b>SUTTON RAPID PACK SNOW MELT EVENTS</b>	
<b>Probability -</b>	<b>HIGH</b>
<b>Magnitude -</b>	<b>MODERATE</b>
<b>Overall Risk -</b>	<b>5.0</b>

### **Area Events**

Numerous rapid snow pack melt events in recent history have likely occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town.

- February 11-16, 1824  
Heavy rains melted snow causing flooding on the Merrimack River; one of the piers on the Hooksett Bridge was destroyed. On the Concord Upper and Lower Bridges, 5 piers and parts of the structures were carried away by the waters. Bridges, mills and dams were either carried away or were destroyed in Canterbury, Henniker, Sutton and Weare. *Timeline: Boscawen, NH*
- March 11-21, 1936  
The great flooding of 1936 resulted in part from heavy rains but also from rapid snow pack melt. Snow north of Concord contributed to the higher waters in the Winnepesaukee, Contoocook and Pemigewassett Rivers. These flooded rivers were largely responsible for the destruction in Concord and the surrounding area. *Concord Monitor*
- Spring, 1976  
The entire region experienced spring flooding. *NH Bureau of Emergency Management*
- March 14, 1977  
With the peak record of the Soucook River, area communities experienced flooding. *NH Bureau of Emergency Management*
- April 16, 1987 (see also Flooding)  
Caused by rapid snowmelt and intense rain, statewide the damage totaled nearly \$5 million.

### **Events in Sutton**

The following events were found to have impacted Sutton.

- March 11-21, 1936  
The photos of the flood of 1936 and of a hurricane of 1938 showed the roadways at both North Sutton and South Sutton underwater. Canoes and rowboats were used on Route 114. *Sutton Town Historian 2008*
- May, 1976  
A late season snowstorm with heavy rain resulted in major run off and flooding of roads and culverts. *Sutton Hazard Mitigation Committee 2014*

*Potential Future Hazards*

South Sutton flooding on Route 114 is likely to occur again. Every gravel road in Town has been shut down at one time or another because of flooding. Roads which are flat and have a steep slope include Birch Hill, Pound Road North, Rowell Hill, Baker Hill, French Road, and other town roads.

### River Ice Jams

Rising waters in early spring often break ice into chunks, which float downstream, pile up and cause flooding. Small rivers and streams pose special flooding risks because they are easily blocked by jams. Ice in riverbeds and against structures presents significant flooding threats to bridges, roads, and the surrounding lands.

SUTTON RIVER ICE JAM EVENTS	
Probability -	<b>HIGH</b>
Magnitude -	<b>LOW</b>
Overall Risk -	<b>3.0</b>

### Area Events

Numerous ice jam events in recent history have likely occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town.

- April 12, 1812  
Ice chunks carried 100 feet of a Concord bridge downstream on the Merrimack River. *History of Concord (Bouton)*
- March 12, 1936  
As a result of heavy snowfall totals, heavy rains, and warm weather, ice chunks jammed the Contoocook River. *US Army Corps of Engineers NH Ice Jams Database*
- April 3, 1959  
As reported by the US Army Corps of Engineers, "Maximum annual gage height of 12.03 feet, affected by backwater from ice, reported at USGS gage Soucook River near Concord, on April 3, 1959." *US Army Corps of Engineers NH Ice Jams Database*
- March 19, 1968  
As reported by the US Army Corps of Engineers, "Maximum annual gage height, 10.48 feet due to an ice jam recorded at USGS gage Soucook River near Concord, New Hampshire on March 19, 1968." *US Army Corps of Engineers NH Ice Jams Database*
- March 14, 1977  
In the State, an ice jam caused major disruption to the road networks as a result of road washouts. *NH Homeland Security and Emergency Management*

### Events in Sutton

The following events are found to have impacted Sutton.

- Circa 1975  
Photographs collected by the History of Sutton II Committee about 30 years ago show an ice jam on Stevens Brook being dynamited. Evidently it had been considered enough of a threat to require action. *Sutton Town Historian*

### Potential Future Hazards

Roby Road, Lane River, Stevens Brook (again), and North Road may be impacted by river ice jams. Because of the small size of Sutton's rivers and brooks, ice jams are not a major problem.

### Dam Breach and Failure

Dam failure results in rapid loss of water that is normally held by the dam. These kinds of floods are extremely dangerous and pose a significant threat to both life and property.

### Area Events

Numerous dam breaches in recent history have likely occurred in the State, region, and the local area surrounding Sutton that may have also had an impact on the Town.

SUTTON DAM BREACH EVENTS	
Probability -	Low
Magnitude -	Low
Overall Risk -	1.0

- May 15, 2006

The Pillsbury Lake Dam in Webster, holding back an artificial lake of about 70 acres, was breached by flooding due to heavy rains. The earth and concrete dam, which blocks the Dear Meadow Brook, was built in the 1960s, creating the Pillsbury Lake District with about 180 households. Floodwaters punched out a 20-foot breach in the dam. The Lake's level fell from 15 feet at its deepest point to about two feet at that same point following the event. *Concord Monitor, 5/18/06*

### Events in Sutton

There are currently **19** dams in Sutton in the 2011 New Hampshire Dam database retained by the Department of Environmental Services Dam Bureau. According to RSA 482:2 II, a dam is any artificial barrier which impounds or diverts water, has a height of four feet or more or has a storage capacity of two acre-feet or more, or is located at the outlet of a great pond. Inactive dams are defined as dams that do not meet the legal definition of a dam. Of the **19**, there are **6** inactive/unclassified dams listed in Sutton that do not meet the above definition and may be in ruins, exempt, breached, removed, or never built.

Each of the **13** active dams is categorized into one of four classifications which are differentiated by the degree of potential damages that a failure of the dam is expected to cause. The classifications are designated as High Hazard (H), Significant Hazard (S), Low Hazard (L), and Non-Menace (NM).

Sutton has **10 NM** dams. One (**1**) **S** dam is situated in Town, the Chadwick Meadow Wildlife Refuge Dam on Lyons Brook. Two (**2**) **L** dams are the Blaisdell Lake Dam on a tributary of the Warner River, and the Cascade Brook Dam on Cascade Brook.

- Significant (S) Hazard Dams - Chadwick Meadow Wildlife Refuge Dam (Lyons Brook)
- Low (L) Hazard Dams - Blaisdell Lake Dam (Warner River), and Cascade Brook Dam (Cascade Brook)

The following events are found to have impacted Sutton.

- October 7-18, 2005 - Columbus Day Flood

A beaver dam at the Bumcarter Road swamp area opened, and culverts could not support the water load. *Sutton Hazard Mitigation Committee 2008*

*Potential Future Hazards*

The Town has never had a dam breach. Dams in Sutton at Kezar Lake and on Lane River beside the library are small enough so that floodwaters flow over or around them and are unlikely to breach. However, the private dam at the corner of Kearsarge Valley Road and North Road is suffering from deferred maintenance. There is concern with future breach at this location. The breaching of the dam at Blaisdell Lake near the south boundary of Town would have an impact in Bradford and Warner but not in Sutton. Dams are listed in **Table 4**.

### Stream Bank Erosion and Scouring

Watercourses which are particularly prone to flash-flooding conditions are most vulnerable to erosion and scouring. These types of rivers are primarily found at higher elevations.

#### Area Events

Bank erosion events in recent history have likely occurred in the State, region, and the local area surrounding Sutton.

SUTTON BANK EROSION EVENTS	
Probability -	MODERATE
Magnitude -	LOW
Overall Risk -	2.0

- May 14 - 17, 2006

The Suncook River, through Epsom, changed its course during this recent heavy rain event and its resultant flooding. The River shifted hundreds of meters, flowing around two dams, creating about a mile of new river through a sand pit a half mile from its original course, and leaving a similar length of dry riverbed. The water carved through peat bogs and tore away a corner of a sand excavation pit. Pittsfield experienced bank erosion as their floodgates failed, and Epsom, Allenstown, and Pembroke later dealt with siltation issues from the new river course. *Concord Monitor, 5/18 - 5/23/06.*

#### Events in Sutton

The following events are found to have impacted Sutton.

- August 8, 1826

This terrific downpour (the same storm that caused the Willie Slide in Crawford Notch) gouged out "awful gulfs and ravines" where a relatively minor brook ran on the side of Mount Kearsarge and ruined fields with a great "deposit of gravel stones and rocks" in the vicinity area of today's Country Club of New Hampshire. *Sutton Town Historian 2008*

- Circa May - Mid 1980s

The bridge beyond Baker Road on Kearsarge Valley Road was at risk for washout due to heavy rains and large amounts of rock and debris cascading down mountain. *Sutton Hazard Mitigation Committee 2014*

- May 2006 - Mother's Day Flood

A reoccurrence of heavy rains impacted the bridge at the Country Club of New Hampshire with a great deposit of gravel stones and rocks. The water cascading down the mountain was so powerful that the road was closed due to high water and the potential for the bridge to washout. *Sutton Hazard Mitigation Committee 2014*

#### Potential Future Hazards

A potential exists for erosion on North Road from Steven's Brook and onto Roby Road from the Lane River (Kezar Lake). Bank erosion and scouring could continue due to flooding and heavy rains. The Town will continue to monitor areas for future damages.

### Debris Impacted Infrastructure

Debris carried by floodwaters that compromises the effectiveness of bridges, dams, culverts, diverting structures, etc. This debris may compound a flooding hazard by obstructing normal floodwater flow.

Debris impacted infrastructure could also be comprised of downed trees, limbs, or power-lines onto roadways.

These roads are typically considered unsafe to pass under such conditions until the debris has been cleaned up or moved out of the travel way and the power lines restored.

SUTTON DEBRIS IMPACTION EVENTS	
Probability -	HIGH
Magnitude -	LOW
Overall Risk -	2.67

### Area Events

Debris impaction events in recent history have likely occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town.

- 2005-2011, Recurring Debris Impacted Infrastructure Events  
In Concord, Bow Brook originates at Thayer Pond, having the potential to overflow and to be impacted by debris. School Street, Warren Street, Pleasant, the State Hospital, Clinton Street, South Street, and Rockingham Street were washed out by Bow Brook during flooding events. The City received federal money to repair Pleasant and Warren Streets. *Concord Hazard Mitigation Task Force 2011*
- May 31, 2006  
In Warner, debris carried by heavy rains damaged the West Joppa Road Covered Bridge. *Warner Hazard Mitigation Committee 2008*

### Events in Sutton

The following events are found to have impacted Sutton.

- August 8, 1826  
The flooding in August 1826 carried away many bridges in Town and destroyed sawmills. Israel Morrill's mill on the short section of the Warner River in Sutton and next to what was probably the largest bridge in Town was destroyed. There is no record of the effect on the flooding of the bridge, which was later the site of Sutton's only covered bridge and which today is the site of the concrete bridge closed to vehicle traffic. *Sutton Town Historian*
- May 13-17, 2006 - Mother's Day Flood  
During the fall and spring floods, on Kearsarge Valley Road, riprap came up over the road and the culvert could not carry any more water. *Sutton Hazard Mitigation Committee 2008*
- April 15, 2007 - Spring Flood  
During the fall and spring floods, on Kearsarge Valley Road, riprap came up over the road and the culvert could not carry any more water. *Sutton Hazard Mitigation Committee 2008*

*Potential Future Hazards*

The State-owned Route 114 bridge over the Lane River in South Sutton is low-lying. Shaker Street has experienced problems. There are over 300 culverts in town, and all could have water load issues.

The following culverts are undersized and should be replaced or regularly maintained to ensure their carrying capacity:

- Nelson Hill North
- Chalk Pond Road
- Baker Hill Road
- Meeting House Hill Road
- Shaker Street
- Jolly Farm Road
- Keyser Street (Box Culvert)

**Tornadoes**

Significantly high winds and occur especially during hurricanes, winter storms, and thunderstorms, but can also exist independent of other storms. Falling objects and downed power lines are dangerous risks associated with high winds. In addition, property damage and downed trees are common during high wind occurrences.

SUTTON TORNADO EVENTS	
Probability -	<b>MODERATE</b>
Magnitude -	<b>LOW</b>
Overall Risk -	<b>2.0</b>

A tornado is a violent windstorm characterized by a twisting, funnel shaped cloud. They develop when cool air overrides a layer of warm air, causing the warm air to rise rapidly. The atmospheric conditions required for the formation of a tornado include great thermal instability, high humidity, and the convergence of warm, moist air at low levels with cooler, drier air aloft. Most tornadoes remain suspended in the atmosphere, but if they touch down they become a force of destruction.

Tornadoes produce the most violent winds on earth, at speeds of 280 mph or more. In addition, tornadoes can travel at a forward speed of up to 70 mph. Damage paths can be in excess of one mile wide and 50 miles long. Violent winds and debris slamming into buildings cause the most structural damage. The tornado is usually accompanied by thunder, lightning, heavy rain, and a loud "freight train" noise. In comparison to a hurricane, a tornado covers a much smaller area but can be more violent and destructive.

The Enhanced Fujita Scale replaced the Fujita Scale in 2007 as the standard scale for rating the severity of a tornado as measured by the damage it causes. Enhanced Fujita (EF) Scale had a more consistent assessment of damage with 28 damage indicators, but kept the original Fujita (F) Scale database intact. Wind speeds for the EF Scale were modified to be more accurate estimates. On February 1, 2007, wind speeds of the EF Scale changed to:

Enhanced Fujita (EF) Scale		Fujita (F) Scale	
2007 - present	3 second gust mph	1971- 2007	3 second gust mph
• EF0 - 65-85 mph	-	• F0 - 45-78 mph	Gale
• EF1 - 86-110 mph	-	• F1 - 79-117 mph	Weak
• EF2 - 111-135 mph	-	• F2 - 118-161 mph	Strong
• EF3 - 136-165 mph	-	• F3 - 162-209 mph	Severe
• EF4 - 166-200 mph	-	• F4 - 210-261 mph	Devastating
• EF5 - over 200 mph	-	• F5 - 262-317 mph	Incredible

**Area Events**

Numerous tornadoes in recent history have occurred in the State, region, and the local area surrounding Sutton that may have also had an impact on the Town.

Between 1791 and 1821, six tornadoes rated F2 or higher on the Fujita Scale (winds between 113-157 mph causing considerable damage) have occurred in Hillsborough County (Office of Emergency Management). The worst tornado to in the area was rated an F3 (winds between 158-206 mph causing severe damage, which includes roofs and some walls torn off well-constructed homes, and heavy cars lifted and thrown) and occurred on August 20, 1968. The worst tornado ever to strike New England was the Worcester Tornado of July 9, 1953. Within

one minute 90 people were killed and over 1,300 injured. Damage was estimated to exceed \$52 million.

Tornadoes can occur at any time of the year, although they are rare outside of the warm season. The peak months of tornado occurrence in the Northeast are June through August, with August being the most frequent month. Thunderstorms have been responsible for spawning tornadoes in many parts of New England. On average, six tornadoes per year touch down somewhere in New England. Damage from tornadoes is caused as a result of high wind velocity and wind blown debris. It is a likely possibility a tornado could touch down in Merrimack County again and even in Sutton.

- Early Tornadoes, 1791-1821  
Four tornadoes rated F2 or higher on the Fujita Tornado Damage Scale (winds between 113-157 mph causing considerable damage) occurred in Merrimack County on July 14, 1791, September 5, 1792, July 1793, and on September 9, 1821. *NH Homeland Security and Emergency Management*
- Spring, 1927  
In the Spring of 1927 a cyclone (tornado) and a flood hit New Hampshire and downed many trees in Bow and Concord. Water height peaked at 12 feet, 2 inches over Sewall's Fall Dam in Concord.
- July 23, 1946  
A tornado struck and damaged the National Guard Armory on Airport Road. *Concord Daily Monitor*
- July 9, 1953  
The worst tornado ever to strike New England was the Worcester Tornado of July 9, 1953. Within one minute, 90 people were killed and over 1,300 injured. Damage was estimated to exceed \$52 million.
- Tornadoes, 1962 - 1976  
Three separate tornadoes, all of an F1 intensity, touched down in Merrimack County. The March 31, 1962 tornado had caused no injuries, but in the July 12, 1967 and August 15, 1976 tornadoes, five people were injured during each event. *The Tornado Project*
- July 27, 1979  
The Concord Monitor reported that during a severe thunder and lightning storm, a small twister was sighted at Beaver Meadow, where 13 trees were toppled, including a 100-foot tall pine. The duration was about 15-20 seconds. *Concord Daily Monitor*
- July 24, 2008, Severe Storms, Tornado, and Flooding  
FEMA-1782-DR. An EF1 - EF2 tornado touched down in Rockingham County then proceeded into another county. In Merrimack County, the tornado was rated up to an EF-3. The tornado killed a woman in Deerfield trapped in a collapsed house. In the county, there was substantial damage from the tornado and the storm which totaled the equivalent of \$1.12 per capita (146,455 people in 2010) for the towns' debris removal reimbursement costs. A total of 123 residences statewide were affected, with

17 destroyed and another 37 suffering major damage. Damage was estimated to exceed \$10 million. *fema.gov*

### *Events in Sutton*

The following events were found to have impacted Sutton.

- September 9, 1821  
A tornado swept through Sutton leveling 10,000 acres of forest and causing about six to ten thousand dollars' worth of damage. *History of Sutton by Wadleigh and Worthen 2008*

### *Potential Future Hazards*

Significantly high winds occur especially during hurricanes, tornadoes, winter storms, and thunderstorms. Falling objects and downed power lines are dangerous risks associated with high winds. In addition, property damage and downed trees are common during high wind occurrences. All utilities, including power lines, are at risk and their damage or destruction would create a hazard to the Town.

The whole Town could be impacted by a tornado. The Villages would be most vulnerable, as tornadoes travel through flat areas and valleys. A tornado would most likely occur in the northeastern to southwestern portion of Town as occurred 1821. The Sutton Central School (K-5), Kearsarge Regional School, and Kearsarge High School would be the most vulnerable in terms of population.

Systems failures could affect Town businesses and local government on a large scale. Sutton has 4 cell towers that provide coverage to parts of Town. In East Sutton, no communications are available. Roby Road and Jolly Farm Road do not have cellular capability, and it is difficult to dispatch by radio. On sections of Route 114 and in South Sutton, cellular reception is problematic. The Town uses analog radios but has digital capability. New equipment has recently been obtained, but topography regularly interferes with cellular and radio transmissions. A communications interruption or failure could affect the capabilities of emergency personnel.

The communications equipment on top of Mt. Kearsarge belongs to state agencies, federal agencies and private cell phone companies. The state repeaters and other equipment could be vulnerable to lightening events. Towns' emergency services have their own separate antennas including the highway department, police department and fire station.

There are four (4) cell towers in the Town of Sutton located at Eaton Grange, King Hill, Shadow Hill and one on Mastin Road. A tall communications tower could possibly be damaged in the event of a tornado. A communications interruption or failure resulting from damage to the tower could affect the capabilities of emergency personnel.

### Downbursts

A downburst is a severe localized wind blasting down from a thunderstorm. These "straight line" winds are distinguishable from tornadic activity by the pattern of destruction and debris. Downbursts are capable of producing winds of up to 175 mph and are life threatening. Downbursts fall into two categories:

- microburst, which covers an area less than 2.5 miles in diameter and
- macroburst, which covers an area equal to or greater than 2.5 miles in diameter.

SUTTON DOWNBURST EVENTS	
Probability -	<b>MODERATE</b>
Magnitude -	<b>LOW</b>
Overall Risk -	<b>2.67</b>

### Area Events

Numerous downbursts in recent history have occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town.

- August 18, 1991  
Five people were killed and 11 were injured in Stratham resulting from an isolated downburst that also caused \$2.5 M in damage. *NH Hazard Mitigation Plan*
- December 1998  
Bradford/Newbury Town line off Route 103/Lake Todd area. Trees were snapped in an area about 100 yards wide and about a mile long. *Bradford Hazard Mitigation Committee 2007*
- July 6, 1999  
A downburst impacted three counties in New Hampshire, including Hillsborough County. It resulted in 2 deaths. Also, two roofs were blown off and widespread power outages occurred. The downburst was designated a macroburst (at least 2.5 miles in diameter). *NH Homeland Security and Emergency Management*
- May or June of 2005  
A microburst hit the Concord Country Club, which caused downed trees and loss of power. No injuries were reported. *Concord Hazard Mitigation Task Force 2011*
- September 9, 2009  
Northwood Lake was impacted by a possible downburst. Trees fell on homes and on roads. Storm debris forced 16 road closures and damaged six structures. During a thunderstorm, rain and 15 minutes of hail reported to be the size of golf balls impacted the Town. *wmur.com*
- September 5, 2011  
In Bow, a 60mph microburst damaged or destroyed a dozen campers in the area of Route 3A between Grandview and Down Road. No injuries were reported. Telephone service at the Town's Police dispatch center was also disrupted. *Unionleader.com 09/06/11*

### *Events in Sutton*

The following events are found to have impacted Sutton.

- *Circa 1997*  
On Fox Chase Road and Jolly Farm Road, a swath of trees was laid flat. Trees were also cut down in Newbury off the reservoir. No houses or power lines were damaged.  
*Sutton Hazard Mitigation Committee 2008*

### *Potential Future Hazards*

Downbursts are considered a greater threat than tornadoes in Sutton. The vulnerabilities are similar, with historic resources and exposed, taller buildings, communications towers, and utilities most likely to be affected. The Villages would be most vulnerable, as tornadoes travel through flat areas and valleys. A tornado would most likely occur in the northeastern to southwestern portion of Town as occurred 1821. The Sutton Central School (K-5), Kearsarge Regional School, and Kearsarge High School would be the most vulnerable in terms of population.

As in the case of a tornado, if there were a downburst in town with severe localized winds, all utilities would be at risk of damage. Utilities and communication are critical to the Town and the inhabitants' safety in the event of a hazard. Tornadoes and downbursts are very isolated events and it is hard to predict where they will strike. High occupancy buildings and tall buildings are more vulnerable in the event of a downburst.

Systems failures could affect Town businesses and local government on a large scale. Sutton has 4 cell towers that provide coverage to parts of Town. In East Sutton, no communications are available. Roby Road and Jolly Farm Road do not have cellular capability, and it is difficult to dispatch by radio. On sections of Route 114 and in South Sutton, cellular reception is problematic. The Town uses analog radios but has digital capability. New equipment has recently been obtained, but topography regularly interferes with cellular and radio transmissions. A communications interruption or failure could affect the capabilities of emergency personnel.

The communications equipment on top of Mt. Kearsarge belongs to state agencies, federal agencies and private cell phone companies. The state repeaters and other equipment could be vulnerable to downburst events. Towns' emergency services have their own separate antennas including the highway department, police department and fire station.

There are four (4) cell towers in the Town of Sutton located at Eaton Grange, King Hill, Shadow Hill and one on Mastin Road. A tall communications tower could possibly be damaged in the event of a tornado. A communications interruption or failure resulting from damage to the tower could affect the capabilities of emergency personnel.

### Lightning

All thunderstorms contain lightning. During a lightning discharge, the sudden heating of the air causes it to expand rapidly. After the discharge, the air contracts quickly as it cools back to ambient temperatures. This rapid expansion and contraction of the air causes a shock wave that we hear as thunder, a shock wave that can damage building walls and break glass. Lightning strikes can cause death, injury, and property damage. Lightning is often referred to as the “Underrated Killer”. New Hampshire ranks 16<sup>th</sup> in the US for casualties from lightning strikes.

SUTTON LIGHTNING EVENTS	
Probability -	HIGH
Magnitude -	LOW
Overall Risk -	4.0

### Area Events

Localized lightning strikes in recent history have likely occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town.

- Early 1900s  
In Warner, several homes were struck by lightning and burned on Collins District Road. *Warner Hazard Mitigation Committee*
- September 1979  
In Warner, a barn on Kearsarge Mountain Road was struck by lightning and destroyed. Four animals were killed. *Warner Hazard Mitigation Committee*
- July 1995  
Lightning and resulting fire destroyed a 200 year-old farmhouse causing \$200,000 damage. *National Climatic Data Center*
- July 1997  
Lightning ignited a massive 21 alarm fire. More than 200 firefighters and 50 trucks battled the blaze that eventually gutted a lumber yard. *National Climatic Data Center*
- June 12, 2005  
During a thunderstorm, lightning struck and severely damaged the historic Loudon Town Hall on Clough Hill Road. *Loudon Hazard Mitigation Committee, 2005*

### Events in Sutton

The following events are found to have impacted Sutton.

- 1830s Events  
In 1830, lightning struck the home of Charles Hart and killed his son Joseph. Horace Eaton, probably in the 1830s, was struck by lightning on the Eaton Grange Road but survived. *Sutton Town Historian 2008*
- Circa 1945  
Wadleigh Hill Road - barn struck by lightning. Burnt flat. *Sutton Hazard Mitigation Committee 2014*

- Circa 1948  
Arthur Davis house on North Road was struck by lightning and burned flat. *Sutton Hazard Mitigation Committee 2014*
- Circa 1997  
A log home on the Newbury Road was struck by lightning. It was significantly damaged, and pets were lost in the blaze. *Sutton Hazard Mitigation Committee 2008*
- July 2006  
A home on Route 114 was damaged by lightning. *Sutton Hazard Mitigation Committee 2008*
- July 2007  
A barn on Baker Hill road was struck by lightning. Vehicles, hay, and geese were lost in the fire. *Sutton Hazard Mitigation Committee 2008*

### ***Potential Future Hazards***

Lightning can strike at any given location. Specific sites in Sutton which would cause the greatest impact if struck by lightning are the utilities, and transformers. Additionally, if the communications towers on Eaton Grange, Mastin Road, Shadow Hill Road and Summit Road (King's Hill) were struck, essential communications would be interrupted. Other vulnerable sites are remote areas that cannot be easily accessed by emergency vehicles. Sutton is a hilly town, but lightning also hits in the valleys. Trees are constantly struck, but buildings sometimes are struck.

Systems failures could affect Town businesses and local government on a large scale. Sutton has 4 cell towers that provide coverage to parts of Town. In East Sutton, no communications are available. Roby Road and Jolly Farm Road do not have cellular capability, and it is difficult to dispatch by radio. On sections of Route 114 and in South Sutton, cellular reception is problematic. The Town uses analog radios but has digital capability. New equipment has recently been obtained, but topography regularly interferes with cellular and radio transmissions. A communications interruption or failure could affect the capabilities of emergency personnel.

### Wildfire

Wildfire is defined as any unwanted and unplanned fire burning in forest, shrub or grass. Wildfires are frequently referred to as forest fires, shrub fires or grass fires, depending on their location. They often occur during drought and when woody debris on the forest floor is readily available to fuel the fire. The threat of wildfires is greatest where vegetation patterns have been altered by past land-use practices, fire suppression and fire exclusion. Because fire is a natural process, fire suppression can lead to more severe wildfires due to vegetation buildup.

SUTTON WILDFIRE EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	5.0

Increased magnitude can decrease capability to extinguish wildfires. Wildfires are unpredictable and usually destructive, causing both personal property damage and damage to community infrastructure and cultural and economic resources. Negative short term effects of wildfires include destruction of timber, forage, wildlife habitats, scenic vistas and watersheds. Effects in the long term include those mentioned above, as well as reduced access to recreational areas and poorer water quality caused by sediment, burned debris and chemicals.

### Area Events

Wildfire events in recent history have likely occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town.

- August 2002  
One of the hottest Augusts on record in Concord along with drought conditions since March made for a high fire danger in New Hampshire. Numerous forest fires were reported, including a 30-acre blaze in New Durham. *Concord Monitor 8/20/02*
- April 2006  
A wildfire in Webster burned over five acres throughout the night. Fire crews had to dig embers out of the soil that were 4 to 5 inches deep. The Forest Ranger commented that embers embedded that deep in the soil at that time of year was very unusual. *WMUR 4/20/06*
- April 29, 2006  
A freight train sparked brush fires along tracks in Bow, Hooksett and Manchester. In Bow, a 50' by 350' fire was spreading toward the woods when officials arrived on the scene. Concord Fire Chief said that fires sparked by trains are not unusual and they are typically caused by exhaust coming out of the stack. *WMUR News*
- Forest Fire late 1970s  
A large fire in the Mink Hill area in Warner inflicted considerable damage. *Warner Town Historians*

### *Events in Sutton*

The following events are found to have impacted Sutton.

- *Summer 1901*  
In the summer of 1901, there is a fire which burned for several days, probably along the Eaton Grange Road. The 1902 annual Town report listed the names of 68 men for "fighting fire on the Eaton lot." This event was during the era of steam powered, portable sawmills and of ample "slash" left behind after logging. *Sutton Town Historian 2008*
- *Circa 1978*  
Brush fire on Old Blaisdell Road. Approximately 1 acre in damage. *Sutton Hazard Mitigation Committee 2014*
- *Circa 1987*  
On Thanksgiving morning, lightning struck at Dresser Hill. The fire was difficult to fight, as it was on the side of a hill. *Sutton Hazard Mitigation Committee 2008*

### *Potential Future Hazards*

Perhaps the single greatest threat in Sutton is fire, as most of the homes are situated in the woods. Sutton is heavily wooded, with difficult, remote areas and many slopes. Rowell Hill is remote, as is the Palmer Town slope with Mount Kearsarge. King Hill Reservation is particularly vulnerable to fire as it is not as readily accessible for fire apparatus.

### Severe Winter Weather

Ice and snow events typically occur during the winter months and can cause loss of life, property damage, and tree damage.

A winter storm can range from moderate snow to blizzard conditions. Blizzard conditions are considered blinding, wind-driven snow over 35 mph that lasts several days. A severe winter storm deposits four or more inches of snow during a 12-hour period or six inches of snow during a 24-hour period.

SUTTON SEVERE WINTER WEATHER EVENTS	
Probability	HIGH
Magnitude -	MODERATE
Overall Risk -	6.0

An ice storm involves rain, which freezes upon impact. Ice coating at least one-fourth inch in thickness is heavy enough to damage trees, overhead wires, and similar objects. Ice storms also often produce widespread power outages.

A Nor'easter is a large weather system traveling from South to North, passing along or near the seacoast. As the storm approaches New England and its intensity becomes increasingly apparent, the resulting counterclockwise cyclonic winds impact the coast and inland areas from a Northeasterly direction. In the winter months, oftentimes blizzard conditions accompany these events. The added impact of the masses of snow and/or ice upon infrastructure often affects transportation and the delivery of goods and services for extended periods.

Extreme cold temperatures are associated with continental Arctic air masses. The actual temperatures reached depend specifically on the nature of the cold air mass and where it originated. In general, those from the Arctic regions are the coldest. Though cold temperatures are dangerous in their own right, they become more so in conjunction with strong winds. The combination produces a wind-chill factor - heat loss measured in Watts per meter squared ( $Wm^{-2}$ ). A wind-chill factor of  $1400 Wm^{-2}$  is equivalent to a temperature of -40 degrees F. At  $2700 Wm^{-2}$ , exposed flesh freezes within a half minute.

All winter storms make walking and driving extremely dangerous. The elderly and very young are at high risk during winter storms and may be affected by hypothermia and isolation. During winter storms, there is an increased risk of fire because people may lose electricity and use candles, portable gas stoves, and other flammable sources of heat and light (*Northeast States Emergency Consortium*).

Winter snow events are as common in Sutton as they are in the entire western half of New Hampshire. Sutton's steep slopes and hills, numerous Class VI and gravel roads, Route 3A, Interstate 93, and its magnitude of water features suggest a high potential for icing, damage, power outages, and impassibility when ice and storm events hit.

### *Area Events*

Numerous severe winter events in recent history have occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town. Unlike the relatively infrequent hurricane, New Hampshire generally experiences at least one or two Nor'easters each year with varying degrees of magnitude. These storms have the potential to inflict more damage than many hurricanes because the high storm surge and high winds can last from 12 hours to 3 days, while the duration of hurricanes ranges from 6 to 12 hours. Severe winter storms, including Nor'easters, typically occur during January and February. However, winter storms can occur from late September through late May.

Typically, infrastructure and critical facilities are impacted by heavy snow. The added impact of the masses of snow and/or ice upon infrastructure often affects transportation and the delivery of goods and services for extended periods. Power outages are also a common impact during snowstorms. The following descriptions are of heavy snowstorms that have additional detail.

- May 17, 1794  
On a negative note, a "great frost" destroyed the grain crop for the year and on a positive note it also destroyed the canker worms which had been destructive to vegetation. *Timeline: Boscawen, NH*
- January 11, 1810  
Portions of New Hampshire were affected by a severe cold snap and high winds which blew the roofs off of houses. *Pembroke Town History; Timeline: Boscawen, NH*
- Year of 1816  
Portions of New Hampshire experienced a very cold year. Little corn was raised during the year because of the cold weather. In some places there was a frost throughout the year. *Pembroke Town History*
- March 11-14, 1888  
All of New England experienced a major snowstorm with snow accumulations of 30-50 inches, one of the most severe winter storms to ever hit New England. *States Emergency Consortium*
- December 17-20, 1929  
On December 17-20, 1929, an ice storm caused unprecedented disruption and damage to telephone, telegraph and power systems throughout the State. *US Army Corps of Engineers NH Storms database*
- December 29-30, 1942  
On December 29-30, 1942, a severe glaze ice storm impacted the entire State. *US Army Corps of Engineers NH Storms database*
- Snowstorms, 1940-1978  
Ten severe snowstorms are documented in south-central New Hampshire during this time span, February 14-15, 1940 (depths over 30" and high winds), February 14-17, 1958 (20-33"), March 18-21, 1958 (22-24"), March 2-5, 1960 (up to 25"), January 18-20, 1961 (up to 25", blizzard conditions), January 11-14, 1964 (up to 12"), January 29-

31, 1966 (up to 10"), February 22-28, 1969 (24-98", slow-moving storm), December 25-28, 1969 (12-18"), January 19-21, 1978 (up to 16"). Accumulations ranged from 10-33 inches in the area and even to 98 inches in the western portion of the State. *American Meteorological Society*

- December 22, 1969-January 17, 1970  
Many communities experienced power disruption during this long ice storm period. *US Army Corps of Engineers NH Storms database*
- February 5-7, 1978  
This snowstorm is described as "a natural disaster of major proportions" and stunned all of New England. The storm was caused by an intense coastal Nor'easter that produced winds in excess of hurricane force and very high snow totals. Most of southern New England received more than three feet of snow, 25-33" in NH and higher throughout New England. Abandoned cars along roadways immobilized infrastructure and blocked major interstates. For over a week, New England remained paralyzed by the storm. All of New Hampshire was impacted. Governor Meldrim Thomson Jr. declared a state of emergency. *American Meteorological Society, Northeast States Emergency Consortium*
- January 8-25, 1979  
Impacts from this ice storm were felt throughout the State of New Hampshire. There were major disruptions to power and transportation in many communities. *US Army Corps of Engineers NH Storms database*
- Snowstorms, 1982-2001  
Four major snowstorms impacted New England, on April 5-7, 1982 (18-22"), in March 1993, in February 1996 (snow, ice and bitter temperatures), and in March 2001. *American Meteorological Society, Northeast States Emergency Consortium, Suncook-Hooksett Banner March 7, 1996*
- March 3-6, 1991  
This ice storm impacted the entire State of New Hampshire. Numerous outages from ice-laden power lines in southern New Hampshire occurred. *US Army Corps of Engineers NH Storms database, NH Bureau of Emergency Management*
- December 1996  
Heavy snowfall hit the State of New Hampshire December, 1996.
- January 7, 1998  
This ice storm had severe impacts throughout most of the State, with 52 communities impacted. FEMA Disaster Declaration #1199, Six injuries and one death resulted. Damage totaled \$12,446,202. In addition, there were 20 major road closures, 67,586 people left without electricity, and 2,310 people without phone service. *US Army Corps of Engineers NH Storms database, NH Bureau of Emergency Management*
- March 23, 1999  
This storm hit New Hampshire with snow and wind. Two feet of snow fell overnight on Mt. Washington and approximately 18,000 New Hampshire residents lost electricity.

- January 16, 2004  
Bitter cold and blustery winds made temperatures feel as cold as -40 degrees. Outdoor exposure in the State proved deadly, causing six deaths. *Associated Press*
- December 11, 2008 - Severe Winter (Ice) Storm  
FEMA-1812-DR. Accumulating ice, snow, rain, and strong winds caused downed trees and power lines, with power outages and traffic accidents resulting. In Merrimack County, debris removal and repair cost reimbursement FEMA the equivalent of \$10.07 per capita (146,455 people in 2010). In Hillsborough County, debris removal costs were \$6.35 per capita (400,721 people in 2010). A major disaster was declared in all 10 counties. *fema.gov*
- February 23-March 3, 2010 - Severe Winter Storm  
FEMA-1892-DR. This severe weather event included high winds, rain, and snow over a week-long period. The primary impact was debris removal and repair reimbursement for fallen trees and power-lines. In Merrimack County, the reimbursement to communities was the equivalent of \$10.39 per capita (146,455 people in 2010), with Hillsborough County at \$3.68 per capita (400,721 people in 2010). In the Concord area, 21,000 Unitil customers were out of power at the peak outage period. *fema.gov, Unitil Energy Systems, 2010*
- April 1, 2011 - April Fool's Day Snowstorm  
A Nor'easter snowstorm impacted the State, causing over 30,000 power outages, most by PSNH. Snow fell in depths of up to 8", but stopped by noon. Although dozens of accidents were reported, no serious injuries were reported. *wmur.com*
- October 29-30, 2011 - Severe Storm and Snowstorm  
FEMA-4049-DR. Towns in Central NH were impacted by this shocking, early severe snowstorm, although a major disaster declaration was not declared in Merrimack County. Halloween festivities were cancelled in most communities, to the heartbreak of young children. In Hillsborough County, damages were at the equivalent of \$5.11 per capita (400,721 people in 2010). The storm was also declared in Rockingham County. *fema.gov*
- February 2013 - Severe Winter Storm Nemo  
FEMA-4105-DR. On February 8-9, 2013; a fierce February Nor'easter, known as Winter Storm Nemo, impacted the state of New Hampshire. This storm was a powerful winter storm that developed from the combination of two areas of low pressure merging above the New England Region. The storm brought almost 3 feet to New England with wind gusts up to 75 mph. NH Governor Maggie Hassan declared a State of Emergency on February 8, 2013; all motorists were asked to limit travel past 7 p.m. that evening. The Town of Henniker experience 24" of snow from Friday, February 8th through Saturday afternoon. No power outages were reported during the storm. *Henniker Hazard Mitigation Committee 2014*

### *Events in Sutton*

The following events were found to have impacted Sutton.

- January 19, 1810  
"Cold Friday" in the region on January 19, 1810, followed a mild evening and thunderstorm the night before. The wind suddenly shifted from south to north-northwest and, accompanied by bitter cold, blew at nearly a hurricane force for 24 hours destroying farms, houses, and standing timber. It reportedly killed people and livestock, but there is no record of anyone in Sutton dying from it. *Sutton Town Historian 2008*
- 1996  
The Town received over \$33,000 in damages from FEMA for natural hazard events over the course of the year. *Sutton Administrative Assistant 2008*
- January 7, 1998  
Baker Hill, Stonehouse Road and Route 114 were shut down due to the ice storm. The entire town of New London was shut down. All higher elevations were dramatically affected. Sutton residents were left without power for a week. Tree Farm lost commercial crops. *Sutton Hazard Mitigation Committee 2008*
- February 17, 2003  
The Town received nearly \$10,000 in damages from FEMA for a major snow storm event. *Sutton Administrative Assistant 2008*
- January 22-23, 2005  
The Town received over \$27,590.54 in damages from FEMA for a major snow storm event. *Sutton Administrative Assistant 2008*
- December 11, 2008 - Ice Storm  
The Emergency Management Director opened the Emergency Operations Center (EOC). The ice storm began with low 30 degree temperatures. Rain became heavy ice buildup on trees and wires. Tree branches fell throughout Town. Wide spread loss of power was experienced and many roads closed. Numerous Fire Department callouts were received. Many residents were without power for over a week. The Sutton Fire Department conducted house to house welfare checks. The Town received \$27,590 from FEMA and an additional \$4,600 from the State of NH for damages. *Sutton Hazard Mitigation Committee 2014*
- February 23-March 3, 2010 - Severe Winter Storm  
This severe winter storm event between February 23 to March 13 started with a big windstorm, and followed through with heavy rain and 6-10" of snow over a week long period which led to road washouts. During this severe winter storm, trees were downed and power was lost for three days in most of the community. Fire Department personnel were undertaking a door-to-door check, trying to reach and check on people to ensure safety. More than 10+ fire callouts were received during this time. *Sutton Hazard Mitigation Committee 2014*

- April 1, 2011 - April Fool's Day Snowstorm  
Heavy wet snow 4-6" with temperatures in the mid 30's. *Sutton Hazard Mitigation Committee 2014*
- October 29, 2011 - Halloween Snowstorm  
Heavy, wet snow started at 4 PM on October 29, finishing with 15" in Sutton by morning. Temperatures rose to 40 degrees by next day. *Sutton Hazard Mitigation Committee 2014*

### ***Potential Future Hazards***

It is extremely likely that Sutton will be impacted by severe winter weather in the future. Damage and serious conditions can result in all areas of the community. Areas above 500 feet and the western portion of Town are more vulnerable. Power outages may occur as a result of downed trees due to heavy snow loads on branches.

Ice occurs primarily in the higher elevations, including Rowell Hill, King Ridge, Baker Hill Road, and others but can also affect the lower levels as well. Ice is difficult for the Highway Department to plow and clean up although the Department can plow up to 42 inches of dry snow. The Highway Department keeps up with the snowfall, but ice storms require more time and resources to keep the roads safe.

