

Town of Lempster, New Hampshire Hazard Mitigation Plan

Town of Lempster
Hazard Mitigation
Committee



Upper Valley Lake Sunapee
Regional Planning
Commission

Mountain Road intersection of Long Pond Road, October 2005 flood

2009

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Vicki



**Town of LEMPSTER, New Hampshire
Board of Selectmen
A Resolution Approving the LEMPSTER Hazard Mitigation Plan**

WHEREAS, the Town of LEMPSTER received assistance from the Upper Valley Lake Sunapee Regional Planning Commission through funding from the NH Homeland Security and Emergency Management to prepare a hazard mitigation plan; and

WHEREAS, several planning meetings to develop the hazard mitigation plan were held between June and July 2008 and then presented to the Board of Selectmen for review and discussion on 3/25, 2009; and

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

WHEREAS, the Board of Selectmen held a public meeting on 3/25, 2009 to formally approve and adopt the LEMPSTER Hazard Mitigation Plan.

NOW, THEREFORE BE IT RESOLVED that the LEMPSTER Board of Selectmen approve the LEMPSTER Hazard Mitigation Plan.

APPROVED and SIGNED this 25 day of MARCH, 2009.

(seal)

TOWN OF LEMPSTER
BOARD OF SELECTMEN

Dorothy E. G...
Chairman

Everett Thayer

Edward Sawyer

ATTEST:

Dorothy E. G...

V. 2/2/09

U.S. Department of Homeland Security
Region I
99 High St, 6th Floor
Boston, MA 02110-2320



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February 2, 2009

OPY

James Richards
Emergency Management Director
Town of Lempster
856 US Route 10
PO Box 33, Lempster, NH 03605

Dear Mr. Richards:

Thank you for the opportunity to review the Town of Lempster, NH Hazard Mitigation Plan. The Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA) Region I has evaluated the plan for compliance with the Interim Final Rule published in the Federal Register on February 26, 2002 (44 CFR Parts 201 and 206). The plan satisfactorily meets all of the mandatory requirements of the regulations except §201.6(c)(5), adoption by the local governing body.


Federal regulations require that a plan must include documentation of its formal adoption by the local governing body (e.g., Board of Selectmen). Accordingly, this letter reflects a conditional approval of the plan until we receive a copy of its signed and stamped adoption resolution. Once this adoption resolution has been received and accepted, FEMA Region I will send a formal letter of approval to you. If the plan is not adopted within one calendar year of FEMA's conditional approval, the jurisdiction must update the entire plan and resubmit it for FEMA review.

With the plan approval referenced above, the Town of Lempster would normally be eligible to apply for Mitigation Grants administered by FEMA. However; all applicants applying for Mitigation grant funding must be participating in the National Flood Insurance Program (NFIP) if they have been identified through the program as having a Special Flood Hazard Area (a Flood Hazard Boundary Map [FHBM] or a Flood Insurance Rate Map [FIRM] has been issued). In order to derive the full benefits of completing a local mitigation plan, we recommend that the Town of Lempster governing body consider the advantages of joining the NFIP.

Along with a copy of the plan's adoption resolution, please also be sure to submit an electronic version of the plan. FEMA must upload complete, electronic versions of all approved plans into the National Emergency Management Information System (NEMIS) database. Acceptable electronic formats include a .doc or .pdf file and may be submitted to us on a CD.

Thank you for your continued dedication to public service demonstrated by preparing and adopting a strategy for reducing future disaster losses. Congratulations once again for achieving this milestone and ensuring a safer future for the residents of the Town of Lempster. Should you have any questions, please do not hesitate to contact Marilyn Hilliard at (617) 956-7536.

Sincerely,


Kevin M. Merli, Director *EM*
Mitigation Division

Enclosure

Cc: Richard Verville, NH State Hazard Mitigation Officer
Victoria Davis, Planner, Upper Valley Lake Sunapee Regional Planning Commission

Jurisdiction:

Instructions for Using the Plan Review Crosswalk for Review of Local Mitigation Plans

Attached is a Plan Review Crosswalk based on the *Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000*, published by FEMA, dated March 2004. This Plan Review Crosswalk is consistent with the *Disaster Mitigation Act of 2000* (P.L. 106-390), enacted October 30, 2000 and *44 CFR Part 201 – Mitigation Planning, Interim Final Rule* (the Rule), published February 26, 2002.

SCORING SYSTEM

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer’s comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer’s comments are encouraged, but not required.

Each requirement includes separate elements. All elements of a requirement must be rated “Satisfactory” in order for the requirement to be fulfilled and receive a summary score of “Satisfactory.” A “Needs Improvement” score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.

When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, reviewers may want to put an N/A in the prerequisite box for single jurisdiction plans.

States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.

Example

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment shall include a] description of the jurisdiction’s vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.*

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A. Does the plan include an overall summary description of the jurisdiction’s vulnerability to each hazard?	Section II, pp. 4-10	The plan describes the types of assets that are located within geographically defined hazard areas as well as those that would be affected by winter storms.		✓
B. Does the plan address the impact of each hazard on the jurisdiction?	Section II, pp. 10-20	The plan does not address the impact of two of the five hazards addressed in the plan. Required Revisions: <ul style="list-style-type: none"> • Include a description of the impact of floods and earthquakes on the assets. Recommended Revisions: <ul style="list-style-type: none"> • This information can be presented in terms of dollar value or percentages of damage. 	✓	
SUMMARY SCORE			✓	

Jurisdiction:

Local Mitigation Plan Review and Approval Status

Jurisdiction: Town of Lempster, New Hampshire	Title of Plan: Town of Lempster Hazard Mitigation Plan	Date of Plan: July 31, 2008
Local Point of Contact: Victoria Davis	Address: 30 Bank Street Lebanon, NH 03768	
Title: Planner		
Agency: Upper Valley Lake Sunapee Regional Planning Commission		
Phone Number: 603-448-1680	E-Mail: vdavis@uvlsrc.org	

State Reviewer:	Title:	Date:
------------------------	---------------	--------------

FEMA Reviewer:	Title:	Date:
Date Received in FEMA Region [Insert #]		
Plan Not Approved		
Plan Approved		
Date Approved		

Jurisdiction:	NFIP Status*			
	Y	N	N/A	CRS Class
1. Town of Lempster, NH		X		
2.				
3.				
4.				
5. [ATTACH PAGE(S) WITH ADDITIONAL JURISDICTIONS]				

* Notes: Y = Participating N = Not Participating N/A = Not Mapped

Jurisdiction:

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted.

Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a "Needs Improvement" score.

SCORING SYSTEM

Please check one of the following for each requirement.

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)

NOT MET	MET
<input type="checkbox"/>	<input type="checkbox"/>

Adoption by the Local Governing Body: §201.6(c)(5) OR

Multi-Jurisdictional Plan Adoption: §201.6(c)(5)
AND

NOT MET	MET
<input type="checkbox"/>	<input type="checkbox"/>

Multi-Jurisdictional Planning Participation: §201.6(a)(3)

Planning Process

N	S
<input type="checkbox"/>	<input type="checkbox"/>

Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)

Risk Assessment

N	S
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Identifying Hazards: §201.6(c)(2)(i)

Profiling Hazards: §201.6(c)(2)(i)

Assessing Vulnerability: Overview: §201.6(c)(2)(ii)

Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)

Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)

Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)

Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)

Mitigation Strategy

Local Hazard Mitigation Goals: §201.6(c)(3)(i)
Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)
Implementation of Mitigation Actions: §201.6(c)(3)(iii)
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)

N	S
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Plan Maintenance Process

Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)
Continued Public Involvement: §201.6(c)(4)(iii)

N	S
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Additional State Requirements*

Insert State Requirement
Insert State Requirement
Insert State Requirement

N	S
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

LOCAL MITIGATION PLAN APPROVAL STATUS

PLAN NOT APPROVED

PLAN APPROVED

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

**Plan approved conditionally pending receipt of adoption documentation. See Reviewer's Comments

Jurisdiction:

PREREQUISITE(S)

Adoption by the Local Governing Body

Requirement §201.6(c)(5): [The local hazard mitigation plan **shall** include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Has the local governing body adopted the plan?				
B. Is supporting documentation, such as a resolution, included?				
SUMMARY SCORE				

Multi-Jurisdictional Plan Adoption

Requirement §201.6(c)(5): For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the plan indicate the specific jurisdictions represented in the plan?				
B. For each jurisdiction, has the local governing body adopted the plan?				
C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?				
SUMMARY SCORE				

Multi-Jurisdictional Planning Participation

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process ... Statewide plans will not be accepted as multi-jurisdictional plans.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			NOT MET	MET
A. Does the plan describe how each jurisdiction participated in the plan's development?				
SUMMARY SCORE				