## Earthquake

An earthquake is a rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and often cause landslides, flash floods, fires, and avalanches. Larger earthquakes usually begin with slight tremors but rapidly take the form of one or more violent shocks, and end in vibrations of gradually diminishing force called aftershocks. The underground point of origin of an earthquake is called its focus; the point on the surface directly above the focus is the epicenter. The magnitude and intensity of an earthquake is determined by the use of scales such as the [Richter scale](#) and [Mercalli scale](#). Geologic events are often associated with California, but New England is considered a moderate risk earthquake zone.

SUTTON EARTHQUAKE EVENTS	
Probability -	LOW
Magnitude -	LOW
Overall Risk -	1.0

## Area Events

Numerous earthquake events in recent history have occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town. No earthquakes have been documented in Sutton. Between 1728 and 1989, there have been 270 earthquakes in New Hampshire (*Northeast Emergency Consortium*). Four of these earthquakes were of a Richter Magnitude scale of 4.2 or more (*Northeast Emergency Consortium*). Two of these occurred in Ossipee, one west of Laconia, and one near the Quebec border. The probability of a future earthquake affecting Sutton is considered **Low**.

Historically, New England has experienced some earthquakes. New England experiences an average of 30-40 earthquakes per year, registering between 2.0 and 2.5 magnitude, but most are not felt.

- 1638  
An earthquake of magnitude 6.5 to 7.0 on the Richter scale was reportedly felt from Plymouth, Massachusetts to Canada.
- Early Earthquakes, 1727 and 1755  
Both earthquakes, October 29, 1727 and November 18, 1755, caused damage to the New England coastline and throughout New England. *Northeast States Emergency Consortium*
- March 28, 1890  
In New Hampshire, an earthquake produced 30 seconds of rumbling. *History of Concord, NH (J Lyford)*
- November 18, 1929  
An earthquake originating at the Grand Banks in Newfoundland at a scale of 7.2 was felt by all of New Hampshire. *National Earthquake Information Center*
- December 20 and 24, 1940  
In late December, New Hampshire felt the shock of two earthquakes, both at 5.5 on the Richter scale. The earthquakes originated near Tamworth in Ossipee. *National Earthquake Information Center, Northeast States Emergency Consortium*

- June 15, 1973  
An earthquake originating near the Quebec border at a scale of 4.8 was felt in various locations throughout the State. *Northeast States Emergency Consortium*
- January 19, 1982  
An earthquake with magnitude 4.5 originated west of Laconia on January 19, 1982. The event caused much alarm but little physical damage. *Northeast States Emergency Consortium*
- April 20, 2002  
An earthquake originating 15 miles southwest of Plattsburgh, NY with a magnitude of 5.1 shook many New England residents awake at 6:50 am. Many felt a slight ground shaking for 15-30 seconds and there were no deaths or injuries reported. *cnn.com and USGS*
- January 20, 2004  
An earthquake measuring 2.2 on the Richter Scale was centered in the Hillsborough-Hopkinton area. Shaking and noise were reported, but no damage occurred. *Concord Monitor, January 2004*
- September 25, 2010- Boscawen Earthquake  
"A magnitude 3.2 earthquake rattled buildings and nerves across much of New Hampshire Saturday night. The quake occurred at 11:28 p.m. and was centered about 10 miles north of Concord, according to the U.S. Geological Survey. State police said they received reports from residents across the state who reported what they thought was an explosion. The quake was felt in places like Fremont, Derry, Durham, Henniker, Penacook and Raymond. There were no reports of damage." *Union Leader*
- October 16, 2012  
With the epicenter near Hollis Center, Maine, a 4.0 earthquake was measured and felt not only in Central NH, but throughout New England. Reportedly sounding like a jumbo jet and lasting for 10 seconds, calls came in to local Fire Departments inquiring about the event. By two hours later, no calls reporting damages or injuries had been received. *Concord Monitor*

### Events in Sutton

The following events were found to have impacted Sutton.

- September 25, 2010 - Boscawen Earthquake  
Residents in Sutton felt the earthquake as a very minor sensation. There was no damage registered. *Sutton Hazard Mitigation Committee 2014*
- October 16, 2012  
Some residents in Sutton felt the earthquake which had its epicenter in Hollis, Me. There was no damage reported. *Sutton Hazard Mitigation Committee 2014*

*Potential Future Hazards*

Although it is likely Sutton residents may feel earthquakes in the future, it is unlikely that any significant damage will result.

Many historic buildings exist in Town, including the Town Hall. Many areas in Town are sandy soils (Colton), including South Sutton, North Sutton, and the schools.

## Landslide

A landslide is the downward or outward movement of slope-forming materials reacting under the force of gravity including: mudflows, mudslides, debris flows, rockslides, debris avalanches, debris slides, and earth flows. Landslides have damaged or destroyed roads, railroads, pipelines, electrical and telephone lines, mines, oil wells buildings, canals, sewers, bridges, dams, seaports, airports, forests, parks, and farms.

SUTTON LANDSLIDE EVENTS	
Probability -	MODERATE
Magnitude -	LOW
Overall Risk -	2.0

### Area Events

Localized landslides in recent history have likely occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town.

- May 14, 2006  
Backyard material slid toward a Sutton home on Mother's Day catching a family, with one young child and expecting another, by surprise. No one was injured by the mudslide but thousands of dollars of property damage were caused. The debris and mud that slid and caused the damage came from land that didn't belong to the family. They had to move out for 10 days until a contractor deemed the property safe. *WMUR News*
- Circa 2008 or 2009  
On Granite Street in Hooksett, a house slid towards the river. Research is not conclusive. *Epsom Hazard Mitigation Committee 2012*

### Events in Sutton

The following events are found to have impacted Sutton.

- Circa 1820  
A landslide occurred on the other side of Mount Kearsarge. *Sutton Hazard Mitigation Committee*

### Potential Future Hazards

Landslide is a possibility in select areas of Sutton where certain topological conditions are met. Development in close proximity to areas of steep slopes (greater than 15%) or roads running through blasted ledge corridors could present a risk to residents. Most potential landslides will be in conjunction with another hazard event, such as flooding or severe rain, or from the construction of buildings or infrastructure in a topologically vulnerable area.

Route 114 near Main Street could be vulnerable to a landslide, and even now small rocks land on the roadway.

At the Kearsarge Regional Middle School there is a steep slope near the wood burning furnace that is at risk of sliding.

### Drought

A drought is defined as a long period of abnormally low precipitation, especially one that adversely affects growing or living conditions. They generally are not as damaging and disruptive as floods and are more difficult to define. The effect of droughts is indicated through measurements of soil moisture, groundwater levels, and stream flow. However, not all of these indicators will be minimal during a drought. For example, frequent minor rainstorms can replenish the soil moisture without raising ground-water levels or increasing stream flow. Low stream flow also correlates with low ground-water levels because ground water discharge to streams and rivers maintains stream flow during extended dry periods. Low stream flow and low ground-water levels commonly cause diminished water supply.

SUTTON DROUGHT EVENTS	
Probability -	MODERATE
Magnitude -	MODERATE
Overall Risk -	3.33

### Area Events

Numerous drought events in recent history have occurred in the State, region, and local area surrounding Sutton and might have also had an impact on the Town. Periods of drought have occurred historically in New Hampshire. The longest recorded continuous spell of less than normal precipitation occurred between 1960-69. In 1999, a drought warning was issued by the Governor's Office. In March 2002, all counties, with the exception of Coos, were declared in Drought Emergency. This was the first time that low-water conditions had progressed beyond the Level Two Drought Warning stage. The probability of another drought affecting Sutton in the future is considered **MODERATE**.

- Various Droughts in the State of New Hampshire  
In the years 1929-1936 (regional), 1939-1944 (severe in southwest, moderate elsewhere), and 1947-1950 (moderate), the State was hit by numerous and long-lasting droughts. Between 1960-1969 was the longest recorded continuous spell of less than normal precipitation with crops affected. For two consecutive years in the mid-1960s, wells went dry. *NH Bureau of Emergency Management*
- April, 1999  
In April 1999, due to lack of precipitation in the State, a drought warning was issued by the Governor's Office. *NH Bureau of Emergency Management*
- March, 2002  
A Drought Emergency was declared by the State, marking the first time low-water conditions have progressed beyond the Level Two stage. *NH Department of Environmental Services*

### Events in Sutton

The following events are found to have impacted Sutton.

- Summer of 1826  
A long summer of drought preceded the downpour and subsequent flooding in August. Samuel Dresser's journal recorded this drought and droughts in other years as they had affected his farming. With farming all but extinct in Sutton, the chief threat from drought is the fire danger. *Sutton Town Historian 2008*

### Potential Future Hazards

In the case of drought, residential and town water supplies would be threatened. Most homes in Town rely on well water which is not easily replenished during periods of drought. Water-saving measures can be taken to reduce the effects of a drought.

All the farms in town, including the tree farms, would be affected by drought. Additionally, wildfires would have the potential of being more severe and commonplace during periods of drought.

Cascade Brook Farm and Musterfield Farm are the only farms in Sutton that are recognized by the United States Department of Agriculture Statistical Service. There are many "Friendly Farms" throughout Sutton that would be affected by Drought. Currently there are 13 certified tree farms in Sutton with land totaling 1,557 acres. The Society for the Protection of NH Forests (SPNHF)'s Black Mountain will become a tree farm in the near future bringing the Total to 14 tree farms encompassing 2,401 acres. This information was obtained from Rita Carroll of Society for the Protection of NH Forests. Ms. Carroll cautions that the number of tree farms is not static. New tree farms are constantly being added or decertified.

### Radon

Radon is a naturally occurring radioactive gas with carcinogenic properties. The gas is a common problem in many states, including New Hampshire. Data collected by the NH Office of Community and Public Health's Bureau of Radiological Health indicates that one third of the houses in New Hampshire have indoor radon levels that exceed the US Environmental Protection Agency's "action level" of four picocuries per liter for at least some portion of the year.

SUTTON RADON EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	5.0

Radon may also enter homes dissolved in drinking water from drilled wells. High levels of radon in water from individual drilled wells are a common occurrence in New Hampshire.

### Area Events

In New Hampshire, radon gas is a common problem, most often affecting the north, east and southeast portions of the State. The gas is colorless, tasteless, and has no odor. Radon is a radioactive gas that comes from the natural decay of uranium that is found in nearly all soils. It typically moves up through the ground to the air above and into homes through cracks and other holes in the foundation. Homes trap radon inside, regardless of age or how they are built. Radon from soil gas is the main cause of radon problems, although sometimes radon enters the home through well water. The gas is the second highest cause of lung cancer, behind smoking (*Environmental Protection Agency*).

- 1986-1987

In Dunbarton, a citizen initiative of well water testing, primarily around the Town Center, found that the radon levels in the community exceeded all levels in the country. The Elementary School well tested fine, but the church had a very high concentration, as well as the rest of the area at the top of the hill around the Town Offices. Residents and Town officials placed filtration systems in their homes and public buildings.

The information garnered interviews with WMUR Channel 9 and a series of public meetings to raise the awareness of Town residents. Although there is no specific Town program in place, residents can test their wells using kits available at the NH Department of Environmental Services. *Dunbarton Hazard Mitigation Committee, 2005*

### Events in Sutton

The following radon events were found to have affected Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### Potential Future Hazards

The potential for the presence of radon in the Town is at **medium to high** levels according to bedrock geology data depicted on *Map 1: Potential Hazards*. As radon is addressed on an individual basis, long-term conditions and consequences are unknown. Some residents have taken individual measures against radon in well water and in basements. Arsenic is also a problem in New Hampshire wells.

### Biological

Biological hazards are natural hazards that can be potentially catastrophic to ecosystem functioning and human and wildlife well-being. They can include medical wastes, microorganisms, viruses or toxins. Examples of biological hazards include invasive species and/or wildlife diseases such as West Nile Virus, Chronic Wasting Disease, Lyme Disease, Avian Influenza (Bird Flu), Dengue Fever, viral meningitis, red tides and algal blooms. Biological hazards are spread through animals, reptiles, fowl, bacteria, insects and spiders, plants, molds and fungus. In recent years, Avian Influenza has become a highly-discussed biological hazard because of its potential to annihilate large numbers of fowl, and particularly, domesticated birds such as chickens, ducks and turkeys. Humans are susceptible to Avian Flu through contact with infected birds. Human-induced biological hazards are possible but not consensually considered natural; they are often referred to as biological terror, where a biological hazard is manipulated in such a way to cause harm to others.

SUTTON BIOLOGICAL EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	5.0

### Area Events

In New Hampshire, the biological events most likely to affect a large population include health outbreaks such as flu, meningitis and conjunctivitis. Diseases such as West Nile Virus and EEE have found its way to the State, and although deaths have resulted from EEE, no humans have tested positive for West Nile.

- 1736-1737  
From July 1736 to September 1737 in New Hampshire's coastal towns and inland to Kingston and Chester, about 1000 deaths were caused by "throat distemper." In 1754, 55 people in Hampton alone died of the same disease. [Merrills' *Gazetteer of the State of New Hampshire*, 1817.] *Sutton Town Historian*
- 1812-1816  
A regional epidemic that was occurring in NH & VT known as "Spotted Fever," claimed many residents. The disease, uncertain to the cause even now, would cause victims to go from healthy to their deathbed in as little as six hours. The town of Warren has record of a mass burial of about two dozen victims. *Local CNHRPC Town Hazard Mitigation Committee*
- Year of 1918  
Two thousand people in New Hampshire died of flu (Spanish flu) in nineteen eighteen compared to just one hundred forty five people the year before. *Department of Commerce*
- 1996  
Milfoil was discovered on the north end of Lake Massasecum in Bradford. A 10 to 11 acre portion of the lake was closed. Several chemical treatments were tried but failed to eradicate the milfoil. Eventually, the weed was harvested. *Blaisdell Lake Property Owners Association, Inc. August 3, 2002*

- February 1 - 14, 2002  
In a two week period at a New Hampshire College, nearly 500 of the school's 5,060 students were affected by an outbreak of bacterial conjunctivitis. *Morbidity and Mortality Weekly Report*; 3/15/2002
- December 27, 2003  
Three teenagers from southwestern New Hampshire were hospitalized for bacterial meningitis and a fourth from Concord was suspected of having the potentially fatal illness. An 18 year old girl from Bennington died from the illness. Two of the victims were from Monadnock Regional High School. *NY Times*, December 27, 2003
- September 30, 2004  
Andover horse dies of EEE; a mosquito-borne virus that is a threat to humans as well. It was the second horse death in NH in September but only the second in NH since 1984. *Concord Monitor*
- 2005  
Seven people were tested in New Hampshire for EEE, Eastern Equine Encephalitis and two died. Forty-six (46) birds and a mosquito pool were tested for West Nile Virus. *NH Center for Disease Control*
- 2005-2006  
The State was preparing for the Avian flu pandemic, which did not end up impacting the country. Using over \$800,000 in federal funds, Town emergency officials trained for the possible pandemic. Ten portable trailers were dispersed across the State, containing medical supplies. Articles and public service announcements served to educate the public. [www.dhhs.state.nh.us/dphs/cdcs/avian](http://www.dhhs.state.nh.us/dphs/cdcs/avian), [www.nhphn.org/news](http://www.nhphn.org/news), [www.wildlife.state.nh.us/Wildlife](http://www.wildlife.state.nh.us/Wildlife)
- October 20, 2007  
A preschool student at the Boscawen Elementary School died at Boston Children's Hospital from pneumonia caused by Methicillin-resistant Staphylococcus aureus, often called MRSA, a bacterium that can be passed from child to child by skin contact. The school was criticized for not cancelling school, and for not notifying parents until after media attention about the issue. School officials said they had acted on the advice of state officials who told them that the MSRA case should not be big news. *Concord Monitor*
- 2009-2011  
The swine flu (H1N1) pandemic was experienced across the globe and was closely monitored by NH doctors. H1N1 was included in the seasonal vaccine strains for 2009-10, 2010-11 and 2011-12 vaccines. Public service announcements about proper hygiene, staying isolated when sick, and fact sheets were prominent. There 722 state-reported confirmed cases to date, as well as 10 confirmed NH deaths related to flu complications. [www.nh.gov/safety/divisions/hsem](http://www.nh.gov/safety/divisions/hsem), [www.dhhs.state.nh.us/dphs/cdcs/influenza](http://www.dhhs.state.nh.us/dphs/cdcs/influenza), [www.cdc.gov](http://www.cdc.gov), [www.en.wikipedia.org](http://www.en.wikipedia.org)

### *Events in Sutton*

The following biological events are found to have affected Sutton.

- 1776-1815

Augusta Worthen's 1890 Town history recorded three deaths in the Mastin family about 1776 per dysentery (page 272), two more deaths in the Mastin family in 1816 from "spotted fever," (page 818), Polly Person's staff also passed away from spotted fever in 1816 after having had it for only two hours (page 279), four Todd children dying from scarlet fever, date not given (page 965), and 15 members of the Hart family dying from diphtheria in 1864-65 (page 741). The same book claims that 1815 was the worst year for spotted fever death in the town, particularly in the northern part (page 174), but gave no details or names of those who had died that year. *Sutton Town Historian 2008*

- Circa 2009-2011

Sutton residents participated in flu clinics and were given the H1N1 vaccines along with other seasonally developed vaccines. The Health Officer purchased face masks to be distributed if necessary in conformance with recommended hygiene practices. *Sutton Hazard Mitigation Committee 2014*

### *Potential Future Hazards*

Sutton is home to 3 schools out of the 6 schools in the Kearsarge Regional School District. Students are quite vulnerable to health outbreaks as they tend to congregate in large numbers and in shared environments where physical contact is common.

It is difficult to predict where a biological hazard would occur due to human and wildlife mobility. Any of these biological hazards could affect Sutton. The Town has wet and swampy areas which are prime breeding grounds for mosquitoes. Large deer herds that can be present do carry deer ticks. Present-day concerns in Sutton include rabies, EEE, West Nile Virus and Lyme disease.

## TECHNOLOGICAL HAZARD EVENTS IN SUTTON

Events of this nature include hazardous material release, explosion/fire, transportation accident, building/structure collapse, power/utility failure, extreme air pollution, radiological event, fuel/resource shortage, strike, business interruption, financial collapse, and communication collapse. Dam failure is being treated as a natural hazard due to its flooding consequence and is located in the **NATURAL HAZARDS** section.

Committee member experiences, knowledge, and recollections generally comprise the local *Events in Sutton* sections. While additional hazards might have occurred in Town, those events in the Plan are what the Committee chose to list, or were familiar with to list, to comprise the hazard events listed within the local *Events in Sutton* sections over the various versions of the Hazard Mitigation Plan. The same is true for the *Potential Future Hazards* sections.

### Hazardous Materials

Hazardous materials and hazardous wastes contain properties that make them potentially dangerous or harmful to humans. They can be liquids, solids, contained gases or sludge. Hazardous wastes can be the by-product of manufacturing, as well as discarded commercial products. Most households contain cleaning agents that become hazardous waste when disposed of improperly. Chemicals have numerous benefits but can also cause hazards during their production, storage, transportation, use or disposal.

Hazardous materials can have adverse health related effects and may even cause death in certain cases. In addition, hazardous materials may damage homes, businesses and other property, as well as natural ecosystems. Chemical accidents in plants or chemical spills during transportation may often release hazardous chemicals.

SUTTON HAZARDOUS MATERIALS EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	7.0

### Area Events

The risk from hazardous materials spills or releases into groundwater is always present as long as consumers and homeowners make irresponsible decisions regarding the disposal of household chemicals. American families improperly dispose of, on average, 15 pounds of hazardous household chemicals in a year. These household chemicals can contaminate drinking water in wells and cause damage to various ecosystems. Most people contaminate without being aware that they are doing so. Further education is needed in order to reduce hazardous waste contamination.

- 1995  
The Suncook Valley Leather Tannery at 5 Main Street experienced a fire that took two weeks to extinguish. The environment was exposed to multiple chemicals due to fire suppression activities and the chemicals used in the facility. The original part of the building was built in the 1800s and was used in a chemically-dependent industry. Chemicals were also present in the building materials. *Pittsfield Hazard Mitigation Committee 2011*

- May 27, 2004  
Fifty-three businesses were forced to close at the Concord Center on Ferry Street in Concord when state officials discovered more than 70 buckets of formaldehyde, motor oil, roofing tar and cleaning solvents in the flooded basement. There were no reported injuries but some workers complained of headaches and dizziness. *Concord Monitor*

### **Events in Sutton**

The following hazardous materials events have impacted Sutton.

- Circa 1960-1970  
A junkyard was in operation by a former public employee near the Village of Sutton Mills some decades ago at the old farm later owned by Henry Carnevale. Battery acid, gas, and oil from junk cars were dumped onto the ground, and the pollution problems were left for future generations to deal with. *Sutton Town Historian*
- Circa 1974  
During icy road conditions a tractor trailer rolled over and caught fire. Contents were reported to be acetone. *Sutton Hazard Mitigation Committee 2014*
- Fall 2006  
A propane truck on Hominy Pot Road rolled over. The incident was in close proximity to I-89. *Sutton Hazard Mitigation Committee 2006*
- March 2013  
A tractor trailer carrying 6500 gallons of milk overturned on I-89 due to icy road conditions. The incident was in close proximity to the Chadwick Meadows watershed. There was the potential for material to flow into Kezar Lake. *Sutton Hazard Mitigation Committee 2014*

### **Potential Future Hazards**

Transportation of hazardous materials on Interstate 89 and State Routes 114 and 103 is an everyday occurrence. These trucks could rollover and spill their contents onto these significant roadways. Routes 114 and 103 see a lot of trucking, including propane deliveries. The primary hazard exists on I-89 with the profuse transport of materials, including the rest stop area. The high school, middle school and elementary school are right off of Exit 10, within a couple of miles of the Interstate. The decision to either shelter in place or evacuate students would be a high priority during any hazardous material spill on I-89.

In addition, there are several facilities in Town that handle, store, or use hazardous materials. Any of these facilities could have a spill or an incident that could result in a spill. The Country Club of New Hampshire stores fertilizers and has a skid tank on site.

A listing of facilities which store or use hazardous materials is found in **Table 10**; these facilities were taken directly from the Tier 2 reporting.



### Explosion/Fire

Explosions are violent releases of energy due to a sudden increase in volume within a given space. Explosions produce extremely high temperatures and release gases. Urban fires in large, unoccupied buildings have occurred around the world. They are sometimes deliberate and sometimes accidental. They have the potential to cause widespread property damage and place both occupants and neighbors in danger.

SUTTON EXPLOSION/FIRE EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	6.0

### Area Events

There is a risk of explosion in households that use gas or oil burners or who store such gases or chemicals in an unsafe manner. Business and industrial sites would also be at potential risk of explosion if there existed flammable materials and especially gases and/or other chemicals.

- April 13, 2004  
French's Toy Shoppe, an established downtown Concord business, was damaged by fire. A neighboring business and 3 abutting apartments were also damaged. The building was 230 years old. No injuries were reported, however, business was forecasted to be shut for one month for repairs. *Concord Monitor*
- January 23, 2005  
A near-fatal explosion occurred at the Gold Star sod farm in Canterbury. Gasoline fumes ignited a propane heater, triggering a fiery explosion and fire that consumed a large workshop and part of the main storage building. Fire crews from several departments battled the fire and laid sand down as a buffer between a nearby river in order to prevent contamination as pesticides and other chemicals burned. *Concord Monitor*
- April 13, 2006  
A Concord Dunkin Donuts on South Main Street was destroyed by fire. The two employees and two customers inside when the fire began were able to escape unharmed. *Concord Monitor*
- January 21, 2010  
Pleasant View Gardens suffered a fire which destroyed about 30,000 square feet of greenhouses, plus a building. The cause is undetermined. *Loudon Hazard Mitigation Committee 2010*

### Events in Sutton

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### *Potential Future Hazards*

A listing of facilities which store or use hazardous materials is found in **Table 10**; these facilities were taken directly from the Tier 2 reporting. These locations may be most susceptible to explosions and the resulting fires. In Sutton, the Vernondale gas station, I-89, Lake Sunapee Country Club, Country Club of New Hampshire, Sutton Automotive, Town Highway Garage, high school, middle school and Labsphere, would be most prone to explosions. These incidents would happen in areas which are populated.

The Sutton Solid Waste Transfer Station stores tires that have the potential for prolonged burning.

### Transportation Accident

Given the number of passengers, frequency of travel, distances traveled and complexity of modern transport, relatively few major accidents involving large numbers of people have occurred. Nevertheless, transportation infrastructure has the potential to fail and cause major hazards; airplanes crash, trains derail, buses and other vehicles collide and boats sink.

SUTTON TRANSPORTATION EVENTS	
Probability -	HIGH
Magnitude -	HIGH
Overall Risk -	9.0

### Area Events

Automobile accidents could occur on any roadway in the region. A major accident would have the greatest impact for travelers on I-89, I-93 and I-393, as these roads experience high traffic volume and vehicles travel at high speeds. In addition, several rail lines create the potential for a transportation accident. Many motor vehicle accidents occur at train crossings. Trains could potentially derail, causing injuries or fatalities and hazardous materials spills. The Concord-Lincoln Line runs 73 miles between Concord and Lincoln. It is owned by the State of New Hampshire and operated by Plymouth & Lincoln Railroad/ New England Southern. The New Hampshire Main Line runs between Concord, Nashua and Lowell, MA. This line is owned by the Boston & Maine Corporation and the New Hampshire section is operated by the Springfield Terminal Railway. The commodities most frequently transported on New Hampshire's rail lines are pulp, paper & allied products, stone, sand, gravel and metals and clay and glass products. In 1999, 876,882 expanded tons of coal and petroleum products, 791,200 tons of chemicals and 171,700 tons of waste and scrap metals were transported on NH rail lines.

- June 24, 1973  
A railroad car of grains spontaneously combusted at the Concord railroad yard. It was determined the grain was improperly processed and stored while it was too hot.  
*Concord Daily Monitor*
- January 7, 2001  
A minor landing accident occurred on an icy runway at the Concord Municipal Airport. The accident was blamed on the inexperience of the student pilot and the poor landing conditions. No injuries were reported. *National Transportation Safety Board*
- July 3, 2005  
A Cessna 152 airplane was damaged during takeoff from Concord Municipal Airport. A certified flight instructor and non-certified student were not injured in the accident.  
*National Transportation Safety Board*

### Events in Sutton

The following events are found to have impacted Sutton.

- Circa 2005  
Due to snow covered roads, Sutton Fire and Rescue responded to a 30 car pile-up on I-89 northbound. *Sutton Hazard Mitigation Committee 2014*
- February, 2011  
Icy road conditions resulted in an eleven car pile-up on I-89. *Sutton Hazard Mitigation Committee 2014*

***Potential Future Hazards***

Traffic accidents may be the most likely type of transportation hazard in Sutton. Winter storms on I-89 between mile markers 22-31 and on the local Sutton roads create dangerous traveling conditions. Elevation changes make travel difficult in snowy and icy conditions. Exit 10 does not have lights at the ramp and this causes hazardous driving conditions in all weather.

### **Building/Structure Collapse**

Building or structure collapse may occur as a result of fire due to the age of a building or structure as well as from a significant natural disaster such as an earthquake or deterioration of a foundation due to water damage. Any natural disaster that could weaken a building's or structure's integrity, coupled with inadequate building conditions, could result in collapse.

<b>SUTTON BUILDING/STRUCTURE COLLAPSE EVENTS</b>	
<b>Probability -</b>	<b>HIGH</b>
<b>Magnitude -</b>	<b>MODERATE</b>
<b>Overall Risk -</b>	<b>6.0</b>

### **Area Events**

Building and structure collapse, although not common, can result from flooding, heavy snow buildup on rooftops, and weakened structural integrity due to fire. Building and structure collapse are more likely to occur in older, less stable structures which are located in sensitive locations.

- September 3, 2004  
In Webster, a fire destroyed a colonial-era barn and killed two horses. The extensive fire resulted in building collapse which made it very hard for authorities to determine the cause of the fire. *Concord Monitor*
- January - February 2008  
In Concord, heavy snow-loads caused multiple building collapses, including Oak Bridge Condominium Pool Building, Beede Electric, and Hall Street Capitol Distributors loading dock. *Concord Hazard Mitigation Task Force 2011*

### **Events in Sutton**

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### **Potential Future Hazards**

The schools have flat roofs, including the high school which was built in 1970, so snow loading can be a problem. Historic structures have peaked roofs and are not as susceptible to snow loading or building collapse; their roofs are built more securely and will not collapse during minor fires. Buildings and large barns with heavy snow loads or other events could cause the roofs to collapse.

### Power/Utility Failure

Utilities systems exist everywhere and are subject to damage from construction work, accidents and extreme weather. Many utilities are protected by back-up generators to prevent failure, whatever the cause may be. Nuclear power plants produce roughly 20% of the nation's power. They exist in nearly all states and 3 million Americans live within 10 miles of a nuclear power plant. The greatest risk to life resulting from a nuclear power plant failure is radiation contamination resulting from radiation release into the environment. People in the immediate vicinity are at greatest risk of radiation contamination. Another common source of energy, coal, can be potentially hazardous because coal power plants emit chemicals such as mercury and sulfur dioxide.

SUTTON POWER/UTILITY FAILURE EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	5.0

### Area Events

New Hampshire contains nuclear and coal power plants. There are two coal power plants in New Hampshire: Merrimack Plant in Bow and Schiller in Rockingham County. The Merrimack Station Power Plant is the largest coal-fired electrical generating station owned by PSNH. It supplies power to 189,000 residents. The greatest health concern over the Merrimack Plant in Bow is the release of mercury into air and area water bodies, such as the Merrimack River.

Customers in Sutton receive electricity from Public Service Company of New Hampshire.

In the harsh environment that New Hampshire residents are subjected to, power and utility failures on an isolated level are not uncommon. During nearly every heavy snow storm, ice storm, or other severe weather event, someone, somewhere, loses power and/or other utilities.

- November 9, 1965  
Northeast Blackout of 1965. The New York- New England grid was not prepared to handle an overload caused by a blown relay and the entire region, from Pennsylvania to New Hampshire and Vermont, was in the dark for a short period of time. The huge effort of re-establishing energy began immediately following the event. The blackout affected the western portion of the state, while the eastern portion and Maine experienced no power failure. *Central Maine Power*
- February 18, 2006  
55 mph wind gusts, resulting from a cold front in the region, felled trees which blocked roads and downed power lines. 80,00 homes and businesses in the state reportedly lost power. Unutil had outages in every town it serves. A reported 25,000 customers in the Concord area lost power. *Concord Monitor*
- December 12, 2008  
Hundreds of thousands of home and business owners in the State were without heat or electricity after an ice storm moved through the State causing the largest power outage in New Hampshire's history. Unutil had 5,000 customers out in Concord. A large amount of FEMA funds were received for snow and ice removal from streets and sidewalks as well as removing trees and limbs off streets when they came down with ice on them. *Concord Monitor, Concord Hazard Mitigation Task Force 2011*

- February 25-March 1, 2010, Severe Winter Storm (High Wind Event)  
In Concord, 2,000 Unitil customers were out of power at the peak outage period. Unitil opened their emergency operations center, and the City opened their EOC for a few hours. Problems included Interference with electrical lines, trees down, and road blockages. Crews were out clearing the entire period. Wind Storm caused power/utility failures, road closures from downed power lines and trees, home and property damage. Some resident's homes were without power for several days. *Unitil Energy Systems and Concord Hazard Mitigation Task Force 2011*
- August 26-September 6, 2011, Tropical Storm Irene  
FEMA-4026-DR. Tropical Storm Irene impacted New Hampshire and damaged four counties, including Merrimack County at the equivalent of \$4.29 per capita (146,455 people in 2010). Damages to roads and bridges from flooding were the primary impact, but power outages from downed trees and lines also occurred during high winds throughout this week-long event. *fema.gov*
- October 28-29, 2012, Hurricane Sandy  
FEMA 4095-DR-NH. Although this disaster event was not officially declared a disaster within the Central NH Region, Belknap, Carroll, Coos, Grafton, and Sullivan counties were eligible for federal aid. Other communities in the State suffered from more minor effects, including high winds, downed trees, power outages, and road washouts. *fema.gov*

### **Events in Sutton**

The following utility failure events are found to have impacted Sutton.

- January 7, 1998  
All higher elevations were dramatically affected because of the ice storm. Sutton residents were left without power for a week. *Sutton Hazard Mitigation Committee 2008*
- Fall 2006  
Windstorms impacted Town for a couple of days. Damages included tree fall and extensive power loss. Portable substations were brought into East Sutton and North Sutton, and on North Road. *Sutton Hazard Mitigation Committee 2008*
- December 11, 2008 - Ice Storm  
The ice storm had low 30 degree temps and rain with heavy ice build up on trees and wires. There were fallen branches throughout town; wide spread loss of power; numerous road closures; and numerous fire department callouts. Many residents were without power for over a week. The Sutton Fire Department conducted house to house checks. The Town received \$27,590.54 from the Federal Government and an addition \$4,598.42 from the State of NH. *Sutton Hazard Mitigation Committee 2014*
- February 23-March 3, 2010 - Severe Winter Storm  
This severe winter storm event between February 23 to March 13 started with a big windstorm, and followed through with heavy rain and 6-10" of snow over a week long period which led to road washouts. During this severe winter storm, trees were downed and power was lost for three days in most of the community. Fire Department personnel were undertaking a door-to-door check, trying to reach and check on people

to ensure safety. More than 10+ fire callouts were received during this time. *Sutton Hazard Mitigation Committee 2014*

- *April 1, 2011 - April Fool's Day Snowstorm*  
Heavy wet snow 4-6" with temperatures in the mid 30's. *Sutton Hazard Mitigation Committee 2014*
- *October 29, 2011 - Halloween Snowstorm*  
Heavy, wet snow started at 4 PM on October 29, finishing with 15" in Sutton by morning. Temperatures rose to 40 degrees by next day. *Sutton Hazard Mitigation Committee 2014*
- *August 26-September 6, 2011 - (High Wind) Tropical Storm Irene*  
The Emergency Management Director opened the Emergency Operations Center (EOC). The Fire station was staffed in anticipation of this event, August 26-September 6. Tropical Storm Irene started with heavy rains, and quickly followed with downed trees and branches. Most damage was done on August 28 with 5" of rain. Numerous fire callouts for flooded basements were received. Power outages occurred. There was minor property damage from fallen or wind-blown debris. The Town received \$12,762 predominantly for cleanup of debris and emergency welfare checks. School was not in session for a day or two as a result of the storm. *Sutton Hazard Mitigation Committee 2014*
- *October 28-29, 2012 - Hurricane Sandy*  
Emergency personnel staffed the Fire House, which is also the Emergency Operations Center (EOC). The Town ensured that everything was made ready. Hurricane Sandy hit with high winds and rain in Sutton. There were downed trees and branches and as well downed power lines. Business was affected due to Town-wide internet loss by local provider, TDS Telecom. School was not in session for a day in preparation for the storm. However, the overall damage was not significant and Hurricane Sandy impacted the Town little. *Sutton Hazard Mitigation Committee 2014*

### ***Potential Future Hazards***

Power losses are commonly sustained at higher elevations in East and North Sutton. All scenic roads in Sutton are vulnerable to power outages as a consequence of the extensive tree cover and minimization of tree trimming on these roads. The Kearsarge Regional Middle School is set up to provide shelter if the residents are able to leave their homes. Residents should be able to shelter in place, gathering needed supplies and water ahead of time.

Farms (feeding animals) and a few individuals in Town who require oxygen and power would be the most vulnerable populations. The power could not be offline for more than two or three days without causing losses.

### **Extreme Air Pollution**

Air pollution is the release of gases, finely divided solids, or finely dispersed liquid aerosols into the Earth's atmosphere that exceed the capacity of the atmosphere to dissipate them or dispose of them into the biosphere. Volcanic activity is the greatest source of air pollution; however, dust storms, wildfires and vehicle exhaust also greatly contribute to air pollution. Humans are at risk of respiratory illnesses due to increased air pollution.

<b>SUTTON EXTREME AIR POLLUTION EVENTS</b>	
<b>Probability -</b>	<b>HIGH</b>
<b>Magnitude -</b>	<b>LOW</b>
<b>Overall Risk -</b>	<b>3.0</b>

### **Area Events**

The New Hampshire Department of Environmental Services conducts daily air quality forecasts for the entire state. Forecasts are based on Ozone and Particle Pollution. Levels of air quality range from "Good"- no health impacts expected- to "Hazardous"- everyone should avoid all outdoor exertion. Email alerts from the NHDES are available on days when the air quality is predicted to reach unhealthy levels.

Extreme air pollution affects New Hampshire citizens 10 days during an average year. Although New Hampshire does not cause most of the pollution that affects its citizens, large urban areas to the south and large power plants in the Midwest produce the emissions that are brought to the state by atmospheric winds. New Hampshire has little control over the extreme air pollution in the state. It can be assumed that in the future air pollution in the state will worsen.

- September 14, 2005  
The Department of Environmental Services declared air-quality action days in the state for 9/14 and 9/15 because of an increase in air particles due to slow moving, stagnant air masses from the Ohio Valley. High temperatures can contribute to decreased air quality. The DES advised people to limit all outdoor activities. *Concord Monitor*
- May 31, 2010  
On Memorial Day weekend, brush fires from Canada impacted the air quality of New Hampshire Residents from more than 50 wildfires that are burning out of control in Quebec. Over 150,000 acres in central Quebec, north of Montreal and Quebec City, about 500 miles north of Manchester, reduced visibility to 1.75 miles in Concord. No air quality alert was issued, although people with respiratory issues were urged to remain indoors. *Union Leader 2010*

### **Events in Sutton**

The following extreme air pollution events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

*Potential Future Hazards*

Sutton residents can do little to reduce extreme air pollution. Monitoring the air quality action days and staying indoors on days with a high level of pollution is the best way to protect residents.

Wildfires and other types of fires can reduce air quality in isolated areas.

The winds and the areas of higher elevation help make extreme air pollution a lesser problem here in Town. Hazy air is experienced on bad air quality days, but overall the air quality is good.

### **Radiological Accident**

Radiological accidents occur primarily at nuclear power plants when radioactive gases are released. They can cause widespread contamination to people and ecosystems as were the cases in Chernobyl and 3-Mile Island. Their cleanup may take centuries because of the extreme saturation of contaminants in the soil, in buildings and in water supplies.

<b>SUTTON RADIOLOGICAL ACCIDENT EVENTS</b>	
<b>Probability -</b>	<b>MODERATE</b>
<b>Magnitude -</b>	<b>LOW</b>
<b>Overall Risk -</b>	<b>1.0</b>

### **Area Events**

The Central New Hampshire region is geographically located between Vermont Yankee Nuclear Power Plant in Vernon, VT and the Seabrook Nuclear Station in Seabrook, NH. These facilities present the greatest risk of radiation contamination to the region in the case of a meltdown or other catastrophic event. As more nuclear facilities are decommissioned, the mobilization of nuclear wastes will increase, augmenting the risk of exposure. Small underground shelters or concrete basements may provide a level of protection. Personal household supplies of iodide, purchased in advance, can help limit the uptake of radiation in the thyroid.

- **January 7, 2010 - Present**

The Vermont Yankee Nuclear Power Plant notified the Vermont Department of Health that groundwater monitoring samples taken in November 2009 contained tritium. An investigation was launched, and a major source of leakage was found in steam pipes inside the Advanced Off-Gas (AOG) drain line to be clogged and corroded. The samples taken show the movement of the tritium contamination in the groundwater into the Connecticut River. Health risks are being investigated. *Vermont Department of Health 2012*

### **Events in Sutton**

The following radiological events are found to have impacted Sutton.

- **Fall 2006**

During the Exit 10 blasting, members of Sutton Fire met with the company doing the blasting on the highway and were told that if the work trailer caught fire, they should let it burn due to the radioactive device inside. *Sutton Hazard Mitigation Committee 2008*

### **Potential Future Hazards**

Sutton is positioned between Vermont Yankee and Seabrook nuclear power plants. No one portion of the Town is more vulnerable than the next. Sutton is not considered vulnerable to any radiological threat from failure of the nuclear power plants due to any terrorist attack or any other malfunction causing public concerns.

Occasionally, trucks using Routes 114, 103 and/or I-89 transport radiological waste and/or material through the Town borders. The spillage of these materials and/or wastes has the potential to cause a serious but isolated contamination event.

### Fuel/Resource Shortage

Current popularly-used sources of energy, such as petroleum, are limited and their production levels are variable, therefore they are prone to shortages and will continue to be so in the future. Fuel and resource shortages are also due to rises in demand. As different regions of the world develop they will need more fuel. Fuel and resource shortages are evident in the rising costs of energy.

SUTTON FUEL/RESOURCE SHORTAGE EVENTS	
Probability -	<b>MODERATE</b>
Magnitude -	<b>LOW</b>
Overall Risk -	<b>2.67</b>

### Area Events

Fuel and resource supplies are often dictated by international geopolitical events, as was the case in 1973, and weather events such as hurricanes in the Gulf of Mexico, therefore it is difficult to predict future hazards that may affect the central New Hampshire region. Nevertheless, any major weather event occurring in the south during hurricane season or a particularly cold winter in the northeast, can and will impact the fuel and resource supply in Webster and the entire region. In addition, as made evident in recent months, political instability in oil producing countries and foreign policy do affect fuel supply in the United States.

- 1973  
The OPEC nations halted exports of oil to the Western nations that supported Israel during a conflict known as the Yom Kippur War, which uncovered the actual power OPEC had on the world's energy business. In the United States, a massive shortage led to high fuel prices and near chaos. The incident caused the U.S. to seriously consider its energy situation and energy independence. *Canadian Economy Online*
- August 31, 2005  
Gasoline prices rose between 40 and 50 cents in Hurricane Katrina's wake and there was concern that in many regions gasoline wouldn't even be available to consumers. President Bush stated that the natural disaster "disrupted the capacity to make gasoline and distribute gasoline". *The White House Office of the Press Secretary, August 31, 2005*
- April, 2006  
MSNBC released the article: "Gasoline Supply Problems Hit U.S. East Coast". The article began by stating: "Scattered gas stations from New Hampshire to Virginia are facing temporary shortages as the industry grapples with a transition to more ethanol-blended fuel." The cause of the fuel shortage was due in large part to logistical and transitional difficulties as terminal owners were required to switch to the higher ethanol-content gas. *MSNBC website, April 21, 2006*
- April 2007  
Rumford Energy oil went out of business, filing bankruptcy, with pre-paying customers losing their money. The company owed at least \$1million dollars to more than 1,000 customers in the Concord area. *Concord Monitor 05/18/07*

### *Events in Sutton*

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### *Potential Future Hazards*

Sutton residents and officials are not at any particular risk for fuel/resource shortage. Rather, they as consumers are under the same economic conditions and burdens as the rest of the country. Personal fuel consumption choices will result in individuals and the municipality weathering any existing and future fuel shortage.

There is one service station operating in Sutton for public use. This station receives their supply of gasoline from outside of the local area. With rising prices, people may have to make choices as to how to best economize their vehicle trips. Sutton will most likely continue to feel the effect of the national energy crisis.

**Strike**

A strike is the collective refusal to work under unfavorable conditions set by employers. Employees who wish to express their disdain for low wages, long hours or poor working conditions will often strike as a group in order to make a greater impression on an employer, the public or the media.

SUTTON STRIKE EVENTS	
Probability -	Low
Magnitude -	Low
Overall Risk -	1.0

**Area Events**

Strikes are most common of employees of public institutions and private businesses. Strikes have the potential to disrupt business, schools and/or government.

- 1922  
A nine month strike occurred in Manchester, NH at the Amoskeag Manufacturing Company over wages and hours.

**Events in Sutton**

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

**Potential Future Hazards**

It is illegal for public employees and unions to strike, but "sick-outs" can occur. A few businesses in Town could be affected if a strike occurred. If a strike/ sick-out occurred at one of the Town Departments or at one of the three elementary schools, this could have an effect on the Town and the residents. Any strikes, or public outcry at the act of striking, would stretch the Police Department resources as well as the Fire Department & Rescue Squad.

### Business Interruption

Business interruption may occur following a natural disaster or catastrophe, such as a hurricane, fire or flood. Occasionally, businesses are forced to temporarily close their operations in order to make necessary repairs caused by damage or to relocate. During a period when a business is interrupted, it may lose money to competitors, causing further economic hardship.

SUTTON BUSINESS INTERRUPTION EVENTS	
Probability -	<b>MODERATE</b>
Magnitude -	<b>LOW</b>
Overall Risk -	<b>2.0</b>

### Area Events

Significant employers in the region, many of which provide crucial services or goods, have the potential to be incapable of opening for business if a disaster were to occur. Most recently, during the May 2006 floods in the central New Hampshire region, numerous area businesses experienced interruptions. Several businesses are highlighted below.

- May 10, 2005  
A February fire at Bowie's Market in Bradford caused a two and a half month business interruption as Bruce Bowie and family relocated their market to the town of Andover. The Bowie family was out of work during the interruption. They eventually relocated to an East Andover location where they had previously done business. *Concord Monitor*
- May 30, 2006  
An article in the Concord Monitor, published May 30, 2006, described the business interruption experienced by some local area businesses. Pitco Frialator, Blue Seal Feeds and Grappone Auto Dealerships were affected by the high water levels. At Pitco Frialator, within a week everything was back to normal and a large contract with a restaurant chain was nearly complete. At the Concord Business Center, 45 businesses that rent space were not able to work for 2 days. Over 140 businesses reported damage to the state. Farms, orchards and greenhouses were hardest hit. *Concord Monitor*

Route 3A in Concord and Bow, an area of multiple car dealerships, industrial enterprises, and major employers, was closed for three days as a result of the "Mother's Day" floods, which affected businesses, restaurants, and truck stops in Bow. *Bow Hazard Mitigation Committee 2007*
- Ice Storm, December 2008  
Businesses throughout New Hampshire were affected by the ice storm.

### Events in Sutton

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### Potential Future Hazards

The potential for interruption exists for all Sutton businesses because of other hazards that have the potential to cause such interruptions. Any one of the other risks mentioned here has the potential to cause business interruption. Although the interruptions may be harmful to Sutton business owners, none of the businesses in Town provide any critical services or goods. Vernondale Store provides gas and convenience items.

### Financial Issues, Economic Depression, Inflation, Financial System Collapse

Financial concerns such as depression, recession, inflation and financial system collapse have previously affected the United States and most industrialized nations of the world. Both developing and industrialized nations have experienced economic depression and financial system collapse due to unpredictable changes in the stock market, inflation, geopolitics, energy prices, etc. The most memorable economic depression that has occurred in the United States was the Great Depression that began in 1929 and may not have ended until the U.S. entered WW II in 1941. Economic depression can also occur on a local level with the closing of a major company or manufacturer resulting in widespread layoffs.

SUTTON FINANCIAL COLLAPSE EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	6.0

### Area Events

Financial concerns mentioned above are somewhat difficult to predict, especially when considered on a localized level. Economic concerns such as layoffs are fickle and can occur on a whim. Some major employers in the region with great influence are: Shop & Save Grocers-Concord, Graphic Packaging-Concord, Precision Technology Inc.-Pembroke, CAIMS Protective Clothing-Pittsfield, Concord Hospital, Grappone Auto Dealerships-Concord and Pitco Frialator in Concord.

- April 27, 2006  
In Franklin, 172 workers were laid off from Polyclad Laminates. *Concord Monitor*
- April 30, 2006  
It was reported that China Mill in Suncook plans to lay off 58 of its 150 workers in June of 2006. *Concord Monitor*
- Summer 2009  
Precision Technology in Pembroke closed suddenly without the required 60 days' notice under the federal Worker Adjustment and Retraining Notification Act and owed their 131 employees money. The business printed and bundled fliers and inserts for mass mailings. The State assisted the workers in obtaining what was owed. *Concord Monitor 10/5/10*

### Events in Sutton

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### Potential Future Hazards

Multiple simultaneous business closings within the town would have an adverse effect on residents and businesses. Most of Sutton's residents work outside of the community and would be subject to the effects of local area economics.

### Communications Systems Interruptions

Communications systems, like utilities, are found everywhere and are subject to damage by construction work, severe weather and traffic accidents. Because communications systems depend on electricity, any power outage may cause an interruption in a communications system. In addition, many communications systems have buried cables which are particularly vulnerable to being cut. Communications systems interruptions can negatively impact a region, town, neighborhood or household in the case of a natural disaster, catastrophe or other emergency.

SUTTON COMMUNICATIONS SYSTEM INTERRUPTION EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	6.0

### Area Events

Communications systems are as prone to failure as power. Power lines often share cables and poles with communications systems. When power fails, cable and telephone services frequently fail as well.

- Mid-1990s  
It was thought that in 1994 or 1995, Concord Hospital phone lines were down. *Boscawen Hazard Mitigation Committee 2007*
- Circa 2003  
A Verizon failure in Manchester affected the State's 911 dispatch. *Concord Fire Department*
- September 30, 2005  
High winds and heavy rains left thousands without power. In Bow, the radio station WTPL 107.7 FM lost power for 2 hours. *Concord Monitor*

### Events in Sutton

The following events are found to have impacted Sutton.

- October 2012  
The local dispatch lost communications capability for a brief amount of time. *Sutton Hazard Mitigation Committee 2014*

### Potential Future Hazards

Systems failures could affect Town businesses and local government on a large scale. Sutton has 4 cell towers that provide coverage to parts of Town. In East Sutton, no communications are available. Roby Road and Jolly Farm Road do not have cellular capability, and it is difficult to dispatch by radio. On sections of Route 114 and in South Sutton, cellular reception is problematic. The Town uses analog radios but has digital capability. New equipment has recently been obtained, but topography regularly interferes with cellular and radio transmissions. A communications interruption or failure could affect the capabilities of emergency personnel.

Cable is available in certain areas of the community. Telephone lines provide main service to Sutton. Communication failure can result from the effect of a natural disaster such as a severe wind storm, or severe winter weather. Such an outage will likely affect the majority of Town residents and the traveling public passing through Sutton.

If land lines and cell towers were interrupted, then cable and email would likely be interrupted as well. The state has portable communication trailers that can be moved into Sutton if needed.

## HUMAN HAZARD EVENTS IN SUTTON

Events of this nature include economic collapse, general strike, terrorism (ecological, cyber and chemical), sabotage, hostage situations, civil unrest, enemy attack, arson, mass hysteria, and special events. While relatively uncommon, they are all caused by direct human action.

Committee member experiences, knowledge, and recollections generally comprise the local *Events in Sutton* sections. While additional hazards might have occurred in Town, those events in the Plan are what the Committee chose to list, or were familiar with to list, to comprise the hazard events listed within the local *Events in Sutton* sections over the various versions of the Hazard Mitigation Plan. The same is true for the *Potential Future Hazards* sections.

### Economic Threats

Identity theft and crimes against financial institutions pose an economic threat to all citizens. These threats include bank fraud, debit and credit card fraud, telecommunications and computer crimes, fraudulent identification, fraudulent government securities, counterfeiting, and electronic fund transfer fraud. These crimes can have drastic economic impacts upon an individual, family, business or organization.

SUTTON ECONOMIC THREAT EVENTS	
Probability -	HIGH
Magnitude -	LOW
Overall Risk -	2.0

### *Area Events*

Economic threats such as those mentioned above can indeed threaten an individual, family, business or organization. Recently, identity theft and fraud have become matters of great concern for people wishing to protect their identity and investments.

- *November 2009*  
The Meredith Financial Resources Mortgage Service, which suddenly declared bankruptcy, was declared a front for a massive Ponzi scheme that may have cost investors as much as \$100 million. The money was supposedly placed in trusts and used to finance construction projects. Investors' money may have instead been used to pay interest to earlier investors, rather than financing the construction projects they claimed to back. Officials with the New Hampshire Department of Justice, the U.S. attorney's office, the FBI, and state banking and securities regulators continue to investigate the case. *Concord Monitor, December 2009*

### *Events in Sutton*

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### *Potential Future Hazards*

Most businesses in Sutton are home businesses. The citizens of Sutton are potential victims of economic threats, but no more so than citizens of other towns and cities in New Hampshire and beyond. Personal education about options and protection measures is key to individual financial protection. Incident history indicates that the elderly are most frequently targeted by scams and fraud. **Table 8** displays the **Economic Assets** in Sutton. Economic challenges put strain on residents of Sutton, and these impacts to the Town's residents could be far reaching.

The communications equipment on top of Mt. Kearsarge belongs to state agencies, federal agencies and private cell phone companies. The state repeaters and other equipment could be vulnerable to lightening events. Towns' emergency services have their own separate antennas including the highway department, police department and fire station.

There are four (4) cell towers in the Town of Sutton located at Eaton Grange, King Hill, Shadow Hill and one on Mastin Road. A tall communications tower could possibly be damaged in the event of a tornado. A communications interruption or failure resulting from damage to the tower could affect the capabilities of emergency personnel.

**General Strike**

A general strike is the stoppage of work by a significant proportion of workers over a broad range of industries in an organized effort to achieve economic or political objectives. A general strike is a form of social revolution.

**Area Events**

Strikes which would affect the area could occur at public and private institutions and at those businesses which supply goods and services to consumers.

- **May 1, 2006**

The most recent general strike that occurred in the United States and New Hampshire was the 'Day Without Immigrants' strike during which both legal and illegal immigrants, in a show of solidarity, boycotted businesses and did not work or go to school in order to demonstrate the economic impact immigrants have on the United States. Events in New Hampshire were held at Dartmouth College and City Hall Plaza, Manchester.

**Events in Sutton**

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

**Potential Future Hazards**

It is illegal for public employees and unions to strike, but "sick-outs" can occur. A few businesses in Town could be affected if a strike occurred. If a strike/ sick-out occurred at one of the Town departments or at any of the 3 schools, this could have an effect on the Town and the residents. Any strikes, or public outcry at the act of striking, would stretch the Police Department resources as well as the Fire Department & Rescue Squad.

<b>SUTTON GENERAL STRIKE EVENTS</b>	
<b>Probability -</b>	<b>MODERATE</b>
<b>Magnitude -</b>	<b>LOW</b>
<b>Overall Risk -</b>	<b>2.0</b>

### Terrorism

The use of force or violence against people in order to create fear, cause physical harm and/or intimidation or for reasons of ransom. Terrorists often make threats in order to create fear and change public opinion. Cyber terrorism consists of hackers who threaten the economy by attacking the intricate computer infrastructure, affecting business and communication. Biological and chemical terrorism refers to those infectious microbes or toxins used to produce illness or death in people or animals. Terrorists may contaminate food or water, thus threatening an unprotected civilian population. Eco-terrorism refers to the destruction of property by persons who are generally opposed to the destruction of the environment or to make a visible argument against forms of technology that may be destructive to the environment.

SUTTON TERRORISM EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	6.0

### Area Events

The following acts of terrorism are considered so because of their intent to create fear and also for their political motivation.

- November 1, 1993  
A shooting at the Newbury Town Hall was ignited by tax and land disputes. Two town workers were killed, another was wounded, and the gunman shot and killed himself.  
*Concord Monitor*
- August 1997  
Five people were left dead after a series of shootings which began in Bow by a man who was angered over long simmering land disputes. The individual was eventually apprehended in Colebrook, NH. *NH Homeland Security and Emergency Management*
- October 27, 1998  
The lit fuse of a bomb left in the Concord Library stacks set off smoke alarms that may have saved the lives of many people. The individual allegedly responsible for the bomb scare left notes complaining about state government. *NH Homeland Security and Emergency Management*
- October 1998  
About a dozen buildings were evacuated after the New Hampshire Technical Institute in Concord received an anonymous call warning that three bombs had been placed on campus. This event followed the bomb scares at the Concord Library. *AP Online, 11/01/98*
- October 2001 to February 2002  
The community responded to many suspicious packages and substances as a result of the introduction of anthrax spores into US Postal facilities elsewhere in the country.  
*Concord Fire Department*

- *October 2010*

A bomb threat was called in to Concord Hospital as a result of a child custody issue and the group known as the "Oathkeepers." The FBI was contacted, but nothing was found in the Hospital during a bomb sweep. Phone lines were flooded with calls by the Oathkeepers to inhibit using the landlines. The incident was determined to be harassment instead of an actual event. *Concord Hazard Mitigation Task Force 2011*

### *Events in Sutton*

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### *Potential Future Hazards*

It is extremely unlikely that Sutton will be the target of any act of terrorism, but because there are many forms of terrorism and terrorists, the possibility always exists. Potential targets include the Town Hall, the High, Middle, and Elementary Schools (local attack), and the bridges on I-89 (regional attack).

### **Sabotage**

Sabotage is a deliberate action aimed at someone or some institution in order to weaken that person's or institution's integrity and reputation through subversion, destruction, obstruction or disruption. Sabotage may occur in war, a workplace, in the natural environment, as a crime, in politics or as a direct attack against an individual.

<b>SUTTON SABOTAGE EVENTS</b>	
<b>Probability -</b>	<b>HIGH</b>
<b>Magnitude -</b>	<b>MODERATE</b>
<b>Overall Risk -</b>	<b>6.0</b>

### **Area Events**

Sabotage is an isolated event and is nearly impossible to predict. Sabotage can infiltrate a business, organization or individual from any part of the world because of modern technology.

- October 2000  
A former help desk worker at a Portsmouth, NH company was found guilty by federal prosecutors of network sabotage for hacking into the company's system after being fired and deleting important documents. *U.S. Department of Justice Press Release. June 18, 2001*
- November 5, 2002  
A group of Republicans plotted to commit political sabotage by jamming a series of Democratic phone banks on Election Day. Two former Republican officials have been sentenced to federal prison for the crime. *Concord Monitor, June 16, 2006*

### **Events in Sutton**

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### **Potential Future Hazards**

Any incident of sabotage in Sutton could come from within Sutton or any nearby town. Local targets could be the communication and electrical facilities and substations as well as the cell towers. If the dispatch in New London were sabotaged, Sutton would not have that emergency service available.

The communications equipment on top of Mt. Kearsarge belongs to state agencies, federal agencies and private cell phone companies. The state repeaters and other equipment could be vulnerable to lightening events. Towns' emergency services have their own separate antennas including the highway department, police department and fire station.

There are four (4) cell towers in the Town of Sutton located at Eaton Grange, King Hill, Shadow Hill and one on Mastin Road. A tall communications tower could possibly be damaged in the event of a tornado. A communications interruption or failure resulting from damage to the tower could affect the capabilities of emergency personnel.

### **Hostage Situation**

A hostage situation is an incident where an innocent civilian is held by someone or some group of persons demanding something from another person or group of persons not related to the person or persons being held hostage. The person or persons held are done so pending the fulfillment of certain terms.

<b>SUTTON HOSTAGE SITUATION EVENTS</b>	
<b>Probability -</b>	<b>HIGH</b>
<b>Magnitude -</b>	<b>MODERATE</b>
<b>Overall Risk -</b>	<b>6.0</b>

### **Area Events**

Hostage situations can occur anywhere, including banks, schools, governmental facilities, institutions, prisons, and in other locations.

- October 15, 1971  
In Nashua, a man held another man hostage at gunpoint and demanded to see the Chief of Police. The acting Chief arrived at the scene and was immediately shot by the man holding the other man hostage. The acting Chief died 12 days later. *City of Nashua, NH website*
- 1980  
In Portsmouth, a woman took two students hostage for 2-3 days. She demanded to speak to Jimmy Carter about the hostage situation in Iran. She was talked out of the situation, released the students, and was prosecuted. *Bow Hazard Mitigation Committee*
- October 2007  
In Rochester, a man held three people working for Hillary Clinton's presidential campaign hostage with a bomb and demanded to speak with Senator Clinton. Local police, State Police, and the FBI address the situation and took the man into custody without incident. *News Reports*

### **Events in Sutton**

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### **Potential Future Hazards**

Hostage situations are isolated events and are therefore nearly impossible to predict. Due to their public nature, the Town Office and all three Schools would likely be the primary targets, if any. Domestic incidences are common, with the average per capita being equal to other communities.

### Civil Disturbance / Public Unrest

This hazard refers to types of disturbances that are caused by a group of people, often in protest against major socio-political problems including sit-ins or protests against wars and any general and public expression of outrage against a political establishment or policy.

Examples of civil disturbance include protests of the WTO and G8 meetings and large-scale sit-ins to protest against the Iraq War. Many instances of civil disturbance and

public unrest are quelled by a use of force from police. Participants may be victims of personal injury in severe cases.

SUTTON CIVIL DISTURBANCE/ PUBLIC UNREST EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	6.0

### Area Events

The most probable locations of larger civil disturbance and/or protest in the State are at the State House in Concord and at the universities and colleges. They have also occurred at controversial locations, such as feminist health centers. The Concord Feminist Health Center was the victim of arson in 2000.

- January 1998  
Between 500 to 600 University of New Hampshire students took over an intersection in Durham. The use of force by police and fire crews was required in order to dissipate the potential risk of further unrest and potential injury due to violence. Several students were treated after being sprayed with pepper spray. *“Civil Unrest in Durham: Lessons Learned”, Fire Service News, NH Fire Academy, Volume XVII, Number 1*
- October 2003  
Anti-abortion group protests school’s sex education program in Goffstown. The anti-abortion protestors were affiliated with Hillsborough County Right to Life. The intent of the group was to express their view that the sexual education curriculum in the district was inappropriate. *Siecus Public Policy Profile, State Profile of New Hampshire*
- November 9, 2005  
In Concord, the teachers’ union protested for weeks over contract negotiations. One of their qualms was the rising cost of health benefits. As of the 9<sup>th</sup>, teachers had not supervised after-school clubs, participated at staff meetings or been involved with other volunteer roles for two weeks. Each morning before classes they picketed. The union’s lead negotiator said: “people are happier when they feel fairly compensated.” *Concord Monitor*
- March 8, 2006  
About 25 Trade union members protested outside Concord Hospital on Pleasant Street, arguing that the hospital should refuse to hire contractors for the new addition who do not provide health insurance to their workers. Protestors stated that non-union contractors who didn’t provide health insurance had an unfair advantage over those who did. *Concord Monitor*
- March 18, 2006  
A reported 400 citizens marched in Concord to recognize the 3 year anniversary of the beginning of the war in Iraq. The protestors marched around downtown Concord and finished in front of the statehouse. *NH Independent Media Center*

- *Late April, 2006*  
A protest took place at the statehouse in Concord. Protestors demonstrated their opposition to the federal government's new national ID card proposal, the Real ID Act.  
*Washington Post*

### *Events in Sutton*

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### *Potential Future Hazards*

The population of Sutton is 1,841 in 2011. Large-scale incidents of civil disturbance and public unrest are unlikely to occur in Sutton. School vote meetings and deliberative sessions can be the most controversial, and have recently been separated into two meetings. People are screened for metal objects. The meetings include contentious tax rate and budget items. Town Meetings and Board meetings are relatively benign.

**Enemy Attack**

Enemy attack, although unlikely, has previously occurred on American soil and may occur in the future. The most memorable enemy attack of recent years was the 9/11/2001 attack against the World Trade Center in New York and against the Pentagon. Much effort is being made by the Government to prevent an enemy attack before it occurs by collecting intelligence on potential enemies of the United States.

<b>SUTTON ENEMY ATTACK EVENTS</b>	
<b>Probability -</b>	<b>Low</b>
<b>Magnitude -</b>	<b>Low</b>
<b>Overall Risk -</b>	<b>1.0</b>

**Area Events**

The area does have a number of potential targets which may be attractive to enemy attack, including Vermont Yankee and Seabrook Nuclear Power Plants, the Franklin Falls, Hopkinton-Everett, and Blackwater Dams, and the State Office complexes in Concord.

**Events in Sutton**

The following events are found to have impacted Sutton.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

**Potential Future Hazards**

Although attacks are unlikely to occur, the disruption of cell towers, power lines, and communications abilities would cause the largest disturbance to the Town. However, with Interstate 89 running through the Town, regional targets could bring terrorists into or through Town.

**Arson**

The unlawful and intentional damage, or attempt to damage, any real or personal property by fire or incendiary device. Arson is a crime that can have grave economic repercussions, cause great property damage and cause personal injury or death.

SUTTON ARSON EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	6.0

**Area Events**

Many fires are difficult to prove as cases of arson because building/structure collapse permanently conceals evidence and arson can be as simple as throwing a cigarette butt in brush from a moving car. Fire Investigators regularly determine the cause of fires, some of which are determined as arson events.

- May 29, 2000  
The Feminist Health Center in Concord was the site of a fire determined to be arson. An accelerant was used. The center did not experience an interruption of business. *An open letter from the Concord Feminist Health Center*
- August 8, 2005  
Three Claremont teens were indicted on charges that they threw a bomb at an unoccupied house which caused major damage. *Concord Monitor*
- December 18, 2005  
An elderly Concord man's death was ruled a homicide after the man was pulled from a house fire. The cause of the fire was arson. *Concord Monitor*
- January 15, 2007  
According to investigators, a fire that destroyed a senior center under construction in Hopkinton appeared to be caused by arson. The two-story building was being framed and was set to open in the spring. *Concord Monitor*

**Events in Sutton**

The following events are found to have impacted Sutton.

- 1991  
At Blaisdell Lake on Old Blaisdell Road, a house with an attached garage was set on fire using an accelerant. Although no injuries were reported, the home was a total loss. *Sutton Hazard Mitigation Committee 2008*
- Late 1990s  
On Route 114, a house being remodeled was set on fire by a teenager. No injuries were reported, and the house was saved. *Sutton Hazard Mitigation Committee 2008*
- July, 2003  
A student set fire to the Kearsarge Regional High School announcer's booth. *Sutton Hazard Mitigation Committee 2014*

*Potential Future Hazards*

Arson is a very real and potential hazard in Sutton and can occur anywhere in Town, which is heavily forested. At King's Hill, teenagers regularly hang out and have bonfires. The area is difficult to monitor. Fires set in remote areas are also of particular concern because of accessibility and the potential to damage large areas.

### **Mass Hysteria**

The collective hysteria (shared hysterical or socio-psychological symptoms) experienced by more than one person. Mass hysteria may occur when a group witness a particular traumatic event and experience the same nauseating symptoms or react similarly. Examples of mass hysteria include such cases as rioting and frenzy, particularly following large-scale accidents or terrorist attacks.

<b>SUTTON MASS HYSTERIA EVENTS</b>	
<b>Probability -</b>	<b>MODERATE</b>
<b>Magnitude -</b>	<b>MODERATE</b>
<b>Overall Risk -</b>	<b>4.0</b>

### **Area Events**

Mass hysteria events are more likely to occur in large population centers, which in the area includes sections of Concord, the New Hampshire International Speedway in Loudon during race events, and in gatherings of people in other locations. Significant annual events are listed in **Table 1**.

- *Mid 2000s*  
At a local hockey game at New England College, parents and teams reacted to an incident during the event. Multiple people were removed by the Police Department. *Henniker Hazard Mitigation Committee 2007*

### **Events in Sutton**

The following events are found to have impacted Sutton. Significant local annual events are listed in **Table 1A**.

- No details on specific events were found during research on Sutton or were identified during Committee discussion.

### **Potential Future Hazards**

While no mass hysteria events are anticipated, areas of high population concentrations such as in the Villages or along high vehicular travel such as I-89 or Route 114 would be the most likely locations affected.

The three schools would also be the most likely locations for a scene of mass hysteria. Situations include if students view an active shooter situation, student injuries, smoke bombs, stink bombs, or pepper spray release. Similarly, these incidents could occur on a bus.

In any situation, the phone system and dispatch could be overloaded, as well as the Police Department, Fire Department, and Town Hall offices and phone lines.

### Special Events

Events draw large numbers of people to area hotels, stores, restaurants and streets, generating increased revenue for local businesses. Large gatherings of people can influence behaviors of groups which may result in mass hysteria, or may become a target for a form of terrorism.

SUTTON SPECIAL EVENTS	
Probability -	HIGH
Magnitude -	MODERATE
Overall Risk -	6.0

### Area Events

Many special events in and around Concord have a significant impact on the number of people in any given location on any particular day. **Table 1** summarizes the major annual events that directly or indirectly impact the entire region.

**Table 1**  
Significant Area Annual Events

Event	Date	Number of People	Location
Annual Law Enforcement Event	Second Week in May	2,000	Concord - State House / LOB
Balloon Rally	First weekend in August	10,000	Pittsfield - Drake's Field
Breast Cancer Walk	October	5,000	Throughout Concord
Concord High School Graduation	Middle of June	4,000	Concord - Memorial Field
Day after Thanksgiving Shopping	Day after Thanksgiving	Unknown	Concord - Mall Area, Loudon Road, Downtown
Downtown Market Days / Summer Music Festival	Third week in July (Wed, Thurs, Fri)	5,000 daily	Concord - Downtown
First Fridays Events	First Fridays in May, June, and July	Unknown	Concord - Main Street
UNH Law School Graduation	Middle of May	Unknown	Concord - Washington Street
Halloween Howl	Friday before Halloween	1,000-2,000	Concord - Main Street
Highland Fling	September (3 days)	1,000 daily	Concord - Downtown
Holiday Magic Parade	November	1,000	Concord - Heights
Hopkinton State Fair	September (Labor Day wknd)	40,000 - 50,000 total	Hopkinton - State Fairgrounds
July 4 Fireworks	July 4	5,000	Concord - Memorial Field
Kiwanis Parade & Fair	Second Weekend in May (Thurs, Fri, Sat & Sun)	1,000	Concord - Main Street, Everett Arena
Laconia Motorcycle Rally Week	June (week before Father's Day)	100,000 - 400,000	Laconia, Weir's Beach, Lakes Region area
Leaf Peeping Tourism	September/October	500-800	Concord
Memorial Day Parade	Memorial Day (observed)	Unknown	Concord - Main Street
Midnight Merriment	First Friday in December	Unknown	Concord - Main Street
NH Motor Speedway: Motorcycle Weekend	June (Father's Day week)	15,000 - 20,000	Loudon
NH Motor Speedway: NASCAR Cup Race	July and September weekends	110,000	Loudon
NH Technical Institute Graduation	Mother's Day Weekend	1,500	Concord - NHTI
Payson Center Rock'n Road Race 5K	May	10,000+	Throughout Concord

**Table 1, continued**  
**Significant Area Annual Events**

Event	Date	Number of People	Location
Presidential Primary Election (media attention)	Sept - Nov every four years (2016)	Unknown	Concord - State House, Polling Places
St. Paul's School Alumni Weekend	Weekend after Memorial Day (Fri, Sat, & Sun)	2,000	Concord - St. Paul's School
Weekend Commute	Friday - Sunday	Unknown	Interstates 93 & 89 North/South

Source: CNHRPC Region Hazard Mitigation Committees

### Events in Sutton

Local special events have an immediate impact on the community as the infrastructure bends to accommodate a significant number of additional people traveling to one location, and being situated in one location, on event days. Events which take place in Sutton are displayed in **Table 1A**.

**Table 1A**  
**Significant Local Annual Events**

Event	Date	Number of People	Location
Farm Days	Last weekend in August	1,000/day	Muster Field Farm / Harvey Road
Fourth of July Parade	July 4	50-75	South Sutton
Harvest Day	Early fall	100-300	Muster Field Farm / Harvey Road
High School Graduation	Mid-June	1,000+	High School lot, Park on North Road for 3/4 of a mile
Ice Harvest Festival	January/when ice is thick	200-300	Kezar Lake
June Jam	Late June	100-200	Muster Field Farm / Harvey Road
Old Home Day	Mid August	100-200	South Sutton
Relay for Life (American Cancer Society)	First weekend in June	500	High School
Sporting & Social Events at the High School and Middle School	Throughout the year	20-300	High School/Middle School
State/Federal Elections	September/November	500-1,900	Town Hall
Town Meeting	Second week in March	500-1,900	Town Hall
Town Election	Second week in March	500-1,900	Second week in March
Strutt in' Sutton	Second Week September	Unknown	Undetermined

Source: Sutton Hazard Mitigation Committee 2008, 2014

### Potential Future Hazards

Since large gatherings in Sutton are uncommon, residents are more likely to be affected by those events occurring in Concord and the area. Effects of these events could include traffic congestion, vehicular accidents, and lack of goods and services available for purchase and consumption.

## EVACUATION ROUTES

Evacuation routes out of a community generally follow along main travel ways in a north-south and/or east-west pattern to lead to other communities and state or interstate routes. In Sutton, the primary evacuation route is I-89 North or South. In the event that the Interstate is blocked, a secondary north-south route would be Route 114 north to New London and south to Bradford, Kearsarge Valley Road to Wilmot, and Roby Road south to Warner.

### Primary Evacuation Routes

- I-89 North - South

### Secondary Evacuation Routes

- Route 114 north to New London
- Route 114 south to Bradford
- Kearsarge Valley Road to Wilmot
- Roby Road south to Warner

These evacuation routes out of Sutton are depicted on *Map 1: Potential Hazards*. In the event of an emergency, there should be a plan to coordinate evacuation traffic in the appropriate directions.

## MAP 1: POTENTIAL HAZARDS

The first map in this four-part series, *Map 1: Potential Hazards*, depicts where hazards are likely to occur in Sutton. The intent of this map is to portray a picture of which areas of Town may be more vulnerable to certain types of hazards and how best to exit Sutton in the event of an emergency.

Areas where flooding regularly occurs along roadways are shown with wetlands and the Town's water features. Areas identified as particularly susceptible to road flooding damage are noted in addition to Sutton's steep slopes (>15%). The PSNH power lines and evacuation routes are also shown. Bridges and dams are displayed as potential hazards. The intent of this map is to portray a picture of which areas of Town may be more vulnerable to certain types of hazards.

## MAP 2: PAST HAZARDS

*Map 2: Past Hazards* identifies the locations where known natural disasters have occurred in town. In Sutton, areas of flood damage, ice and snow damage, fire damage, and frequent accident locations were noted on the map. The past hazard locations were identified by the Hazard Mitigation Committee or through research into the hazards listed within this Chapter.

## CHAPTER 3. ASSET AND RISK IDENTIFICATION

### 2014 PLAN UPDATE

The Hazard Mitigation Committee reviewed and updated as needed each of the assets and risks tables within this Chapter. Sites were added or removed, and contact information was revised. Modifications were made to the *Hazard the Site is Most Susceptible to* to reflect the addition of technological and human hazards into the document. Revisions were made to the future development section, which now includes a clear table. The *Map 3: Assets and Risks* and *Map 4: Potential Hazards and Losses* maps were also updated as needed.

### INTRODUCTION

The identification of assets within a community is integral to determining what may be at risk from a natural disaster. This Chapter examines the assets in five categories: **CRITICAL FACILITIES**, **VULNERABLE POPULATIONS**, **ECONOMIC ASSETS**, **SPECIAL CONSIDERATIONS**, and **HISTORIC/OTHER CONSIDERATIONS**.

Not only are the address and phone number supplied, where available, for each identified asset, the hazards to which the asset is most susceptible are listed. Hazards are primarily natural disasters, but can also include secondary disasters (such as sewer or water line rupture) or human-made disasters or emergencies (such as a vehicular accident).

In Sutton, each asset can be damaged by any or all of the dozens of hazards listed in **CHAPTER 2. HAZARD IDENTIFICATION**. The majority of the assets appear on *Map 3: Assets and Risks* at the end of this section. Because of the numerous hazards each site may be susceptible to, the main hazard categories of Natural, Human, and Technological were often used in the following tables to signify the primary type of hazard susceptibility. When these general designations are not sufficient, specific hazards are alternatively listed if they are appropriate for a given site.

**CRITICAL FACILITIES**

Critical facilities are categorized as those town or state buildings or services that are first-responders in a disaster. Fire Departments, Police Departments, and Department of Public Works as well as the Town Office are crucial in providing and coordinating the emergency services. Other critical facilities would include hospitals and shelters. Utilities or utility features are also included because of communication and power/water services provided.

**Table 2**  
**Essential Facilities**

Facility Type	Address	Phone	Hazards the Site is Most Susceptible to
Town Hall	93 Main St., Sutton Mills	927-4416	Flooding, Hostage Situation
Fire Department	2 North Road, North Sutton	927-4740	Communication Interruption/Fuel Shortage
Police Department	1 North Road	927-4422	Communication Interruption/Fuel Shortage
Highway Department	13 Village Road, Sutton Mills	927-4411	Communication Interruption/Fuel Shortage
Kearsarge Regional Middle School	32 Gile Pond Road	927-2100	Hostage Situation/Mass Hysteria
Kearsarge Regional High School	457 North Road	927-4261	Hostage Situation/Mass Hysteria
Sutton Central School	28 Newbury Road	927-4215	Hostage Situation/Mass Hysteria

*Source: Sutton Hazard Mitigation Committee*

**Table 3**  
**Utilities**

Facility Type	Address	Phone	Hazards the Site is Most Susceptible to
Communication Tower	Eaton Grange Road	N/A	Sabotage/Weather/Chemical
Communication Towers	Shadow Hill Road	N/A	Sabotage/Weather/Chemical
Communications Tower	Mastin Road	N/A	Sabotage/Weather/Chemical
Communications Tower	Summit Road	N/A	Sabotage/Weather /Chemical

*Source: Sutton Hazard Mitigation Committee*

**Table 4**  
**Dams**

Facility Type	Status	Class	Location	Hazards the Site is Most Susceptible to
231.01 Kezar Lake Dam	Active	NM	Lane River	Earthquake, Sever Weather, Biological, Flooding, Breach
231.02 Lane River Dam	Active	NM	Lane River	Earthquake, Sever Weather, Biological, Flooding, Breach
231.03 Lane River Dam	Ruins	---	Lane River	Earthquake, Sever Weather, Biological, Flooding, Breach
231.04 Lane River Clothespin Mill Dam	Ruins	---	Lane River	Earthquake, Sever Weather, Biological, Flooding, Breach
231.05 Forsters Mill Dam	Active	NM	Lane River	Earthquake, Sever Weather, Biological, Flooding, Breach
231.06 Lane River	Active	NM	Lane River	Earthquake, Sever Weather, Biological, Flooding, Breach
231.07 Lane River Dam	Ruins	---	Lane River	Earthquake, Sever Weather, Biological, Flooding, Breach
231.08 Chadwick Grist Mill Dam	Breached	---	Unnamed stream	Earthquake, Sever Weather, Biological, Flooding, Breach
231.09 Lane River Dam VIII	Active	NM	Lane River	Earthquake, Sever Weather, Biological, Flooding, Breach
231.10 Lane River Sawmill Dam	Ruins	---	Lane River	Earthquake, Sever Weather, Biological, Flooding, Breach
<b>231.11 Blaisdell Lake Dam</b>	<b>Active</b>	<b>L</b>	<b>Tributary of Warner River</b>	<b>Earthquake, Sever Weather, Biological, Flooding, Breach</b>
231.12 Stevens Brook Dam	Active	NM	Stevens Brook	Earthquake, Sever Weather, Biological, Flooding, Breach
231.13 Lower Pond	Active	NM	Unnamed stream	Earthquake, Sever Weather, Biological, Flooding
231.14 Farm Pond	Active	NM	Springs	Earthquake, Sever Weather, Biological, Flooding
<b>231.15 Cascade Brook Dam</b>	<b>Active</b>	<b>L</b>	<b>Cascade Brook</b>	<b>Earthquake, Sever Weather, Biological, Flooding</b>
<b>231.16 Chadwick Meadows Wildlife Refuge</b>	<b>Active</b>	<b>S</b>	<b>Lions Brook</b>	<b>Earthquake, Sever Weather, Biological, Flooding</b>
231.17 Palmer Pond Dam	Ruins	---	Tributary of Stevens Brook	Earthquake, Sever Weather, Biological, Flooding
231.18 Rep Toomey Dam	Active	NM	Tributary of Lane River	Earthquake, Sever Weather, Biological, Flooding
231.19 Rep Toomey Downstream Control	Active	NM	Tributary of Lane River	Earthquake, Sever Weather, Biological, Flooding

*Source: NH Department of Environmental Services GIS dams database*

The dams in **Table 4** above have four classifications by the NH Department of Environmental Services which are differentiated by the degree of potential damages that a failure of the dam is expected to cause. The classifications are designated as **High Hazard (H)**, **Significant Hazard (S)**, **Low Hazard (L)**, and **Non-Menace (NM)**, and the rows are highlighted to make them more visible. Other dams are unclassified, which means that they are inactive. Further description is available in **CHAPTER 2. HAZARD IDENTIFICATION**.

The blue or gray highlighted dam(s) indicate those which are the most important in Town, and would do the most damage if breached, and are classified as either **H**, **S**, or **L Hazard** dams.

**Table 5**  
**Bridges**

Facility Type	Location	Phone	Hazards the Site is Most Susceptible to
079/145 (Town)	King Hill Road over brook	N/A	Earthquakes, Debris, Ice Jams, Flooding
084/160 (State)	I-89 Southbound over North Hominy Pot Road	N/A	Earthquakes, Debris, Ice Jams, Flooding
085/136 (Town)	King Hill Road over brook	N/A	Earthquakes, Debris, Ice Jams, Flooding
085/161 (State)	I-89 Northbound over North Hominy Pot Road	N/A	Earthquakes, Debris, Ice Jams, Flooding
086/143 (Town)	Felch Road over Lyon Brook	N/A	Earthquakes, Debris, Ice Jams, Flooding
086/158 (Town)	Hominy Pot Road over Lyon Brook	N/A	Earthquakes, Debris, Ice Jams, Flooding
091/136 (Town)	Penacook Road over Lyon Brook	N/A	Earthquakes, Debris, Ice Jams, Flooding
097/088 (Town)	Chalk Pond Road over Kings Brook	N/A	Earthquakes, Debris, Ice Jams, Flooding
099/088 (Town)	Chalk Pond Road over Lane River	N/A	Earthquakes, Debris, Ice Jams, Flooding
099/090 (Town)	Grist Mill Road over Lane River	N/A	Earthquakes, Debris, Ice Jams, Flooding
105/111 (Town)	Wadleigh Hill Road over Lane River	N/A	Earthquakes, Debris, Ice Jams, Flooding
109/144 (State)	I-89 Southbound over NH114	N/A	Earthquakes, Debris, Ice Jams, Flooding
109/145 (State)	I-89 Northbound over NH114	N/A	Earthquakes, Debris, Ice Jams, Flooding
112/126 (State)	Penacook Road over Kezar Lake Outlet	N/A	Earthquakes, Debris, Ice Jams, Flooding
117/065 (State)	NH114 over Lane River	N/A	Earthquakes, Debris, Ice Jams, Flooding
129/116 (State)	I-89 Southbound over Gile Pond Road	N/A	Earthquakes, Debris, Ice Jams, Flooding
130/117 (State)	I-89 Northbound over Gile Pond Road	N/A	Earthquakes, Debris, Ice Jams, Flooding
139/153 (Town)	Cotton Road over Baker Brook	N/A	Earthquakes, Debris, Ice Jams, Flooding
146/037 (Town)	Roby Road over Lane River	N/A	Earthquakes, Debris, Ice Jams, Flooding
146/107 (Town)	North Road over Stevens Brook	N/A	Earthquakes, Debris, Ice Jams, Flooding
170/024 (Town)	Morse Loop over brook	N/A	Earthquakes, Debris, Ice Jams, Flooding
191/058 (State)	I-89 northbound over Stevens Brook Pond	N/A	Earthquakes, Debris, Ice Jams, Flooding
192/057 (State)	I-89 southbound over Stevens Brook Road	N/A	Earthquakes, Debris, Ice Jams, Flooding

*Source: NH Department of Transportation State Bridge List*

**Table 6**  
**Shelters and Medical Facilities**

<b>Facility Type</b>	<b>Address</b>	<b>Phone</b>	<b>Hazards the Site is Most Susceptible to</b>
Kearsarge Regional High School	P.O. Box 182, 457 North Road	927-4261	Earthquake, Flooding, Tornadoes, Terrorism, Communication Failure, Power Failure, Fire
Kearsarge Regional Middle School	32 Gile Pond Road, North Sutton	927-2100	Earthquake, Flooding, Tornadoes, Terrorism, Communication Failure, Power Failure, Fire
Sutton Central School	RFD 1 Box 159, 28 Newbury Road	927-4215	Earthquake, Flooding, Tornadoes, Terrorism, Communication Failure, Power Failure, Fire
First Free Will Baptist Church	1533 Route 114	927-4150	Earthquake, Flooding, Tornadoes, Terrorism, Communication Failure, Power Failure, Fire
Trinity Bible Church	539 Route 114	927-4384	Earthquake, Flooding, Tornadoes, Terrorism, Communication Failure, Power Failure, Fire

*Source: Sutton Hazard Mitigation Committee*

## VULNERABLE POPULATIONS

Areas or neighborhoods that are densely populated, buildings that house people who may not be self-sufficient in a disaster or areas that include homes which are not very resistant to natural disasters are considered vulnerable. Vulnerable populations include schools, manufactured home parks (MHP), elderly housing developments or care facilities, and day care centers.