Jurisdiction:

PLANNING PROCESS: §201.6(b): *An open public involvement process is essential to the development of an effective plan.*

Documentation of the Planning Process

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:*

- (1) *An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
- (2) *An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and*
- (3) *Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

Requirement §201.6(c)(1): *[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan provide a narrative description of the process followed to prepare the plan?	Sec I pp 2-5			
B. Does the plan indicate who was involved in the planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)	Sec I p 6			
C. Does the plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)	Sec I pp 2-3			
D. Was there an opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?	Sec I pp 2-3			
E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?	Sec I pp 2-3			
SUMMARY SCORE				

Jurisdiction:

RISK ASSESSMENT: §201.6(c)(2): *The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

Identifying Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment shall include a] description of the type ... of all natural hazards that can affect the jurisdiction.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan include a description of the types of all natural hazards that affect the jurisdiction? If the hazard identification omits (without explanation) any hazards commonly recognized as threats to the jurisdiction, this part of the plan cannot receive a Satisfactory score. Consult with the State Hazard Mitigation Officer to identify applicable hazards that may occur in the planning area.	Sec III pp 11-33			
SUMMARY SCORE				

Profiling Hazards

Requirement §201.6(c)(2)(i): *[The risk assessment shall include a] description of the ... location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the risk assessment identify the location (i.e., geographic area affected) of each natural hazard addressed in the plan?	Sec III pp 11-33 Appendix D			
B. Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the plan?	Sec III pp 11-33			
C. Does the plan provide information on previous occurrences of each hazard addressed in the plan?	Sec III pp 11-33			
D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the plan?	Sec III pp 11-34			
SUMMARY SCORE				

Jurisdiction:

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): *[The risk assessment shall include a] description of the jurisdiction’s vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.*

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A. Does the plan include an overall summary description of the jurisdiction’s vulnerability to each hazard?	Sec III pp 35-36			
B. Does the plan address the impact of each hazard on the jurisdiction?	Sec III pp 11-33 Sec IV p 37 Sec V pp 39-40			
SUMMARY SCORE				

Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): *The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area*

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A. Does the plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?	Sec IV p 37 Sec V pp 39-43	Note: A “Needs Improvement” score on this requirement will not preclude the plan from passing.		
B. Does the plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?	Sec I p 9 Sec V p 39	Note: A “Needs Improvement” score on this requirement will not preclude the plan from passing.		
SUMMARY SCORE				

Assessing Vulnerability: Estimating Potential Losses

Requirement §201.6(c)(2)(ii)(B): *[The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate*

Element	Location in the Plan (section or annex and page #)	Reviewer’s Comments	SCORE	
			N	S
A. Does the plan estimate potential dollar losses to vulnerable structures?	Sec IV p 37; Sec V pp 39-43	Note: A “Needs Improvement” score on this requirement will not preclude the plan from passing.		
B. Does the plan describe the methodology used to prepare the estimate?	Sec IV p 37	Note: A “Needs Improvement” score on this requirement will not preclude the plan from passing.		
SUMMARY SCORE				

Jurisdiction:

Assessing Vulnerability: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): *[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan describe land uses and development trends?	Sec II pp 9-10	Note: A "Needs Improvement" score on this requirement will not preclude the plan from passing.		
SUMMARY SCORE				

Multi-Jurisdictional Risk Assessment

Requirement §201.6(c)(2)(iii): *For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?				
SUMMARY SCORE				

MITIGATION STRATEGY: §201.6(c)(3): *The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.*

Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): *[The hazard mitigation strategy **shall** include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A Does the plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards? (GOALS are long-term; represent what the community wants to achieve, such as "eliminate flood damage"; and are based on the risk assessment findings.)	Sec I p 5 Sec VII p 47			
SUMMARY SCORE				

Jurisdiction:

Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): *[The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?	Sec VI pp 44-46 Sec VII pp 47-49 Sec VIII pp 50-51			
B. Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure?	Sec VI p 49 Sec VII p 51			
C. Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure?	Sec VI p 49 Sec VII p 51			
SUMMARY SCORE				

Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): *[The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the mitigation strategy include how the actions are prioritized ? (For example, is there a discussion of the process and criteria used?)	Sec VI pp 46 Sec VII pp 49			
B. Does the mitigation strategy address how the actions will be implemented and administered ? (For example, does it identify the responsible department, existing and potential resources, and timeframe?)	Sec VIII pp 50-51			
C. Does the prioritization process include an emphasis on the use of a cost-benefit review (see page 3-36 of <i>Multi-Hazard Mitigation Planning Guidance</i>) to maximize benefits?	Sec VI p 46 Sec VII p 49			
SUMMARY SCORE				

Jurisdiction:

Multi-Jurisdictional Mitigation Actions

Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A Does the plan include at least one identifiable action item for each jurisdiction requesting FEMA approval of the plan?				
SUMMARY SCORE				

PLAN MAINTENANCE PROCESS

Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): [The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan describe the method and schedule for monitoring the plan? (For example, does it identify the party responsible for monitoring and include a schedule for reports, site visits, phone calls, and meetings?)	Sec IX p 52			
B. Does the plan describe the method and schedule for evaluating the plan? (For example, does it identify the party responsible for evaluating the plan and include the criteria used to evaluate the plan?)	Sec IX p 52			
C. Does the plan describe the method and schedule for updating the plan within the five-year cycle?	Sec IX p 52			
SUMMARY SCORE				

Jurisdiction:

Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): *[The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan identify other local planning mechanisms available for incorporating the requirements of the mitigation plan?	Sec VI pp 44-45 Sec VII p 48			
B. Does the plan include a process by which the local government will incorporate the requirements in other plans, when appropriate?	Sec VI p 44 Sec VII p 48			
SUMMARY SCORE				

Continued Public Involvement

Requirement §201.6(c)(4)(iii): *[The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE	
			N	S
A. Does the plan explain how continued public participation will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)	Sec IX p 52			
SUMMARY SCORE				

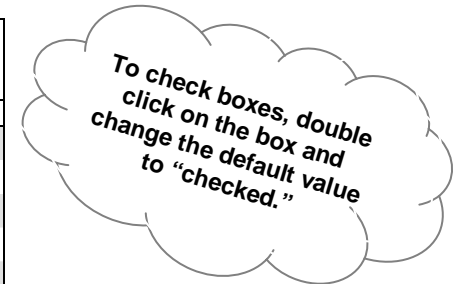
Jurisdiction: _____

Matrix A: Profiling Hazards

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each natural hazard that can affect the jurisdiction. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An “N” for any element of any identified hazard will result in a “Needs Improvement” score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Location		B. Extent		C. Previous Occurrences		D. Probability of Future Events	
	Yes	N	S	N	S	N	S	N	S
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extreme Heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Legend:

§201.6(c)(2)(i) Profiling Hazards

- A. Does the risk assessment identify the location (i.e., geographic area affected) of each hazard addressed in the plan?
- B. Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the plan?
- C. Does the plan provide information on previous occurrences of each natural hazard addressed in the plan?
- D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the plan?

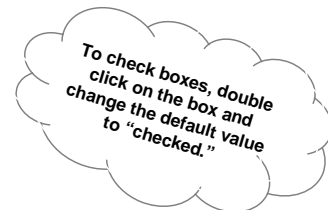
Jurisdiction: _____

Matrix B: Assessing Vulnerability

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each requirement. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An “N” for any element of any identified hazard will result in a “Needs Improvement” score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.

Note: Receiving an N in the shaded columns will not preclude the plan from passing.



Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Overall Summary Description of Vulnerability	B. Hazard Impact		A. Types and Number of Existing Structures in Hazard Area (Estimate)	B. Types and Number of Future Structures in Hazard Area (Estimate)		A. Loss Estimate	B. Methodology				
	Yes		N	S		N	S		N	S	N	S	
Avalanche	<input type="checkbox"/>	§201.6(c)(2)(ii) Assessing Vulnerability: Overview	<input type="checkbox"/>	<input type="checkbox"/>	§201.6(c)(2)(ii) Assessing Vulnerability: Identifying Structures	<input type="checkbox"/>	<input type="checkbox"/>	§201.6(c)(2)(ii) Assessing Vulnerability: Estimating Potential Losses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Coastal Erosion	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extreme Heat	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Legend:

§201.6(c)(2)(ii) Assessing Vulnerability: Overview

- A. Does the plan include an overall summary description of the jurisdiction’s vulnerability to each hazard?
- B. Does the plan address the impact of each hazard on the jurisdiction?

- B. Does the plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

§201.6(c)(2)(ii)(A) Assessing Vulnerability: Identifying Structures

- A. Does the plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?

§201.6(c)(2)(ii)(B) Assessing Vulnerability: Estimating Potential Losses

- A. Does the plan estimate potential dollar losses to vulnerable structures?
- B. Does the plan describe the methodology used to prepare the estimate?

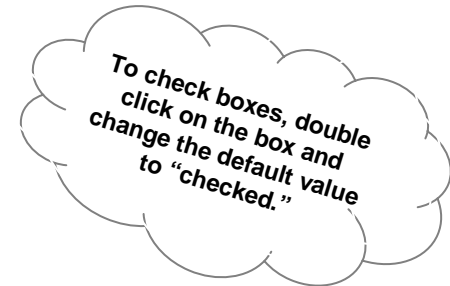
Jurisdiction:

Matrix C: Identification and Analysis of Mitigation Actions

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure consideration of a range of actions for each hazard. **Completing the matrix is not required.**

Note: First, check which hazards are identified in requirement §201.6(c)(2)(i). Then, place a checkmark in either the N or S box for each applicable hazard. An “N” for any identified hazard will result in a “Needs Improvement” score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Comprehensive Range of Actions and Projects	
	Yes	N	S
Avalanche	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam Failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drought	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthquake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expansive Soils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extreme Heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hailstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurricane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Subsidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landslide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Severe Winter Storm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tornado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tsunami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volcano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wildfire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windstorm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Legend:

§201.6(c)(3)(ii) Identification and Analysis of Mitigation Actions

A. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?

I. INTRODUCTION

A. BACKGROUND

The New Hampshire Homeland Security and Emergency Management (NH HSEM) has a goal for all communities within the State of New Hampshire to establish local hazard mitigation plans as a means to reduce future losses from natural or man-made hazard events before they occur. The NH HSEM has provided funding to the Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC), to prepare local Hazard Mitigation Plans with several of its communities. UVLSRPC began preparing a local Hazard Mitigation Plan for the Town of Lempster in October 2007. The *Lempster Hazard Mitigation Plan* serves as a strategic planning tool for use by the Town of Lempster in its efforts to reduce future losses from natural and/or man-made hazard events before they occur. This *Plan* does *not* constitute a section of the Master Plan.

The Lempster Hazard Mitigation Committee prepared the *Lempster Hazard Mitigation Plan* with the assistance and professional services of the Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC) under contract with the New Hampshire Homeland Security and Emergency Management (NH HSEM) operating under the guidance of the Federal Emergency Management Agency (FEMA). After a public meeting held in the Lempster Town Offices, the Lempster Board of Selectmen adopted the plan on February 25, 2009.

B. PURPOSE

The Lempster Hazard Mitigation Plan is a planning tool for use by the Town of Lempster in its efforts to reduce future losses from natural and/or man-made hazards. This plan does not constitute a section of the Town Master Plan, nor is it adopted as part of the Zoning Ordinance.

C. HISTORY

On October 30, 2000, President Clinton signed into law the Disaster Mitigation Act of 2000 (DMA 2000). The ultimate purpose of DMA 2000 is to:

- Establish a national disaster mitigation program that will reduce loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from disasters, and

- Provide a source of pre-disaster mitigation funding that will assist States and local governments in accomplishing that purpose.

DMA 2000 amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act by, among other things, adding a new section: 322 – Mitigation Planning. This places new emphasis on local mitigation planning. It requires local governments to prepare and adopt jurisdiction-wide hazard mitigation plans as a condition to receiving Hazard Mitigation Grant Program (HMGP) project grants. Local governments must review and if necessary, update the mitigation plan annually to continue program eligibility.

Why develop a Mitigation Plan?

Planning ahead to lessen or prevent a disaster will reduce the human, economic, and environmental costs. The State of NH is vulnerable to many types of hazards, including floods, hurricanes, winter storms, wildfires, wind events, and earthquakes. All of these types of events can have significant economic, environmental, and social impacts. The full cost of the damage resulting from the impact of natural hazards – personal suffering, loss of lives, disruption of the economy, and loss of tax base – is difficult to quantify and measure.

D. SCOPE OF THE PLAN

The scope of the *Lempster Hazard Mitigation Plan* includes the identification of natural hazards affecting the Town, as identified by the Lempster Hazard Mitigation Committee. The hazards were reviewed under the following categories as outlined in the State of New Hampshire Hazard Mitigation Plan:

- Dam Failure
- Flooding
- Hurricane
- Tornado & Downburst
- Thunderstorm/Lightning/Hail
- Severe Winter Weather
- Earthquake
- Drought
- Extreme Heat
- Erosion
- Wildfire
- Natural Contaminants
- Hazardous Materials Spill

E. METHODOLOGY

Using the *Guide to Hazard Mitigation Planning for New Hampshire Communities* (2002), as developed by the Southwest Regional Planning Commission (SWRPC), the Lempster Hazard Mitigation Committee, in conjunction with the UVLSRPC, developed the content of the *Lempster Hazard Mitigation Plan* by tailoring the nine-step process set forth in the guidebook appropriate for the Town of Lempster. Many FEMA resources and multiple State and Federal websites were also used as well. The Committee held a total of

three posted meetings beginning in June 2008 and ending in August 2008. All meetings were posted inviting the general public and notices were sent to the Town Offices of neighboring towns to invite town officials. The public will continue to be involved in future revisions at meetings posted publicly. The Lempster Board of Selectmen adopted the Plan after FEMA conditional approval on February 25, 2009. Prior to the Town of Lempster approving the Plan, a public meeting was held to gain additional input from the citizens of Lempster and to raise awareness of the ongoing hazard mitigation planning process.

The following hazard mitigation meetings were vital to the development of this Plan:

June 16, 2008
July 10, 2008
July 31, 2008

To complete this Plan, the Hazard Mitigation Committee followed the following planning steps:

Step 1: Identify and Map the Hazards (June 2008)

Committee members identified areas where damage from natural disasters had previously occurred, areas of potential damage, and human-made facilities and infrastructure that were at risk for property damage and other risk factors. A GIS-generated base map provided by the UVLSRPC was used in the process.

Step 2: Determine Potential Damage (June 2008)

Committee members identified facilities that were considered to be of value to the Town for emergency management purposes, for provision of utilities and services, and for historic, cultural and social value. A GIS-generated map was prepared to show critical facilities identified by the Lempster Hazard Mitigation Committee. A summary listing of “Critical Facilities” is presented in Chapter IV. Costs were determined for losses for each type of hazard.

Step 3: Identify Mitigation Plans/Policies Already in Place (June 2008)

Using information and activities in the handbook, the Committee and UVLSRPC staff identified existing mitigation strategies which are already implemented in the Town related to relevant hazards. A summary chart and the results of this activity are presented in Chapter VI.

Step 4: Identify the Gaps in Protection/Mitigation (June 2008)

Existing strategies were then reviewed for coverage, effectiveness and implementation, as well as need for improvement. Some strategies are contained in the Emergency Action Plan and were reviewed as part of this step. The result of these activities is presented in Chapter VI.

Step 5: Determine Actions to be Taken (July 2008)

During an open brainstorming session, the Hazard Mitigation Committee developed a list of other possible hazard mitigation actions and strategies for the Town of Lempster. Ideas proposed included policies, planning, and public information. A list of potential mitigation strategies can be found in Chapter VII.

Step 6: Evaluate Feasible Options (July 2008)

The Hazard Mitigation Committee selected mitigation strategies from their list of potential strategies, and evaluated the strategies based on eight criteria derived from the criteria listed in the evaluation chart found on page 27 of the *Guide to Hazard Mitigation Planning for New Hampshire Communities*. The eight criteria used for evaluation of potential mitigation strategies are listed in Chapter VII. Each strategy was rated (high (3), average (2), or low (1)) for its effectiveness in meeting each of the eight criteria (e.g., Does the mitigation strategy reduce disaster damage?). Strategies were ranked by overall score for preliminary prioritization then reviewed again under step eight. The ratings of the potential mitigation strategies can be found in Chapter VII.

Step 7: Coordinate with other Agencies/Entities (Ongoing)

UVLSRPC staff reviewed the Lempster Master Plan. This was done in order to determine if any conflicts existed or if there were any potential areas for cooperation. Town staff that was involved in preparing the Emergency Operations Plan participated in the hazard mitigation meetings, to avoid duplication and to share information.

Step 8: Determine Priorities (July 2008)

The Committee reviewed the preliminary prioritization list in order to make changes and determine a final prioritization for new hazard mitigation actions and existing protection strategy improvements identified in previous steps. UVLSRPC also presented recommendations for the Committee to review and prioritize. These are provided in Chapter VIII.