**Table 7**  
**Vulnerable Populations**

Facility Type	Address	Phone	Hazards the Site is Most Susceptible to
Kearsarge Regional High School	P.O. Box 182, 457 North Road	927-4261	Earthquake, Flooding, Communications Failure, Power Failure, Fire, Biological, Mass Hysteria
Sutton Central School	RFD 1 Box 159, 28 Newbury Road	927-4215	Earthquake, Flooding, Communications Failure, Power Failure, Fire, Biological, Mass Hysteria
Kearsarge Regional Middle School	32 Gile Pond Road, North Sutton	927-2100	Earthquake, Flooding, Communications Failure, Power Failure, Fire, Biological, Mass Hysteria
Live Wire Day Care	Route 114, Sutton/Bradford Town Line	938-2849	Earthquake, Flooding, Communications Failure, Power Failure, Fire, Biological, Mass Hysteria

*Source: Sutton Hazard Mitigation Committee*

## ECONOMIC ASSETS

Although a town normally contains dozens of small businesses, typically several businesses stand out prominently in Town. These businesses employ the most people in a town (both from Warner and from outside) and are places where large numbers of people are located and may need to evacuate from in the event of a disaster. In other cases, some large businesses can provide critical services or products to residents in need or may be able to sustain their employees for a duration of time. In Sutton, there are few businesses and only one which is large enough to be considered an economic asset.

**Table 8**  
**Economic Assets**

Facility Type	Address	Phone	Hazards the Site is Most Susceptible to
Labsphere	231 Shaker St	927-4266	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, Terrorism
Vernondale Store	1526 Route 114	927-4256	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, Terrorism
Follansbee Inn	2 Kezar Street	927-4221	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, Terrorism
Country Club of New Hampshire	178 Kearsarge Valley Road	927-4246	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, Terrorism
Wadleigh State Park	138 Penacook Road	927-4724	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, Terrorism

*Source: Sutton Hazard Mitigation Committee*

**SPECIAL CONSIDERATIONS**

Churches and cemeteries are special considerations for their unique contributions to society. Churches are often natural gathering places for people in disasters and can temporarily provide shelter and accommodation. Cemeteries, both public and small privately owned lots, are recognized for their historical and logistical importance. In addition, businesses that potentially store or use hazardous materials are listed as special considerations due to the potential for leaking or combustion in the event of a disaster.

**Table 9**  
**Cemeteries and Churches**

Facility Type	Address	Phone	Hazards the Site is Most Susceptible to
East Sutton Cemetery	East Sutton Road	n/a	Flooding, Earthquake, Ice, Wind, Biological
Blaisdell Cemetery	Blaisdell Hill Road	n/a	Flooding, Earthquake, Ice, Wind, Biological
Trinity Bible Church	539 Route 114	927-4384	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism
Palmer Cemetery	Gore Road	n/a	Flooding, Earthquake, Ice, Wind, Biological
Meetinghouse Cemetery	Meetinghouse Hill Road	n/a	Flooding, Earthquake, Ice, Wind, Biological
Millswood Cemetery	Route 114	n/a	Flooding, Earthquake, Ice, Wind, Biological
Sutton Mills Cemetery	Main Street	n/a	Flooding, Earthquake, Ice, Wind, Biological
Mastin Cemetery	Baker Road	n/a	Flooding, Earthquake, Ice, Wind, Biological
First Free Will Baptist Church	1533 Route 114	927-4150	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism
North Sutton Cemetery	Keyser Street	n/a	Flooding, Earthquake, Ice, Wind, Biological

*Source: Sutton Hazard Mitigation Committee*

**Table 10**  
**Hazardous Materials Facilities**

Facility Type	Address	Phone	Hazards the Site is Most Susceptible to
Transfer Station	795 Route 114	927-4475	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, Terrorism
Highway Department	13 Village Road	927-4411	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, Terrorism
Country Club of New Hampshire	178 Kearsarge Valley Road	927-4246	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, Terrorism

*Source: Sutton Hazard Mitigation Committee*

**HISTORIC/OTHER CONSIDERATIONS**

Historic resources and structures provide that link to the cultural history of a town. They may also be more vulnerable to certain hazards since they often have fewer safety devices installed or have limited access. Recreational facilities are places where large groups of people can and do gather. Campgrounds in particular may be more vulnerable to natural disasters because the shelters are light and temporary.

**Table 11**  
**Historic Sites and Buildings**

Facility Type	Address	Phone	Hazards the Site is Most Susceptible to
South Sutton Meetinghouse	17 Meetinghouse Hill Road	n/a	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism, Vandalism, Biological (Mold)
Muster Field Farm	63 Harvey Road	927-4276	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism, Vandalism, Biological (Mold)
Old Store Museum	12 Meetinghouse Hill Road	n/a	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism, Vandalism, Biological (Mold)
Old South Sutton School House	19 Meeting House Hill Road	n/a	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism, Vandalism, Biological (Mold)
Pillsbury Memorial Hall	93 Main Street, Sutton Mills	927-4416	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism, Vandalism, Biological (Mold), Flooding

*Source: Sutton Hazard Mitigation Committee*

**Table 12**  
**Recreational and Gathering Sites**

Facility Type	Address	Phone	Hazards the Site is Most Susceptible to
Country Club of New Hampshire (Club House)	189 Kearsarge Valley Road	927-4246	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism, Vandalism, Biological (Mold), Flooding, Fire/Explosion (Fertilizer)
Camp Wabasso - Girl Scout Summer Camp	166 Rte. 114	938-2240	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism, Vandalism, Biological (Mold), Flooding, Fire/Explosion (Fertilizer)
Wadleigh State Park (Park Entrance)	138 Penacook Road	927-4724	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism, Vandalism, Biological (Mold), Flooding, Fire/Explosion (Fertilizer)
Sutton Free Library	103 Main Street	927-4927	Earthquake, Severe Winter Weather, Tornado, Power Failure, Communication Failure, Terrorism, Vandalism, Biological (Mold), Flooding, Fire/Explosion (Fertilizer)
Smiley Grove Park	1513 Route 114	n/a	Severe Weather, Flooding, Vandalism

*Source: Sutton Hazard Mitigation Committee*

## FUTURE DEVELOPMENT

Not only do existing sites have susceptibility to different types of hazards, consideration must be granted to new development projects in a community. Sutton has few future development projects on the horizon which have been presented to, or will soon be presented to, the Planning Board. In addition, large areas of land which are for sale and/or have the potential to be sold and developed in the future are prime areas to identify for future development. All of these types of future development locations are shown in **Table 13**.

**Table 13**  
Future Development

Facility Name	Location	Type of Facility	Hazards the Site is Most Susceptible to
Meadowview Subdivision	08-217-478, Hominy Pot Road, Kings Hill, Felch Road, Penacook Road	9 lots residential	Earthquake, Severe Winter Weather, Power Failure, Communication Failure
Harborview Subdivision	10-688-134, Stonehouse Road and possibly Kings Hill as a secondary emergency access	32 lots residential	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, transportation issues
Falvey Subdivision	Baker Hill Road	6 lot residential	Earthquake, Severe Winter Weather, Power Failure, Communication Failure, Flooding/Landslides
Rogers Subdivision	Birch Hill Road	5 residential lots	Earthquake, Severe Winter Weather, Power Failure, transportation issues, Communication Failure,

*Source: Sutton Hazard Mitigation Committee*

This information does not appear on the maps because the developments or potential developments are not guaranteed to be built at this time.

### HOMES WITHIN THE SPECIAL FLOOD HAZARD AREAS

As noted in the **CHAPTER 4. POTENTIAL LOSSES**, there are **40** single family homes, **0** multi-family homes, **0** manufactured homes and **1** non-residential building located within the Special Flood Hazard Areas in Sutton.

With appropriate ordinances in place today, site-specific examinations would be conducted by the Building Inspector, and no new homes would be constructed without the necessary safeguards or permits.

The majority of homes within the floodplain are located along the main standing bodies of water, Blaisdell Lake, Kezar Lake, and Billings Pond or along the most prominent waters flowing in Town, Lane River, Stevens Brook, Lyons Brook, and Cascade Brook. Others are in low-lying areas.

With an up-to-date Floodplain Ordinance in place today, site inspections would be conducted by the Zoning Compliance Officer for all-new construction or substantial improvements. No new homes would be constructed in the Special Flood Hazard Areas without the necessary safeguards or permits.

### MAP 3: ASSETS AND RISKS

The *Map 3: Assets and Risks* illustrates the sites inventoried within this section. They are categorized into Emergency Response and Town Facilities, Schools, Water Supplies, Bridges, Dams, Cemeteries, Churches, Communications Towers, Daycare Facilities, Elderly Housing, Entertainment and Recreation, Hazardous Material Facilities, Large Employers, Manufactured Housing Parks, and Unique/Historic Resources. Each facility is referenced by a keyed and numbered legend. A concentration of facilities exists along NH Route 114 in the Villages.

## CHAPTER 4. POTENTIAL LOSSES

### 2014 PLAN UPDATE

As five years have elapsed since the second writing of this Plan, assessing data has changed and therefore building values have changed. Not only are the average and total home and non-residential building values in the Special Flood Hazard Areas modified within this Chapter, damages ranges for other natural hazards have been revised. Potential dollar damages resulting from natural hazards as identified in **CHAPTER 2. HAZARD IDENTIFICATION** were calculated.

### INTRODUCTION

The Town of Sutton has been impacted by natural disasters, including wind events, severe winter storms and ice storms, secondary disasters as a result of the natural disasters (such as power loss) and to a lesser degree, human and technological hazards as documented in **CHAPTER 2. HAZARD IDENTIFICATION**. This Chapter estimates town-wide building damage in Town from natural hazard events. It is difficult to ascertain the amount of damage caused by a hazard because the damage will depend on the hazard's extent and magnitude, making each hazard event somewhat unique. Human and technological hazards are typically even more incalculable. Human loss of life was not included in the potential loss estimates for natural hazards, but could be expected to occur, depending on the magnitude of the hazard.

## LOSS ESTIMATION

Estimating losses from a natural disaster is difficult and often inaccurate. Estimating losses from technological and human-induced hazards is even more difficult because technological hazards are less predictable than natural hazards and human behavior is almost completely unpredictable. What type of hazard will impact what portions of Sutton, the nature of the damage and how hard the hazard will impact people, infrastructure, critical facilities and other assets is beyond most scientific measures.

While this Plan focuses on being pro-active in those geographic areas of Sutton most prone to recurring hazards (like flooding), some initial estimates of measurable property damage and building damage have been discussed by utilizing simple techniques such as the numbers of structures and assessed valuation. This two-dimensional approach of calculating dollar losses from tangible structures offers a basic yet insightful tool to begin further loss estimation analyses.

For gauging more three-dimensional estimation of damages, FEMA has developed a software program entitled HAZUS-MH (for multi-hazard), which is a powerful risk assessment software program for analyzing potential losses from floods, hurricane winds and earthquakes. In HAZUS-MH, current scientific and engineering knowledge is coupled with the latest Geographic Information Systems (GIS) technology to produce estimates of hazard related damage before, or after, a disaster occurs. HAZUS-MH takes into account various impacts of a hazard event such as:

- Physical damage: damage to residential and commercial buildings, schools, critical facilities, and infrastructure;
- Economic loss: lost jobs, business interruptions, repair and reconstruction costs; and
- Social impacts: impacts to people, including requirements for shelters and medical aid.

Federal, State and local government agencies and the private sector can order HAZUS-MH free-of-charge from the FEMA Distribution Center. If a GIS infrastructure is placed into service in the future, Sutton should order the software to assist in estimating losses for the community on a disaster-specific basis. However, most small communities like Sutton cannot afford the funding and staff time necessary to train staff and maintain a GIS system. Maps are subcontracted out to other agencies.

A more manageable technique is available to Sutton for loss estimation for the purposes of this **HAZARD MITIGATION PLAN UPDATE 2014**. Natural hazard losses are calculated based on dollar damage ranges over the entire community, or in the case of flooding, buildings in the floodplain are counted and their value is collected. Using **2013 assessment data**, the total assessed value of all residential and non-residential primary structures only (no land or detached structures) in Sutton of **\$177,879,970** is the basis for loss estimation calculations. The number of total parcels in the community in **2013** is **1,557**. Points for consideration for technological and human hazard losses are raised, as each non-natural hazard would need to be uniquely measured by site, scope, and magnitude.

## LOSSES BY FLOODING

Flooding is often associated with hurricanes, ice-jams, rapid snow melting in the spring, and heavy rains. These are all types of flooding hazards evaluated in **CHAPTER 2. HAZARD IDENTIFICATION**.

Parcels within the floodplain were identified using Sutton's tax maps concurrently with the 2010 FEMA Digital Flood Insurance Rate Maps (DFIRMs). Next, parcels containing buildings were identified using the Tax Assessor's database for the Town. Building type was characterized into one of four categories. The categories are single-family homes, multi-family homes, manufactured homes, and non-residential buildings. Building value was taken from the assessing database. *Land value and building content value were not considered in these calculations.*

**Table 14**  
Building Value in the Special Flood Hazard Areas

Building Type	Number of Buildings	Total Value of Buildings	Average Replacement Value
Single Family Homes	40	\$8,000,000	\$200,000
Multi-family Homes	0	\$0	\$0
Manufactured Homes	0	\$0	\$0
Non-Residential Buildings	1	\$200,000	\$200,000
Total	41	\$8,200,000	-----

*Sources: Town of Sutton May 31, 2013 assessment data*

In **Table 14**, **40** single family residential homes, **0** multi-family homes, **0** manufactured homes, and **1** non-residential building were approximated to be situated within or immediately adjacent to the floodplain. The average replacement value is **\$200,000** for both a single-family home and the non-residential building. The assessed value of all residential and non-residential structures in Sutton is **\$177,879,970**. The total value of all buildings approximated to be located in the Special Flood Hazard Areas is **\$8,200,000** for the **41** structures.

### Potential Building Losses Calculations for Flooding

In the following calculations, the average replacement value was calculated by adding up the assessed values of all structures in the special flood hazard areas and then dividing by the number of structures. The Federal Emergency Management Agency (FEMA) has developed a process to calculate potential loss for structures during flooding. The potential loss was calculated by multiplying the average replacement value by the percent of damage expected from the hazard event, and then by multiplying that figure by the number of structures.

The costs for repairing or replacing infrastructure such as bridges, railroads, power lines, roads, drainage systems, telephone lines, or natural gas pipelines, and land value and the contents of structures have not been included in these estimates in the following figures.

**Table 15**  
Dollar Damage Ranges for Total Buildings in Special Flood Hazard Areas

Building Type	Total Value of Buildings	Total Buildings Damaged in Potential Floodplain by Respective Building Type		
		Eight-Foot Flood 49% Damage	Four-Foot Flood 28% Damage	Two-Foot Flood 20% Damage
Single Family Homes	\$8,000,000	\$3,920,000	\$2,240,000	\$1,600,000
Multi-Family Homes	\$0	\$0	\$0	\$0
Manufactured Homes	\$0	\$0	\$0	\$0
Non-Residential Buildings	\$200,000	\$98,000	\$56,000	\$40,000

Source: Town of Sutton (see [Table 14](#))

**Table 15** represents the worst case scenario of all single-family homes, multi-family homes, manufactured homes, and non-residential buildings within the Special Flood Hazard Area that are damaged by a flood hazard event. If all single family homes were damaged by a *Two-Foot Flood (20% Damage)*, the dollar damage to the buildings only could be **\$1.6 million** while an *Eight-Foot Flood (49% Damage)* could yield **\$3.9 million** in damage.

There is **1** non-residential building situated in the floodplain. If all non-residential building were damaged by a *Two-Foot Flood (20% Damage)*, the dollar damage to the buildings only could be **\$40,000** while an *Eight-Foot Flood (49% Damage)* could yield **\$98,000** in damage. Dollar damage estimations vary according to the standard percentages of damage levels associated with flooding levels set by FEMA.

**Table 15A**  
**Dollar Damage Ranges for Individual Buildings in Special Flood Hazard Areas**

		Individual Buildings Damaged in Potential Floodplain by Respective Building Type		
Building Type	Individual Value of Buildings	Eight-Foot Flood 49% Damage	Four-Foot Flood 28% Damage	Two-Foot Flood 20% Damage
Single Family Homes	\$200,000	\$98,000	\$56,000	\$40,000
Multi-Family Homes	\$0	\$0	\$0	\$0
Manufactured Homes	\$0	\$0	\$0	\$0
Non-Residential Buildings	\$200,000	\$98,000	\$56,000	\$40,000

*Source: Town of Sutton (see Table 14)*

Dollar damage estimations to buildings vary according to the standard percentages of damage levels associated with flooding levels set by FEMA. **Table 15A** also represents the worst case scenario, but of individual single-family homes, multi-family homes, manufactured houses, and non-residential buildings within the Special Flood Hazard Area that are damaged by a flood hazard event. If one single family home suffered from a *Two-Foot Flood (20% Damage)*, the projected dollar damage to the building only could be **\$40,000** while an *Eight-Foot Flood (49% Damage)* could yield over **\$98,000** in damage.

There is **1** non-residential building situated in the floodplain. If one non-residential building suffered from a *Two-Foot Flood (20% Damage)*, the projected dollar damage to the building only could be **\$40,000** while an *Eight-Foot Flood (49% Damage)* could yield over **\$98,000** in damage.

## LOSSES BY OTHER NATURAL HAZARDS

Building damage by natural disasters in New Hampshire is not limited to flooding alone, which is easier to quantify and predict. Simple calculations can be made based upon generalizations of a disaster impacting a certain percentage of the number of buildings in the Town. The assessed value of all residential and non-residential structures in Sutton is **\$177,879,970**. Disaster damages are often illustrated in the following section utilizing a percentage range of town-wide building damage. At **985** housing units in Sutton, disaster impact to **10%** of them would yield **99** damaged units.

### Hurricane and Severe Storms

Damage caused by hurricanes can be both severe and expensive. In the past, Sutton has been impacted by wind and flooding damage as a result of hurricanes.

Assuming 1% to 5% Town-wide building damage, a hurricane could result in up to **\$1,778,800** to **\$8,893,999** in building damage.

### Rapid Snow Pack Melt

Flooding caused by rapid snow pack melt is often found along roadways and from water courses such as rivers and streams. Those areas which are particularly susceptible would be the floodplain and along highways, but anywhere where the water cannot yet percolate into the frozen ground could be vulnerable.

Assuming 1% to 5% Town-wide building damage, rapid snow pack melt could result in up to **\$1,778,800** to **\$8,893,999** in building damage in building damage.

### River Ice Jams

There are multiple lakes and ponds within Sutton that produce streams and brooks flowing throughout the town. Blaisdell Lake, Kezar Lake, and Billings Pond are the main standing bodies of water. The Lane River, Stevens Brook, Lyons Brook, and Cascade Brook are the most prominent waters flowing in Town. The River and brooks flow under multiple bridges on I-89 and state and local roads as identified in **Table 5**. Multiple additional small streams abound with culverts and drainage systems. The *2011-2014 Statewide Transportation Improvement Program (STIP)* provides many examples of basic cost estimates bridge replacement and rehabilitation. Ranges can run from about **\$170,000** (Durham - Bunker Creek) for a small local bridge replacement and approaches to over **\$6,520,000** (Enfield - Mascoma Lake) or more for a bridge replacement with drainage, shoulders, and pavement rehabilitation. The average of six different bridge replacements within this cost range is **\$3,163,000**.

Using this average figure of **\$3,163,000** for one **(1)** bridge replacement in Sutton, if two **(2)** bridges needed to be replaced in Town as a result of the physical damage caused by river ice jams, the cost could be **\$6,327,000**.

In addition, if half of the **40** single family homes in the floodplain **(20)** were damaged as a result of two-foot flooding resulting from river ice jams, there could be up to **\$800,000** in building damage.

### Dam Breach and Failure

There are currently **19** dams in Sutton in the 2011 New Hampshire Dam database retained by the Department of Environmental Services Dam Bureau. According to RSA 482:2 II, a dam is any artificial barrier which impounds or diverts water, has a height of four feet or more or has a storage capacity of two acre-feet or more, or is located at the outlet of a great pond. Inactive dams are defined as dams that do not meet the legal definition of a dam. Of the **19**, there are **6** inactive/unclassified dams listed in Sutton that do not meet the above definition and may be in ruins, exempt, breached, removed, or never built.

Each of the **13** active dams is categorized into one of four classifications which are differentiated by the degree of potential damages that a failure of the dam is expected to cause. The classifications are designated as High Hazard (H), Significant Hazard (S), Low Hazard (L), and Non-Menace (NM).

Sutton has **10 NM** dams. One (**1**) **S** dam is situated in Town, the Chadwick Meadow Wildlife Refuge Dam on Lyons Brook. Two (**2**) **L** dams are the Blaisdell Lake Dam on a tributary of the Warner River, and the Cascade Brook Dam on Cascade Brook.

- **Significant (S) Hazard Dams**  
Chadwick Meadow Wildlife Refuge Dam (Lyons Brook)
- **Low (L) Hazard Dams**  
Blaisdell Lake Dam (Warner River), and Cascade Brook Dam (Cascade Brook)

The amount of dollar damage in the event of a dam breach will vary according to the extent and magnitude of the breach as well as the classification of the dam. The Town's assessing records should be consulted to ascertain the range of possible damage to buildings in the vicinity.

### Stream Bank Erosion and Scouring

There are multiple lakes and ponds within Sutton that produce streams and brooks flowing throughout the town. Blaisdell Lake, Kezar Lake, and Billings Pond are the main standing bodies of water. The Lane River, Stevens Brook, Lyons Brook, and Cascade Brook are the most prominent waters flowing in Town.

A projected dollar value of damage to buildings would be difficult to measure, but even if half (**20**) of the **40** single family homes in the floodplain were completely damaged as a result of erosion, there could be up to **\$4 million** in building damage.

### Debris Impacted Infrastructure

There are multiple lakes and ponds within Sutton that produce streams and brooks flowing throughout the town. Blaisdell Lake, Kezar Lake, and Billings Pond are the main standing bodies of water. The Lane River, Stevens Brook, Lyons Brook, and Cascade Brook are the most prominent waters flowing in Town. The River and brooks flow under multiple bridges on I-89 and state and local roads as identified in **Table 5**. Multiple additional small streams abound with culverts and drainage systems. The *2011-2014 Statewide Transportation Improvement Program (STIP)* provides many examples of basic cost estimates bridge replacement and rehabilitation. Ranges can run from about **\$170,000** (Durham - Bunker Creek) for a small local bridge replacement and approaches to over **\$6,520,000** (Enfield -

Mascoma Lake) or more for a bridge replacement with drainage, shoulders, and pavement rehabilitation. The average of six different bridge replacements within this cost range is **\$3,163,000**.

Along with the Town's and State's maintenance responsibilities of keeping drainage systems and culverts (including box culvert bridges) cleaned and maintained, private property owners are also required to maintain their own culverts to help eliminate the possibility of flooding as a result of debris impacted infrastructure. Private culverts typically are found under driveways.

Using this average figure of **\$3,163,000** for one (1) bridge replacement in Sutton, if two (2) bridges needed to be replaced in Town as a result of the physical damage caused by debris impacted infrastructure, the cost could be **\$6,327,000**.

### Tornadoes

Tornadoes are relatively uncommon natural hazards in the State. On average, about six touch down each year. However, damage largely depends on where a tornado strikes. If it strikes an inhabited area, the impacts could be severe. In the State of New Hampshire, the total cost of tornadoes between 1950 and 1995 was \$9,071,389 (*The Disaster Center*). The cost of a tornado in Sutton would not be town-wide because tornadoes strike in smaller areas. Dollar amounts would depend on whether the tornado hit an area with a high density of buildings. A significant tornado struck the Town of Epsom and Northwood in the region in July 2008 causing extreme damage to life and property in certain areas.

If a tornado impacted 1% of the Town's buildings, it could result in up to **\$1,778,800** in building damage.

### Downbursts and High Winds

Damage caused by downbursts and high winds would not be Town-wide because they typically strike in smaller areas. Few places in Sutton are at specific risk (see **CHAPTER 2. HAZARD IDENTIFICATION** and **CHAPTER 3. ASSET AND RISK IDENTIFICATION**), but they can strike anywhere without warning. Dollar amounts would depend on if the hazard hit an area with a high density of buildings. A significant tornado struck the area's Town of Epsom in July 2008 causing extreme damage to life and property, and a strong microburst in 2011 in Bow resulted in significant damage to large recreational vehicles on Route 3A.

If high winds impacted 1% of the Town's buildings, it could result in up to **\$1,778,800** in building damage.

### Lightning

Damage caused by lightning would not be Town-wide because it typically strikes in smaller areas. Few places in Sutton are at specific risk (see **CHAPTER 2. HAZARD IDENTIFICATION** and **CHAPTER 3. ASSET AND RISK IDENTIFICATION**), but lightning strikes can cause fires. In the future, damages will vary according to the value of the home and the contents inside, and dollar amounts would depend on if the hazard hit an area with a high density of buildings.

If lightning impacted 1% of the Town's buildings, it could result in up to **\$1,778,800** in building damage.

### Wildfire

The risk of fire is difficult to predict based on location. Forest fires are more likely to occur during years of drought. In addition, areas and structures that are surrounded by dry vegetation that has not been suitably cleared are at high risk. However, fire danger is generally universal and can occur practically at any time. Dollar damage would depend on the extent of the fire, the number and type of buildings burned, and the amount of contents destroyed within the buildings.

If a wildfire impacted 1% of the Town's buildings, it could result in up to **\$1,778,800** in building damage.

### Severe Winter Weather

Heavy snowstorms typically occur during January and February. New England usually experiences at least one or two Nor'easters with varying degrees of magnitude each year. Power outages, extreme cold, and impacts to infrastructure are all effects of winter storms that have been felt in Sutton in the past. All of these impacts are a risk to the community, including isolation, especially of the elderly, and increased traffic accidents. Damage caused as a result of this type of hazard varies according to wind velocity, snow accumulation, and duration.

Assuming 1% to 5% Town-wide building damage, a severe winter storm could result in up to **\$1,778,800** to **\$8,893,999** in building damage.

### Earthquake

Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric, and phone lines and are often associated with landslides and flash floods. Four earthquakes in New Hampshire between 1924-1989 had a magnitude of 4.2 or more. Two of these occurred in Ossipee, one west of Laconia, and one near the Quebec border. A small earthquake occurred nearby in Boscawen in 2010.

Seismic lines are indicated on *Map 1: Potential Hazards*. Buildings that are not built to a high seismic design level would be susceptible to structural damage.

Assuming 1% to 5% Town-wide building damage, an earthquake could result in up to **\$1,778,800** to **\$8,893,999** in building damage.

### Landslide

Damage caused by landslides would be concentrated in those areas along embankments, either along the highways, hillsides, or rivers and streams (erosion). Few places in Sutton are at specific risk (see **CHAPTER 2. HAZARD IDENTIFICATION** and **CHAPTER 3. ASSET AND RISK IDENTIFICATION**), although areas of over 15% slope would be most vulnerable. Areas along North Road from Steven's Brook and onto Roby Road from the Lane River (Kezar Lake) could also be affected. Building damage dollar amounts would depend on if the hazard impacted an area with a high density of buildings or if the damage was remote.

If a landslide impacted 1% of the Town's buildings, it could result in up to **\$1,778,800** in building damage.

### Drought

Drought is often declared on state-wide or region-wide basis, and sometimes by individual town. Damage caused by drought would be difficult to quantify, but would most likely impact the agricultural economic base of a community. Although everyone would be charged to conserve water, orchards, farms, and nurseries would be most affected.

As physical damage is usually isolated to specific locations, the effects of potential disasters at certain facilities could be researched utilizing the Town's assessor's database for valuation on targeted land. Agricultural land may be among the most affected by drought. People who rely on well water might find their wells running dry.

Cascade Brook Farm and Musterfield Farm are the only farms in Sutton that are recognized by the United States Department of Agriculture Statistical Service. However, there are many "Friendly Farms" throughout Sutton that would also be affected by drought. Currently, there are **13** certified tree farms in Sutton with land totaling **1,557** acres.

### Radon

As radon might not be noticed by the general public without education and testing, it is difficult to estimate any potential damages. Airborne radon seeping out of basements and through water vapor can be mitigated by individual property owners at an average of **\$1,200** for a radon reduction system (per the US Environmental Protection Agency) to treat the air inside a home.

If 10% of Sutton's homes (**99**) installed radon reduction systems, **\$118,200** would be spent.

### Biological

Biological hazards affect the ecosystem, humans, and wildlife. As such, a dollar value cannot be placed upon such resources. However, the population of the Town, at **1,837** in 2010, is either spread out over the geography of the community or concentrated in manufactured housing and group living quarters. The Capital Area Public Health Network's Public Health Improvement Plan should be consulted for further information on the vulnerability of the Town. The Center for Disease Control, CDC, is a very good source of information on biological hazards and their detrimental effects.

## LOSSES BY TECHNOLOGICAL HAZARDS

Sutton increasingly relies on technology to perform everyday tasks more efficiently. A breakdown of this system has immeasurable damaging effects. Loss of business, productivity, routine and an impact to public health has negative consequences to individuals, families, and businesses alike. Human hazards are similar to technological hazards because they are both somewhat human-induced. Technology is designed by humans and humans are frequently partly responsible for technological disasters (transportation accidents, air pollution, strikes, financial collapse, etc.). Much of what follows in the sections on technological and human hazards is applicable to both categories. **CHAPTER 3. ASSET AND RISK IDENTIFICATION** identifies sites that are vulnerable to the technological disasters highlighted below, and **Table 1A** lists the annual events that occur within the Town.

Physical minor technological disasters such as traffic accidents are common in Sutton and will continue to occur. The potential physical and human loss depends on the magnitude of the accident, the value of the vehicles involved and other factors such as the safety of the vehicles involved and the number of occupants in the vehicle. Because of the complex factors that determine the magnitude of traffic accidents, it is difficult to estimate the losses associated with them. Losses associated with larger events such as explosions and building collapses also cannot be easily measured because the loss depends on numerous unpredictable factors, such as: emergency response time, structural integrity, weather, geographic location, chemicals present at the accident site, occupants in the building or area, etc.

FEMA uses a methodology for integrating technological hazards into disaster mitigation planning. This methodology reinforces the importance of analyzing the vulnerability of assets and the hazards that threaten them. The methodology promotes the following steps prior to estimating losses: Identify Hazards, Profile Hazard Events, Inventory the Assets. These steps will hereafter be frequently referred to as steps 1, 2 and 3. This plan does not attempt to carry out the loss estimation for every asset in Sutton based on the vulnerability of all assets and the magnitude of the hazards. What ensues, however, is an explanation of the steps used to arrive at an estimation of losses so that those responsible for mitigating hazards at specific locations within the Town may best do so. Numerous hazards have been identified below and where possible, resources containing further practical information for completing the three steps mentioned above have been included. The hazards have already been identified in **CHAPTER 2. HAZARD IDENTIFICATION** and are listed below. The criteria for consideration for the second step, Hazard Profile, are as follows:

- *Application mode*: Describes the action (s) necessary to cause the hazard to occur.
- *Duration*: Length of time the hazard is present on the target. For example, length of time a hazardous material spill may affect an area.
- *Dynamic / static characteristic of a hazard*: Describes the tendency of the hazard to expand, contract, or remain confined in time, magnitude and space.
- *Mitigating conditions*: Characteristics of the target or its physical environment that can reduce the effects of the hazard. For instance, preventive measures are mitigating conditions when dealing with hazardous material spills.
- *Exacerbating conditions*: Characteristics that can enhance or magnify the effects of a hazard. For example, the wood in a structure may be an exacerbating condition in the case of a fire rather than a mitigating condition.

The third step used in estimating potential losses is the Inventory of Assets or the assessment of the vulnerability of the assets. By assessing the vulnerability it becomes easier to estimate the losses. Vulnerabilities can either be inherent or tactical. Inherent vulnerabilities exist independent of any protective or preventive measures applied to the asset. Inherent vulnerabilities to consider include:

- *Visibility*: Is the public aware of the target, facility, site, system or location?
- *Utility*: What is the value of the target, facility, site, system or location?
- *Accessibility*: Is the target, facility, site, system or location accessible to the public?
- *Asset mobility*: Is the target or asset mobile or is it fixed?
- *Presence of hazardous materials*: Are hazardous materials present at the target or asset?
- *Potential for collateral damage*: What are potential consequences for neighbors and surrounding area?
- *Occupancy*: What is the potential for loss of human life based on number of people present at the target or affected area?

Tactical vulnerability refers to the security, design and other mitigation tools used to protect a place. These measures can include site planning and landscape design, parking security, structural, electrical and fire protection engineering, architectural and interior space planning and electronic and organized security. These factors are included because when estimating potential asset losses it is necessary to first assess the vulnerability of the asset to particular threats. For example, the potential loss a structure could sustain as a result of a technological hazard will be higher if there are no preventive measures implemented in the building's design and construction.

Because there is no formula or system for estimating potential losses by technological and human-induced hazards, a thorough inventory of assets, profile of hazards and inventory vulnerability assessment are imperative. With that established, it should be noted that the damage of technological hazards can be great to physical structures, ecosystems, computer systems, utilities and communications. Humans rely on the proper functioning of technology for their well-being and any loss or interruption to this technology could be economically debilitating. However, the most valuable asset that could be at risk of a technological hazard is human life. Hazardous materials spills, explosions, fires, transportation accidents, building and structure collapse, radiological accidents and extreme air pollution all threaten the fragile human life.

Sutton's permanent population base of nearly **1,837** in 2010, in addition to temporary and transient populations, is vulnerable to technological hazards, including those in the following sections.

### Hazardous Materials

Damage to structures is often isolated at one or two locations, so the effects of potential disasters at certain facilities could be researched utilizing the Town Assessor's database for valuation on specific buildings. In order to best estimate the potential losses in the case of a hazardous materials spill or contamination, one must research the hazardous waste events that could potentially occur in the Town. This step has been referred to above as 'profiling' the hazard. A good source of information on different types of hazardous wastes and the consequences of their spillage is the U.S. Government's Environmental Protection Agency website. The National Response Center maintains an updated list of hazardous materials incidents that were responded to on their website [www.nrc.uscg.mil/incident\\_type\\_2000up.html](http://www.nrc.uscg.mil/incident_type_2000up.html).

In 2009 there were a total of **31,886** incidents responded to within the U.S. and its territories. The second factor in estimating the potential losses in the case of a hazardous waste incident is assessing the vulnerability of the asset or target in question. The Town must assess all those locations, including buildings, roads, rail corridors, rivers, lakes, streams, etc., that could be potential targets of a hazardous waste spill or contamination. When assessing the vulnerability of any site it is necessary to consider all the criteria explained above.

### Explosion/Fire

Damage to structures is often isolated at one or two locations, so the effects of potential disasters at certain facilities could be researched utilizing the Town Assessor's database for valuation on specific buildings. FEMA reports that fire annually costs the U.S. over \$10 billion in damage, causes 5,000 deaths and 30,000 injuries. They also report that in a typical year, home appliance and wiring problems account for 93,500 fires, 550 deaths and \$760 million in property damage. Fire is a costly hazard that causes both property damage and physical harm or death.

A good source of information on fires and fire damage is the National Fire Protection Agency. The NFPA updates a website regularly: [www.nfpa.org](http://www.nfpa.org). The website contains extensive information on different types of fires and explosions. It should be referred to when doing research on the Hazard Profile. When doing the Inventory of Assets, all of the above criteria should be considered because fires and explosions have the potential to affect many structures differently depending on the structure's engineering and fire preventive measures. Explosions and fires also have the potential to cause physical harm and death and because of this they should be treated as very threatening hazards.

### **Transportation Accident**

As discussed in the Introduction to Technological Hazards, the most common transportation accidents are vehicular. The same criteria for estimating potential losses resulting from the other technological hazards can be applied to transportation accidents. The Town can estimate the potential losses of different transportation accidents that may occur at different locations throughout the Town by profiling past accidents and by assessing the vulnerability of property and human life involved. Within the region, accidents of other nature have occurred, such as airplane crashes in Concord. One good source of information on all things pertaining to motor vehicle accidents is the National Highway Traffic Safety Administration. On their website, [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov), information on things such as crash tests and rollover ratings to an analysis of speeding-related fatal traffic crashes is included. This source will be useful when profiling the hazard. When assessing the vulnerability of assets, everything from high accident locations, frequency of accidents, time of accidents, weather, road conditions, vehicle type, the number of occupants and the driver should be considered in addition to the Step 3 criteria mentioned above.

### **Building/Structure Collapse**

Damage to structures is often isolated at one or two locations, so the effects of potential disasters at certain facilities could be researched utilizing the Town Assessor's database for valuation on specific buildings. In profiling the building/structure collapse hazard, one should consider that buildings and structures frequently collapse because of some other hazard, such as fire, wind, flood, etc. An assessment of the vulnerability must include all the criteria mentioned above. Because firefighters and construction workers are a vulnerable population in the case of building and structure collapse, researching occupational safety is advisable in order to complete Steps 2 and 3. The Center for Disease Control website, [www.cdc.gov](http://www.cdc.gov), has a link to the Electronic Library of Construction Occupational Safety and Health. This Electronic Library has relevant articles on the effects of building/structure collapse and the vulnerability of workers who often are required to work in unsafe conditions.

### **Power/Utility Failure**

The incapacity or destruction of the energy and utility systems in Sutton and the region would have a debilitating effect on the physical and economic security of the Town, the public health and the general well-being of the Town's residents. Power failure is a common occurrence when many natural hazards cause damage to critical infrastructure. The potential vulnerability of power/utility infrastructure should be assessed, in the case that damage is inflicted by another hazard on this infrastructure. Because PSNH and Unitil are the major electric power providers to the Town of Sutton, they are the best source of information on this particular hazard. Power and utility failure is similar to communications system failure because any interruption of service can cause lost revenues for businesses, interrupted service from organizations or agencies and even failure of emergency services by those who provide them. These consequences must be considered when estimating the losses incurred from power or utility failure.

### **Extreme Air Pollution**

Extreme air pollution is a hazard that can adversely affect public health and productivity. On days when the air quality is very poor, an extra effort is required of emergency personnel. The best source of information on air pollution is the New Hampshire Department of Environmental Services. When estimating the losses resulting from extreme air pollution, it is necessary to first profile the hazard and assess the vulnerability of those assets most threatened. The general public is most at risk during poor air quality days, and within the general public, certain groups of people are more at risk than others. Worker productivity is decreased on poor air quality days and more work is required of emergency personnel. Energy output is higher on these days as well, for many people require air conditioners and fans to remain cool.

### **Radiological Accident**

A radiological accident has the potential of causing widespread human loss of life, asset damage and environmental destruction. Cleanup of radiological accidents is painstaking. When assessing the potential losses in the case of a radiological accident, it is important to consider the potential loss of human life and the subsequent long-term loss of the utility of land and buildings in the area contaminated by the accident. The two nuclear power plants that were highlighted above have 10-mile Emergency Planning Zones around them. Neither Sutton nor any town in the region is located within the EPZ of Seabrook Station. Nevertheless, contamination is possible at least 50 miles from the site of a radiological accident. Contamination is also possible resulting from a spill from a vehicle transporting radiological material. A recommended source of information on all things related to radiological accidents and nuclear power is the United States Environmental Protection Agency.