Step 9: Develop Implementation Strategy (July 2008)

Using the chart provided under step nine of the *Guide to Hazard Mitigation Planning for New Hampshire Communities*, the Committee created an implementation strategy which included person(s) responsible for implementation (who), a schedule for completion (when), and a funding source and/or technical assistance source (how) for each identified hazard mitigation actions. The prioritized implementation schedule can be found in Chapter VIII.

Step 10: Adopt and Monitor the Plan

UVLSRPC staff compiled the results of steps one through nine in a draft document, as well as helpful and informative materials from the *State of New Hampshire Natural Hazard Mitigation Plan* (2004), which served as a resource for the *Lempster Hazard Mitigation Plan*. The process for monitoring and updating the Plan can be found in Chapter IX.

F. HAZARD MITIGATION GOALS

The Town of Lempster Hazard Mitigation Committee reviewed the hazard mitigation goals for the State of New Hampshire, and revised them for Lempster.

They are as follows:

1. To protect the general population, the citizens of the town and guests, from all natural and man-made hazards.
2. To reduce the potential impact of natural and man-made disasters on the town's critical support services, critical facilities, and infrastructure.
3. To reduce the potential impact of natural and man-made disasters on the town's economy.
4. To reduce the potential impact of natural and man-made disasters on the town's natural environment.
5. To reduce the potential impact of natural and man-made disasters on the town's specific historic treasures and interests as well as other tangible and intangible characteristics which add to the quality of life of the citizens and guests of the town.
6. To identify, introduce and implement cost effective hazard mitigation measures so as to accomplish the town's goals (above) and to raise the awareness and acceptance of hazard mitigation.

G. ACKNOWLEDGEMENTS

The following people participated in the development of this plan as the Hazard Mitigation Committee:

- James Richards, Emergency Management Director
- Dave Loring, Fire Chief
- Mary Grenier, Selectman
- Barbara Chadwick, Rescue Director
- Renee LaPorte, Road Agent
- Victoria Davis, UVLSRPC

The Hazard Mitigation Committee was composed of local officials, citizens of Lempster and a staff representative of the UVLSRPC for meeting facilitation and plan development. Neighboring communities, agencies, businesses, academia, non-profits and other interested parties were invited to participate through the public posting of meeting times and agendas or through invitation. Historical information, relevant data and potential future mitigation strategies were contributed by all parties involved in the planning process. For a record of all meeting topics see Appendix C: Meeting Documentation. The staff representative of the UVLSRPC gathered all information from local officials, agency representatives and public input and compiled the information to develop the Plan.

II. COMMUNITY PROFILE

A. INTRODUCTION¹

The Town of Lempster is located in Sullivan County, north of the Town of Marlow and north and west of the Town of Washington. The Town encompasses 20,480 acres or 32 square miles in area. The Town can be generally characterized as high, hilly, wooded, and rural with several water bodies and large acreages of forest cover mixed with occasional individual homes and groups of houses along the road system. Approximately 8% of the Town is conserved land including the town forest. High elevations and steep slopes have encouraged the preservation of forest tracts particularly in the eastern portion of town between Silver Mountain and Lempster Mountain.

Lempster is within three watersheds: the western portion of town is within the Cold River Watershed, the northeastern portion of town is within the Sugar River Watershed, and the southeastern portion of town is within the Upper Ashuelot River Watershed. The Cold River flows through the northwestern corner of the town. There are also several brooks including Ways, Cold, Beaver, Giles, Dodge, Hamlin, and Richardson Brooks. Several lakes and ponds are scattered throughout the town: Cold Brook Pond (15 acres), Dodge Pond (16.5 acres, el. 1,203'), Hurd Pond (11 acres, el. 1,460'), Long Pond (120 acres, el. 1,548'), and Sand Pond (159 acres, el. 1,543 acres, partially in Marlow) and other unnamed ponds.

Town facilities include the Town Hall (Meeting House) which is listed on the National Register of Historic Places. The Town Offices Building provides for administrative space, storage for the Historical Society, and a small room for public meetings. It is anticipated that the town offices will be moved to a new location on Route 10 and will include town offices, fire department, and an office for the Sullivan County Sheriff's Department personnel while in Lempster. The new facility will also include an area for a public shelter. The Sullivan County Sheriff's Department is contracted to work in Lempster for 40 hours a week. The State Police are utilized during other times. The Miner Memorial Library is a historic structure located in East Lempster Village. There is no police station though space will be provided in the proposed new town offices building. The Lempster Fire Station is centrally located on Lempster Street. The Lempster Rescue Squad houses their equipment at the Fire Department. The Southwest Fire Mutual Aid in Keene dispatches for 78 towns including Lempster. The Lempster Highway Department facility is located on Olds Road at the town pit. The Town's solid waste facility is located on Lovejoy Road. The Goshen-Lempster School is located off Route 10 in East Lempster. It is owned by the cooperative school district and serves grades K-8. High school students choose schools outside of Lempster. The public road system

¹ Lempster Master Plan (1987)

consists of about 59 miles including about 15 miles of State roads, 34 miles of Town maintained roads, and 10 miles of Class VI unmaintained roads. The Town does not have public water or sewer and has no plans for these in the near future.

Figure II-1: Locus Map of Lempster



Lempster is currently not a participating member of the National Flood Insurance Program (NFIP). The Town of Lempster proposes to become a participating member of the NFIP. Updated maps for all towns within Sullivan County were finalized in 2006. These maps identified those areas in the Town of Lempster that fall within Zone A, which are Special Flood Hazard Areas inundated by the 100-year flood, with base flood elevations *not* determined. Examination of the floodplain maps indicates that there are relatively few areas that would be inundated by a 100-year flood. However, the Lempster Hazard Mitigation Committee identified additional areas which have been flooded on a regular basis. The Special Flood Hazard Areas and the Committee identified flood areas are shown in Appendix D.

B. DEVELOPMENT TRENDS

Examination of the U.S. Census Data indicates that population grew by 48% from 1980 to 1990 going from a population of 532 to 788. From 1990-2000, population increased by 20%. Using NH Office of Energy and Planning 2005 population estimate of 1,060 for the Town, population grew by approximately 12% between 2000 and 2005.

The predominant land use in Lempster is residential. Most of this development is in year-round single family homes. The greatest density of development occurs along Route 10. The remaining development occurs along other maintained road frontage. Proposed developments include a relatively new three-lot subdivision with one house built on the south side of Stage Road; a five-lot proposed subdivision on Bean Mountain Pond; and a 36-lot approved, but undeveloped subdivision off Mountain Road. These developments are not in any site specific hazard areas.

In 2008, 12 wind mills of about 80 meters in height will be installed by Lempster Wind LLC off Earl's Lane in the northeast portion of Town. The energy will be sold to Public Service of New Hampshire. This is on leased private land, and the power will be underground from the higher elevation to Bean Mountain Road. It is not anticipated that any site specific hazards will impact these towers. It is hoped that the design of the towers will withstand any major wind or ice storm events.

Several factors have played, and will continue to play, an important role in the development of Lempster. These include the existing development pattern and availability of land for future development; the present road network; physical factors such as steep slopes, soil conditions, wetlands, and aquifers; and, land set aside for conservation. These factors have an impact, both individually and cumulatively, on where and how development occurs. It should be noted that the maintained roads are located primarily in the eastern half of the Town.

There are many undeveloped large parcels in Lempster. However, due to steep slopes and other development constraints such as lack of road access, many areas of Town are not developable. However, due to growth pressures in the region, the Town may become a desirable location for future development. Review and amendment of land use regulations will help the Town determine the density and location of future development taking into account many factors including known hazard event areas such as flood zones.

The following tables provide the current population and number of housing units in Lempster as well as projections. The average number of persons per housing unit was 2.5 in 2000. In 2000, there were 190 vacant units—this includes 159 seasonal/recreational units probably used for hunting and vacation. These were assumed to be included in the U.S. Census total housing units as single-family units.

Table II-1: AREA POPULATION TRENDS

Area	1970	1980	Avg. Annual Growth 70-80	1990	Avg. Annual Growth 80-90	2000	Avg. Annual Growth 90-00	30 Yr. Avg. Annual Rate
Lempster	360	637	5.87%	947	4.04%	971	0.25%	3.36%
Acworth	459	590	2.54%	776	2.78%	836	0.75%	2.02%
Goshen	395	549	3.35%	742	3.06%	741	-0.01%	2.12%
Unity	709	1092	4.41%	1341	2.08%	1530	1.33%	2.60%
Washington	248	411	5.18%	628	4.33%	895	3.61%	4.37%
Sullivan County	30,949	36,063	1.54%	38,592	0.68%	40,458	0.47%	0.90%
New Hampshire	737,681	920,610	2.24%	1,109,252	1.88%	1,235,786	1.09%	1.73%

Source: US Census

Table II-2: POPULATION PROJECTIONS FOR LEMPSTER

	1970	1980	1990	2000	2010	2020	2030
Population	360	637	947	971	1180	1310	1400
Decade Change in Population		.77	.49	.03	.22	.11	.07

Source: 1970 – 2000 US Census & 2010 – 2030 NH Office of Energy & Planning

Table II-3 : OCCUPIED HOUSING UNIT PROJECTIONS BY TYPE FOR LEMPSTER

	2000	2010	2020	2030
Single-Family Units (.73)	282	345	383	409
Multi-Family Units (.02)	8	9	11	11
Mobile Home Units (.25)	97	118	130	140
TOTAL OCCUPIED UNITS	387	472	524	560

Source: US Census PHC 2-31 Table 18 for unit type proportions in 2000; assumed all vacant units are single-family; projected totals based on persons/occupied unit (2.5)

Table II-4: TOTAL HOUSING UNIT PROJECTIONS BY OCCUPANCY FOR LEMPSTER

	2000	2010	2020	2030
Seasonal or Vacation Vacant (.28)	159	199	216	231
Other Vacant Units (.05)	31	35	39	41
Occupied Units (.67)	387	482	516	552
TOTAL ALL UNITS	577	709	771	824

Source: US Census PHC-1-31 Table 12 for 2000; total units projected as percentage of occupied units; other units projected in proportion of total in 2000.

III. HAZARD IDENTIFICATION

The Lempster Hazard Mitigation Committee reviewed the list of hazards provided in the *State of New Hampshire Hazard Mitigation Plan*, and some hazard history for the State of New Hampshire and Sullivan County in particular. A list of past hazard events in Lempster, Sullivan County, and the State of New Hampshire can be found in the following discussion and tables. After reviewing this information and the Emergency Operations Plan, the Committee conducted a Risk Assessment. The resulting risk designations are provided in the heading of each hazard table below as well as a more detailed discussion further into this chapter.

A. WHAT ARE THE HAZARDS IN LEMPSTER?

Lempster is prone to a variety of natural and human-made hazards. The hazards that Lempster is most vulnerable to were determined through gathering historical knowledge of long time residents and town officials; research into the CRREL Ice Jam Database, FEMA and NOAA documented disasters, and local land use restrictions; and from the input of representatives from state agencies (NH HSEM). The hazards affecting the Town of Lempster are dam failure, flooding, hurricane, tornado, thunderstorm (including lightning and hail), severe wind, extreme winter weather (including extreme cold and ice storms), snow avalanche, earthquake, landslide, erosion, drought, extreme heat, wildfire, radon, and hazardous materials spills. Each of these hazards and the past occurrences of these hazards are described in the following sections. Hazards that were eliminated from assessment are those that have not had a direct impact on the Town of Lempster and are not anticipated to have an impact as determined by the Hazard Mitigation Planning Committee, representatives from state agencies and citizens of the Town of Lempster. Eliminated hazards include Land Subsidence, Expansive Soils, Landslides, and Snow Avalanches.

B. DESCRIPTIONS OF HAZARDS

An assessment of each hazard relevant to Lempster is provided below. An inventory of previous and potential hazards is provided. Past events are shown in the following tables and the potential for future events is then discussed. The “risk” designation for each hazard was determined after evaluations discussed later in this chapter.

- Dam Failure
- Flooding
- Hurricane
- Tornado & Downburst
- Thunderstorm/Lightning/Hail
- Severe Winter Weather
- Earthquake
- Drought
- Extreme Heat
- Erosion
- Wildfire
- Natural Contaminants
- Hazardous Materials Spill

Dam Failure

Dam failure results in rapid loss of water that is normally held by the dam. These kinds of floods pose a significant threat to both life and property. Appendices G and H provide maps with the location of dams in Lempster.

Past Dam Failure Events

There has been one dam failure which impacted the Town of Lempster. This was at the Cold Brook Pond Dam about 10 years ago. This event took out bridges and flooded along Route 10. The dam has since been replaced. Three dams are designated by the State as “low hazard potential” which means because of its location and size, a dam failure would result in no possible loss of life, low economic loss to structures or property; possible structural damage to public roads; the release of liquid industrial, agricultural, or commercial wastes under certain conditions; and reversible losses to environmentally-sensitive areas. Three dams were designated as “non-menace” which means because of its location and size, a dam failure would not result in probable loss of life or loss to property.

Table III-1: DAMS

DAMS (DAM FAILURE LOW/MEDIUM RISK)									
Dam #	Class	Dam Name	Water Body	Owner	Status	Type	Impoundment Area in Acres	Height of Dam (Ft)	Drainage Area in Acres
136.01	L	Long Pond Dam	Tr Ashuelot River	Town of Lempster	Active	E	120	10	1.46
136.02		Cold River Lower Dam	Cold River	L May Wheeler	Ruins	T/S	0	10	0
136.03		Cold River	Cold River	D Kittredge & B Leavy	Ruins		0	0	0
136.04		Cold River Sawmill	Cold River	L May Wheeler	Breached	E	0	0	0
136.05		Cold River Dam	Cold River	Mrs. James Delaney	Breached	E	0	7	7.65
136.06	NM	Tr Dodge Pond Br	Tr Dodge Pond Brook	D Cunningham (deceased)	Active	S/E	0.5	5.5	0
136.07		S Branch Sugar River	S Branch Sugar River	J Wirkkala & S Dow	Ruins		0	0	0
136.08	S	Cold Brook Pond Dam	Cold Brook	D & P Bonn	Active	C	13	19	1.36
136.09	NM	Tr Gile Brook Dam	Tr Gile Brook	John A Wirkkala	Active	E	0.5	6	0
136.10	NM	Tr Dodge Brook Dam	Tr Dodge Pond Brook	D Cunningham (deceased)	Active	S/E	0.25	9	0
136.11	L	Richardson Br Pd	Richardson Brook	E O’Grady Trust	Active	E	10	12	1

DAMS (DAM FAILURE LOW/MEDIUM RISK)									
Dam #	Class	Dam Name	Water Body	Owner	Status	Type	Impoundment Area in Acres	Height of Dam (Ft)	Drainage Area in Acres
136.12	L	High View Wildlife Pond Dam	Natural Swale	D&C Kelsey	Active	E	4.5	27	0.18
136.13		Leete Wildlife Pond	Natural Swale	Preston Leete	Not Built	E	0.54	0	0.02
136.14	NM	High View Wildlife Pond	Natural Runoff	Kevin Onnela	Active	E	2.5	11	0.13
136.15	NM	Fire Pond	Natural Swale	Gary Tampone	Active	E	0.5	6	0
136.16	NM	Fire Pond	Hamlin Brook	Jordan Grace	Active	E	0.23	7	0
136.17		Gallup Marsh	Unnamed Brook	NH Fish & Game	Breached	E	20	5	0.8
136.18	NM	Conc/Beaver Dam	Unnamed Stream	Richard Grinnell	Active	C	1	6	200
136.19	NM	Brown Pond	Unnamed Stream	Leonard Brown	Active	C	0.3	4.5	200
136.20	NM	Lyme Timber Pond	Unnamed Pond	Lyme Timber Co.	Active	E	10	8.5	0.20
136.21		Jolly Roger Snowmobile Pond	Unnamed Stream	Marc Gagnon	Not Built	E	4.7	6.5	0.37

Source: 136.19e: Dam information provided by the NH Dam Bureau in 2007; Significant & High Hazard dams must have an emergency action plan. The State of 136.20 New Hampshire classifies dams into the following four categories: Blank- Non-Active; NM – Non-menace; L – Low hazard; S – Significant hazard; H – High Hazard 136.21 Type: S=stone; C=concrete; E=earth

Potential Future Dam Failure Damage

Although there are 21 dams in Lempster, there is only one “significant” hazard dam in Lempster. This is the Cold Brook Pond Dam on Cold Brook. An emergency action plan is required for any of these dams to delineate inundation areas. The map of critical facilities and hazard areas (Appendix D) includes the inundation area of the Cold Brook Pond Dam from the Emergency Action Plan. There is also the May Pond Dam outside of Lempster in the Town of Washington which is listed as significant hazard potential which could impact the Town of Lempster. There are no buildings within this inundation area in Lempster. The inundation area for this dam is included on the critical facilities and hazard areas map (Appendix D). The Committee determined that dam failure is a low/medium risk in Lempster.