### **Fuel/Resource Shortage**

Fuel or resource shortage is a hazard that has the potential to cause an economic crisis. Most recently, New Hampshire residents witnessed the effects of the fuel shortage resulting from the aftermath of Hurricane Katrina. The price of gasoline increased for several weeks until finally stabilizing. Because fuel supply is fickle, it is nearly impossible to predict the occurrence of a shortage. Nearly everyone is vulnerable to the effects of fuel shortage, from consumers to businesses. A few of the many sources on energy and the potential for fuel or resource shortages can be found on the websites of the U.S. Department of Energy, Environmental Protection Agency and the Federal Energy Regulatory Commission.

### **Strike**

Strikes are a hazard capable of interrupting services provided by businesses, government, schools, hospitals and organizations. Strikes tend to cause economic loss rather than asset loss or loss of human life. When estimating the potential loss caused by a strike, it is important to do a profile of typical area strikes and to assess the services that could be disrupted. Estimation of losses should be directed at those potential targets of strikes and the assets related to those targets.

### **Business Interruption**

Of the technological hazards, estimating potential losses resulting from business interruption may be the easiest. Typically, the only asset threatened by business interruption is economic. Business owners have a good idea of their daily, weekly, monthly and yearly revenue. By estimating lost revenue over any period of time, a business owner can calculate his or her losses. Without complicating the estimation too much, business owners should undergo Steps 1, 2 and 3 when estimating potential business interruption losses. The reason for this is that businesses may be interrupted for any number of reasons and it is important to attempt to predict how each hazard could affect business. For example, a flooded basement, causing a short-term interruption resulting from a severe hurricane, although debilitating, will not cause as long a business interruption as a fire that causes complete building collapse.

### **Financial Issues, Economic Depression, Inflation, Financial System Collapse**

These hazards can threaten individuals, families, states and even the entire nation. It is difficult, at best, to foresee the occurrence of a hazard of this type. Nevertheless, it is recommended that a profile of the hazard and an assessment of the vulnerability of the assets inventoried be carried out. Not all assets are equally vulnerable to these hazards. As history has shown, such things as demographics and geography can make one population more vulnerable than another. It is also important to remember that these hazards frequently affect certain industries more than others. Financial collapse in the manufacturing sector may affect one geographic area or the entire nation, but the high tech sector may experience growth during the same period. Because of the complexity of this hazard, when estimating losses it is critical to follow Steps 1, 2 and 3 for all potential assets.

### **Communications Systems Interruptions**

Communications systems interruptions can be detrimental to a business or other organization that relies on communications systems in order to conduct business. Often, communications systems interruptions or failures result in a business interruption. Therefore, the same criteria explained in the above section on Business Interruption may be applied to communication systems interruptions as well. In the case of an emergency, or during another hazard event, individuals and government agencies rely on communications for safety. If these systems were interrupted during another event, people would be at risk.

Refer to the **CHAPTER 3. ASSET AND RISK IDENTIFICATION** for vulnerability of specific sites to these hazards.

## LOSSES BY HUMAN HAZARDS

Sutton is a community of about **1,837** people per the Census 2010 count. A high rate of casualty could result in the event of a human disaster event at a public gathering place, at the Elementary School, the Regional Middle or High Schools, the Town Offices, or during special events. **CHAPTER 3. ASSET AND RISK IDENTIFICATION** identifies sites that are vulnerable to human disasters, and **Table 1A** lists the annual events that occur within the Town.

Damage to structures is usually isolated to one or two locations, so the effects of potential disasters at certain facilities could be researched utilizing the Town Assessor's database for valuation on specific buildings.

The same methodology that was explained in the previous section should be applied to human hazards when estimating losses. Human and technological hazards are more similar to each other than either is to natural hazards because they both result from human behavior or failure of human-created systems. The profile of human hazards and the vulnerability of assets from human-induced hazards are distinct from those of technological hazards because they are even harder to measure. It should be assumed, in all cases, that any hazard event will cause a worst-case scenario. As in the previous section on technological hazards, when possible, sources of further information have been referenced in order to strengthen the research for steps 2 and 3. An additional tool that FEMA recommends is the creation of a Facility Inherent Vulnerability Matrix. This tool can be used to compare the relative vulnerability of each asset based on the criteria that is used for Step 2. The x-axis should contain vulnerability point values, ranging from low to high (0 for absolutely no vulnerability to 5 for high vulnerability), and the y-axis should contain the criteria: asset visibility, target utility, asset accessibility, asset mobility, presence of hazardous materials, collateral damage potential and site population/ capacity (incrementally increasing from 0 to >5000). Because each quadrant of the matrix contains a point value, the vulnerability of each asset can be calculated by selecting the appropriate point value.

The guidelines for estimating potential losses given above and in the previous section on Technological Hazards are only suggestions. However, because there is no straightforward methodology for calculating potential losses due to technological and human-induced hazards, the most thorough evaluation of assets, hazards and asset vulnerability provides the best means for estimating losses and mitigating disasters.

### General Strike

Structural damage as well as disruption of services and revenue can occur. Most likely to occur as a result of general strike is a disruption of services, as strikes are most frequently aimed at providers of services such as government, schools, hospitals and corporations.

### Terrorism

Acts of terrorism vary greatly from act to act but recent terrorist events have been targeted at humans. Terrorist acts that cause human casualties have drawn more attention to terrorists and their agendas. There are different acts of terrorism and each has the potential to cause damage, however, the nature of the damage depends on the act of terrorism. Eco-terrorism typically targets businesses and government facilities, political terrorism may target a landmark or government office and biological terrorism may target large groups of people. In order to estimate potential losses from acts of terrorism, each type should be considered different. In other words, the vulnerability of the potential targets should be assessed depending on the different types of acts of terrorism. The U.S. Department of Homeland Security should be the primary source of information on terrorism.

### Sabotage

Sabotage, like terrorism, has the potential to damage more than simply infrastructure or property. It is unknown how sabotage has the potential to cause human casualties; however, it can cause business interruption, humiliation and defamation of character, financial collapse and economic catastrophe. Businesses, organizations, government agencies, schools, individuals and anyone who could be at risk of sabotage should address their security and assess their vulnerability to the hazard. Especially vulnerable to sabotage are organizations in the industries of information and telecommunications, physical distribution, energy, banking & finance and vital human services.

### Hostage Situation

Hostage situations vary in time and damage. Because hostage situations involve humans, the potential for casualties is greater in hostage situations than in other human hazards such as sabotage, general strike and civil unrest. The procedure for profiling the hazard should be done as for the other human hazards, but when assessing the vulnerability of the asset it must be remembered that it is human life.

### Civil Disturbance / Public Unrest

Structural damage as well as disruption of services and revenue can occur.

### Enemy Attack

Damage to structures is often isolated at one or two locations, so the effects of potential disasters at certain facilities could be researched utilizing the Town's assessor's database for valuation on specific buildings. Vulnerable targets are typically those that are the most visible and utile to the general public because enemies, like terrorists, seek those locations that offer the greatest potential for exhibition.

### Arson

Damage to structures is often isolated at one or two locations, so the effects of potential disasters at certain facilities could be researched utilizing the Town's assessor's database for valuation on specific buildings. According to a 1998 FEMA/USFA report, arson is the leading cause of fire and direct financial loss resulting from fire. It accounts for 30% of both. For further details refer to the above reference to [Explosion/Fire](#) in the [LOSSES BY TECHNOLOGICAL HAZARDS](#) section.

### Mass Hysteria

This condition can result at locations where large groups of people congregate in likely response to a primary hazard event. It is unknown how to calculate the potential losses resulting from an event of mass hysteria. Structural damage as well as disruption of services and revenue can occur in addition to bodily harm.

### Special Events

The special events in Sutton are listed in **Table 1A** and the area special events have been listed in **Table 1**. Special events are unique because they are not inherently a hazard, like the natural, technological and other human hazards. In very rare cases, special events locations are the site of some property loss, injury and death in extreme cases. While researching special events in the region, no cases of death were discovered. Nevertheless, the potential exists. Because each special event is different, varying in place, time, number of people, etc., the vulnerability of the assets and potential for losses will vary. Different events draw different crowds to different venues.

### **MAP 4: POTENTIAL HAZARDS AND LOSSES**

The *Map 4: Potential Hazards and Losses* illustrates where the community facilities and vulnerable populations are located as well as the locations of potential and future hazards. The map shows those areas where the population is most susceptible to flooding, wildfire, landslides, and wind damage as well as the locations of bridges, dams, wetlands, icy roads, and the recommended evacuation routes.

## CHAPTER 5. DEVELOPMENT TRENDS

### 2014 PLAN UPDATE

It has been five years since the last Plan was written, with the new decennial Census 2010 having been taken. The best available new data has been used in this Chapter to portray the population, housing, and overall demographic picture of present day Sutton. A revised section on *Relation to Natural Hazards* helps to tie the fabric of the community into the most likely natural, human, and technological hazard events which could occur in those areas.

### INTRODUCTION

A simplified description of how the Town's population and housing have grown within the last four decades follows. Relationships of the locations of people and buildings to natural hazard events are generally explored. Examination of this information will allow the Town to better understand the land use and demographic trends within its borders and how emergency and preventative services can best serve the growing and changing population and landscape.

### POPULATION AND HOUSING GROWTH

Sutton adopted its latest Master Plan in **2005**. Chapters include detailed information and maps (where feasible) on Current Land Use, Population and Economics, Historic and Cultural Resources, Community Facilities and Services, Natural Resources, Housing, Transportation, and Future Land Use. The chapters contain the basis for which the Town's ordinances and regulations are written and updated.

The following tables in **CHAPTER 5. DEVELOPMENT TRENDS** contain the newest available data from different sources on housing and population growth which depict development trends over time. Sutton has been growing at a fast rate over the last forty years. Since 1990, the population growth rate has declined from the boom of the 1970s and 1980s, although over the last decade it has begun to rebound. The current Census 2010 population counted **1,837** people and **985** housing units. This is a population increase of almost **19%** and a proportional increase of **19%** in housing units since 2000.

**Table 16**  
Overall Population and Housing Growth Trends in Sutton, 1970-2010

Growth	Population	Net Change		Housing Units	Net Change	
		#	%		#	%
1970 Census	642	N/A	0	242	N/A	0
1980 Census	1,091	449	69.9%	449	207	85.5%
1990 Census	1,457	366	33.5%	776	327	72.8%
2000 Census	1,544	87	6.0%	826	50	6.4%
2010 Census	1,837	293	19.0%	985	159	19.2%
Total Change from 1970 - 2010	---	1,195	186.1%	---	743	307.0%

Sources: 1970-1990 US Census CPH-2-31 Table 9 Population and Housing Unit Counts; US Census 2000 & 2010 Data \*includes all housing units, including vacant and seasonal

In **Table 16**, Sutton's current population of **1,837** shows a near doubling of the population over the previous four decades. Although the Town's population grew comparatively little in the 2000s (**6.0%**), over the 40 year-time span between 1970 and 2010, the Town grew by **186%**. In the Central NH region, this is an average rate of population growth. The number of housing units has increased even more since 1970, growing from only **242** units in 1970 to triple that number to total **743** units in 2010, an overall growth rate of **307%**. Although the *rate* of growth is higher than most communities in the Central NH region, the *number* of actual units gained is generally equal or less than that of other local communities.

In 2000, there was an average of **1.9** people in each housing unit, while in 2010 that figure remained steady as the number of homes "grew" proportionate to the population growth during that period. This figure is a significant decrease from 1970's average of **2.7** people living in each housing unit, a smaller regionally comparable number 40 years ago. Sutton's overall growth since 1970 has increased by **1,195** people and **743** homes.

**Table 17**  
Population Density in Sutton, 1970-2010

Area in Square Miles (excluding water)	Persons per square mile				
	1970	1980	1990	2000	2010
42.5	15.1	25.7	34.3	36.3	43.2

Sources: **Table 16**, Office of Energy and Planning's GIS acreage calculations

The Town of Sutton enjoys a low population density, with **42.5** square miles of land area and **1,837** people as of 2010. As displayed in **Table 17**, the population density has about tripled per square mile, from only **15** people in 1970 to **34** in 1990 and then to **43** in 2010. The increase of only **28** people per square mile over 40 years is one of the lowest of the other communities in the Central NH region.

**Table 18**  
**New Construction Permits Issued by Building Type, 2005 - 2012**

Building Type	2005	2006	2007	2008	2009	2010	2011	2012	8-Year Total
Single Family Homes	22	17	13	14	9	3	2	5	85
Multi-family Homes	0	0	0	0	0	0	0	0	0
Manufactured Homes	0	0	0	0	0	0	0	0	0
Non-Residential Buildings	0	0	0	0	0	0	0	0	0
Total New Permits Issued	22	17	13	14	9	3	2	5	85

*Source: Town of Sutton Building Inspector*

In **Table 18**, Sutton had few new residential building permits issued in 2011 (**2**) and 2012 (**5**). The highest years were **22** permits issued in 2005 and **17** in 2006 during a period of growth. In 2010 and 2011, Sutton issued the fewest permits in nine years, **3** and **2**, respectively.

Single family housing permits were the *only* type of new construction permit issued in Town, totaling **85** over eight years. Over the period, **0** multi-family and **0** manufactured housing permits were issued. Zero (**0**) non-residential permits were issued between 2005-2012 in Sutton.

## LAND USE

According to NH Office of Energy and Planning geographic information system (GIS) calculations and the **2005** Master Plan land use determination methodology calculations, Sutton has a total land area of **27,233** acres, or about **42.5** square miles of land area. However, the actual taxable land calculations may differ in the assessing records, which is not unusual.

Current tax assessing data indicate the actual acreage of the Town is just about **25,780** acres in several different land use type categories.

**Table 19**  
Land Use in Sutton, 2013

Land Use	Acres	% of Town
Residential	4,818.1	18.7%
Commercial	490.4	1.9%
Industrial	0.0	0.0%
Excavation	6.2	0.0%
Agricultural Land	416.8	1.6%
Conservation Land	1,363.0	5.3%
Public Recreation	101.9	0.4%
Public/Institutional	1.0	0.0%
Forested	17,037.1	66.1%
Wetlands	605.8	2.3%
Unproductive	359.4	1.4%
Water	580.0	2.2%
Total	25,780	100.00%

*Source: Town of Sutton Assessing, MS-1, and Conservation Commission/NH Fish & Game Data 2013*

From **Table 19**, forested (vacant) use, is the predominant land use type, comprising **66%** of the Town's land area. Residential land use comprises **19%**, and conservation land (**5%**) round out the highest land uses. The other uses of Sutton's land are predictably much smaller percentages. Other than the water and wetlands total acreage of **5%**, the remaining land uses are very small: commercial (**2%**), agricultural (**2%**), unproductive land (**1%**), and public recreation (**0.5%**). Other land uses such as excavation and public/institutional land of a few acres do not register as a percentage of land use in Sutton.

## RELATION TO NATURAL HAZARDS

The locations of where people are concentrated or where new lands may be developed should be compared to the locations of potential natural hazards in order to best mitigate potential property damage, personal injury or loss of life.

### Areas of Highest Densities

There are two lakes in Sutton with high population densities bordering the lake area. One such area is the Blaisdell Lake area, which also incorporates Billings Pond. There are approximately 108 properties surrounding the lake, including the Girl Scout's Camp Wabasso. The camp can accommodate an additional 280 people during its summer camp use. Kezar Lake also has a denser population surrounding its shores. Approximately 125 properties are in the surrounding areas.

There is also a high population density along NH Route 114 between Johnson Hill Road and Meetinghouse Road. There are approximately 68 properties in that area.

Other areas of high density include the Sutton Mills/Main Street area. There are approximately 77 properties in the downtown area that continue and run along Newbury Road ending around Mill Road. North Sutton Village and South Sutton Village are also dense areas with high concentrations of population and local traffic.

Potential hazards within the areas of highest density include flooding, fire, traffic accidents/evacuation difficulty, and hazardous materials. In 2006, gasoline seeped into Smiley Drive Park, but the tank was changed.

### Changes Since the 2008 Plan

Some changes have occurred in Sutton since the 2008 Hazard Mitigation Plan. Two new areas have been developed, the King Ridge subdivision of 36 housing units on Summit Road and the Mountainside Drive subdivision, which has 10 units. Potential hazards include severe weather on the mountain, lightning, radon, storm drainage, communications failure, and fire. Hominy Pot Road/Felch Road has 4 new houses since 2008. Potential hazards include flooding from Lyon Brook, fire, and severe weather (wind, rain, winter).

### Vulnerable Populations

As mentioned above, of high density are also located in areas of potential hazards. Both the Blaisdell Lake and Kezar Lake areas are vulnerable to flooding. Parts of Sutton Mills and South Sutton are also located within the floodplain. Camp Wabasso and the surrounding area could be vulnerable to any sort of hazard during the summer months when their population doubles.

The High and Middle Schools which are situated within one-quarter to one-half mile of Interstate 89 are of particular concern. Should a hazardous spill occur on the highway such as vapors and gases, timely evacuation will be problematic. Truck spills on Route 114 and incidents at the Country Club will have a similar effect on evacuation.

The Community Baptist Church and Trinity Bible Church in South Sutton will utilize Route 114 for the evacuation of a large number of people. Free Will Baptist Church attendees in North Sutton would also be vulnerable population due to the congregation of people.

Labsphere employees are vulnerable to toxic hazardous incidents at the facility. Livewire daycare is on Route 114 in South Sutton.

#### *Changes Since the 2008 Plan*

No changes have occurred to the vulnerable population areas since the 2008 Hazard Mitigation Plan.

#### *Future Development in Sutton*

The potential for hazards and the vulnerability of the population should be considered before undergoing any future development in Sutton. Although new construction growth at this time is slow as depicted in **Table 18** above, the number of residential housing units could increase by using the Town's plentiful undeveloped forestland areas when the economy improves such as those listed in **Table 13**.

Between 1994 and 2003, 72 new lots were created through the approval of subdivisions in Sutton; the largest number was in 1998, when 37 new lots in King Ridge were created. Sutton's Zoning Ordinance currently requires a two-acre lot size for all newly created lots.

In 2007, the Harborview residential subdivision on Stonehouse Road resulted in the creation of 32 additional lots. A second large subdivision, Meadowview, on Hominy Pot Road yielded an additional 9 residential lots. As 77% of Sutton's land remains undeveloped, it is reasonable to expect that development will continue to occur in desirable locations which also may be subject to natural hazard events.

#### *Changes Since the 2008 Plan*

Few changes have occurred since the 2008 Hazard Mitigation Plan. As illustrated in **Table 13**, potential residential development could occur in the future in different areas of Town. The newly added Falvey (Baker Hill Road) and Rogers (Birch Hill Road) subdivisions could together add a total of 11 residential lots. Both of these subdivisions could be most susceptible to earthquake, severe winter weather, power failure, transportation issues, communication failure, flooding, and/or landslides.

## CHAPTER 6. FLOODPLAIN MANAGEMENT

### 2014 PLAN UPDATE

Sutton has been exposed to major flooding events since the updated writing of this Plan in 2008. These events have resulted in Federal Disaster Declarations under the Robert T. Stafford Act for public and individual assistance. As a result of these events, the Town has applied for and received Hazard Mitigation funds to upgrade culverts, bridges, and roadways affected by these flooding events and to clean up debris. Updates to this Chapter included reviewing each section and adding or updating new information where relevant. Special Flood Hazard Area information has been added, roads impacted by flooding and potential future flooding threats were added, any repetitive losses were identified, and updated statistics were available.

### INTRODUCTION

Second only to winter storms, flooding is the most common natural disaster to impact New Hampshire. Floods are most likely to occur in the spring due to the increase in rainfall and melting of snow. However, they can occur any time of year as a result of heavy rains, hurricane, or severe winter storms. Past flood events have been recounted within **CHAPTER 2. HAZARD IDENTIFICATION.**

### FLOODING IN SUTTON

The probability of flooding in Sutton is **HIGH**, according to **CHAPTER 2. HAZARD IDENTIFICATION.** As the Census 2010 Census counted **985** housing units in Town, about **4.2%** of homes in Town seem to be located within in a Special Flood Hazard Area. In most cases, only a portion of the structures identified are within the floodplain. Rapid snow pack melt is a **HIGH** probability, as is severe storms. The probability of a river ice jam is considered **HIGH** as is debris impacted infrastructure. Bank erosion and scouring is considered a **MODERATE** probability and Dam breach and failure a **LOW** probability. Flooding on local roads from undersized culverts have become more commonplace in the last few years and have temporarily disrupted travel.

#### Special Flood Hazard Areas

From all the different types of flooding examined in the Plan, the overall risk of another flood in Sutton seems **HIGH**. The Town is susceptible to flooding because of the close proximity of the Lane River, Stevens Brook, and Cascade Brook to development and infrastructure such as roads and culverts.

Altogether, a total of **41** primary structures, which include **40** single family homes, **0** multi-family homes, **0** manufactured homes, and **1** non-residential building, were approximated to be located within the Special Flood Hazard Area (floodplain). This information is taken from **Table 14** in **CHAPTER 4. POTENTIAL LOSSES.**

### Roads and Areas Impacted by Flooding

One of the most common types of flooding in Sutton is due to road washouts. Some roads have been reconstructed or repaired after the flooding event(s), but many of the culverts remain to be upgraded. Remaining culverts and bridges (including box culvert bridges) will be upgraded as funding and staff time permit. The listed roads and bridges below have experienced washouts or other types of flooding, such as inundation.

Often, when the Lane River floods, the numerous brooks and streams in Town, many of which flow under roads in culverts, also flood. Multiple areas in Town contain damaged or undersized culverts that are at risk of washout during heavy rain or flooding events. Some residences could potentially be cut off from the rest of the Town if culverts washed out and caused heavy flooding on roads, making them untraversable.

- Andrews Avenue
- Archie Sawyer
- Baker Hill
- Baker Road
- Barker Road
- Beaver Pond
- Birch Hill
- Blaisdell Hill Road
- Brown Road South
- Bull Bridge Road
- Camp Kemah Road
- Chalk Pond Road
- Corporation Hill
- Cotton Road
- Eaton Grange Road
- Foothills Road
- French Road East
- Gile Pond Road
- Gold Mine Road
- Harwood Road
- High Mowing Road
- Hominy Pot Road
- Johnson Hill Road
- Jolly Farm Road
- Kearsarge Valley Road
- King Hill Road
- Lovetts Road
- Main Street
- Mastin Road
- Meadow Brook Road
- Meetinghouse Hill Road
- Music Hill Road
- Nelson Hill North
- Newbury Road
- North Road
- North Sutton area
- Old Blaisdell Road
- Penacook Road
- Pound Road N
- Pound Road S
- Poor Farm Road
- Ridge Road
- Roby Road
- Rowell Hill Road
- Route 114 (sections)
- Shadow Hill Road
- Shaker Street
- South Sutton area
- Stevens Brook Road
- Stonehouse Road
- Wadleigh Hill Road
- Winslow Circle Road
- Winslow Road

Stevens Brook impacted a bridge on North Road during the last three floods. Lane River, which flows out of Kezar Lake, at the Route 114 bridge, flooded in April 2007 at the Cressey House, which was later purchased by the Historical Society. Cascade Brook regularly floods and causes damages to roadways. These sites are likely to continue flooding if another significant rain event occurs.

Because of the broad, marshy meadows along Lane River, future flood events in the vicinity of North Sutton and South Sutton can be expected to affect travel along Route 114 but are not likely to result in destructive washouts or damage to buildings. Sutton Mills, however, is located at the end of a drop of about 160 feet of the Lane River and would be more susceptible to such damage.

Lane River beaver dams on Wadleigh Hill at Pressey Bridge have a flooding potential if they were to give way. Some private dams have had a propensity to flood: Corporation Hill (2), Chadwick Meadows, Kearsarge Valley Road, and a State Dam at outlet of Keyser Lake and Cascade Marsh.

Some of the listed roads are State-owned and out of local control but have undersized culverts or other issues which continue to cause flooding. Washout potential or inundation still exists during heavy rain or rapid snow pack melt events, on both Town and State roads, and with it the potential to lose primary evacuation access in and out of Town.

The Town hopes to have conversations with the State of NH to upgrade the State infrastructure on Route 114 most prone to washouts. Even those repaired or upgraded facilities will still appear on this list if they continue to flood.

### Town Culverts

There are about 300 culverts in Sutton. The Town does not maintain an inventory of culverts at this time, but the Highway Department upgrades or repairs dozens of culverts per year. The sizes of these culverts range from 6" and up.

The following culverts are undersized and should be replaced or regularly maintained to ensure their carrying capacity:

- Nelson Hill North
- Chalk Pond Road
- Baker Hill Road (replacement in August 2018 in Action Plan)
- Meeting House Hill Road (replacement in September 2013 in Action Plan)
- Shaker Street
- Jolly Farm Road
- Keyser Street Box Culvert Bridge (replacement in September 2018 in Action Plan)

### Potential Future Flooding Threats

Past flood events in Sutton and the surrounding area have been recounted within **CHAPTER 2. HAZARD IDENTIFICATION**. The threat of flooding to the same extent as the May 2006 flood remains a 1% possibility in any given year. Damage will occur to bridges and culverts which will require road closings; pavement will be undermined and require excavation to repair; mudslides may occur in some areas; and equipment damage will be caused by rescue and/or repair operations in high water. Emergency shelters will be required for those rendered homeless by high water. Low-lying areas are particularly susceptible when no major waterbody or water course is present. Roads and areas susceptible to flooding include locations identified above.

Flooding will still occur in Sutton from all sources. Homes near the Lane River, Kezar Lake (125 properties), Blaisdell Lake (108 properties), and those in the floodplain such as at Sutton Mills are at particular risk of flooding damage. Blaisdell Lake and Billings Pond with the Girl Scout's Camp Wabasso hosts a summer population of 280 people, most of whom are children.

Drainage of roads plays a key role in preventing infrastructure and property damages. Culvert pipes need to be up-sized to address the increased water. The Town will continue to work with the State and FEMA to upgrade culvert pipes.

### **NATIONAL FLOOD INSURANCE PROGRAM (NFIP)**

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer funded disaster relief for flood victims and the increasing amount of damage caused by floods. The Federal Insurance and Mitigation Administration (FIMA) a component of the Federal Emergency Management Agency (FEMA) manages the NFIP, and oversees the floodplain management and mapping components of the Program.

Communities participate in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage. In exchange, the NFIP makes federally subsidized flood insurance available to homeowners, renters, and business owners in these communities. Flood insurance, Federal grants and loans, Federal disaster assistance, and Federal mortgage insurance is unavailable for the acquisition or construction of structures located in the floodplain shown on the NFIP maps for those communities that do not participate in the program.

To get secured financing to buy, build, or improve structures in Special Flood Hazard Areas, it is legally required by federal law to purchase flood insurance. Lending institutions that are federally regulated or federally insured must determine if the structure is located in a SFHA and must provide written notice requiring flood insurance. Flood insurance is available to any property owner located in a community participating in the NFIP.

Flood damage is reduced by nearly \$1 billion a year through partnerships with communities, the insurance industry, and the lending industry. Further, buildings constructed in compliance with NFIP building standards suffer approximately 80 percent less damage annually than those not built in compliance. Additionally, every \$3 paid in flood insurance claims saves \$1 in disaster assistance payments.

The NFIP is self-supporting for the average historical loss year, which means that operating expenses and flood insurance claims are not paid for by the taxpayer, but through premiums collected for flood insurance policies. The Program has borrowing authority from the U.S. Treasury for times when losses are heavy; however, these loans are paid back with interest.

More information on flood insurance can be found at [www.fema.gov/national-flood-insurance-program](http://www.fema.gov/national-flood-insurance-program).

### Sutton's NFIP Statistics

Sutton has been a participant in the National Flood Insurance Program since May 17, 1977. The date of the previous effective Flood Insurance Rate Maps (FIRMs) is May 17, 1977. The current effective Flood Insurance Study for Merrimack County, which includes Sutton, is dated April 19, 2010.

The current effective Digital Flood Insurance Rate (DFIRM) maps dated April 19, 2010 were adopted by the Board of Selectmen, superceding all previous FIRM maps.

In **Table 20**, the number of NFIP policies in force has remained the same at four (**4**) from December 2007 to April 2013. As no further claims have been made since the 2008 Plan, the number of paid losses, two (**2**), remains the same.

The total dollar amount of losses paid to individuals through the NFIP since 1977 is **\$11,773**. From 1977 to 2013, the average paid loss was **\$5,887**.

**Table 20**  
Sutton Policy and Loss Statistics

Date	Policies in Force	Insurance in Force	Number of Paid Losses (since 1977)	Total Losses Paid (since 1977)
December 2007	4	\$631,900	2	\$11,773
April 2013	4	\$775,000	2	\$11,773

*Source: December 2007 and April 2013 FEMA Policy and Claims database*

The number of total parcels in the community in 2013 is **1,557**. While the entire Town of Sutton is eligible to purchase federal flood insurance, only four (**4**) parcels have NFIP insurance. As described in **CHAPTER 4. POTENTIAL LOSSES**, a total of **41** homes and **0** non-residential buildings are thought to be situated in the Special Flood Hazard Areas.

## REPETITIVE LOSS PROPERTIES

A specific target group of repetitive loss properties is identified and serviced separately from other NFIP policies by the Special Direct Facility (SDF). The target group includes every NFIP-insured property that, since 1978 and regardless of any change(s) of ownership during that period, has experienced four or more paid flood losses, two paid flood losses within a 10-year period that equal or exceed the current value of the insured property, or three or more paid losses that equal or exceed the current value of the insured property. The loss history includes all flood claims paid on an insured property, regardless of any changes of ownership, since the building's construction or back to 1978. Target group policies are afforded coverage, whether new or renewal, only through the SDF.

The FEMA Regional Office in Boston provides information about repetitive loss properties to state and local floodplain management officials. The FEMA Regional Office may also offer property owners building inspection and financial incentives for undertaking measures to mitigate future flood losses. These measures include elevating buildings above the level of the base flood, demolishing buildings, removing buildings from the flood area, and in some cases drainage improvement projects. If the property owners agree to mitigation measures, their property may be removed from the target list and would no longer be serviced by the SDF.

### Sutton's NFIP Repetitive Flooding Losses

Records on repetitive losses paid for a single property in a community are held maintained by the Federal Emergency Management Agency and held by the NH Office of Energy and Planning (NH OEP). These data records are confidential for the property-specific information they contain. Repetitive losses are determined by any repetitive damage claims on those properties that hold flood insurance through the NFIP.

**Table 21**  
**Sutton Repetitive Loss Properties**

Building Type	Number of Repetitive Loss Properties
Single Family	0
Multi-Family	0
Non-Residential	0
Total Properties	0

*Source: FEMA, March 2012*

**Table 21** displays a total of zero (0) repetitive loss property in Sutton as of March 2012. Of the two (2) paid losses shown in **Table 20** through the FEMA National Flood Insurance Program, neither of them were repetitive losses.

## **FLOODPLAIN MANAGEMENT GOALS AND REDUCING FLOOD RISKS**

A major objective for floodplain management is to continue participation in the National Flood Insurance Program.

Communities that agree to manage Special Flood Hazard Areas shown on NFIP maps participate in the NFIP by adopting minimum standards. The minimum requirements are the adoption of the Floodplain Ordinance and Subdivision/Site Plan Review requirements for land designated as Special Flood Hazard Areas.

Federally subsidized flood insurance is available to any property owner located in a community participating in the NFIP. Communities that fail to comply with NFIP will be put on probation and/or suspended. Probation is a first warning where all policyholders receive a letter notifying them of a \$50 increase in their insurance. In the event of suspension, the policyholders lose their NFIP insurance and are left to purchase insurance in the private sector, which is of significantly higher cost. If a community is having difficulty complying with NFIP policies, FEMA is available to meet with staff and volunteers to work through the difficulties and clear up any confusion before placing the community on probation or suspension.

### **Community Assistance Visits in Sutton**

A Community Assistance Visit (CAV) is a process required by the National Flood Insurance Program (NFIP) as a way of reviewing a town's compliance with established floodplain regulations to be sure that they meet NFIP requirements. If the Town is not in compliance with regulations in any way, the officials that conduct the CAV provide assistance and guidance to assist with correcting any violations.

The most recent CAV was conducted on July 26, 2004. A letter was sent to Sutton Selectmen on August 16, 2004 reviewing the visit and discussing the results, which are as follows.

It was discussed that all development in the Special Flood Hazard Area (SFHA) requires a permit. The board was reminded that the definition of "Development" includes such activities as grading, excavating, and land clearing, not just typical construction.

The CAV also reviewed the need for properly completed Elevation or Floodproofing Certificate to be filed with the building permit for approved construction in the SFHA. As noted in the NFIP requirements, construction is not prohibited, but these certificates are required in order to demonstrate compliance with the regulations. The elevation certificate ensures that the lowest enclosed floor of a residential structure is at or above the base flood elevation; and the Floodproofing Certificate for non-residential structures guarantees that the appropriate floodproofing materials/techniques have been applied to the structure to a point one foot above the base flood elevation.

The CAV also discussed the issue of substantial damage or improvement. Whenever there is a proposed change to such a structure, whether from damage or just a desire to improve, and the cost of this work would equal or exceed 50% of the market value of the structure, then the entire structure must comply with regulations. This could mean elevating the building or floodproofing it.

As of the **2014 PLAN**, the NH Office of Energy and Planning, which oversees New Hampshire's NFIP compliance for FEMA, uses a risk-based tool to determine whether another CAV is performed. NH communities are ranked on factors such as area, population, policies, losses, structures in floodplain, etc, and each community is designated as either a Tier 1 or 2 community. Tier 1 communities have CAVs completed every five years. Tier 2 communities will be contacted at some point in the future through a Community Assistance Call (CAC), which is usually a phone call. Sutton is designated a Tier 2 community.

### **Floodplain Ordinance Amendments**

The Town of Sutton became a member of the NFIP in May, 1977 and approved their first Floodplain Ordinance at Town Meeting in 1988. Floodplain Ordinances can be updated to be made more stringent than the federal requirements or when FEMA requires updating of regulations for compliance. Over time, Sutton has made many amendments.

In March 2008, Sutton updated the Floodplain Ordinance to comply with recent changes to the NFIP program and to allow the Selectmen to approve the new Digital Flood Insurance Rate (DFIRM), when available.

In December 2009, the Board of Selectmen adopted the new FEMA Floodplain Maps, the current effective Digital Flood Insurance Rate (DFIRM) maps dated April 19, 2010.

In March 2010, the Town also adopted the amended Floodplain Ordinance, incorporating the necessary FEMA revisions including definition changes.

In March 2013, the Floodplain Ordinance was edited for typographical and formatting changes for reprinting of all Zoning Ordinances.

The Town is presently compliant with FEMA requirements.

### **Potential Administrative Techniques to Minimize Flood Losses in Sutton**

According to NFIP policies, when an applicant files a request for a building permit in the floodplain, the applicant must include an elevation certificate in order to be in compliance. In addition, if an applicant intends to fill onsite, a letter of map of revision must be submitted along with the application. According to NFIP requirements in the Floodplain Ordinance, building permits should be reviewed to assure sites are reasonably safe from flooding and require anchoring to prevent flotation, collapse, or lateral movement and construction out of flood resistant materials.

Ongoing attention and familiarity with the NFIP will keep Town staff and volunteers in top form. In order to reduce flood risks, the Building Inspector, Planning staff, and other Town staff whose duties include review/inspection of development or construction should be familiar with the Floodplain Ordinance and the NFIP.

Because of their unique position to ensure development conforms with ordinances prior to approval, the Planning Board should be familiar with NFIP policies, especially those regulations that are required to be incorporated into the Subdivision and Site Plan Review regulations. A workshop sponsored by the NH Homeland Security and Emergency Management (NHHSEM) or the NH Office of Energy and Planning (NHOEP) would be appropriate to educate current staff and volunteers.

An essential step in mitigating flood damage is Town and property owner participation in the NFIP. Sutton should work to consistently enforce NFIP compliant policies to continue its participation in this program. Town staff should promote flood insurance to property owners in Town as only four (4) are protected by currently taking advantage of the insurance opportunity.

## CHAPTER 7. LOCAL HAZARD MITIGATION OBJECTIVES

### 2014 PLAN UPDATE

The objectives previously developed were reviewed and updated as needed by the Hazard Mitigation Committee during a public meeting. While the hazard incidents have remained the same, with a few additions over the course of the last five years, it was important to reassess the objectives' relevancy to the overall hazard mitigation actions which the Town has identified. Specific hazard objectives which address the most common hazard events that could impact Sutton have been reviewed and were updated as necessary.

### INTRODUCTION

The following objectives were developed by the Hazard Mitigation Committee to enable the Town to address the primary hazards in the community. Collectively, they will help formulate the mitigation strategies documented in the following chapters.

### GENERAL OBJECTIVES

These objectives were excerpted from a former version of the State Hazard Mitigation Plan and amended as needed to reflect Sutton's community needs.

1. To improve upon the protection of the general population, the citizens and guests of Sutton, from all natural, human, and technological hazards.
2. To reduce the potential impact of natural, human, and technological disasters on Sutton's critical support services and facilities, infrastructure, private property, economy, natural environment, and historic treasures.
3. To improve Sutton's emergency preparedness, disaster response, and recovery capability.

## HAZARD SPECIFIC OBJECTIVES

Objectives were developed to specifically address the predominant hazards, of the 39 different hazards examined, that are most likely to affect the Town. CHAPTER 2. HAZARD IDENTIFICATION's Hazard Vulnerability Assessment was referenced to ascertain which hazards were the highest risk to Sutton, and main categories are listed below. The Assessment is available in CHAPTER 12. APPENDIX. From these objectives, strategies will be developed for the community to implement.

### Flood

4. To minimize the impact a flood would have on life, property, and infrastructure in the Town of Sutton.

### Fire

5. To minimize fire, wildfire, and lightning damage to, and reduce the risk of damage to, life, property, and infrastructure.

### Severe Weather

6. To minimize the threat to life, property, and infrastructure from severe weather events.
7. To minimize the impact to travelers through blocked transportation systems from severe weather events.

### Human & Technological

8. To minimize the impact to populations from the threat of human, radon, biological, hazardous materials and technological disturbances to life, property, and infrastructure.

### Multiple Hazards

9. To reduce or bypass the risk of damage by severe storms and winter weather to Sutton's infrastructure, power grid, communication systems, and critical facilities.

## CHAPTER 8. EXISTING MITIGATION SUPPORT STRATEGIES

### 2014 PLAN UPDATE

The Committee reviewed each of their identified strategies from 2008 and updated the information. Some are currently in practice, others had improvements or changes from five years prior when they were first identified, and additional activities were added. Progress since the 2008 Plan was provided, and Future Improvements were identified for strategies. A listing of the existing plans reviewed for **CHAPTER 8** was provided. Action items from 2008 which were accomplished are listed in **Tables 22A-G** as existing mitigation strategies along with their completion date.

### INTRODUCTION

The Hazard Mitigation Committee identified a number of pro-active protection mechanisms that are currently in place in Sutton that could reduce the damages and losses in the event of a natural disaster or secondary disaster. Listed by Department or Board, the tables reflect what plans, activities, processes, or infrastructure that each has to mitigate disaster effects.

**CHAPTER 8. EXISTING MITIGATION SUPPORT STRATEGIES** contains an inventory of locally-important existing mitigation activities which have a positive impact on the way hazard events are handled within the community. Most activities are not hazard mitigation Actions. These strategies support the Action Plan and help decrease the community's hazard risk. **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS** contains the Action Plan that the community is working to achieve between 2013-2018. These **CHAPTER 8.** supporting programs, policies, training programs, plans, activities, completed Actions, etc. are not STAPLEE-rated (Social Technical Administrative Political Legal Environmental and Economics questions) like the Actions in **CHAPTER 10.**, but instead serve to sustain and assist the community to maintain and accomplish its hazard mitigation Actions and priorities.

## REVIEW OF EXISTING PLANS

During the Hazard Mitigation process and the identification of existing mitigation for **CHAPTER 8. EXISTING MITIGATION SUPPORT STRATEGIES**, the Hazard Mitigation Committee used their knowledge of the documents utilized for their duties with the Town of Sutton to develop the existing and potential Actions. The following plans and documents were referenced for the development of this Plan:

- Zoning Ordinance
- Emergency Operations Plan
- Fire Department Standard Operating Guidelines
- Rescue Department Standard Operating Guidelines
- Hazard Mitigation Plan Update
- Mutual Aid Agreements
- Master Plan
- Plowing & Sanding Policy
- Police Department Standard Operating Procedures
- Capital Improvements Program
- Subdivision & Site Plan Review Regulations

## DESCRIPTION OF SUPPORTING PROJECTS, PROGRAMS, AND ACTIVITIES

Each existing program, policy, activity, plan, training, process, regulation, ordinance, guidelines, agreement, improvement, Committee, drill, specialized equipment, partnership, etc. which assists with mitigating hazards was identified by the Hazard Mitigation Committee by each Town Department. The Committee discussed the *Effectiveness* of each strategy and recommended changes or improvements to their existing programs. *Descriptions* of the activity were provided, as well as the area of Sutton covered by the activity. The responsible Department was identified. *Effectiveness* of the activity was rated on a High-Medium-Low scale. The results of existing mitigation strategies identification are displayed in **Table 22A-G**.

In addition, the Actions which were **COMPLETED** from the 2008 Plan are listed within these **Tables**. The completion date of the Action from 2008 is listed and **CHAPTER 10 Action Plan's Project Rationale** was transferred to the *Description* column. **COMPLETED** Actions are gauged according to their *Effectiveness* and whether *Future Improvements or Changes* are required, in the same manner as the existing mitigation strategies listed by each Department.

**Table 22A**  
**Supporting Strategies: Police Department**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
Police Department Standard Operating Procedures (SOPs)	Standard Operating Procedures include West Nile, hostage/barricade, biological and chemical, communicable diseases, precious materials, and active shooter. Procedures are currently untested.	Entire Town	Police Chief	High	Supporting activity of the Department to the Mitigation Plan	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan
Active Shooter Drill  <b>COMPLETED</b> July 2012	Fall 2006, an active shooter drill with the scenario of students in school took place. Six of seven towns participated: Warner, Wilmot, New London, Springfield, Newberry, Sutton, Bradford (did not participate). Practicing the emergency response to an active shooter in the school will make the Police, Fire, and Rescue Department members learn the layout, command sequence, and procedures to undertake in the event of a real situation. The 2012 drill took place in the school.	Kearsarge Regional Middle & High Schools, Elementary School	Police Chief	High	Training has been provided to six officers.	Undertake realistic drills with Sutton Fire & Rescue, Highway and incorporate the seven towns that comprise KRSD
Local Mutual Aid & School District Mutual Aid	Towns within the mutual aid are Sutton, Warner, Wilmot, New London, Springfield, Newberry, Sutton, Bradford. All Police Departments have been trained by the State Police SWAT team.	Entire Town	Police Chief	High	Supporting activity of the Department to the Mitigation Plan	Continue to train with Mutual Aid Departments in areas of Fire Arms, Taser, Use of Force, and Active Shooter.
Police Department Training	Training has been provided for fire arms, taser, CPR/defibrillator, pepper spray, active shooter, and other situations. The six officers are trained annually.	Entire Town	Police Chief	High	Supporting activity of the Department to the Mitigation Plan	Attend a first responder training program.
Police Department In-Service Training	Training is provided every month with two hours of training available to the five officers.	Entire Town	Police Chief	High	Supporting activity of the Department to the Mitigation Plan	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan

**Table 22A, continued**  
**Supporting Strategies: Police Department**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
911 Telephone Box	Outside of the new Police Department is a 911 telephone box for residents and travelers to use in the event of an emergency.	Entire Town	Police Chief	High	Door light changed to blue in 2008 to indicate a call box.	Add a blue light above the call box at the door.
Employee Safety in the Town Hall  Undertook Employee Panic Buttons Measures  <b>COMPLETED</b> October 2009	Each office in the Town Hall has a personal panic button. While panic buttons have accidentally been pushed, these methods have been untested in a real emergency.  Buttons were upgraded and field tested.	Town Hall	Police Chief	High	Buttons were replaced in May 2009. Panic buttons have been field tested.	Office area should be more secure protecting employees from harm and emergency exits should be added in those areas needed.
Central New Hampshire Special Operations Unit	Provide mutual Law Enforcement assistance and logistical support to the Town in high risk situations including drug raids, hostage rescue, barricaded suspects, search and rescue, or other situations requiring exceptional police action which are beyond the normal resources and/or capabilities of the Sutton Police Department.	Entire Town	Police Chief	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continue being a participating member of the Central New Hampshire Special Operations Unit. Hold a scheduled training in the Town of Sutton once a year with the Central New Hampshire Special Operations Unit.
Upgraded Dispatch to Utilize WiFi System  <b>COMPLETED</b> June 2008	The dispatch was recently upgraded in 2008 to utilize a Wi-fi system. After New London dispatch upgraded their system to WiFi, Sutton could participate. Dispatch could then be done automatically on the computer. Cost per year is about \$2,200	Town Hall	Police Chief	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continually monitor and upgrade for compliance to this supporting activity of the Hazard Mitigation Plan

*Source: Sutton Hazard Mitigation Committee; Police Department*

**Table 22B**  
**Supporting Strategies: Fire & Rescue Department**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
No Open Burning Signs Posted on Forested Land	Lands which are forested are posted no open burning without a permit.	Entire	Fire Chief	High	Signs are posted by the Fire Department yearly on public roads where there are potential gatherings.	Post the King Hill Reservation so people know where they are for emergency purposes.
Fire Department Standard Operating Guidelines (SOGs)	Written guidelines include how to handle structure fires, chimney fires, hazardous materials, vehicle accidents. Guidelines are written by the Fire Officers.	Entire	Fire Chief	High	SOGs were written & approved by the general membership in 2012.	Continue to review and update Fire SOGs and add new SOGs when relevant.
Rescue Department Standard Operating Guidelines (SOGs)	Written guidelines include procedural/personnel procedures including who should respond to which type of call and how the response should take place, how to safely dress per call, etc.	Entire	Rescue Chief	Moderate	SOGs are reviewed annually.	Continue to review and update Rescue SOGs and add new SOGs when relevant.
Fire Department In-service Training	Fire Department members, all volunteers, have the ability to participate in in-service training. Training has included NIMS, vehicle extrication, incident command, hazardous materials, PSNH electrical emergencies, Cold water rescue, bombing, terrorism, and GPS.	Entire	Fire Chief	High	Cold water rescue, bombing, and terrorism, have been added to training. A regular training schedule for the 2 <sup>nd</sup> Tuesday of the month has been developed.	Have more training on NIMS, and encourage Department members to attend training outside of the Department.
Fire / Rescue Department Use of New London Dispatch	Fire Department has used New London dispatch since April 1, 2007. Prior to that, the Department used a "red phone". Rescue has always gone through New London dispatch.	Entire	Fire Chief/ Rescue Chief	High	A regional Code Red system has been established. Calls are now texted to cell phones.	Develop a repeater system.
Rescue Training	Monthly training for the Rescue Department has included NIMS, incident command. Monthly area training exists for EMS to practice working with other communities.	Entire	Rescue Chief	High  Moderate - for area monthly	Members were encouraged to participate at monthly training sessions.	Encourage members to attend the monthly area training sessions.

**Table 22B, continued**  
**Supporting Strategies: Fire & Rescue Department**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
<p>Fire Department Monthly Training</p> <p>Develop Schedule of Fire Department Training</p> <p><b>COMPLETED</b> January 2010</p>	<p>Department trains once per month. Of the 32 members, 13 are certified Fire Fighter Level 1, 3 are FF level 2. The Town pays for certification.</p> <p>Developed a schedule of training for Fire Department activities. The schedule will enable members to plan accordingly to attend training sessions.</p>	Entire	Fire Chief	High	Three members are now FF Level 2. Some members have had NIMS training.	Encourage more members to become NIMS compliant and certified Level 1. All members should be CPR and defibrillator trained.
<p>Fire &amp; Rescue Cadet Program</p> <p>Purchase Safety Equipment for Cadets</p> <p><b>COMPLETED</b> October 2012</p>	<p>Thirteen cadets ages 14 through college age are enrolled. Nine of them attend monthly. The cadets assist the Fire &amp; Rescue personnel on calls.</p> <p>Provided funding for smaller equipment that fits the cadets. Cadets used older gear for adults which fits improperly, compromising safety.</p>	Entire	Fire Chief / Rescue Chief	High	Cadets attended monthly trainings with the Fire & Rescue Department to enhance skills.	Continue to provide funding for smaller equipment that fits the cadets.

*Source: Sutton Hazard Mitigation Committee; Fire & Rescue Department*

**Table 22C**  
**Supporting Strategies: Emergency Management**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
Mass Casualty Plan	Rescue Department developed Mass Casualty Plan in 2008.	Entire	EMD/Rescue Chief	High	Class was taken on mass casualty by EMD and Rescue Department.	Conduct drills on the Plan to ensure it works.
Emergency Operations Plans 2010	The last plan was 2003 and was redone in 2010. Describes who's responsible for what actions during an emergency, includes evacuation plan. Includes general warning systems, chain of command, lists of resources.	Town-wide	EMD	High	The Plan was updated in 2010 to current standards.	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan
Emergency Operations Center	The EOC is located at the Fire Station. It contains one phone line, a generator, internet connection, cell phones, a fax line, and a radio. The Center accommodates only two people and no equipment.	Fire Department	EMD	High	Provided DSL internet and a dedicated fax line to EOC.	Build an addition to hold more people and equipment.
Greater Sullivan County Public Health Network Participation	The network created a plan to address mass casualty, health epidemics, etc. The Town is a member of the network, and has participated in the group to develop the plan. Drills and training has been conducted.	Town-wide	EMD	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continue the Town's active participation on the GSCPHN Committee.
EMD NIMS Compliance	All requirements were met in July 2012.	Town-wide	EMD	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Plan a drill to exercise town-wide disaster situation, including buildings destroyed and sheltering scenario.

*Source: Sutton Hazard Mitigation Committee; Emergency Management Director*

**Table 22D**  
**Supporting Strategies: Highway Department**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
NH Public Works Mutual Aid	Highway Department has been a member since its inception. Sutton has never used it nor has it been called upon to provide vehicles or labor.	Roadways	Road Agent	High	The Town continued its participation in the NH Public Works Mutual Aid	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan
Plowing & Sanding Policy	The plowing and sanding policy provides a basic order to the roads, which changes per situation.	Roadways	Road Agent	High	Supporting activity of the Department to the Mitigation Plan	Post the plowing and sanding policy on the website and place in the Town Report.
Culvert Maintenance Plan	The number of culverts which have been replaced is decreasing because most of the culverts in Town are now adequately functioning. The Highway Department has a culvert maintenance plan to replace those most in need first. The State has also been replacing culverts.	Culverts beneath Roadways	Road Agent	High	Nearly three dozen culverts have been replaced since 2008.	Continue upgrading culverts according to the culvert replacement plan or as otherwise required.
Highway Department Training	The 6 employees try to attend yearly training at UNH T2, including: culvert installation, chainsaw, Roads Scholar, NIMS, etc. It is difficult to find time for training with only 6 on staff.	Town-wide	Road Agent	Moderate	Five crew members attend trainings on about an annual basis. One or two have been through the Roads Scholars program.	Send employees to more training. Including a CPR course.
Highway Department Standard Operating Guidelines (SOPs)	The Highway Department has informal procedures and guidelines which are not written. Employees typically act as required for the situation that arises, and requirements are written into job descriptions. The Plowing and Sanding Policy is written.	Town-wide	Road Agent	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Consider developing written SOGs.

*Source: Sutton Hazard Mitigation Committee; Road Agent*

**Table 22E**  
**Supporting Strategies: Planning Board/Code Enforcement**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
Master Plan 2005	Updated yearly. Includes schedules and projects. Used by all Boards. Master Plan is currently being updated.	Town-wide	Planning Board	High	Supporting activity of the Department to the Mitigation Plan	Update Master Plan for 2020. Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan
Builder Checklist for Inspections	A checklist is provided to the builder indicating what will be inspected, including hardware, fire detections, railings, etc.	Buildings	Code Enforcement Officer	High	Completed included with Building Permit Application - Integrate with Access database	Continue to update on a regular basis and integrate with Planning and Zoning Boards
NFIP Participant	Enrolled in program since 1977. The Town is required to have a Floodplain Ordinance and provisions in the Subdivision Regulations. The Floodplain Ordinance was just updated 2010 to the specifications of the State. New DFIRMS were being digitized for Merrimack County and adopted by the Town in 2010. In 2013, a revised Zoning Ordinance includes the Floodplain Ordinance.	Floodplain	Planning Board	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan.
Zoning Ordinance	Constantly updated, they are considered current. Include drainage and infrastructure provisions. Currently undergoing review as a result of work on the Master Plan. In 2013, a revised Zoning Ordinance includes the Floodplain Ordinance.	Town-wide	Planning Board	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan.
Site Plan/Subdivision Regulations	Includes fire and emergency access, drainage, floodplain, and bonding provisions. The public is keenly aware of what is in the regulations when they come before the Board. Site Plan Review Regulations are currently being updated 05-13.	Town-wide	Planning Board	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan.

**Table 22E, continued**  
**Supporting Strategies: Planning Board/Code Enforcement**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
Capital Improvements Program	CIP lists funding priorities for six years and is updated yearly. Town makes equipment purchases as needed.	Town-wide	Planning Board	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan
Access Database Completed April 2013	Developed access database to facilitate communication between Planning/Zoning/Health/Assessing/Building permits Code Enforcement etc.	Town-wide	Planning Board	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continually update for accuracy
CAMA MAPS	Working on developing digitized tax maps and FIRM MAPS to use for overlay purposes and integrate with NFIP Maps	Town-wide	Planning Board	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Update Annually for Accuracy
Building/Code Enforcer	Develop job description for certified Building Code Inspector and to harmonize the job description with the new requirements from the Planning Board.	Town-wide	Board of Selectmen	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Evaluate annually for any new regulations that need to be enforced. Monthly reporting to Board of Selectmen.
Encourage Cell Tower Location in Town  <b>COMPLETED</b> December 2012	A cell/communications tower on Jolly Farm Road, Johnson Hill, or Fox Chase will improve reception in Town. A repeater could additionally be placed upon the tower. The PB revised the Zoning Ordinance to relax some of the regulations.	Town-wide	Planning Board	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan

*Source: Sutton Hazard Mitigation Committee; Planning Board*

**Table 22F**  
**Supporting Strategies: Town Administration**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
Interdepartmental Cooperation	Town departments use the same radio frequencies. For many situations emergencies, cooperation among departments is critical.	Entire	Board of Selectmen	High	Sutton Police Department has installed a repeater	Communication would be improved by providing funding for enhanced communication for purchase of additional repeaters.
Safety Committee	Police Chief chairs the committee four times per year. Topics include employee and facility safety, first aid equipment, etc.	Employee Locations, Town Buildings	Board of Selectmen	High	The Fire Chief attends quarterly meetings. Safety Committee acquired an AED for the Sutton Solid Waste Facility.	Invite Rescue on a regular basis.
Communication Liaison / Officer	The Town Administrator disseminates information as needed, providing information to all the Town Departments.	Entire	Town Administrator	Moderate	Information is disseminated to all departments through the town website and email list group.	Formalize the process for regular contact with Departments.
Town Hall Alarm System	The Town Hall has an alarm system which is routinely tested and maintained by an alarm company.	Town Hall	Town Administrator	High	Alarm system is serviced annually.	Research other systems for enhanced security of Town Hall.
Town Hall Interior Half-Doors	The Selectmen's office and Town Clerk's office have half doors which inhibit people from walking in. However, the doors are seldom locked and people do come right in.	Town Hall	Board of Selectmen	Low	Employees have completed training on conflict in the workplace.	Adopt a Town Hall Safety plan for exiting building or shelter during emergency.
Attendance at Seminars by Town Officials	Seminars by NH HSEM, LGC, others attended by Selectmen, Health Officer, Planning Board. Regularly attend as workshops come up.	Town-wide	Town Administrator	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Make more time and money available to more officials/staff.

**Table 22F, continued**  
**Supporting Strategies: Town Administration**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
Joint Selectmen's Meetings with Surrounding Towns and School Districts to Discuss issues	Periodic meetings held, including for regional issues.	Town-wide	Board of Selectmen	Medium	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continue to meet with surrounding Town as issues develop.
9-11 Numbering Ordinance	Town ordinance for emergency services and also facilitates the building permit process. Information on number posting is submitted as part of Town Report. The Town of Sutton has completed 911 mapping in compliance and conjunction with Department of Safety.	Town-wide	Board of Selectmen	Medium	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continually monitor numbering and update new construction. Enforce local ordinance for compliance
Class VI Road Policy	Property owners must upgrade roads to bring up to Class V standards before building or logging. Road Agent will bring updates to the Selectmen as needed. The Town of Sutton has adopted a Class VI Road Policy.	Class VI roads	Board of Selectmen & Planning Board	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Develop specific requirements for Class VI road upgrade.
Conservation Commission Easement Program	The Town owns 213 acres of open space without conservation easements and 666 acres with conservation easements. There are 1,073 acres of privately owned land with conservation easements. State owned opens space land totals 484 acres.	Town Wide	Conservation Commission and Board of Selectmen	High	Commission has developed criteria for acquisition of Conservation Land. The Conservation Commission receives 100% of the land use change tax.	Continue capital improvement planning for funding mechanism.

*Source: Sutton Hazard Mitigation Committee; Board of Selectmen*

Table 22G

## Supporting Strategies: Kearsarge Regional School District: Sutton Central, KRMS, KRHS

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
Hold Regular Drills	Each school is required to conduct 10 drills per year.	Elementary School, Middle School & High School	Principal	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continue to add changes from the drill exercises to make it safer for students.
Kearsarge School District Emergency Management Plan 2010	The EMP contains information for fire drills, what students, parents, and teachers will do in the event of an emergency. All schools in the Kearsarge Regional School District within Sutton are operating under the same procedure	Elementary School, Middle School & High School	School Principal	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continue to add changes from the drill exercises to make it safer for students.
School Security Features	All schools have a buzz in lock system. Cameras have been installed at the main entrances. Visitors are required to sign-in.	Elementary School, Middle School & High School	School Principal	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Educate students, staff and visitors on the school security system and the importance of maintaining a secure campus.
Blizzard Bag Program	The Kearsarge Extended Learning Network, (KELN) also referred to as the Learning on Line/Blizzard Bag initiative has been extended to the 2012-2013 school year. The purpose of the program will be to allow students to complete up to five emergency days through Learning on Line/Blizzard Bag lesson plans. These KELN days will count as "traditional" school days. For this school year, three Blizzard Bag days were used. All students have a backup of paper work in the event there is a loss of power/internet. Annually, the district prepares for 5 blizzard bag days.	Elementary School, Middle School & High School	School Principal	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Loss of electricity is a concern as students cannot use the online system. Continue to work with the Town Highway Department and utility companies for clearing dead and potentially dangerous limbs prior to hazard events.
Cyberbullying Resources on School Website	Multiple curriculum resources and links for parents and students are available on Sutton Central's website. This can help stop human hazards from occurring to students.	Elementary School, Middle School & High School	School Principal	High	N/A. Recently added supporting strategy of the Hazard Mitigation Plan Update	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan

Table 22G, continued

## Supporting Strategies: Kearsarge Regional School District: Sutton Central, KRMS, KRHS

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
Water Testing	KRSD has all wells tested per state requirements. Water samples are taken and sent to certified labs. The results are submitted to the state	Elementary School, Middle School & High School	School Principal	High	N/A Remedy added supporting strategy of the Hazard Mitigation plan	Continually monitor and update for compliance to this supporting activity of the Hazard Mitigation Plan
Standard Operating Procedure: Drop Cover and Hold 5/2013	Adopted a Drop Cover and Hold SOP and post posters describing actions	Elementary School, Middle School & High School	School Principal	High	N/A Remedy added supporting strategy of the Hazard Mitigation plan	Continue monitoring for effectiveness on an annual basis.
Standard Operating Procedure: Secure Campus 5/2013	Adopted a Secure Campus SOP and post posters describing actions	Elementary School, Middle School & High School	School Principal	High	N/A Remedy added supporting strategy of the Hazard Mitigation plan	Continue monitoring for effectiveness on an annual basis.
Standard Operating Procedure: Shelter-In-Place 5/2013	Adopted a Shelter-In-Place SOP and post posters describing actions	Elementary School, Middle School & High School	School Principal	High	N/A Remedy added supporting strategy of the Hazard Mitigation plan	Continue monitoring for effectiveness on an annual basis.
Standard Operating Procedure: Lockdown 5/2013	Adopted a Lockdown SOP and post posters describing actions	Elementary School, Middle School & High School	School Principal	High	N/A Remedy added supporting strategy of the Hazard Mitigation plan	Continue monitoring for effectiveness on an annual basis.
Standard Operating Procedure: Evacuation 5/2013	Developed an Evacuation SOP and post posters describing actions	Elementary School, Middle School & High School	School Principal	High	N/A Remedy added supporting strategy of the Hazard Mitigation plan	Continue monitoring for effectiveness on an annual basis.
Standard Operating Procedure: Reverse Evacuation 5/2013	Developed a Reverse Evacuation SOP and post posters describing actions	Elementary School, Middle School & High School	School Principal	High	N/A Remedy added supporting strategy of the Hazard Mitigation plan	Continue monitoring for effectiveness on an annual basis.

**Table 22G, continued**

**Supporting Strategies: Kearsarge Regional School District: Sutton Central, KRMS, KRHS**

Existing Program, Policy or Activity	Description	Area of Town Covered	Responsibility	Effectiveness	Progress Since Last Plan	Future Improvements
District Resource Officer	Add a certified Sutton police officer to the staff of the Kearsarge Regional School District in the capacity of Resource Officer. This officer would work with district officials to ensure the safety, security and welfare of students, staff, and visitors.	District wide	Police Chief/KRS D Superintendent	High	N/A Remedy added supporting strategy of the Hazard Mitigation plan	Obtain funding through appropriation at district level and/or Town Meeting.

*Source: Sutton Hazard Mitigation Committee; Kearsarge Regional School District*

## CHAPTER 9. NEWLY IDENTIFIED MITIGATION ACTIONS

### 2014 PLAN UPDATE

The 2008 Actions were reviewed by the Committee to ensure their relevancy, and were updated or removed as needed. The Committee identified new Actions which can be undertaken for natural, human, or technological event mitigation. Objectives which the Action met were also identified.

### INTRODUCTION

In addition to the programs and activities that Sutton is currently undertaking to protect its residents and property from natural, human, or technological disasters, a number of additional strategies were identified by the Hazard Mitigation Committee for consideration. Many of these newly identified mitigation strategies will be considered for further action in the Mitigation Action Plan in **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS**. Some of them are the result of improvements to the existing strategies identified in **Tables 22A-G** on the previous pages.

### DESCRIPTION OF POTENTIAL MITIGATION PROJECTS, PROGRAMS, AND ACTIVITIES

These types of activities were considered when determining new projects, programs and activities, listed in **Tables 23A-E**, which Sutton can develop:

- Life and Property Protection
- Emergency Services
- Public Information and Involvement
- Training and Preparation
- Planning and Implementation

The Hazard Mitigation Committee considered improvements to existing strategies, new programs or activities, and new projects that would improve the conditions in many of the assets identified in **CHAPTER 3. ASSET AND RISK IDENTIFICATION**. All strategies are considered Actions that the community can take, and will later be integrated into a Mitigation Action Plan in **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS** with the responsible party identified, how much the Action will cost, and when and how the Action will be completed.

**Table 23A**  
**Potential Mitigation Actions: Flood**

<b>Meets Objective #</b>	<b>Name of Potential Action</b>	<b>Description of Potential Action</b>	<b>Affected Location</b>	<b>Type of Activity</b>
1, 2, 4, 9 Aug 2007 replaced culvert with 2-6' X 40'	Replace French Road East's Culvert with Open Bottom Pipe or Box Culvert	Replace French Road East's undersized culvert with an open bottom pipe (\$35,000) or box culvert (\$250,000). The project manifested as a result of recurring flooding experienced in this area.	French Road East	Life and Property Protection
1, 2, 4, 9 Aug 2008 replaced 2-4 foot culverts	Install Additional Culvert on North Road	Install one 4' culvert on North Road to reduce flooding conditions and alleviate drainage issues. The project manifested as a result of recurring flooding experienced in this area.	North Road	Life and Property Protection
1, 2, 4, 9 Aug 08 installed 2-4 foot culverts and 1-3 foot culvert	Install Multiple Culverts on Beaver Pond Road	Install two 4' culverts and one 3' culvert on Beaver Pond Road to reduce flooding conditions and alleviate drainage issues. The project manifested as a result of recurring flooding experienced in this area.	Beaver Pond Road	Life and Property Protection
1, 2, 4, 9 July 97 installed 3 six foot culverts	Install Box Culvert on Hominy Pot Road	Install a box culvert/bridge on Hominy Pot Road to reduce flooding conditions and alleviate drainage issues. The project manifested as a result of recurring flooding experienced in this area.	Hominy Pot Road	Life and Property Protection
1, 2, 4, 9 July 2009 replaced 5' foot X 60	Install Culvert Across Shaker Road	Install one 6'x60' culvert across Shaker Road to reduce flooding conditions and alleviate drainage issues. The project manifested as a result of recurring flooding experienced in this area.	Shaker Road	Life and Property Protection
1, 2, 4, 9 August 98, installed 3-6 foot culverts	Install Box Culvert on Baker Road	Install a box culvert to assist with drainage on Baker Road to reduce flooding conditions and alleviate drainage issues. The project manifested as a result of recurring flooding experienced in this area.	Baker Road	Life and Property Protection
1, 2, 3, 4, 6	Participate in National Flood Insurance (NFIP) Training	Volunteers, staff could invite a person from NHHSEM or NH Office of Energy and Planning to offer a workshop on the NFIP at the Town Offices and review the Zoning Ordinance and Subdivision/Site Plan Review Regulations for NFIP compliance.	Town-wide	Training and Preparation

**Table 23A continued**  
**Potential Mitigation Actions: Flood**

<b>Meets Objective #</b>	<b>Name of Potential Action</b>	<b>Description of Potential Action</b>	<b>Affected Location</b>	<b>Type of Activity</b>
1, 2, 4, 8	Update the Zoning Ordinance to Comply with NFIP Requirements	The Zoning Ordinance needs to be updated as new requirements to the National Flood Insurance Program are necessary for retention of NFIP participation. The Floodplain Ordinance protects life and property by regulating distance of structures to flood hazard areas, regulating elevation, clarifying definitions, regulating new structures and encroachments, stating duties of the Code Enforcement Officer, etc. On March 9, 2010, the ordinance was last updated. The new DFIRM maps were adopted 2010.	Floodplains	Planning and Implementation
1, 2, 4, 9	Replace Baker Hill Road Culvert	Undersized culvert needs to be replaced on Baker Hill Road just past Ellis home. A 15" x 40" steel replacement should be installed.	Baker Hill Road	Life and Property Protection
1, 2, 4, 9	Replace Meeting House Hill Road Culvert	One known culvert on the road. To maintain the integrity of the road, the undersized culvert needs to be replaced on Meeting House Hill Road to a 12" X 30". Culvert replacement by PSNH 97-2/5 pole. Soil is acidic, but have to use metal culverts.	Meeting House Hill Road	Life and Property Protection
1, 2, 4, 7, 9	Replace Keyser Street Bridge over Seasonal Stream	The undersized box culvert bridge needs to be replaced to a 3' X 4' by 30' long box culvert on Keyser Street. A wetlands permit is required. The bridge is failing, although it was recently repaired.	Keyser Street	Life and Property Protection

*Source: Sutton Hazard Mitigation Committee; Road Agent*

**Table 23B**  
**Potential Mitigation Actions: Fire**

Meets Objective #	Name of Potential Action	Description of Potential Action	Affected Location	Type of Activity
1, 3, 5	Encourage Fire & Rescue Training Area Attendance	Encourage Fire & Rescue members to attend monthly area training sessions.	Entire Town & Area	Training and Preparation
1, 3, 5	Encourage Fire Department Member Certification	Encourage more Fire Department members to be certified Fire Fighter I, NIMS Compliant, and certified for CPR and defibrillator use.	Entire Town	Training and Preparation
1-9	Undertake Improvements to Emergency Operations Center	In the Emergency Operations Center, there is no room for any equipment and the Center holds a maximum of two people.	Emergency Operations Center	Emergency Services
1-9	Build Fire Station Addition	Build an addition onto the Fire Station to hold more people and equipment and to house a training facility. The quarters are now cramped and outdated. New addition will be about 6,000 sq. ft. Locker room, showers, laundry & utility rooms, handicapped restrooms, office space, training rooms, etc. will be included.	Fire Station	Emergency Services
1-9	Secure a Repeater System	Multiple dead spots exist in Town which inhibit communication. Currently the Town does not have a repeater but must rely on their dispatch center in New London.	Entire Town	Emergency Services
1, 3, 5	Install a Dry Hydrant at the Maple Leaf Development at King Hill Road and Penacook Road	Install dry hydrants in accordance with rural fire protection program. There is no water access on this side of Keyser Lake. Potential for future development is here. The bridge is not large enough for two fire trucks to pass each other if needed to shuttle water. A dry hydrant is needed at the Maple Leaf Development site.	Maple Leaf Development at King Hill Road and Penacook Road	Life and Property Protection

**Table 23B, continued**  
**Potential Mitigation Actions: Fire**

Meets Objective #	Name of Potential Action	Description of Potential Action	Affected Location	Type of Activity
1, 3, 5	Install a Dry Hydrant at Russell Pond at Route 114 and Fox Chase Road	Install dry hydrants in accordance with rural fire protection program. About nine homes are on this street and it currently has no easy water access during the winter in particular. A dry hydrant is needed at the Russell Pond at Route 114 and Fox Chase Road location.	Russell Pond at Route 114 and Fox Chase Road	Life and Property Protection
1, 3, 5	Install a Dry Hydrant near the Post Office and Route 114 in South Sutton	Install dry hydrants in accordance with rural fire protection program. A dry hydrant is needed at the Post Office and Route 114 in South Sutton. The high number of homes in the area and the existing historic structures have no easy water access.	Post Office and Route 114 in South Sutton	Life and Property Protection
1, 3, 5	Develop Specific Requirements for Class VI Road Upgrade	As Sutton continues to expand into remote areas that are only accessible by Class VI roads, these roads will need to be upgraded in order to provide reasonable access by safety services. The Board of Selectmen will initiate and partner closely with the Road Agent and Planning Board to ensure all standards and needs are met for the policy. The Fire Department should also provide their requirements. This project would be undertaken by the Board of Selectmen and Planning Board at their regularly scheduled meetings.	Class VI roads	Planning and Implementation

*Source: Sutton Hazard Mitigation Committee; Fire Department*

**Table 23C**  
**Potential Mitigation Actions: Severe Weather**

Meets Objective #	Name of Potential Action	Description of Potential Action	Affected Location	Type of Activity
1, 7	Publicize Plowing and Sanding Policy	Post the plowing and sanding policy on the website and place in the Town Report.	Roadways	Public Information and Involvement
1, 3, 4, 5, 6, 7, 8	Develop List of Persons Requiring Assistance During Disasters	The Police & Fire Departments need to know who to check on (elderly, disabled, etc) during disaster events, power outages, etc. People regularly move or have health status changes. Solicitation techniques include: Place a notification on the Town website urging new arrivals to register. Partner with the Welcome Basket Committee to place a card, printed by the Town Office, into the basket that has emergency numbers, sign up information for Code Red, etc. Place an advertisement in the annual Town Report.	Entire Town	Emergency Services
1, 3, 4, 5, 6, 7, 8	Develop & Disseminate Public Education Materials for Emergency Supplies and Sheltering	Develop public education materials to inform residents which emergency supplies they should secure and where shelters are available. Hazard events include extended power outages which are common in the winter, flooding seclusion, and winter storms. Dissemination techniques include: Place information on the Town website. Partner with the Welcome Basket Committee to place a card, printed by the Town Office, into the basket that has emergency numbers, sign up information for Code Red, etc. Place information in the annual Town Report.	Entire Town	Public Information and Involvement
1, 3, 4, 5, 6, 7, 8	Develop Volunteer List for Staffing Shelters	The EMD opens the shelter during severe weather events and volunteers are needed for its staffing. Developing a list of volunteers to staff the shelters in advance of the events will enable greater efficiency and quicker opening of the center. A church group could be asked to take over this job.	Entire Town	Emergency Services

*Source: Sutton Hazard Mitigation Committee*

**Table 23D****Potential Mitigation Actions: Human / Pandemic / Technological**

<b>Meets Objective #</b>	<b>Name of Potential Action</b>	<b>Description of Potential Action</b>	<b>Affected Location</b>	<b>Type of Activity</b>
1, 3, 4, 5, 6, 7, 8,	Attend First Responder Training for Police Officers	Police officers should attend a first responder training program.	Entire Town	Training and Preparation
1, 8	Encourage Employees to Wear Panic Buttons	Employees should wear their personal panic buttons. The Town purchased a button for each employee.	Town Hall	Life and Property Protection
1, 8	Encourage Town Hall Employee Safety	Employees should attend conflict management training. Employees and volunteers should take an active role in promoting their own personal safety at the Town Offices and in the field. The Town should become compliant with its lighting over the exits, especially in basements.	Town Hall	Life and Property Protection
1, 8	Encourage Radon Testing in Schools and in Town Buildings	Encourage the three schools to test for water radon, test three Town buildings and implement any measures necessary to rectify issues.	Entire Town	Life and Property Protection
1, 8	Promote Public Education for Radon Testing	Educate the public about the probability of radon and offer ways residents can mitigate the problem.	Entire Town	Public Information and Involvement
1, 2, 3, 4, 5, 6, 8, 9	Adopt Town Hall Safety Plan	In order to ensure the safety of the personnel and general public, it is imperative that the Town Hall have a posted evacuation plan in a readily visible location. It is necessary for all staff to be trained in proper safety procedures.	Town Hall	Planning and Implementation

*Source: Sutton Hazard Mitigation Committee; Police Department*

**Table 23E**  
**Potential Mitigation Actions: Multiple Hazards**

Meets Objective #	Name of Potential Action	Description of Potential Action	Affected Location	Type of Activity
1, 6, 9	Develop Middle School Shelter in Place Plan	Develop a school shelter in place plan for the Middle School so Town and School officials know who is doing what and what the process is.	Schools	Planning and Implementation
1, 3	Promote Volunteer Opportunities	Develop an active promoting campaign to recruit volunteers for the Fire Department, Rescue Department, and all other town boards and departments.	Entire Town	Public Information and Involvement
1, 3	Provide a Stipend for Fire and Rescue Members	Providing a stipend for on-call Fire & Rescue members will help promote volunteerism in the community. Volunteer members take time away from their jobs to perform their duties during lengthy incidents.	Entire Town	Emergency Services
1, 3, 9	Establish Central Communications	Establish a contact/one central location for interdepartmental communication. Future central communications may be located in the Emergency Operations Center.	Emergency Operations Center (Fire Station)	Emergency Services
1, 8	Enhance Police Station Exterior	Add blue lights on top of the Police Station to make the 911 call box stand out.	Police Station	Emergency Services
1, 3, 9	Develop Formal Process for Town Department Central Non-Emergency Communications	Formalize the process for regular contact with Departments. Currently, the Town Administrator communicates with departments on an as-needed basis.	Entire Town	Planning and Implementation
1, 3	Hire or Seek a Grant Writer	A small town volunteer Fire Department cannot spend time writing grants to obtain essential equipment. Neighboring towns regularly apply for and receive grants for new equipment. A grant writer can serve multiple departments and the Town Offices.	Entire Town	Training and Preparation

**Table 23E, continued**  
**Potential Mitigation Actions: Multiple Hazards**

<b>Meets Objective #</b>	<b>Name of Potential Action</b>	<b>Description of Potential Action</b>	<b>Affected Location</b>	<b>Type of Activity</b>
1, 3, 6, 8, 9	Develop Emergency Response Mitigation Plan	Write a plan to develop a process to obtain reimbursement funds for extended emergency services.	Entire Town	Planning and Implementation
3, 4, 5, 6, 8	Develop Plan for Evacuation of Animals and Identify Shelters	Identify shelters (or care and feeding centers) for animals as well as evacuation plans which consider pets and livestock.	Town-wide	Planning and Implementation
1, 3, 4, 5, 6, 7, 8	Collect and Make Available Disaster Pamphlets and Information for Residents	Develop pamphlets for the education of citizens or use Red Cross, NH HSEM, FEMA, NFIP, or other informational pamphlets on how to prepare for disasters. Make the available at the Town Hall and other locations.	Town-wide	Public Information and Involvement
1, 3, 4, 5, 6, 7, 8	Hold Annual Evacuation Plan Exercise with Elementary, Middle, and High Schools	Hold an exercise annually with the 3 Schools to practice evacuation plan. Allocate sites for off-site evacuation. Last drill held in 2009.	Elementary, Middle, High Schools	Training and Preparation
1-9	Undertake Realistic Drills with Sutton Emergency Response and the Seven Towns that Comprise KRSD	Because Sutton is part of a regional school district encompassing 7 towns, it would behoove the Sutton Police Department to coordinate training with the other six Towns in the mutual aid district.	Elementary, Middle, High Schools	Training and Preparation

*Source: Sutton Hazard Mitigation Committee*

## CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS

### 2014 PLAN UPDATE

The new mitigation strategies which were identified in **CHAPTER 9. NEWLY IDENTIFIED MITIGATION ACTIONS** and the relevant 2008 Actions have been placed into one of five Action tables categorized by the type of activity, **Tables 25A-E**. A few older Actions remain which did not have respective discussion and appearance in the 2008 Newly Identified Mitigation Actions Chapter. All Actions were prioritized using the enhanced STAPLEE method below, and new costs, timeframes, and rationales were identified. An updated cost-benefit analysis was developed. Actions from 2008 which have not been completed have been indicated as **DEFERRED**. The **COMPLETED** Actions of the Plan are now documented in **Table 24**, and the **DELETED** Actions are documented in **Table 24A**.

### INTRODUCTION

The Hazard Mitigation Committee ranked each of the new or improved mitigation Actions from **CHAPTER 9. NEWLY IDENTIFIED MITIGATION ACTIONS** by utilizing the following enhanced STAPLEE (Social Technical Administrative Political Legal Environmental and Economics) criteria. The Committee asked and then answered such questions as "Does the action reduce damage?", "Does the action contribute to Town objectives?", "Is the action socially acceptable", and "Does the action offer reasonable benefits compared to its cost in implementing?"

The following list documents the questions (criteria) that were posed to the Committee. The Committee responded to these and other questions, with a numeric score of "1" (indicating *NO* response), a "2" (indicating *MAYBE/PARTIALLY* response), and a "3" (indicating *YES* response).

- Does the action reduce damage and human losses?
- Does the action contribute to community objectives?
- Does the action meet existing regulations?
- Does the action protect historic structures?
- 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 in implementing?
- Is the action environmentally sound?

The numeric answers were totaled to give a final score for each of the criteria. Those answers that totaled higher were given the higher priority. A score of **36** would indicate that the mitigation strategy, or Action, received the highest possible score. The scores ranged from a high of **35** to a low of **27**. The full scoring matrix is located in **CHAPTER 12. APPENDIX**. The rankings are indicated in the Priority Score column in the Mitigation Action Plan **Tables 25A-E** on the following pages.

Not only are **NEW** Actions prioritized, existing Actions from 2008 are categorized into **COMPLETED**, **DELETED**, or **DEFERRED** as described in the following sections.

### STATUS OF EXISTING 2008 AND NEW 2014 ACTIONS

The Actions in the following tables were listed in the 2008 Plan. Many Actions have been **COMPLETED** and are listed in **Table 24**. The status of the remaining Actions, plus the **NEW** Actions developed by the 2014 Hazard Mitigation Committee, was addressed in this **2014 PLAN** in the following manner:

- **COMPLETED** Actions      Listed in **Table 24. Mitigation Actions Completed Since 2008** and placed in **CHAPTER 8. EXISTING MITIGATION SUPPORT STRATEGIES**. Indicated as **COMPLETED** under the Action heading.

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- **DELETED** Actions      Listed in **Table 24A. Mitigation Actions Deleted from the 2008 Plan**. Indicated as **DELETED** under the Action heading. Reason for deletion is indicated.

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- **DEFERRED** Actions      Indicated as **DEFERRED** under the Action heading in **Action Plan Tables 25A-E**. Reason for deferral is indicated.

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- **NEW** Actions      Indicated as **NEW** under the Action heading in **Action Plan Tables 25A-E**. Action just developed for this 2014 Plan.

Actions that were **DELETED** from the 2008 Plan are no longer relevant to the Town, may not have been able to receive funding, or are no longer a priority to Sutton.

Actions which were **DEFERRED** from 2008 are still important to the Town but did not have the staff capability or the funding to undertake them, other Actions took higher priority, more time is required for completion, or they may need to be repeated in order to be effective. They remain in the Action Plan and have been re-prioritized with the **NEW** Actions.

Changes in priority of the 2008 Actions occurred over the last five years. The former priority of the **DEFERRED** Actions is listed in parentheses after **DEFERRED** so a comparison can be readily made.

### Completed Mitigation Actions

The Town has implemented several Actions identified in 2008 since the original plan was adopted. Departments have undertaken the challenges inherent in getting the Actions implemented to ensure that the Town will benefit from the identified mitigation strategies. These **COMPLETED** Actions, are displayed in **Table 24**. Several of the mechanisms for implementing Actions include insertion into existing plans and documents, discussed in **CHAPTER 11. PLAN MONITORING, EVALUATING, AND UPDATING**.

The **COMPLETED** Actions are also identified in **CHAPTER 8. EXISTING MITIGATION SUPPORT STRATEGIES**, joining the other strategies, policies, plans, procedures, guidelines, training, equipment, etc. which have the potential to mitigate a hazard.

**Table 24**  
**Mitigation Actions Completed Since 2008**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost*	How Funded
33	Install Additional Culvert on North Road <b>COMPLETED</b>	Highway Department	August 2008	\$10,000	Highway Budget
33	Install Multiple Culverts on Beaver Pond Road <b>COMPLETED</b>	Highway Department	August 2008	\$10,000	Highway Budget
33	Install Culvert Across Shaker Road <b>COMPLETED</b>	Highway Department	July 2009	\$75,000	Warrant Article
30	Develop Schedule of Fire Department Training <b>COMPLETED</b>	Fire Department Training Officer	January 2010	\$0	N/A
36	Undertake Realistic Active Shooter Drill <b>COMPLETED</b>	Police Department	July 2012	\$0	N/A
29	Purchase Safety Equipment for Cadets <b>COMPLETED</b>	Fire and Rescue Chief	October 2012	\$18,900	EMPG Grant, Fire and Rescue Budget
27	Encourage Cell Tower Location in Town <b>COMPLETED</b>	Town Administrator	December 2012	\$0	Cell tower owners

*Source: Sutton Hazard Mitigation Committee*

**Deleted Mitigation Actions**

The Town has **DELETED** several Actions identified in 2008. **DELETED** Actions are displayed in **Table 24A**. **DELETED** Actions are no longer necessary or are no longer priorities to the Town, are not relevant, could not be realistically undertaken, were not financially feasible, or were changed/incorporated into another Action listed in the **Table 25A-E Action Plan**.