Flooding

Flooding is the 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 inadequate local drainage. Floods can cause loss of life, property damage, crop/livestock damage, and water supply contamination, and can disrupt travel routes on roads and bridges.

Floods in the Lempster area are most likely to occur in the spring due to the increase in rainfall and snowmelt; however, floods can occur at any time of the year. A sudden winter thaw or a major summer downpour can cause flooding. Floodplains indicate areas potentially affected by flooding. There are several types of flooding.

100-Year Floods The term “100-year flood” does not mean that flooding will occur once every 100 years, but is a statement of probability to describe how one flood compares to others that are likely to occur. What it actually means is that there is a one percent chance of a flood in any given year. These areas were mapped for all towns in New Hampshire by FEMA. Appendix D displays the “Special Flood Hazards Areas.”

River Ice Jams Ice forming in riverbeds and against structures presents significant hazardous conditions storm waters encounter these ice formations which may create temporary dams. These dams may create flooding conditions where none previously existed (i.e., as a consequence of elevation in relation to normal floodplains). Additionally, there is the impact of the ice itself on structures such as highway and railroad bridges. Large masses of ice may push on structures laterally and/or may lift structures not designed for such impacts. A search on the Cold Regions Research and Environmental Laboratory (CRREL) and discussion with the Lempster Committee revealed that there is no history of ice jam related events in the Town.

Rapid Snow Pack Melt Warm temperatures and heavy rains cause rapid snowmelt. Quickly melting snow coupled with moderate to heavy rains are prime conditions for flooding.

Severe Storms Flooding associated with severe storms can inflict heavy damage to property. Heavy rains during severe storms are a common cause of inland flooding.

Beaver Dams and Lodging Flooding associated with beaver dams and lodging can cause road flooding or damage to property.

Bank Erosion and Failure As development increases, changes occur that increase the rate and volume of runoff, and accelerate the natural geologic erosion process. Erosion typically occurs at the outside of river bends and sediment deposits in low velocity areas at the insides of bends. Resistance to erosion is dependent on the riverbank’s protective cover, such as vegetation or rock riprap, or its soils and stability. Roads and bridges are also susceptible to erosion.

Past Flooding Events

In 2006 several roads which are not designated areas of 100-year flood were washed out. In addition, the Committee delineated areas where flooding has occurred in recent years. Appendix D is a map which shows the locally identified flood areas. Appendix D also shows the Flood Insurance Rate Map of Special Flood Hazard Areas. The following tables provide a list of floods in the State, County, and Lempster.

Table III-2: FLOODING – FEMA DISASTER DECLARATIONS

FLOODING – FEMA DISASTER DECLARATIONS				
Hazard	Date	Location	Description of Areas Impacted	Damages
Flood	March 11-21, 1936	NH State	Damage to Road Network. Flooding caused by simultaneous heavy snowfall totals, heavy rains and warm weather. Run-off from melting snow with rain overflowed the rivers	Unknown
Flood / Severe Storm	April 16, 1987	Cheshire, Carroll, Grafton, Hillsborough, Merrimack, Rockingham, & Sullivan Counties, NH	FEMA Disaster Declaration # 789- DR (Presidentially Declared Disaster). Flooding of low-lying areas along river caused by snowmelt and intense rain.	\$4,888,889 in damage.
Flood	August 7-11, 1990	Belknap, Carroll, Cheshire, Coos, Grafton, Hillsborough, Merrimack & Sullivan Counties, NH	FEMA Disaster Declaration # 876. Flooding caused by a series of storm events with moderate to heavy rains.	\$2,297,777 in damage.
Flood	October 29, 1996	Grafton, Hillsborough, Merrimack, Rockingham, Strafford & Sullivan Counties, NH	FEMA Disaster Declaration # 1144- DR. Flooding caused by heavy rains.	\$2,341,273 in damage.
Flood	October 7-18, 2005	Cheshire, Grafton, Merrimack, Sullivan, and Hillsborough Counties, NH	FEMA Disaster Declaration # 1610. Severe storms and flooding.	\$3,000,000 in damages.
Flood	October-November 2005	Grafton, Hillsborough, Merrimack, Rockingham, Strafford & Sullivan counties	FEMA Disaster Declaration # DR-1144- NH	Unknown
Flood	April 16, 2007	All counties, NH	FEMA Disaster Declaration # 1695. Severe storms and flooding; 2,005 home owners and renters applied for assistance in NH.	\$27,000,000 in damages

Table III-3: FEMA FLOOD INSURANCE RATE MAP SPECIAL FLOOD HAZARD AREAS

Location of Special Flood Hazard Area	Number of Structures in Area	Comments
Cold River	Two houses	Narrow flood area in northwest corner of town
Dodge Brook	17 houses, 7 mobile homes, and a boys scout camp	Along east side of Route 10
Ashuelot River and Richardson Brook	One house	Southeast portion of town

Table III-4: LOCALLY DEFINED FLOODING

LOCALLY DEFINED FLOODING – MEDIUM RISK			
Date	Location	Description of Areas	Damages
Every spring	Lovejoy Road just west of Route 10	Brook at road	Water over road every spring
	Keyes Hollow Road (Class VI) from intersection with Coffin Hill Road and town line with Acworth	Flooding over road from beaver activity in wetland along river	Not passable
	2 nd NH Turnpike (State road)	Brook crossing	Water over road when heavy rain washes edges
Every few years	Lempster Street just north of Lempster Village (state road)	Brook crossing	Floods every few years when washes edges
	Grandview Road	Ways Brook crossing	Washes downhill side of road; no buildings; will install larger culvert in 2008
April 2007	Lovejoy Road between Route 10 and Charlestown Turnpike	Brook crossing and traverses along road; one house in area	Road washes during heavy storms; potential threat to one house
October 2005	Long Pond Road	Bridge at Richardson Brook crossing	bridge isolating houses to the south
	Mountain Road	Bridge near intersection w/ Long Pond Road	Washed out road on each side of bridge
	Coach Road	Brook crossing	Lost road when dam overflowed and took out culverts
	Schrenk Road	Giles Brook crossing	Lost bridge; replaced with FEMA funds
	Mill Road	Giles Brook crossing	Replaced fill around culvert
	Mill Road	Ways Brook Crossing	No culvert; water goes over road
	Intersection of Hurd Road and Mill Road (Class VI)	Giles Brook crossing	Took out road
Intersection of Keyes Hollow Road and Bugbee Drive (Class VI)	Cold River crossing	Washed out on both sides of bridge; no buildings but eliminated access to some houses	

Potential Future Flooding Events

Future flooding is likely as noted in the above table based upon local knowledge of past flood events. Only one house is in the locally determined flooding areas. A boys scout camp and potentially 27 homes are located within the FEMA determined flood areas. According to the State's Mitigation Plan, Sullivan County has a high hazard risk for flooding. The Committee determined flooding is a medium risk in Lempster.

Hurricane

A hurricane is an intense tropical weather system with a well-defined circulation and maximum sustained winds of 74 mph (64 knots) or higher. Hurricane winds blow in a large spiral around a relative calm center known as the "eye." The "eye" is generally 20 to 30 miles wide, and the storm may extend outward 400 miles. As a hurricane nears land, it can bring torrential rains, high winds, and storm surges. A single hurricane can last for more than 2 weeks over open waters and can run a path across the entire length of the eastern seaboard. August and September are peak months during the hurricane season that lasts from June 1 through November 30. Damage resulting from winds of this force can be substantial, especially considering the duration of the event, which may last for many hours (*NH Hazard Mitigation Plan*; FEMA website).

Past Hurricane Events

There have been several hurricanes over the years which have impacted New England and New Hampshire. These are listed below. The 1938 hurricane directly impacted Lempster according to the Committee member recollections.