**Table 24A**  
**Mitigation Actions Deleted from the 2008 Plan**

Priority Score	Action	Who is Responsible	Deleted By Date	Approx Cost*	How Funded
36	Purchase Additional Barricades <b>DELETED</b> This Action was deleted because it was no longer necessary or a priority to the Town	Highway Department	May 2013	\$1,500	Highway Budget

*Source: Sutton Hazard Mitigation Committee*

## **SUTTON'S MITIGATION ACTION PLAN 2014**

The Committee identified mitigation Actions specific to the natural hazards of flooding (all subcategories included), fire (includes fire and lightning), and severe winter weather. These were the most highly ranked of the natural hazards from **CHAPTER 2. HAZARD IDENTIFICATION**, many of which could qualify for FEMA or other federal grant programs. The remaining natural hazards, both low- and high-ranking, were considered for their applicability and the availability of options for Actions. Many of the Actions listed here have an indirect benefit to several different types of disaster events.

Locally-important Actions for natural, technological, or human disasters that were planning- or response-oriented were also identified and ranked here since the **SUTTON HAZARD MITIGATION PLAN UPDATE 2014** is an essential tool for the Town's emergency management program. The Plan would not be complete without these other Actions. Funding for these projects may be available at the local level through the Town budget.

The ranking in the *Priority Score* column in **Tables 25A-E** serves as a guideline for when the Town should begin acting on the identified strategies, or Actions. The Committee then determined who would be responsible for ensuring that each action would be completed, the recommended completion date, the approximate cost for completing the action, and how the action would be funded. The **Mitigation Action Plan** is a comprehensive proposal designed to help the Town of Sutton prepare in advance for the impacts of disasters. Combined with the Maps of this **HAZARD MITIGATION PLAN UPDATE**, the **Action Plan** should guide future hazard mitigation efforts.

### **Action Plan 2014**

A total of **37** Actions that Sutton can undertake were identified and prioritized. Those Actions that are listed first in each table, with the highest score, were given the highest priority by the Hazard Mitigation Committee:

**Table 25A**

**Sutton's Mitigation Action Plan 2014: Life and Property Protection**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
35	Replace Baker Hill Road Culvert <b>NEW</b>	Highway Department	August 2018	\$2,000	Highway Department Culvert Budget
<p><b>Project Rationale:</b> One known culvert on the road. To maintain the integrity of the road, the undersized culvert needs to be replaced on Baker Hill Road just past Ellis home. A 15" x 40' steel replacement should be installed.</p>					
<p><b>Cost Rationale:</b> Cost is for materials, equipment rentals, and labor.</p>					
35	Replace Meeting House Hill Road Culvert <b>NEW</b>	Highway Department	September 2013	\$2,000	Highway Department Culvert Budget
<p><b>Project Rationale:</b> One known culvert on the road. To maintain the integrity of the road, the undersized culvert needs to be replaced on Meeting House Hill Road to a 12" X 30'. Culvert replacement by PSNH 97-2/5 pole. The soil is acidic, but metal culverts must be used.</p>					
<p><b>Cost Rationale:</b> Cost is for materials, equipment rentals, and labor.</p>					
35	Replace Keyser Street Bridge over Seasonal Stream <b>NEW</b>	Highway Department	September 2018	\$10,000	Warrant Article
<p><b>Project Rationale:</b> The undersized box culvert bridge needs to be replaced to a 3' X 4' by 30' long box culvert on Keyser Street. A wetlands permit is required. The bridge is failing, although it was recently repaired.</p>					
<p><b>Cost Rationale:</b> Cost is for materials, equipment rentals, wetlands permit, and labor.</p>					
35	Install a Dry Hydrant at the Maple Leaf Development at King Hill Road and Penacook Road <b>NEW</b>	Fire Department	September 2016	\$6,000	Warrant Article
<p><b>Project Rationale:</b> A dry hydrant is needed at the Maple Leaf Development site as a small development might go in. Existing homes have no protection. There is no water access on this side of Keyser Lake. Potential for future development is here. The bridge is not large enough for two fire trucks to pass each other if needed to shuttle water.</p>					
<p><b>Cost Rationale:</b> Cost is for permitting, materials, equipment rentals, and engineering.</p>					

**Table 25A, continued**  
**Sutton's Mitigation Action Plan 2014: Life and Property Protection**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
35	Install a Dry Hydrant at Russell Pond at Route 114 and Fox Chase Road <b>NEW</b>	Fire Department	September 2017	\$6,000	Warrant Article
<b>Project Rationale:</b> About nine homes are on this street and it currently has no easy water access during the winter in particular. A dry hydrant is needed at the Russell Pond at Route 114 and Fox Chase Road location.					
<b>Cost Rationale:</b> Cost is for permitting, materials, equipment rentals, and engineering.					
35	Install a Dry Hydrant near the Post Office and Route 114 in South Sutton <b>NEW</b>	Fire Department	September 2018	\$6,000	Warrant Article
<b>Project Rationale:</b> A dry hydrant is needed at the Post Office and Route 114 in South Sutton. The high number of homes in the area and the existing historic structures has no easy water access.					
<b>Cost Rationale:</b> Cost is for permitting, materials, equipment rentals, and engineering.					
31 (32)	Encourage Town Hall Employee Safety <b>DEFERRED</b>	Police Department	October 2015	\$0	N/A
<b>Project Rationale:</b> Develop a planned exit strategy for Town Hall employees. Employees should attend training on what warning signs to watch for. This Action was deferred from 2008 because other Actions took higher priority.					
<b>Cost Rationale:</b> Cost reflects the Town's practice to use in-kind staff support to produce the project as part of their normal duties.					
29 (30)	Undertake Radon Testing in Town Buildings <b>DEFERRED</b>	Town Administrator	July 2018	\$3,000	Building Maintenance Fund
<b>Project Rationale:</b> The Town Administrator would partner with the Kearsarge Regional School District to undertake the testing of the three schools. Similar testing should be done in Town buildings. Radon concerns the public health of students and staff and the cost is outweighed by the effects of potential health problems due to radon exposure. This Action was deferred from 2008 because the Town did not have the funding to undertake it.					
<b>Cost Rationale:</b> Cost is for six radon kits and lab analysis, at \$500 per location.					

*Source: Sutton Hazard Mitigation Committee. See also CHAPTER 9 and Figure 4*

Table 25B

## Sutton's Mitigation Action Plan 2014: Emergency Services

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
33 (32)	Enhance Police Station Exterior <b>DEFERRED</b>	Police Department	January 2014	\$1,000	Police Department Budget
<p><b>Project Rationale:</b> At night, the Police Station is closed and looks like any other building. Blue lights and an emergency phone have recently been added. Add a blue light above the call box at the door. This Action was deferred from 2008 because more time is required for completion (blue lights and emergency phone were required first).</p>					
<p><b>Cost Rationale:</b> Cost is for purchase and installation of a sign, light, and other materials.</p>					
32 (36)	Establish Central Communications <b>DEFERRED</b>	Emergency Management Director	October 2018	\$0	N/A
<p><b>Project Rationale:</b> A procedure should be developed to disseminate information effectively without duplication. Time and money would be saved since multiple Departments would not be trying to do the same job. The EMD will partner with the Town Administrator to produce the procedure. This Action was deferred from 2008 because other Actions took higher priority.</p>					
<p><b>Cost Rationale:</b> Cost reflects the Town's practice to use in-kind staff support to produce the project as part of their normal duties and using volunteer labor.</p>					
32 (31)	Secure a Repeater System <b>DEFERRED</b>	Safety Services (Police, Fire, and Rescue)	July 2018	\$50,000	Grant, Warrant Article
<p><b>Project Rationale:</b> At the present time, there are many areas in Town with no reception. Having a repeater would increase safety to residents by allowing local communications to occur. This could be in collaboration with New London Dispatch. This Action was deferred from 2008 because the Town did not have the funding or staff capability to undertake it.</p>					
<p><b>Cost Rationale:</b> Cost is for the purchase of a repeater and its installation as well as reprogramming equipment.</p>					
31 (32)	Undertake Improvements to Emergency Operations Center <b>DEFERRED</b>	Emergency Management Director	August 2018	\$10,000	Fire Department Addition Capital Reserve Fund
<p><b>Project Rationale:</b> At the present time, there is no true Center for operation. Improvements to the existing room would provide a secure location for organized communication during emergency situations. Three offices need to be outfitted in a new Fire Dept building addition. This Action was deferred from 2008 because more time is required for completion (the Fire Station addition needs to be built first).</p>					
<p><b>Cost Rationale:</b> Cost is for the purchase of a computer and software, office equipment, phone, and DSL.</p>					

**Table 25B, continued**  
**Sutton's Mitigation Action Plan 2014: Emergency Services**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
31	Develop Volunteer List for Staffing Shelters <b>NEW</b>	Town Administrator	November 2015	\$0	N/A
<p><b>Project Rationale:</b>  The Town Administrator should obtain the assistance of the Board of Selectmen and Police, Fire, and Rescue Departments to determine the requirements for shelter staffing. Staffing help could come from Churches or other groups. Town shelters are the Middle school and Colby Sawyer Weir Center. The Highway Department is anticipated to shelter animals.</p>					
<p><b>Cost Rationale:</b>  Cost reflects the Town's practice to use in-kind staff support to produce the project as part of their normal duties and using volunteer labor.</p>					
28 (26)	Provide a Stipend for Fire and Rescue Members <b>DEFERRED</b>	Fire and Rescue Departments	March 2016	\$35,000	Fire and Rescue Budget - Personnel
<p><b>Project Rationale:</b>  Sutton has an all-volunteer Fire Department and an all-volunteer Rescue Squad. Members leave their jobs to attend to calls. By paying a stipend to members, the volunteer base will be increased and volunteers will be kept who otherwise cannot afford to leave their jobs. This Action was deferred from 2008 because the Town did not have the funding to undertake it.</p>					
<p><b>Cost Rationale:</b>  Cost is for stipend for labor of fire, and rescue volunteers using a state formula.</p>					
27 (27)	Build Fire Station Addition <b>DEFERRED</b>	Fire Chief	May 2017	\$250,000	Capital Reserves and/or Warrant Article
<p><b>Project Rationale:</b>  An addition would permit improved meeting space, and provide showers and storage. The Department has outgrown its present space and each year the price to build the addition increases. This Action was deferred from 2008 because funding was not yet available (the Town did not have the funding to undertake it).</p>					
<p><b>Cost Rationale:</b>  Cost is for site work, construction, and labor to build a two-story addition with an elevator to the Fire Station which would include a meeting room, ADA compliant showers, and storage.</p>					
27 (25)	Develop List of Persons Requiring Assistance During Disasters <b>DEFERRED</b>	Welfare Officer	June 2014	\$0	N/A
<p><b>Project Rationale:</b>  A list of vulnerable people is necessary so the Fire and rescue know who to check in on in the event of a power outage or heavy snow storm. The list can be developed in partnership with the VNA. This Action was deferred from 2008 because more time is required for completion.</p>					
<p><b>Cost Rationale:</b>  Cost reflects the Town's practice to use in-kind staff support to produce the project as part of their normal duties.</p>					

*Source: Sutton Hazard Mitigation Committee. See also CHAPTER 9 and Figure 4*

**Table 25C**

**Sutton's Mitigation Action Plan 2014: Public Information and Involvement**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
34 (31)	Develop and Disseminate Public Education Materials for Emergency Supplies and Sheltering <b>DEFERRED</b>	Emergency Management Director	April 2014	\$1,000	Emergency Management Budget
<p><b>Project Rationale:</b> Informational materials will increase public relations and awareness and help prevent damage to life and property. Information will be disseminated through the Town of Sutton website and Annual Town Report; brochures will be made available at the Town Hall, Transfer Station, churches, and store. This Action was deferred from 2008 because more time is required for completion and the Town did not have the staff capability to undertake it.</p>					
<p><b>Cost Rationale:</b> Cost is for the professional printing of brochures. In-kind volunteer support will be used to develop the materials.</p>					
34 (26)	Promote Volunteer Opportunities <b>DEFERRED</b>	Town Administrator	January 2013 - December 2018*	\$0	N/A
<p><b>Project Rationale:</b> The same people are volunteering on multiple committees. New volunteers will reduce the workload of existing volunteers and infuse new ideas into the community. Promotion can be done via the website, the Town Hall bulletin board, and at the booth at Farm Days. This Action was deferred from 2008 because this is an Action to be repeated at regular intervals in order to be effective. *The Action is anticipated to recur annually through 2018.</p>					
<p><b>Cost Rationale:</b> Cost reflects the Town's practice to use in-kind staff support to produce the project as part of their normal duties.</p>					
34	Collect and Make Available Disaster Pamphlets and Information for Residents <b>NEW</b>	Town Administrator, Emergency Management Director	April 2014	\$1,000	Executive Operating Budget
<p><b>Project Rationale:</b> Informational materials will increase public relations and awareness and help prevent damage to life. Information will be disseminated through the pamphlets posted on the Town of Sutton website and in the Annual Town Report; brochures will be made available at the Town Hall, Transfer Station, churches, and store.</p>					
<p><b>Cost Rationale:</b> Cost is for the professional printing of brochures. In-kind volunteer support will be used to develop the materials.</p>					
34	Educate Students, Staff and Visitors on School Security System and on Maintaining Secure Campus <b>NEW</b>	Sutton Police Chief	April 2014	\$0	N/A
<p><b>Project Rationale:</b> Informational materials will increase public awareness regarding safety and help prevent injuries.</p>					
<p><b>Cost Rationale:</b> Cost is \$0 to the Town as any printing of brochures would be completed by the School District. The Town would provide volunteer support by developing the materials with existing staff and volunteers.</p>					

**Table 25C, continued**

**Sutton's Mitigation Action Plan 2014: Public Information and Involvement**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
33 (27)	Promote Public Education for Radon Testing <b>DEFERRED</b>	Welfare Administrator	April 2014	\$0	N/A
<p><b>Project Rationale:</b> Educating people about the availability of testing for radon can help offset the effects of potential health problems due to radon exposure. The project can be partnered with the Emergency Management Director. This Action was deferred from 2008 because the Town did not have the funding to undertake it.</p>					
<p><b>Cost Rationale:</b> Cost reflects the Town's practice to use in-kind staff support to produce the project as part of their normal duties and using available NH DES radon brochures.</p>					
32 (31)	Publicize Plowing and Sanding Policy <b>DEFERRED</b>	Town Administrator	November 2014	\$0	N/A
<p><b>Project Rationale:</b> It is important to keep the public aware of the schedule the Highway Department follows for plowing and sanding the roads. This cuts down inquiry and complaint calls to the Town and informs residents of the normal procedures. Handouts will be photocopied at the Town Hall, and the Policy will be placed on the Town's website and in the Annual Town Report. This Action was deferred from 2008 because more time is required for completion and the Town did not have the staff capability to undertake it.</p>					
<p><b>Cost Rationale:</b> Cost reflects the Town's practice to use in-kind staff support to produce the project as part of their normal duties.</p>					

*Source: Sutton Hazard Mitigation Committee. See also CHAPTER 9 and Figure 4*

**Table 25D**  
**Sutton's Mitigation Action Plan 2014: Training and Preparation**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
35	Ensure Capital Planning Funding for Hazard Mitigation Projects <b>NEW</b>	Planning Board	March 2014 - February 2018*	\$20,000	Warrant Articles or Department Operating Budgets
<p><b>Project Rationale:</b>                      Many of the projects outlined in the Hazard Mitigation Plan have not been incorporated into the general budget and need be discussed at the annual March Town Meetings. Funds would need to be secured for such issues as certify all fire fighters, developing a sanding policy and its publishing, publishing a booklet with information for townspeople on where to shelter, etc. This will accomplish transparency and community involvement. Projects should be incorporated into the Capital Improvements Program (CIP) to ensure funding is spread out evenly over time.                      *The Action is anticipated to recur annually through 2018.</p>					
<p><b>Cost Rationale:</b>                      Cost could be for items, materials, labor, photocopying, installation, wiring, consultant, research design, study, engineering, printing, newspaper advertisements, inspection, workshops/training, etc to accomplish Hazard Mitigation projects within this Plan as approved by Town voters.</p>					
34 (23)	Hire or Seek a Grant Writer <b>DEFERRED</b>	Town Administrator	March 2014	\$1,500	Administrative Budget
<p><b>Project Rationale:</b>                      A professional grant writer is able to complete the appropriate paperwork in a timely fashion. The Town does not have the staffing or the volunteers to be able to track, research, and write grants. This Action was deferred from 2008 because the Town did not have the funding to undertake it.</p>					
<p><b>Cost Rationale:</b>                      Cost is for the fee for a professional grant writer to write one grant.</p>					
34	Hold Annual Evacuation Plan Exercise with Elementary, Middle, and High Schools <b>NEW</b>	Kearsarge Regional School District	December 2018	\$0	N/A
<p><b>Project Rationale:</b>                      It is imperative that Sutton Police, Fire and Rescue understand the evacuation plan of each of the three schools in order to provide the utmost safety to its students.</p>					
<p><b>Cost Rationale:</b>                      Cost reflects the Town's practice to use in-kind volunteer support to produce the project as part of their normal duties. Because Sutton has an all -volunteer Fire and Rescue Departments, Police are on duty, and school is in session, there is no additional cost to the Town.</p>					
34	Undertake Realistic Drills with Sutton Emergency Response and the Seven Towns that Comprise KRSD <b>NEW</b>	Police Department	December 2018	\$1,000	Police Department General Budget
<p><b>Project Rationale:</b>                      Because Sutton is part of a regional school district encompassing 7 towns, it would behoove the Sutton Police Department to coordinate training with the other six Towns in the mutual aid district.</p>					
<p><b>Cost Rationale:</b>                      Cost is for potential overtime of some members of the Sutton Police Department.</p>					

**Table 25D, continued**  
**Sutton's Mitigation Action Plan 2014: Training and Preparation**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
33 (30)	Encourage Fire & Rescue Training Area Attendance <b>DEFERRED</b>	Fire Department Training Officer	January 2013 - December 2018*	\$0	N/A
<p><b>Project Rationale:</b>                      Support from neighboring communities is essential in providing services to those in need. Area training sessions allow different communities' Departments to work together under different scenarios. In turn, this enables the Departments to provide better services in the event of shared emergencies as the members know one another and know how to work together. This Action was deferred from 2008 because this is an Action to be repeated at regular intervals in order to be effective.                      *The Action is anticipated to recur annually through 2018.</p>					
<p><b>Cost Rationale:</b>                      Cost reflects the Town's practice to use in-kind volunteer support to produce the project as part of their normal duties.</p>					
33	Participate in National Flood Insurance (NFIP) Training <b>NEW</b>	Planning Board, Town Administrator	October 2018	\$1,500	Planning Board Budget or Town Administration Budget
<p><b>Project Rationale:</b>                      In order for Planning Board members, Zoning Board of Adjustment members, Town Administration, and the Building Inspector to remain current with NFIP procedures and policies, regular training must be taken. This training would broaden the Town's identification of building projects that may be in the floodplain. Workshops are offered by the State and/or FEMA (or in other training) and addresses flood hazard planning and management.</p>					
<p><b>Cost Rationale:</b>                      Cost is estimated for three members of the Town to attend formal training.</p>					
30 (30)	Encourage Fire Department Member Certification <b>DEFERRED</b>	Fire Department Training Officer	January 2013 - December 2018*	\$1,000	Fire Department Budget
<p><b>Project Rationale:</b>                      Advanced training of members would in turn enable them to provide better emergency services to those in need. This Action was deferred from 2008 because this is an Action to be repeated at regular intervals in order to be effective.                      *The Action is anticipated to recur annually when needed through 2018.</p>					
<p><b>Cost Rationale:</b>                      Cost reflects the Town's practice to use in-kind volunteer support to produce the project as part of their normal duties.</p>					
27 (30)	Attend First Responder Training for Police Officers <b>DEFERRED</b>	Police Department	May 2015	\$1,800	Police Department Training Budget
<p><b>Project Rationale:</b>                      First responder training will permit officers who are first on the scene of an emergency to be able to provide emergency services to victims. This Action was deferred from 2008 because other Actions took higher priority.</p>					
<p><b>Cost Rationale:</b>                      Cost is for attendance of classes and certification for five officers at \$350 each.</p>					

*Source: Sutton Hazard Mitigation Committee. See also CHAPTER 9 and Figure 4*

**Table 25E**

**Sutton's Mitigation Action Plan 2014: Planning and Implementation**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
34	Update the Zoning Ordinance to Comply with NFIP Requirements <b>NEW</b>	Planning Board	March 2014 - March 2018*	\$0	N/A
<p><b>Project Rationale:</b> The Zoning Ordinance needs to be updated as new requirements to the National Flood Insurance Program are necessary for retention of NFIP participation. The Floodplain Ordinance protects life and property by regulating distance of structures to flood hazard areas, regulating elevation, clarifying definitions, regulating new structures and encroachments, stating duties of the Code Enforcement Officer, etc. In 2010, the Town adopted the recommended updates to the ordinance. The existing ordinance is amended with federal updates on a recurring basis. *The Action is anticipated to recur as updates from the NFIP become necessary through 2018.</p>					
<p><b>Cost Rationale:</b> Cost is \$0 due to in-kind staff and/or volunteer labor, and language is provided by the NH Office of Energy and Planning.</p>					
34	Adopt Town Hall Safety Plan <b>NEW</b>	Safety Committee	December 2014	\$0	N/A
<p><b>Project Rationale:</b> In order to ensure the safety of the personnel and general public, it is imperative that the Town Hall have a posted evacuation plan in a readily visible location. It is necessary for all staff to be trained in proper safety procedures.</p>					
<p><b>Cost Rationale:</b> Cost reflects the Town's practice to use in-kind staff and volunteer support to produce the project as part of their normal duties.</p>					
33 (30)	Develop Middle School Shelter in Place Plan <b>DEFERRED</b>	Emergency Management Director	December 2014	\$0	N/A
<p><b>Project Rationale:</b> Partnering with the Kearsarge Regional School District and the Town Police and Fire Departments, a plan should be developed to keep children and staff in the school, or evacuate if necessary, if an incident occurs in the Middle School vicinity. The Middle School is within ¼ mile of Interstate 89. This Action was deferred from 2008 because the Town did not have the staff capability to undertake it.</p>					
<p><b>Cost Rationale:</b> Cost reflects the Town's practice to use in-kind volunteer support to produce the project as part of their normal duties.</p>					
33 (29)	Develop Emergency Response Mitigation Plan <b>DEFERRED</b>	Emergency Management Director	December 2014	\$0	N/A
<p><b>Project Rationale:</b> Town Administration and Departments should develop a plan to ensure that Departments apply for reimbursement funding for hazard events to try and offset the costs expended from the Department budgets. This Action was deferred from 2008 because more time is required for completion.</p>					
<p><b>Cost Rationale:</b> Cost reflects the Town's practice to use in-kind volunteer support to produce the project as part of their normal duties.</p>					

**Table 25E, continued**  
**Sutton's Mitigation Action Plan 2014: Planning and Implementation**

Priority Score	Action	Who is Responsible	Completed By Date	Approx Cost to Town*	How Funded
33	Develop Plan for Evacuation of Animals and Identify Shelters <b>NEW</b>	Emergency Management Director	December 2018	\$200	Emergency Management Budget
<p><b>Project Rationale:</b>                      The residents of Sutton take great pride in their domestic animals and therefore in many instances will not leave unless their animals can go with them. Having an evacuation plan and identified shelter for pets will allow safety for both pets and owners.</p> <p><b>Cost Rationale:</b>                      Cost is for paper and printing of the plan, and public education (placing information on Town website, flyers at Town Office and information publicized in the Town report).</p>					
33 (26)	Develop Formal Process for Town Department Central Non-Emergency Communications <b>DEFERRED</b>	Town Administrator	December 2014	\$0	N/A
<p><b>Project Rationale:</b>                      The Town Administrator should work with the Department heads to develop a system which permits everyone to meet or communicate on a regular basis to be aware of what is occurring in Town. This Action was deferred from 2008 because the Town did not have the staff capability to undertake it.</p> <p><b>Cost Rationale:</b>                      Cost reflects the Town's practice to use in-kind staff and volunteer support to produce the project as part of their normal duties.</p>					
32	Develop Specific Requirements for Class VI Road Upgrade <b>NEW</b>	Board of Selectmen	December 2018	\$0	N/A
<p><b>Project Rationale:</b>                      As Sutton continues to expand into remote areas that are only accessible by Class VI roads, these roads will need to be upgraded in order to provide reasonable access by safety services. The Board of Selectmen will initiate and partner closely with the Road Agent and Planning Board to ensure all standards and needs are met for the policy. The Fire Department should also provide their requirements. This project would be undertaken by the Board of Selectmen and Planning Board at their regularly scheduled meetings.</p> <p><b>Cost Rationale:</b>                      Cost reflects the Town's practice to use in-kind staff and volunteer support to produce the project as part of their normal duties.</p>					

*Source: Sutton Hazard Mitigation Committee. See also CHAPTER 9 and Figure 4*

*\*The Approximate Cost for each project was a rough estimate agreed upon by the Hazard Mitigation Committee utilizing their various fields of expertise.  
 The costs are total approximate costs for the entire project.  
 In-kind staff time is not considered as part of out-of-pocket expense.*

The prioritization exercise performed on *Figure 4* in **CHAPTER 12. APPENDIX** helped the Committee evaluate both the **NEW and DEFERRED** hazard mitigation Actions that they had brainstormed throughout the hazard mitigation planning process. While the Actions would all help improve the Town's disaster responsiveness capability and overall safety, funding and staff availability will be the predominant factors in determining which and when the mitigation Actions are completed.

## **COST TO BENEFIT ANALYSIS**

There are **37** Actions within the **MITIGATION ACTION PLAN**. As indicated in the above tables, those Actions that cost the least or impart the highest benefit to residents and businesses are not necessarily the first Actions to be completed based on their priority listing. This cost to benefit analysis evaluates the Actions in a different way which should also be considered by the Town when working to complete activities from the Action Plan. When an Action displays a cost range, the *lower figure* of the costs is categorized.

### **\$0-\$1,000 Cost**

Twenty-two (**22**) of the Action items listed are estimated to cost between \$0 and \$1,000. Costs are minimal as most Actions are performed by Town volunteers such as the Police, Fire and Rescue, Emergency Management, or by Town Office or other paid personnel. Most \$0 costs are only for labor and are in-kind to the respective Departments or Board volunteer. Others are costs borne by other parties and not the Town. Any equipment needed is already owned or accessible by those Departments. Other in-kind costs covered by the Town include printing, photocopies, paper, and public noticing. Most of the Actions with \$0 cost are in the **Training and Preparation, Public Information and Involvement, or Planning and Implementation** Tables.

The highest benefit gained for each Action is dependent on the chances of a hazard event, the type of hazard, and its magnitude. However, the following may provide the best cost to benefit relationship:

- Develop and Disseminate Public Information Materials for Emergency Supplies and Sheltering [April 2014]
- Develop List of Persons Requiring Assistance During Disasters [June 2014]
- Hold Annual Evacuation Plan Exercise with Elementary, Middle, and High Schools [December 2018]
- Establish Central Communications [October 2018]

### **\$1,001-\$15,000 Cost**

Eleven (**11**) Action items are of lower cost (between \$1,001 and \$15,000). Costs are those which should be placed in the Capital Improvements Program (CIP) and/or those for which a warrant article should be approved at the annual Town Meeting. Many of these Actions require a moderate but one-time effort by Town Departments to complete. Costs include paid labor, equipment rentals, and materials for installation of culverts and dry hydrants, and training costs, and emergency supplies. Most of the Actions within this price range are in the **Life and Property Protection, Emergency Services, or Planning and Implementation** Tables.

The highest cost to benefit gained for each Action is again dependent on the chances of a hazard event, the type of hazard, and its magnitude. Potential loss of life and property are extremely difficult to predict or place a dollar figure on. However, the following Actions may provide the best cost to benefit relationship within this monetary category based on their capability to positively affect a large number of people:

- Attend First Responder Training for Police Officers [May 2015]

- Install a Dry Hydrant at the Maple Leaf Development at King Hill Road and Penacook Road [September 2016]
- Undertake Radon Testing in Town Buildings [July 2018]
- Undertake Improvements to Emergency Operations Center [August 2018]

### \$15,001-\$50,000 Cost

Only three (3) Action items cost between \$15,001 and \$50,000, a moderate amount of funding, often spread out over time. Costs are those which should be placed into the Capital Improvements Program (CIP) to be paid for over time or those for which a warrant article should be approved at the annual Town Meeting. These Actions are often **Life and Property Protection** or **Emergency Services** tasks which require a lengthy effort by Town Departments to complete. Costs include paid labor and materials for installation of culverts and drainage systems, developing long-range planning documents, building renovations, and capital reserve funds.

The highest cost to benefit for these Actions is difficult to anticipate, as most of these expenditures are required to keep the town operating in a safe manner and to maintain the safety of residents. Nonetheless, the following Actions may provide the highest cost to benefit based on their capability to positively affect a large number of people:

- Ensure Capital Planning Funding for Hazard Mitigation Projects [March 2014-February 2018\*]
- Provide a Stipend for Fire and Rescue Members [March 2016]
- Secure a Repeater System [July 2018]

### Over \$50,000 Cost

Only one (1) Action item of high cost is \$50,000 and over and should be analyzed separately from the prior categories. These costs are those which should be placed into the Capital Improvements Program (CIP) to be paid for over time or those for which a warrant article should be approved at the annual Town Meeting. These Actions are often **Life and Property Protection** or **Emergency Services** tasks which require a lengthy effort by Town Departments to complete. Costs include paid labor and materials for installation of culverts and drainage systems, bridge replacement, building renovations or additions, infrastructure work, and capital reserve funds.

The highest cost to benefit for these Actions is difficult to anticipate, as most of these expenditures are required to keep the town operating in a safe manner and to maintain the safety of residents. Nonetheless, the following Actions may provide the highest cost to benefit based on their capability to positively affect a large number of people:

- Build Fire Station Addition [May 2017]

\* This Action will recur during the duration of the Plan period. For the rationale behind its recurrence, see Mitigation Action Plan [Tables 25A-25E](#).

## CHAPTER 11. PLAN MONITORING, EVALUATING, AND UPDATING

### 2014 PLAN UPDATE

The Town received FEMA approval for the Hazard Mitigation Plan in **FEBRUARY 2009**. The Plan indicated that the Committee would meet quarterly according to **Table 26**. The completion of a planning document is merely the first step in its life as an evolving tool. The Hazard Mitigation Plan Update is a dynamic document that should be reviewed on a regular basis as to its relevancy and usefulness and to add new tasks as old tasks are completed. With this in mind, the Committee reviewed each of the sections and updated them where necessary. The **Tasks of the Plan Update** section was revised to guide the update efforts of the community. The *Process to Incorporate Actions* was added to reflect specific tasks to get the Hazard Mitigation Plan Update's Actions implemented, and new avenues were presented.

### INTRODUCTION

The completion of a planning document is merely the first step in its life as an evolving tool. The Hazard Mitigation Plan Update is a dynamic document that should be reviewed on a regular basis as to its relevancy and usefulness and to add new tasks as old tasks are completed. This Chapter will discuss the methods by which the Town of Sutton will review, monitor, and update its new **SUTTON HAZARD MITIGATION PLAN UPDATE 2014**.

### MAINTENANCE AND UPDATE SCHEDULE OF THE HAZARD MITIGATION PLAN

The Board of Selectmen should vote to establish a permanent Hazard Mitigation Committee in **SPRING 2014**, or shortly after the FEMA **Letter of Approval** has been received as indicated in **CHAPTER 1. INTRODUCTION's METHODOLOGY**. The purpose is to meet on a regular basis to ensure the Hazard Mitigation Plan's Actions are being actively worked on.

The Emergency Management Director or designee should serve as Chair of the Committee for Hazard Mitigation meetings, and should be appointed in such a capacity by the Board of Selectmen. Current Hazard Mitigation Committee members can be appointed to continue to participate as members of the permanent Committee. Committee membership should include the Emergency Management Director, Staff Coordinator (administrative position), Town Administrator, Fire Chief, Rescue Chief, Police Chief, Road Agent, Building Inspector/Code Enforcement Officer, Town Planner, 1 (one) Selectman, 1 (one) Planning Board member, 1 (one) Conservation Commission member, 1 (one) School District Representative, Business Community members, Non-profits, local State or Federal agency representatives, and Members at large.

This Committee will aim to meet quarterly according to the following potential future meeting schedule:

**Table 26**  
**Hazard Mitigation Committee Annual Future Meeting Schedule**

Month	Preliminary Agenda
<b>April</b>	Committee to determine Action Plan items to pursue for next year, including \$0 cost items. Committee to assist Department Heads with getting next year's high-cost Action Plan items into the CIP.
<b>July</b>	Committee to assist Department Heads with their budget requests to include Action Plan items, and to determine which Action Plan items should have warrant articles. Committee gets \$0 Action Plan items started with appropriate responsible party.
<b>September</b>	Committee begins to update the Hazard Mitigation Plan's <b>CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS</b> . Committee attends Selectmen budget meetings and suggests warrant articles for Action Plan items. Committee attends Budget Committee meetings scheduled through January to champion Action item funding.
<b>January</b>	Committee completes update to the Hazard Mitigation Plan's <b>CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS</b> . Committee provides revised copies to Department Heads, keeps original Word and Excel files accessible on Town computer system.

*Sources: Sutton Hazard Mitigation Committee 2014*

For each of these meetings, the Emergency Management Director will invite Department Heads and Board Chairs, and Staff to participate in the meetings as well as coordinating with the permanent Hazard Mitigation Committee. Public notice will be given as press releases in local papers, will be posted in the public places in Sutton, and will be posted on the Town of Sutton website.

Led by the Emergency Management Director, the Hazard Mitigation Plan's **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS** will be monitored and updated annually according to the schedule in **Table 26**. Funds will be placed into the annual budget for the administrative costs associated with updating the plan such as word processing and map generation, and for printing costs.

The Emergency Management Director will work with the Board of Selectmen to schedule a series of meetings to update the Hazard Mitigation Plan as part of the budget process cycle in the fall of each year. Strategies, actions, or items identified will be placed into the following fiscal year's budget request.

### Tasks of the Plan Update

A number of tasks will be accomplished for the complete update to the Hazard Mitigation Plan. Note that information from many Chapters will be used or referenced by other Chapters. The **2014 PLAN UPDATE** section of each Chapter will be updated as changes are made.

The yearly, modified update led by the Emergency Management Director (or designee) can be undertaken by monitoring and completing the **CHAPTER 10** tasks, as indicated in **Table 26**. At least once every five years, the complete update (all 12 Chapters, the Appendix, and the Maps) will be undertaken and provided to FEMA. For the full Plan update, the Town should contact the Central NH Regional Planning Commission (CNHRPC) at least a year prior to expiration whether funding and planning assistance will be available for the update. If not, the Emergency Management Director and Hazard Mitigation Committee will follow the Agendas in the **CHAPTER 12. APPENDIX** of this Hazard Mitigation Plan to ensure the Plan update is thoroughly completed, in addition to consulting any new FEMA guidance publication after the *Local Mitigation Plan Review Guide* dated October 1, 2011.

### Acknowledgements.

Add the new Hazard Mitigation Committee members and contributors.

### Chapter 1.

Update any available socio-demographic information from **CHAPTER 5**. Revise the methodology to reflect the new meetings, tasks, and public notification.

### Chapter 2.

Add new disaster events that have affected Sutton, and describe the potential future hazards. Add new Town special events in **Table 1A**. Recalculate the probability, magnitude, and overall risk numbers.

### Chapter 3.

Modify the Town sites and hazards each is susceptible to in **Tables 2** through **12**. Update the future development in **Table 13**.

### Chapter 4.

Update **Table 14, Table 14A, Table 15, and Table 15A** with current building value information and dollar damage ranges per building type for flood hazards. With the revised total building assessment, update the percentage calculations for all natural, technological, and human disasters.

### Chapter 5.

Revise **Table 16, Table 17, and Table 18** with new demographic and housing information as it becomes available. Update the building permit figures in **Table 19**. Revise land use data in **Table 20** as it becomes available. The text analysis will need to be revised to reflect all changes.

### Chapter 6.

Update the numbers of buildings in the floodplain and flooding information. Update **Table 21** with current flood policy and loss statistics. Update **Table 21A** with new repetitive loss

information and revise the repetitive loss discussion. Update the ordinance and community assistance visit discussion as new information becomes available.

Chapter 7.

Revise and update the general and hazard-specific objectives to ensure their continued relevance to the Town.

Chapter 8.

Update **Table 22A** through **Table 22F** with new existing mitigation strategies that are being undertaken. Move completed potential Actions from **CHAPTER 9** to **CHAPTER 8**; completed Actions from **CHAPTER 10** will also be added here. Combine the duplicate entries.

Chapter 9.

Add new potential mitigation Actions for the Town to undertake in **Tables 23A** through **23E**. Move the completed potential Actions to **CHAPTER 8**.

Chapter 10.

Remove completed Actions from **Table 25A** through **Table 25E** and place into **Table 24**. Place completed Actions into Chapter 8 as existing mitigation strategies. Add newly deleted Actions to **Table 24A**. Revise **Table 25A** through **Table 25E** as each Action gets addressed. Reevaluate each Action not yet completed utilizing the enhanced STAPLEE method, and add new Actions utilizing the STAPLEE method to reprioritize. Modify cost and project rationales as needed, as well as the approximate cost and date for completion. Rewrite the cost to benefit analysis based upon revisions.

Chapter 11.

Modify **Table 26** with revised quarterly agendas if needed. Add new information to the Chapter or revise as needed if new information becomes available.

Chapter 12.

Revise the processes or grant information if new information becomes available. Update **Figure 1**, **Figure 2**, and **Figure 3** if the probability, magnitude, and overall risks from **CHAPTER 2** were recalculated. Update the Action matrix in **Figure 4** whenever **CHAPTER 10** is updated based upon the new projects and priorities. Update the glossary with additional terms as needed. Provide copies of all agendas, meeting summaries, attendance sheets, department support letters, and publicity for inclusion into the Appendix.

Maps.

Update **Map 1**, **Map 2**, **Map 3**, and **Map 4** of the Plan as needed to reflect the changes in **CHAPTERS 2** and **3**. If geographic information system (GIS) software compatible with ArcGIS, hardware, and personnel to run the GIS are not available at the Town, assistance will be sought elsewhere, such as with the CNHRPC.

## IMPLEMENTATION OF THE PLAN THROUGH EXISTING PROGRAMS

In addition to work by the Hazard Mitigation Committee and Town Departments, several other mechanisms exist which will ensure that the **SUTTON HAZARD MITIGATION PLAN UPDATE 2014** receives the attention it requires for optimum benefit.

### Master Plan

The Sutton Master Plan was adopted in **MARCH 2005**, developed by the Planning Board with assistance from the CNHRPC. Implementation of the Master Plan has been occurring since its adoption.

The Planning Board should consider adopting the Hazard Mitigation Plan Update as a separate Chapter to its Master Plan in accordance with RSA 674:2.III(e). The Hazard Mitigation Plan Update should be presented to the Planning Board in **SPRING 2014** after FEMA approval for consideration and adoption after a duly noticed public hearing, just as any typical Chapter of a Master Plan.

### *Process to Incorporate Actions*

The Hazard Mitigation Committee will present the Hazard Mitigation Plan Update to the Planning Board in **SPRING 2014** or after FEMA approval for consideration and adoption into the Master Plan after a duly noticed public hearing, just as any typical Chapter of a Master Plan. The Hazard Mitigation Committee will oversee the process to begin working with the Planning Board to ensure that the Hazard Mitigation Plan Update Actions are incorporated into the Master Plan.

### *Progress in Implementation through this Program Since the Last Hazard Mitigation Plan*

The **2005** Master Plan developed by the Planning Board does not contain the **HAZARD MITIGATION PLAN UPDATE 2008** as an Appendix.

- *How Was This Accomplished?*

The **2005** Master Plan has not been revised, although its revision is an Action in the **ACTION PLAN**. The Planning Board was given a copy of the **HAZARD MITIGATION PLAN UPDATE 2014** and can choose to incorporate several Action items that pertain to the Planning Board. Several Actions included revisions to Board regulations and to Capital Improvements, or Zoning Amendments. The Floodplain Ordinance under the purview of the Planning Board has been updated since 2008. The Emergency Management Director will recommend that the Board incorporate the Planning Board Actions as appropriate into the Future Land Use and Implementation Chapters, and include the **HAZARD MITIGATION PLAN UPDATE 2014** into the Master Plan Appendix whenever the Planning Board updates the Master Plan.

### **Capital Improvements Program**

Sutton developed its newest Capital Improvements Program (CIP) for **2005-2010**, with the intention of an annual update, but the items in the CIP are updated annually through Town Meeting process. Strategies or purchases requiring capital improvements from the Hazard Mitigation Plan Update will be inserted into the Capital Improvements Program. Depending on the Town's funding needs, a Capital Reserve Fund for Hazard Mitigation Program Projects may be established to set aside funding for the many projects identified in the Hazard Mitigation Plan Update.

#### ***Process to Incorporate Actions***

The Hazard Mitigation Committee will oversee the process to begin working with the Planning Board's CIP Committee to incorporate the various projects into the yearly CIP. As the CIP is updated on a yearly basis, a representative from the Hazard Mitigation Committee will request to sit on the CIP Committee to ensure the projects are added.