Table III-5: HURRICANES & TROPICAL STORMS

HURRICANES AND TROPICAL STORMS – LOW/MEDIUM RISK				
Hazard	Date	Location	Description of Areas Impacted	Damages
Hurricane	August, 1635	n/a		Unknown
Hurricane	October 18-19, 1778	n/a	Winds 40-75 mph	Unknown
Hurricane	October 9, 1804	n/a		Unknown
Gale	September 23, 1815	n/a	Winds > 50mph	Unknown
Hurricane	September 8, 1869	n/a		Unknown
Hurricane	September 21, 1938	Southern New England	Flooding caused damage to road network and structures. 13 deaths, 494 injured throughout NH. Disruption of electric and telephone services for weeks. 2 Billion feet of marketable lumber blown down. Total storm losses of \$12,337,643 (1938 dollars). 186 mph maximum winds.	Unknown
Hurricane (Carol)	August 31, 1954	Southern New England	Category 3, winds 111-130 mph. Extensive tree and crop damage in NH, localized flooding	Unknown
Hurricane (Edna)	September 11, 1954	Southern New England	Category 3 in Massachusetts. This Hurricane moved off shore but still cost 21 lives and \$40.5 million in damages throughout New England. Following so close to Carol it made recovery difficult for some areas. Heavy rain in NH	Unknown
Hurricane (Donna)	September 12, 1960	Southern and Central NH	Category 3 (Category 1 in NH). Heavy flooding in some parts of the State.	Unknown
Tropical Storm (Daisy)	October 7, 1962	Coastal NH	Heavy swell and flooding along the coast	Unknown
Tropical Storm (Doria)	August 28, 1971	New Hampshire	Center passed over NH resulting in heavy rain and damaging winds	Unknown
Hurricane (Belle)	August 10, 1976	Southern New England	Primarily rain with resulting flooding in New Hampshire. Category 1	Unknown

HURRICANES AND TROPICAL STORMS – LOW/MEDIUM RISK				
Hazard	Date	Location	Description of Areas Impacted	Damages
Hurricane (Gloria)	September, 1985	Southern New England	Category 2, winds 96-110 mph. Electric structures damaged; tree damages. This Hurricane fell apart upon striking Long Island with heavy rains, localized flooding, and minor wind damage in NH	Unknown
Hurricane (Bob)	August 19, 1991	Southern New England; caused flooding in Lempster	Structural and electrical damage in region from fallen trees. 3 persons were killed and \$2.5 million in damages were suffered along coastal New Hampshire. Federal Disaster FEMA-917-DR	Unknown
Hurricane (Edouard)	September 1, 1996	Southern New England	Winds in NH up to 38 mph and 1 inch of rain along the coast. Roads and electrical lines damaged	Unknown
Tropical Storm (Floyd)	September 16-18, 1999	Southern New England	FEMA DR-1305-NH. Heavy Rains	Unknown
Hurricane (Katrina)	August 29, 2005 & continuing	East Coast of US and more	FEMA-3258-EM. Heavy rains and flooding devastating SE US	Unknown
Tropical Storm (Tammy)	October 5-13, 2005	East Coast of US	Remnants of Tammy contributed to the October 2005 floods which dropped 20 inches of rain in some places in NH.	Unknown

Potential Future Hurricane Damage

Hurricane events will affect the entire town. It is impossible to predict into the future what damage will occur in the town. According to the State’s mitigation plan, Sullivan County has a medium risk for hurricanes. The Committee determined the hurricane risk to be low/medium in Lempster.

Tornado & Downburst

“A tornado is a violent windstorm characterized by a twisting, funnel shaped cloud. These events are spawned by thunderstorms and, occasionally by hurricanes, and may occur singularly or in multiples. They develop when cool air overrides a layer of warm air, causing the warm air to rise rapidly. Most vortices remain suspended in the atmosphere. Should they touch down, they become a force of destruction.” (*NH Hazard Mitigation Plan*). The Fujita Scale is the standard scale for rating the severity of a tornado as measured by the damage it causes. Most tornadoes are in the F0 to F2 Class. Building to modern wind standards provides significant

property protection from these hazard events. New Hampshire is located within Zone 2 for Design Wind Speed for Community Shelters, which suggests that buildings should be built to withstand 160 mph winds.

Significantly high winds occur especially during tornadoes, hurricanes, 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 severe wind occurrences. 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 fall into two categories: 1. Microburst, which covers an area less than 2.5 miles in diameter, and 2. Macrobust, which covers an area at least 2.5 miles in diameter. Most downbursts occur with thunderstorms, but they can be associated with showers too weak to produce thunder.

Past Tornado & Downburst Events

The following table displays tornadoes occurring in Sullivan County between 1950 and 1995 as provided by the “Tornado Project” (www.tornadoproject.com) and the *NH Natural Hazard Mitigation Plan*. The Committee recalled that three to four years ago a severe microburst knocked down stands of trees in Lempster between Hurd Road and Route 10.

Table III-6: TORNADOES IN SULLIVAN COUNTY

TORNADOS – LOW/MEDIUM RISK Sullivan County		
Date	Fujita Scale	Damages
October 24, 1955	F0	No deaths or injuries; costs unknown
July 9, 1962	F0	No deaths or injuries; costs unknown
July 9, 1962	F1	No deaths or injuries; costs unknown
July 18, 1963	F1	No deaths or injuries; costs unknown

Potential Future Tornado and Downburst Damage

It is impossible to predict where a tornado or downburst will occur or what damage it will inflict. The Lempster Committee does not recall tornadoes in Lempster. The FEMA website places the State of NH in the Zone II Wind Zone which provides that a community shelter should be built to a 160 mph “design wind speed.” According to the State’s mitigation plan, Sullivan County has a medium risk for tornadoes. The Committee determined there is a low/medium risk for tornadoes and downbursts in Lempster.

Thunderstorms

A thunderstorm is a rain shower during which you hear thunder. Since thunder comes from lightning, all thunderstorms have lightning. A thunderstorm is classified as "severe" when it contains one or more of the following: hail three-quarter inch or greater, winds gusting in excess of 50 knots (57.5 mph), tornado. Hail is a form of precipitation that occurs when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere where they freeze into ice. When the hail particle becomes heavy enough to resist the updraft, it falls to the ground. The resulting wind and hail can cause death, injury, and property damage.

An average thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Winter thunderstorms are rare because the air is more stable, strong updrafts cannot form because the surface temperatures during the winter are colder.

Lightning is a giant spark of electricity that occurs within the atmosphere or between the atmosphere and the ground. As lightning passes through the air, it heats the air to a temperature of about 50,000 degrees Fahrenheit, considerably hotter than the surface of the sun. Fires are a likely result of lightning strikes, and lightning strikes can cause death, injury, and property damage. It is impossible to predict where lightning will strike. There have probably been lightning strikes in Lempster, but there is no record of damage.

Past Thunderstorm Events

There have probably been lightning strikes in Lempster, but there is no record of damage. A thunderstorm with lightning or hail could impact the entire town. There have been no recalled hailstorms Lempster. In 2007, a small wildfire was started by a lightning strike above Blueberry Lane in the northeast portion of towns. There was also a house fire near Long Pond Dam. The town offices lost computer battery backups and satellite due to lightning last summer. There seems to be more of a lightning threat along the high areas between South Road and Silver Mountain.

Potential Future Thunderstorm Damage

It is inevitable that thunderstorms will occur in Lempster's future. Lightning, hail, or wind from a thunderstorm could impact the entire town. It is not possible to estimate possible damage. According to the State's mitigation plan, Sullivan County has a medium risk of a lightning hazard. The risk for future thunderstorm damage was determined by the Committee to be medium risk in Lempster.

Severe Winter Weather

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

Heavy Snow Storms A heavy snowstorm is generally considered to be one which deposits four or more inches of snow in a twelve-hour period... A blizzard is a winter storm characterized by high winds, low temperatures, and driving snow- according to the official definition given in 1958 by the U.S. Weather Bureau, the winds must exceed 35 miles per hour and the temperatures must drop to 20°F (-7°C) or lower. Therefore, intense Nor'easters, which occur in the winter months, are often referred to as blizzards. The definition includes the conditions under which dry snow, which has previously fallen, is whipped into the air and diminishes visual range. Such conditions, when extreme enough, are called "white outs."

Ice Storms Freezing rain occurs when snowflakes descend into a warmer layer of air and melt completely. When these liquid water drops fall through another thin layer of freezing air just above the surface, they don't have enough time to refreeze before reaching the ground. Because they are "supercooled," they instantly refreeze upon contact with anything that is at or below 0 degrees C, creating a glaze of ice on the ground, trees, power lines, or other objects. A significant accumulation of freezing rain lasting several hours or more is called an ice storm. This condition may strain branches of trees, power lines and even transmission towers to the breaking point and often creates treacherous conditions for highway travel and aviation. Debris impacted roads make emergency access, repair and cleanup extremely difficult.

"Nor'easters" Nor'easters can occur in the eastern United States any time between October and April, when moisture and cold air are plentiful. They are known for dumping heavy amounts of rain and snow, producing hurricane-force winds, and creating high surfs that cause severe beach erosion and coastal flooding. A Nor'easter is named for the winds that blow in from the northeast and drive the storm up the east coast along the Gulf Stream, a band of warm water that lies off the Atlantic coast.