#### ***Progress in Implementation through this Program Since the Last Hazard Mitigation Plan***

Many of the **COMPLETED** Actions were able to have been completed because of their placement into and purchase out of the Capital Improvements Program. See **Table 24. Mitigation Actions Completed Since 2008.**

- ***How Was This Accomplished?***

Based on guidance from the Department heads which served on the Hazard Mitigation Committee, the Planning Board worked together with the Departments and Boards to identify the items needed for the Hazard Mitigation Plan Action implementation. The appropriate Actions identified were then added to the CIP.

### **Zoning Ordinance and Regulations**

Several of the implementation strategies proposed involve revisions to the Zoning Ordinance, Subdivision Regulations, and/or the Site Plan Review Regulations. The Town staff and Planning Board annually draft Zoning Ordinance amendments for Town Meeting approval, and will be requested to do so in order to accommodate Actions. The Regulations are updated by the Board as needed.

#### ***Process to Incorporate Actions***

A Hazard Mitigation Committee representative will work with Town staff and the Planning Board to develop appropriate language for modifications to the Zoning Ordinance and the Subdivision and Site Plan Regulations, as appropriate, to accommodate Actions in the **SUTTON HAZARD MITIGATION PLAN UPDATE 2014**. The representative, if requested, can help Town staff draft language for respective changes to the Regulations or the Zoning Ordinance, and assist Town staff with presenting the language to the Planning Board for consideration.

The Hazard Mitigation Committee representative will request from the Planning Board a copy of the required language for any FEMA Zoning Ordinance Updates for incorporation into the Plan.

*Progress in Implementation through this Program Since the Last Hazard Mitigation Plan*

Although not listed in **Table 24. Mitigation Actions Completed Since 2008**, the Town adopted NFIP updates to the Zoning Ordinance. Several other ordinance revisions have occurred since 2008 related to hazard mitigation, including Floodplain Ordinance, Telecommunications Ordinance revisions and clean up bringing them in line with State line. Subdivision and Site Plan Review Regulation modifications related to these zoning changes are currently underway in **SPRING 2014** by the Planning Board.

- *How Was This Accomplished?*

The Planning Board, via the Land Use Coordinator, directly obtained the required NFIP floodplain ordinance revision information from the NH Office of Energy and Planning, and developed the appropriate amendment and warrant article. Town Meeting vote(d) on the proposed Floodplain Ordinance and Telecommunications Ordinance revisions for the Zoning Ordinance.

**Town Meeting**

In Sutton, the annual Town Meeting is held in March where the voters of the Town vote to raise money for capital projects and approve the annual operating budget of the Town. This is an opportunity to get some of the Actions of the Hazard Mitigation Plan Update funded.

*Process to Incorporate Actions*

The Hazard Mitigation Committee will oversee the process to begin working with the Budget Committee and Board of Selectmen to develop warrant article language for appropriate Actions. A representative from the Hazard Mitigation Committee will provide a copy of the **ACTION PLAN** to both the Budget Committee and Board of Selectmen and validate the need for funding at the annual Town Meeting to accomplish the projects. The representative will work with the Town Administrator to write warrant article language for Action items for approval.

*Progress in Implementation through this Program Since the Last Hazard Mitigation Plan*

Town Meeting was used to accomplish many of the Action purchases displayed in **Table 24. Mitigation Actions Completed Since 2008** through separate warrant articles, warrant articles to remove funds from the Capital Improvements Program, or through adoption of Department Operating Budgets and the General Fund.

- *How Was This Accomplished?*

The Department heads, as members of the Hazard Mitigation Committee, brought Action items to be purchased to the Board of Selectmen and Budget Committee for consideration. The CIP contained many of the Actions, as discussed previously. The Board of Selectmen and Budget Committee brought Actions to the Town Meeting via warrant articles, as well as Operating Budgets, additional warrant articles which might have included Action items from the CIP, and warrant articles to add funding into the capital reserve funds. Most of the Action items were funded in this manner.

### Operating Budgets

Many of the Actions will not require specific funding but are identified as needing in-kind Staff labor to perform the work required to undertake the Actions. Town Departments and Staff have rigorous job functions that demand their undivided attention to the tasks required to run their respective Departments. Additions to the work load to accommodate the Actions can put a strain on their ability to serve the public during performance of their normal job duties. When possible, Sutton Departments and Staff will be able to prioritize their tasks to work on Plan Actions. Any work performed comes out of the operating budget for that particular Department.

### *Process to Incorporate Actions*

The responsible Department Head or Staff position identified in the **Who is Responsible** column of the preceding Tables will work on the Actions allocated to him/her, or delegate the Action to another person, when their normal job duties permit. The funding for the Actions comes out of the Department's operating budget as work is undertaken by the Staff person on an as-time-permits basis unless the Action is a component of the Staffs' normal work duties.

The individual will attempt to follow the **Completed by Date** as a guideline for completion. A yearly review of **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS** by the Hazard Mitigation Committee will reprioritize the Actions, and the members can report on their progress, asking for assistance or more time as needed.

### *Progress in Implementation through this Program Since the Last Hazard Mitigation Plan*

The Operating Budgets of the Town Departments have served to implement many of the Actions displayed in **Table 24. Mitigation Actions Completed Since 2008**.

- *How Was This Accomplished?*

Department heads who participated in the Hazard Mitigation Committee submitted their Action items to Board of Selectmen and Budget Committee for consideration. Individual Department needs are recognized as part of their respective Operating Budgets and are proposed to the Board of Selectmen and Budget Committee. All Operating Budgets went to Town Meeting for residents' affirmative vote.

## **EVALUATION OF THE PLAN**

During the Committee's annual review of **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS's ACTION PLAN**, the Actions are evaluated as to whether they have been **COMPLETED**, **DELETED**, or **DEFERRED**. Those Action types are placed into their respective **CHAPTER 10** Tables, **Table 24 Mitigation Actions Completed Since 2008**, **Table 24A Mitigation Actions Deleted from the 2008 Plan**, and the **ACTION PLAN Tables 25A** through **25E** if they are **DEFERRED**. Any **NEW** Actions will be added as necessary. Each of the Actions remaining within the **ACTION PLAN** will undergo the STAPLEE prioritization as discussed in **CHAPTER 10's INTRODUCTION** and will be displayed in the **ACTION EVALUATION AND PRIORITIZATION SCORING** matrix in **CHAPTER 12. APPENDIX**.

The five-year full Plan update will evaluate the Actions in the same manner in addition to fulfilling all of the **Tasks of the Plan Update** within this **CHAPTER 11**.

## CONTINUED PUBLIC INVOLVEMENT

On behalf of the Hazard Mitigation Committee, the Emergency Management Director, under direction of the Town Administrator, will be responsible for ensuring that Town Departments and the public have adequate opportunity to participate in the planning process. Administrative staff may be utilized to assist with the public involvement process.

For each quarterly meeting in **Table 26** and for the yearly update process, techniques that will be utilized for public involvement include:

- Provide personal invitations to Town volunteer Board and Committee Chairs;
- Provide personal invitations to Town Department heads;
- Post meeting notice flyers at the North Sutton Post Office, South Sutton Post Office, Sutton Library, Solid Waste Facility, and Town Office; and
- Submit newspaper articles for publication to the Concord Monitor and the Intertown Record.

Entities to invite to future Hazard Mitigation Plan updates include the neighboring communities of Wilmot, New London, Warner, Newbury, and Bradford; local businesses such as Vernondale Store; any state agencies with an interest in Sutton; the Elementary School or School District representatives; and non-profits operating in Sutton such as the Town Library, Historical Society, and Muster Field Farm Museum.

The Hazard Mitigation Committee will ensure that the Town website at [www.sutton-nh.gov](http://www.sutton-nh.gov), which is accessible to residents and visitors at all times, is updated with the Hazard Mitigation meeting notices and other necessary information. A number of Action Plan items which will be undertaken relate to public education and involvement. The website could be a good way to get the word out.

The public will be invited to participate in the yearly process of updating the Hazard Mitigation Plan using public notice meeting flyers, press releases, and the Town website. The colorful Public Meeting Notice Schedule flyers will be posted at the North Sutton Post Office, South Sutton Post Office, Sutton Library, Solid Waste Facility, and Town Office.

These outreach activities will be undertaken during the Plan's annual review and for Hazard Mitigation Committee meetings the Emergency Management Director calls to order.

## CHAPTER 12. APPENDIX

### 2014 PLAN UPDATE

Where identified, new contact information was provided for disaster relief and grant programs. Information on the FEMA Hazard Mitigation, National Incident Management System (NIMS) programs, and new Hazard Mitigation Assistance grant program was provided. The Action Matrix was updated with current prioritization information which was incorporated into **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS**, and the hazard vulnerability matrices were updated as displayed in **CHAPTER 2. HAZARD IDENTIFICATION**.

### INTRODUCTION

The Appendix contains supplemental information to this Hazard Mitigation Plan Update. The intent of this Plan is to provide information about potential disasters, assets at risk, and a means of implementing the actions to help minimize loss to life and property. In addition, the process by which grant and relief money can be obtained and what programs are available to assist the Town and its residents are equally important. When the annual Hazard Mitigation Plan Update process is repeated in 2017 and subsequent years for **CHAPTER 10**, materials used for publicity and meetings are exhibited to lay out the process for future Hazard Mitigation Committees.

### PROCESS FOR DISASTER DECLARATION IN SUTTON

There are two phases to a disaster - first response and recovery. The recovery phase, or clean-up efforts, is where the majority of grant funds could be applied for. Having an approved Hazard Mitigation Plan Update in place before a disaster occurs, according to the US Disaster Mitigation Act of 2000 and its amendments, is required after November 2004 in order to be eligible to apply for these recovery funds. These grant programs are briefly explained later in this chapter under the **HAZARD MITIGATION ASSISTANCE GRANT PROGRAMS** section. Much of the information following is taken directly from the FEMA website.

### FEMA Information

The Federal Emergency Management Agency (FEMA) has extensive resources related to disaster prevention and disaster recovery on its website at [www.fema.gov](http://www.fema.gov). The following is an excerpt from their on-line library:

The first response to a disaster is the job of local government's emergency services with help from nearby municipalities, the state and volunteer agencies. In a catastrophic disaster, and if the governor requests, federal resources can be mobilized through the Federal Emergency

Management Agency (FEMA) for search and rescue, electrical power, food, water, shelter and other basic human needs.

It is the long-term recovery phase of disaster that places the most severe financial strain on a local or state government. Damage to public facilities and infrastructure, often not insured, can overwhelm even a large city.

A governor's request for a major disaster declaration could mean an infusion of federal funds, but the governor must also commit significant state funds and resources for recovery efforts. A Major Disaster could result from a hurricane, earthquake, flood, tornado or major fire which the President determines warrants supplemental federal aid. The event must be clearly more than state or local governments can handle alone. If declared, funding comes from the President's Disaster Relief Fund, which is managed by FEMA, and disaster aid programs of other participating federal agencies.

A Presidential Major Disaster Declaration puts into motion long-term federal recovery programs, some of which are matched by state programs, and designed to help disaster victims, businesses and public entities.

An Emergency Declaration is more limited in scope and without the long-term federal recovery programs of a Major Disaster Declaration. Generally, federal assistance and funding are provided to meet a specific emergency need or to help prevent a major disaster from occurring.

### **The Major Disaster Process**

A Major Disaster Declaration usually follows these steps:

- The Local government responds, supplemented by neighboring communities and volunteer agencies. If overwhelmed, turn to the state for assistance;
- The State responds with state resources, such as the National Guard and state agencies;
- Damage assessment by local, state, federal, and volunteer organizations determines losses and recovery needs;
- A Major Disaster Declaration is requested by the governor, based on the damage assessment, and an agreement to commit state funds and resources to the long-term recovery;
- FEMA evaluates the request and recommends action to the White House based on the disaster, the local community and the state's ability to recover;
- The President approves the request or FEMA informs the governor it has been denied. This decision process could take a few hours or several weeks depending on the nature of the disaster.

### Emergency Declaration

An **Emergency Declaration** can be declared for any occasion or instance when the President determines federal assistance is needed. Emergency Declarations supplement State and local efforts in providing emergency services, such as the protection of lives, property, public health, and safety, or to lessen or avert the threat of a catastrophe in any part of the United States. The total amount of assistance provided for a single emergency may not exceed \$5 million. If this amount is exceeded, the President shall report to Congress.

### Disaster Aid Programs

There are two major categories of disaster aid: Individual Assistance is for damage to residences and businesses or personal property losses, and Public Assistance is for repair of infrastructure, public facilities and debris removal.

#### *Individual Assistance*

Disaster assistance is money or direct assistance to individuals, families and businesses in an area whose property has been damaged or destroyed and whose losses are not covered by insurance. It is meant to help people with critical expenses that cannot be covered in other ways. This assistance is not intended to restore damaged property to its condition before the disaster.

While some housing assistance funds are available through our Individuals and Households Program, most disaster assistance from the Federal government is in the form of loans administered by the Small Business Administration.

Disaster aid to individuals generally falls into the following categories:

- Disaster Housing is available to individuals in several forms. **Temporary Housing** (a place to live for a limited period of time): Money is available to rent a different place to live, or a government provided housing unit when rental properties are not available. **Repair**: Money is available to homeowners to repair damage from the disaster to their primary residence that is not covered by insurance. The goal is to make the damaged home safe, sanitary, and functional. **Replacement**: Money is available to homeowners to replace their home destroyed in the disaster that is not covered by insurance. The goal is to help the homeowner with the cost of replacing their destroyed home. **Permanent Housing Construction**: Direct assistance or money for the construction of a home. This type of help occurs only in insular areas or remote locations specified by FEMA, where no other type of housing assistance is possible.
- Other than Housing Needs, money is available for necessary expenses and serious needs caused by the disaster. This includes: disaster-related medical and dental costs, disaster-related funeral and burial cost, clothing; household items (room furnishings, appliances); tools (specialized or protective clothing and equipment) required for your job; necessary educational materials (computers, school books, supplies), fuels for primary heat source (heating oil, gas), clean-up items (wet/dry vacuum, dehumidifier), disaster damaged vehicle, moving and storage expenses related to the disaster (moving and storing property to avoid additional disaster damage while disaster-related

repairs are being made to the home), and other necessary expenses or serious needs as determined by FEMA.

- Other Disaster Aid Programs include crisis counseling, disaster-related unemployment assistance, legal aid, and special tax considerations.
- Low-Interest Disaster Loans are available after a disaster for homeowners and renters from the US Small Business Administration (SBA) to cover uninsured property losses. Loans may be for repair or replacement of homes, automobiles, clothing or other damaged personal property. Loans are also available to businesses for property loss and economic injury.

Visit [www.disasterassistance.gov](http://www.disasterassistance.gov) for more information.

### *Public Assistance*

The objective of the Federal Emergency Management Agency's (FEMA) Public Assistance (PA) Grant Program is to provide assistance to State, Tribal and local governments, and certain types of Private Nonprofit organizations so that communities can quickly respond to and recover from major disasters or emergencies declared by the President.

Through the PA Program, FEMA provides supplemental Federal disaster grant assistance for debris removal, emergency protective measures, and the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain Private Non-Profit (PNP) organizations. The PA Program also encourages protection of these damaged facilities from future events by providing assistance for hazard mitigation measures during the recovery process.

The Federal share of assistance is not less than 75% of the eligible cost for emergency measures and permanent restoration. The grantee (usually the State) determines how the non-Federal share (up to 25%) is split with the subgrantees (eligible applicants).

Visit [www.disasterassistance.gov](http://www.disasterassistance.gov) for more information.

## HAZARD MITIGATION

Hazard Mitigation is sustained action taken to reduce or eliminate long-term risk to people and their property from hazards and their effects. Mitigation focuses on breaking the cycle of disaster damage, reconstruction, and repeated damage. Mitigation efforts create safer communities and reduce loss of life and property. Mitigation includes such activities as:

- Complying with or exceeding NFIP floodplain management regulations.
- Enforcing stringent building codes, flood-proofing requirements, seismic design standards and wind-bracing requirements for new construction or repairing existing buildings.
- Adopting zoning ordinances that steer development away from areas subject to flooding, storm surge or coastal erosion, or other hazards.
- Retrofitting public buildings to withstand hurricane-strength winds or ground shaking and for installing sprinkler systems for fire events.
- Acquiring damaged homes or businesses in flood-prone areas, relocating the structures, and returning the property to open space, wetlands or recreational uses.
- Building community shelters and tornado safe rooms to help protect people in their homes, public buildings and schools in hurricane- and tornado-prone areas.
- Replacing malfunctioning culverts and drainage systems to alleviate debris impacted infrastructure conditions and to reduce rural and urban flooding conditions along roadways.
- Installing cisterns in housing or non-residential developments to suppress fires until a constant water source becomes available or installing dry hydrants along fire ponds or rivers sources to provide quick access to a water supply to combat fire hazards.

Mitigation is achieved through risk analysis, which results in information about a community that provides a foundation for mitigation activities that reduce risk. The goal of risk reduction is to reduce the risk to life and property, which includes existing structures and future construction, in the pre and post-disaster environments. Risk reduction is achieved through regulations, local ordinances, land use and building practices, and mitigation projects that reduce or eliminate long-term risk from hazards and their effects.

For more information, visit [www.fema.gov/multi-hazard-mitigation-planning](http://www.fema.gov/multi-hazard-mitigation-planning), or contact NH Homeland Security and Emergency Management at (800) 852-3792 or visit [www.nh.gov/safety/divisions/hsem](http://www.nh.gov/safety/divisions/hsem).

## **NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS)**

The National Incident Management System (NIMS) provides a systematic, proactive approach to guide departments and agencies at all levels of government, nongovernmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property and harm to the environment. Most State and local governments follow the NIMS protocol for disaster response.

A basic premise of NIMS is that all incidents begin and end locally. NIMS does not take command away from State and local authorities. NIMS simply provides the framework to enhance the ability of responders, including the private sector and NGOs, to work together more effectively. The Federal Government supports State and local authorities when their resources are overwhelmed or anticipated to be overwhelmed. Federal departments and agencies respect the sovereignty and responsibilities of local, tribal, and State governments while rendering assistance. The intention of the Federal Government in these situations is not to command the response, but rather to support the affected local, tribal, and/or State governments.

Elected and appointed officials are responsible for ensuring the public safety and welfare of the people of that jurisdiction. Specifically, these officials provide strategic guidance and resources during preparedness, response, and recovery efforts. Elected or appointed officials must have a clear understanding of their roles and responsibilities for successful emergency management and response. At times, these roles may require providing direction and guidance to constituents during an incident, but their day-to-day activities do not focus on emergency management and response. Their awareness of NIMS is critical to ensuring cooperative response efforts and minimizing the incident impacts.

Preparedness is essential for effective incident and emergency management and involves engaging in a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action to achieve and maintain readiness to respond to emergencies. As such, the NIMS Preparedness Component serves as a baseline concept that links all the NIMS Components. Preparedness spans jurisdictions, governments, agencies and organizations. Though individuals certainly play a critical role in preparedness and are expected to prepare themselves and their families for all types of potential incidents, they are not directly included in NIMS preparedness. NIMS primarily discusses the preparedness role for governments, organizations geared specifically toward preparedness, elected and appointed officials, nongovernmental organizations, and the private sector.

NIMS works hand in hand with the National Response Framework (NRF). NIMS provides the template for the management of incidents, while the NRF provides the structure and mechanisms for national-level policy for incident management. Free online courses are available for emergency management officials, first responders, Town staff, Board members, and Town officials.

Visit [www.training.fema.gov/IS/NIMS.asp](http://www.training.fema.gov/IS/NIMS.asp) to take courses.

## **HAZARD MITIGATION ASSISTANCE GRANT PROGRAMS**

Through the NH Homeland Security and Emergency Management (NHHSEM), the Federal Emergency Management Agency provides funds for assistance to municipalities in the event of a disaster through Hazard Mitigation Assistance program. The programs are described briefly here. For more details about these funding sources, contact the NHHSEM or visit the FEMA website at [www.fema.gov/hazard-mitigation-grant-program](http://www.fema.gov/hazard-mitigation-grant-program) or [www.nh.gov/safety/divisions/hsem/HazardMitigation/hmcp](http://www.nh.gov/safety/divisions/hsem/HazardMitigation/hmcp).

### **Pre-Disaster Mitigation Program (PDM)**

The Pre-Disaster Mitigation (PDM) program provides technical and financial assistance to States and local governments for cost-effective pre-disaster hazard mitigation activities that complement a comprehensive mitigation program, and reduce injuries, loss of life, and damage and destruction of property. FEMA provides grants to States and Federally recognized Indian tribal governments that, in turn, provide sub-grants to local governments (to include Indian Tribal governments) for mitigation activities such as planning and the implementation of projects identified through the evaluation of natural hazards. For more information, visit [www.fema.gov/pre-disaster-mitigation-grant-program](http://www.fema.gov/pre-disaster-mitigation-grant-program) or [www.nh.gov/safety/divisions/hsem/HazardMitigation/pdm](http://www.nh.gov/safety/divisions/hsem/HazardMitigation/pdm).

### **Flood Mitigation Assistance Program (FMA)**

This program requires a 25% match (half in-kind and half local cash) and awards funds for Planning Grants, Technical Assistance Grants, and Project Grants. A Flood Mitigation Plan must be in place before funds can be sought for Technical Assistance or Projects. This program awards funding for Flood Mitigation Plans, structural enhancements, acquisition of buildings or land, and relocation projects. For more information, visit [www.fema.gov/flood-mitigation-assistance-program](http://www.fema.gov/flood-mitigation-assistance-program) or [www.nh.gov/safety/divisions/hsem/HazardMitigation/fma](http://www.nh.gov/safety/divisions/hsem/HazardMitigation/fma).

### **Repetitive Flood Claims (RFC)**

Repetitive Flood Claims provides funding to States and communities to reduce or eliminate the long-term risk of flood damage to structures insured under the NFIP that have had one or more claims for flood damages, and that cannot meet the requirements of the Flood Mitigation Assistance (FMA) program for either cost share or capacity to manage the activities. The grant pays for 100% of the cost. For more information, visit [www.fema.gov/repetitive-flood-claims-program](http://www.fema.gov/repetitive-flood-claims-program) or [www.nh.gov/safety/divisions/hsem/HazardMitigation/rfc](http://www.nh.gov/safety/divisions/hsem/HazardMitigation/rfc).

### **Severe Repetitive Loss (SRL)**

Severe Repetitive Loss (SRL) funds provides funding to reduce or eliminate the long-term risk of flood damage to severe repetitive loss (SRL) structures insured under the National Flood Insurance Program (NFIP). Projects include property acquisition and structure demolition and relocation, structure elevation, and minor localized flood reduction projects. A 75/25% match is required. For more information, visit [www.fema.gov/severe-repetitive-loss-program](http://www.fema.gov/severe-repetitive-loss-program) or [www.nh.gov/safety/divisions/hsem/HazardMitigation/srl](http://www.nh.gov/safety/divisions/hsem/HazardMitigation/srl).

**Hazard Mitigation Grant Program (HMGP)**

A disaster must be declared to take advantage of this program, which is designed to protect public and private property from future disasters. This program typically awards funding for projects that are structural in nature or for the acquisition of buildings or land. It covers the broadest range of mitigation project activities. The funding award is 75% with a 25% match.

For more information, for a listing of criteria, or to request an application to these or any other grant programs, please contact the NH Homeland Security and Emergency Management at (800) 852-3792 or visit [www.nh.gov/safety/divisions/hsem/HazardMitigation](http://www.nh.gov/safety/divisions/hsem/HazardMitigation) or [www.nh.gov/safety/divisions/hsem/HazardMitigation/hmcp](http://www.nh.gov/safety/divisions/hsem/HazardMitigation/hmcp).

**Emergency Management Performance Grant (EMPG)**

The Emergency Management Performance Grant (EMPG) Program assists State and Local Governments and other eligible agencies in preparing for all hazards. The EMPG focuses on Planning, Organization/Administrative, Equipment, Training, Exercises, Mitigation and Maintenance/Sustainment to enhance and sustain all-hazards emergency management capabilities. A 50/50% match is required.

For more information, for a listing of criteria, or to request an application to these or any other grant programs, please contact the NH Homeland Security and Emergency Management at (800) 852-3792 or visit [www.nh.gov/safety/divisions/hsem/grants](http://www.nh.gov/safety/divisions/hsem/grants).

**Community Development Block Grant (CDBG)**

A disaster must be declared to take advantage of this program, which awards emergency funds to cover unmet needs in a community. At least one of three national objectives must be met: the funds must have a direct benefit to low and moderate income persons; or must prevent or eliminate slums and blight in neighborhoods; or must eliminate conditions which threaten the public health and welfare. The NH Community Development Finance Authority (CDFA) administers this program. The CDBG website is [www.nhcdfa.org/block-grants/program](http://www.nhcdfa.org/block-grants/program).

**NATURAL, TECHNOLOGICAL, AND HUMAN HAZARD VULNERABILITY SCORING**

The following figures are used in **CHAPTER 2. HAZARD IDENTIFICATION** to determine the probability, magnitude, and overall risk of each of the **39** hazards presented in the Hazard Mitigation Plan Update. The exercise was completed by the Hazard Mitigation Committee during a Work Session.

**Figure 1  
Natural Hazard Vulnerability Matrix**

Sutton 2013  Natural Hazard Events	Probability	Human Impact	Property Impact	Business Impact	Severity	OVERALL RISK
	Likelihood the hazard will occur in 25 years  0= NA 1= <b>Low</b> 2= <b>Moderate</b> 3= <b>High</b>	Likelihood of injury or death in 25 years  0=NA 1=Low 2=Moderate 3=High	Likelihood of physical losses or damages in 25 years  0=NA 1=Low 2=Moderate 3=High	Likelihood of service interruption in 25 years  0=NA 1=Low 2=Moderate 3=High	CALCULATED Average of Human + Property + Business Impact  <1.6= <b>Low</b> 1.6-2.5= <b>Moderate</b> >2.5= <b>High</b>	CALCULATED Probability x Severity
Flooding	3	2	2	1	1.67	5.00
Hurricanes and Severe Storms	3	2	2	1	1.67	5.00
Rapid Snow Pack Melt	3	1	1	1	1.00	3.00
River Ice Jams	2	1	1	1	1.00	2.00
Dam Breach and Failure	1	1	1	1	1.00	1.00
Stream Bank Erosion and Scouring	2	1	1	1	1.00	2.00
Debris Impacted Infrastructure	3	1	2	1	1.33	4.00
Tornadoes	2	1	1	1	1.00	2.00
Downbursts	2	1	2	1	1.33	2.67
Lightning	3	1	2	1	1.33	4.00
Wildfire	3	1	3	1	1.67	5.00
Severe Winter Weather	3	2	2	2	2.00	6.00
Earthquake	1	1	1	1	1.00	1.00
Landslide	2	1	1	1	1.00	2.00
Drought	2	2	2	1	1.67	3.33
Radon	3	2	2	1	1.67	5.00
Biological	3	1	3	1	1.67	5.00

Sources: *CHAPTER 2. HAZARD IDENTIFICATION, Sutton Hazard Mitigation Committee 2014*

**Figure 2**  
**Technological Hazard Vulnerability Matrix**

Sutton 2013	Probability	Human Impact	Property Impact	Business Impact	Severity	OVERALL RISK
<b>Technological Hazard Events</b>	Likelihood the hazard will occur in 25 years	Likelihood of injury or death in 25 years	Likelihood of physical losses or damages in 25 years	Likelihood of service interruption in 25 years	CALCULATED Average of Human + Property + Business Impact	CALCULATED Probability x Severity
	0= NA 1= <b>Low</b> 2= <b>Moderate</b> 3= <b>High</b>	0=NA 1=Low 2=Moderate 3=High	0=NA 1=Low 2=Moderate 3=High	0=NA 1=Low 2=Moderate 3=High	<1.6= <b>Low</b> 1.6-2.5= <b>Moderate</b> >2.5= <b>High</b>	
Hazardous Materials	3	3	2	2	2.33	7.00
Explosion/Fire	3	2	2	2	2.00	6.00
Transportation Accident	3	3	3	3	3.00	9.00
Building/Structure Collapse	3	1	3	2	2.00	6.00
Power/Utility Failure	3	1	2	2	1.67	5.00
Extreme Air Pollution	3	1	1	1	1.00	3.00
Radiological Accident	1	1	1	1	1.00	1.00
Fuel/Resource Shortage	2	1	2	1	1.33	2.67
Strike	1	1	1	1	1.00	1.00
Business Interruption	2	1	1	1	1.00	2.00
Financial Issues, Economic Depression, Inflation, Financial System Collapse	3	2	2	2	2.00	6.00
Communications Systems Interruptions	3	3	2	1	2.00	6.00
Cell Towers	2	2	2	2	2.00	4.00

Sources: CHAPTER 2. HAZARD IDENTIFICATION, Sutton Hazard Mitigation Committee 2014

**Figure 3**  
**Human Hazard Vulnerability Matrix**

Sutton 2013	Probability	Human Impact	Property Impact	Business Impact	Severity	OVERALL RISK
<b>Human Hazard Events</b>	Likelihood the hazard will occur in 25 years	Likelihood of injury or death in 25 years	Likelihood of physical losses or damages in 25 years	Likelihood of service interruption in 25 years	CALCULATED Average of Human + Property + Business Impact	CALCULATED Probability x Severity
	0= NA 1= <b>Low</b> 2= <b>Moderate</b> 3= <b>High</b>	0=NA 1=Low 2=Moderate 3=High	0=NA 1=Low 2=Moderate 3=High	0=NA 1=Low 2=Moderate 3=High	<1.6= <b>Low</b> 1.6-2.5= <b>Moderate</b> >2.5= <b>High</b>	
Economic Threats	2	1	1	1	1.00	2.00
General Strike	2	1	1	1	1.00	2.00
Terrorism	3	2	2	2	2.00	6.00
Sabotage	3	2	2	2	2.00	6.00
Hostage Situation	3	2	2	2	2.00	6.00
Civil Disturbance / Public Unrest	3	2	2	2	2.00	6.00
Enemy Attack	1	1	1	1	1.00	1.00
Arson	3	2	2	2	2.00	6.00
Mass Hysteria	2	2	2	2	2.00	4.00
Special Events	3	2	2	2	2.00	6.00

Sources: CHAPTER 2. HAZARD IDENTIFICATION, Sutton Hazard Mitigation Committee 2014

**ACTION EVALUATION AND PRIORITIZATION SCORING**

**Figure 4** displays the priority ranking score of each of the Actions displayed in **Tables 25A - 25E** in **CHAPTER 10. EVALUATION AND IMPLEMENTATION OF ACTIONS**. The ranking was completed by the Hazard Mitigation Committee during a Work Session. Ranking for each criteria: **3**= criteria was met well, **2** = met average, **1** = met poorly.

**Figure 4**  
**Action Plan Evaluation and Prioritization**

As a group, rank with a 1, 2, or 3 each of the following Actions according to if the Action answers the questions in the column headings.  
**3 = YES                    2 = PARTIALLY/MAYBE                    1 = NO**

6/25/2013

Best score = 36

<b>Action</b>	Reduce Damage?	Contribute to Town Objectives?	Meet Regulations?	Protect Sensitive Structures?	Implemented Quickly?	Socially Acceptable?	Technically Feasible?	Administratively Realistic?	Politically Acceptable?	Legal?	Have a Reasonable Cost to Benefits?	Environmentally Sound?	Total Priority Score
Encourage Town Hall Employee Safety	3	3	3	1	2	3	3	3	3	3	3	1	31
Undertake Radon Testing in Town Buildings	1	3	3	1	1	3	3	3	3	3	2	3	29
Replace Baker Hill Road Culvert	3	3	3	3	2	3	3	3	3	3	3	3	35
Replace Meeting House Hill Road Culvert	3	3	3	3	2	3	3	3	3	3	3	3	35
Replace Keyser Street Bridge over Seasonal Stream	3	3	3	3	2	3	3	3	3	3	3	3	35
Install a Dry Hydrant at the Maple Leaf Development at King Hill Road and Penacook Road	3	3	3	3	2	3	3	3	3	3	3	3	35
Install a Dry Hydrant at Russell Pond at Route 114 and Fox Chase Road	3	3	3	3	2	3	3	3	3	3	3	3	35
Install a Dry Hydrant near the Post Office and Route 114 in South Sutton	3	3	3	3	2	3	3	3	3	3	3	3	35
Establish Central Communications	2	3	3	3	2	3	3	3	3	3	3	1	32
Undertake Improvements to Emergency Operations Center	3	3	3	3	1	3	3	3	3	3	2	1	31
Enhance Police Station Exterior	3	3	3	3	3	3	3	3	3	3	2	1	33
Secure a Repeater System	3	3	3	3	1	3	3	3	3	3	3	1	32
Provide a Stipend for Fire and Rescue Members	3	3	1	3	1	2	3	3	2	3	3	1	28
Develop Volunteer List for Staffing Shelters	3	3	3	1	2	3	3	3	3	3	3	1	31
Develop List of Persons Requiring Assistance During Disasters	2	3	3	1	1	3	3	2	2	3	3	1	27
Publicize Plowing and Sanding Policy	3	3	3	3	1	3	3	3	3	3	3	1	32
Develop and Disseminate Public Education Materials for Emergency Supplies and Sheltering	3	3	3	3	3	3	3	3	3	3	3	1	34
Promote Public Education for Radon Testing	3	3	3	3	3	2	3	3	3	3	3	1	33
Promote Volunteer Opportunities	3	3	3	3	3	3	3	3	3	3	3	1	34
Collect and Make Available Disaster Pamphlets and Information for Residents	3	3	3	3	3	3	3	3	3	3	3	1	34
Educate Students, Staff and Visitors on School Security System and on Maintaining Secure Campus	3	3	3	3	3	3	3	3	3	3	3	1	34

**Figure 4, continued**  
**Action Plan Evaluation and Prioritization**

As a group, rank with a 1, 2, or 3 each of the following Actions according to if the Action answers the questions in the column headings.  
**3 = YES                      2 = PARTIALLY/MAYBE                      1 = NO**

6/25/2013

Best score = 36

Does/Is the Action.....	Reduce Damage?	Contribute to Town Objectives?	Meet Regulations?	Protect Sensitive Structures?	Implemented Quickly?	Socially Acceptable?	Technically Feasible?	Administratively Realistic?	Politically Acceptable?	Legal?	Have a Reasonable Cost to Benefits?	Environmentally Sound?	Total Priority Score
Encourage Fire & Rescue Training Area Attendance	3	3	3	3	2	3	3	3	3	3	3	1	33
Encourage Fire Department Member Certification	3	3	2	3	1	3	3	2	3	3	3	1	30
Attend First Responder Training for Police Officers	3	3	1	1	1	3	3	2	3	3	3	1	27
Build Fire Station Addition	2	2	3	3	1	2	3	3	2	3	2	1	27
Hire or Seek a Grant Writer	3	3	3	3	3	3	3	3	3	3	3	1	34
Hold Annual Evacuation Plan Exercise with Elementary, Middle, and High	3	3	3	3	3	3	3	3	3	3	3	1	34
Undertake Realistic Drills with Sutton Emergency Response and the Seven Towns that Comprise KRSO	3	3	3	3	3	3	3	3	3	3	3	1	34
Participate in National Flood Insurance (NFIP) Training	3	3	3	3	2	3	3	3	3	3	3	1	33
Develop Middle School Shelter in Place Plan	3	3	3	3	2	3	3	3	3	3	3	1	33
Develop Emergency Response Mitigation Plan	3	3	3	3	2	3	3	3	3	3	3	1	33
Develop Formal Process for Town Department Central Non-Emergency Communications	3	3	3	3	3	3	3	3	3	3	3	1	34
Update the Zoning Ordinance to Comply with NFIP Requirements	3	3	3	3	3	3	3	3	3	3	3	1	34
Develop Plan for Evacuation of Animals and Identify Shelters	3	3	3	3	2	3	3	2	3	3	2	3	33
Develop Specific Requirements for Class VI Road Upgrade	3	3	3	3	1	3	3	2	3	3	3	2	32
Adopt a Town Hall Safety Plan	3	3	3	3	3	3	3	3	3	3	3	1	34
Ensure Capital Planning Funding for Hazard Mitigation Projects	3	3	3	3	2	3	3	3	3	3	3	3	35

Source: CHAPTER 10 Action Plan Tables 25A-E

## GLOSSARY OF TERMS

The Sutton Hazard Mitigation Plan Update utilizes numerous terms throughout the document to refer concepts and ideas surrounding hazards of all types. A selection of the more commonly used, or easily confused, terms and acronyms have been defined for the user of this Plan.

100 Year Flood - A flood event which has a one percent (1%) chance of occurring in a given year

Accessory Building - A structure which is detached from the principal building and located on the same lot, which is incidental to the principal building or use such as a shed, barn, garage, etc.

Action - A strategy which fulfills an objective

Central New Hampshire Regional Planning Commission (CNHRPC) - A non-profit voluntary organization of municipalities which is staffed by professional planning and support personnel. CNHRPC has 20 member communities.

Disaster Mitigation Act (DMA) - Enacted in 2000, it requires states and municipalities to have local natural hazard mitigation plans in place in order to be eligible for disaster funding programs

Federal Emergency Management Agency (FEMA) - Agency of the United States Government tasked with disaster mitigation, preparedness, response and recovery planning

Flood - Temporary overflowing of water onto land which is usually devoid of surface water

Flood Insurance Rate Map (FIRM) - The official map on which the Federal Insurance Administration has identified both the areas of special flood hazards and the risk premium zones for a community

Floodplain - The relatively flat area adjacent to a channel of a natural stream or river which either has been or may be covered by flood water

Geographic Information Systems (GIS) - A technology that manages, analyzes and disperses geographic knowledge

Goal - A broad statement of intent

Hazard Mitigation Planning - A collaborative process identifying hazards affecting a community, assessing vulnerability to those hazards, and reaching consensus on how to minimize or eliminate the effects of those hazards.

HAZUS-MH - Software program developed by the Federal Emergency Management Agency to be used for risk assessment and estimation of hazard related damage

Human Hazard - Hazards caused by human circumstances, such as terrorism, hostage situations, civil unrest, mass hysteria, riots, etc.

Information Technology - The use of computers in order to process, store, transmit, etc. information from anywhere at any time

Infrastructure - Facilities and services needed to sustain everyday land-use activities, such as telephone wires, roads, power lines, etc.

Manufactured Homes - Factory-built, single-family structures, commonly referred to as "mobile homes"

Manufactured Housing Parks - An area where space for two or more manufactured homes is rented

Multi-Unit Housing - Structures containing three or more housing units, such as apartment buildings and condos

New Hampshire Homeland Security and Emergency Management (NHHSEM) - Established in order to protect the lives, property and environment of the people of New Hampshire from the threat or occurrence of emergencies resulting from any natural or human-made disaster. A division of the NH Department of Safety (NHDOS).

National Flood Insurance Program (NFIP) - Created in 1968, NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages

Natural Hazard - Hazards caused by the natural environment such as drought, avalanche, hurricane/typhoon/cyclone, tornado, extreme heat/cold, etc.

Objective - Specific explanation of the broad goal

Property - A collection of land, buildings and vehicles of which someone can claim ownership

Richter Magnitude Scale - A base-10 logarithmic scale which assigns a single number to quantify the size of an earthquake

Technological Hazard - Hazards caused by problems with technology such as power/utility failure, radiological accident, dam/levee failure, fuel/resource shortage, hazardous material release, etc.

## PHOTOGRAPHIC HISTORY OF SUTTON DISASTERS

### 1938 Hurricane



Route 114 North of Watkins Avenue, September 1938 Hurricane  
*Photo courtesy of Historical Society. Photo taken by Randolph "Chan" Blodgett, Jr.*



Route 114 at Watkins Avenue, September 1938 Hurricane  
*Photo courtesy of Historical Society. Photo taken by Randolph "Chan" Blodgett, Jr.*

## 1938 Hurricane



Gile Pond, after September 1938 Hurricane

*Photo courtesy of Historical Society. Photo taken by Randolph "Chan" Blodgett, Jr.*



Route 114 Bridge in South Sutton, September 1938 Hurricane

*Photo courtesy from Sutton Hazard Mitigation Plan 2008*

## 1975 Ice Jam



Blasting of Stevens Brook Ice Jam, 1975

*Photo courtesy of Historical Society. Photo excerpted from History of Sutton, New Hampshire, Volume II, by Jack Noon*

## 2008 Ice Storm



Tree Fall, December 2008 Ice Storm  
*Photo courtesy of Police Department*



Sutton Police Cruiser Debris Fall, December 2008 Ice Storm  
*Photo courtesy of Police Department*

### 2009 Eaton Grange Fire



Eaton Grange Fire, June 2009  
*Photo courtesy of Fire Department*



Eaton Grange Fire, June 2009  
*Photo courtesy of Fire Department*

**PUBLICITY AND MEETING INFORMATION FOR THE SUTTON HAZARD MITIGATION PLAN UPDATE 2014**

To better assist future Hazard Mitigation Committee updates of this Plan, exhibited are the following materials which enabled the Committee to effectively produce this document. Four (4) Committee meetings, four (4) Work Session meetings, and one (1) Public Information Meeting were held. The publicity materials for the Board of Selectmen meeting to adopt the Plan are included.

From each of the Meetings, where available:

- Press release (press releases often covered more than one meeting)
- Copies of press release in the newspapers if available
- Flyer (flyers often covered more than one meeting)
- Agenda
- Attendance sheet

The following additional documentation is exhibited:

- Support Letters from Department heads, Board Chairs, and emergency first responders
- Approvable Pending Adoption (APA) notification from FEMA