There are two main components to a Nor'easter: Gulf Stream low-pressure system (counter-clockwise winds) generate off the coast of Florida. The air above the Gulf Stream warms and spawns a low-pressure system. This low circulates off the southeastern U.S. coast, gathering warm air and moisture from the Atlantic. Strong northeasterly winds at the leading edge of the storm pull it up the east coast. As the strong northeasterly winds pull the storm up the east coast, it meets with cold Arctic high-pressure system (clockwise winds) blowing down from Canada. When the two systems collide, the moisture and cold air produce a mix of precipitation.

Winter conditions make Nor'easters a normal occurrence, but only a handful actually gather the force and power to cause problems inland. The resulting precipitation depends on how close you are to the converging point of the two storms. Nor'easter events which occur toward the end of a winter season may exacerbate the spring flooding conditions by depositing significant snow pack at a time of the season when spring rains are poised to initiate rapid snow pack melting.

Past Extreme Winter Weather Events

The following table provides a list of past extreme winter weather events in New Hampshire and Lempster. An additional concern is the 2nd NH Turnpike frost heaves every spring. This is a State road, but the Town is very concerned about the hazard of this road in the spring as the frost heaves turn the road into a dangerous rollercoaster.

Table III-7: SEVERE WINTER WEATHER

SEVERE WINTER WEATHER/ICE STORMS – MEDIUM RISK				
Hazard	Date	Location	Description of Areas Impacted	Damages
Ice Storm	December 17-20, 1929	New Hampshire	Unprecedented disruption and damage to telephone, telegraph and power system. Comparable to 1998 Ice Storm (see below)	Unknown
Blizzard	February 14-17, 1958	New Hampshire	20-30 inches of snow in parts of New Hampshire	Unknown
Snow Storm	March 18-21, 1958	New Hampshire	Up to 22 inches of snow in south central NH	Unknown
Snow Storm	December 10-13, 1960	New Hampshire	Up to 17 inches of snow in southern NH	Unknown
Snow Storm	January 18-20, 1961	New Hampshire	Up to 25 inches of snow in southern NH	Unknown
Snow Storm	February 2-5, 1961	New Hampshire	Up to 18 inches of snow in southern NH	Unknown
Snow Storm	January 11-16, 1964	New Hampshire	Up to 12 inches of snow in southern NH	Unknown
Blizzard	January 29-31, 1966	New Hampshire	Third and most severe storm of 3 that occurred over a 10-day period. Up to 10 inches of snow across central NH	Unknown
Snow Storm	December 26-28, 1969	New Hampshire	Up to 41 inches of snow in west central NH	Unknown
Snow Storm	February 18-20, 1972	New Hampshire	Up to 19 inches of snow in southern NH	Unknown
Snow Storm	January 19-21, 1978	New Hampshire	Up to 16 inches of snow in southern NH	Unknown

SEVERE WINTER WEATHER/ICE STORMS – MEDIUM RISK				
Hazard	Date	Location	Description of Areas Impacted	Damages
Blizzard	February 5-7, 1978	New Hampshire	New England-wide. Up to 25 inches of snow in central NH	Unknown
Snow Storm	February, 1979	New Hampshire	President's Day storm	Unknown
Ice Storm	January 8-25, 1979	New Hampshire	Major disruptions to power and transportation	Unknown
Snow Storm	April 5-7, 1982	New Hampshire	Up to 18 inches of snow in southern NH	Unknown
Ice Storm	February 14, 1986	New Hampshire	Fiercest ice storm in 30 yrs in the higher elevations in the Monadnock region. It covered a swath about 10 miles wide from the MA border to New London NH	Unknown
Extreme Cold	November-December, 1988	New Hampshire	Temperature was below 0 degrees F for a month	Unknown
Ice Storm	March 3-6, 1991	New Hampshire	Numerous outages from ice-laden power lines in southern NH; access to Lempster Mountain area was impossible	Unknown
Snow Storm	1997	New Hampshire	Power outages throughout Lempster due to heavy snowfall	Unknown
Ice Storm	January 15, 1998	New Hampshire; Substantial power outages in Lempster	Federal disaster declaration DR-1199-NH, 20 major road closures, 67,586 without electricity, 2,310 without phone service, \$17+ million in damages to Public Service of NH alone	Unknown
Snow Storm	2000	Regional; entire town of Lempster	Heavy snow; building roof collapsed in Lempster crushing a fire truck	Unknown
Ice Storm	2004	Regional	Ice storm resulted in many trees down and loss of power.	Unknown

Potential Future Severe Winter Damage:

There is the potential for severe winter damage every year. The event would affect the entire town. The Dodge Hollow area may be particularly impacted due to its topography. Ice storms cause downed trees and limbs along South Road providing fuel for wildfires. The Silver Mountain area has little access due to logging roads being blocked by downed trees possibly from past ice storms. According to the State’s mitigation plan, Sullivan County has a high risk for severe winter weather. The Committee determined severe winter weather to be a medium risk in Lempster.

Earthquake

The following is a list of earthquakes which have impacted New England, New Hampshire, and Lempster.

Table III-8: EARTHQUAKES

EARTHQUAKES – LOW/MEDIUM RISK			
Date	Location	Magnitude	Damage
1638	Central NH	6.5-7	
October 29, 1727	Off NH/MA coast	NA	Widespread damage Massachusetts to Maine: cost unknown
December 29, 1727	Off NH/MA coast	NA	Widespread damage Massachusetts to Maine: cost unknown
November 18, 1755	Cape Ann, MA	6.0	Much damage: cost unknown
1800s	Statewide	83 felt earthquake in NH	Unknown
1900s	Statewide	200 felt earthquake in NH	Unknown
March 18, 1926	Manchester, NH	Felt in Hillsborough Co	Unknown
Dec 20, 1940	Ossipee, NH	Both earthquakes 5.5	Damage to homes, water main rupture: cost unknown.
December 24, 1940	Ossipee, NH	NA	Unknown
December 28, 1947	Dover-Foxcroft, ME	4.5	Unknown
June 10, 1951	Kingston, RI	4.6	Unknown
April 26, 1957	Portland, ME	4.7	Unknown
April 10, 1962	Middlebury, VT	4.2	Unknown
June 15, 1973	Near Quebec Border	4.8	Unknown
January 19, 1982	West of Laconia	4.5	Structure damage 15 miles away in Concord: cost unknown
October 20, 1988	Near Berlin, NH	4	Unknown

Potential Future Earthquake Damage:

A United States Geographic Survey mapping tool on the web (geohazards.cr.usgs.gov/projects) projects a 5 – 6 peak ground acceleration (pga) with 10% probability of exceedance in 50 years for the Town of Lempster. This pga rating is equivalent to a Modified Mercalli Intensity of “V” with moderate perceived shaking and very light potential damage. An earthquake event would impact the entire town. According to the State’s mitigation plan, Grafton County has a medium risk for earthquakes. The Committee determined the risk to be low/medium in Lempster.

Drought

A drought is defined as a long period of abnormally low precipitation. The effects of drought are indicated through measurements of soil moisture, groundwater levels and stream flow; however, not all of these indicators will be low during a drought. Costs can include loss of agricultural crops and livestock.

Past Drought Events

In 2001-2002, several private wells dried up in Lempster. Although there may have been other droughts, the Committee members do not recall any.

Table III-9: DROUGHT

Date	Location	Description	Damages
1929-1936	Statewide	Regional. Recurrence Interval 10 to > 25 years	Unknown
1939-1944	Statewide	Severe in southeast and moderate elsewhere. Recurrence Interval 10 to > 25 years	Unknown
1947-1950	Statewide	Moderate. Recurrence Interval 10 to > 25 years	Unknown
1960-1969	Statewide	Regional longest recorded continuous spell of less than normal precipitation. Encompassed most of the Northeastern US. Recurrence Interval > 25 years	Unknown
2001-2002	Statewide	Affected residential wells and agricultural water sources	Unknown

Potential Future Drought Damage

Drought will affect the entire town. The damage will depend upon the crops being grown at the time of the drought. No cost has been assigned to residential wells going dry though new wells may have to be dug or drilled. According to the State’s mitigation plan, Sullivan County has a medium risk for drought. The Committee determined that drought is a low/medium risk in Lempster.

Extreme Heat

Extreme heat is characterized by abnormally high temperatures and/or longer than average time periods of high temperatures. These event conditions may impact the health of both humans and livestock.

Past Extreme Heat Events

In the summer of 2008, Rescue personnel assisted several residents having breathing difficulties due to extreme heat. The following table lists the extreme heat events in the past which included the Northeast and New Hampshire.

Table III-10: EXTREME HEAT

Date	Location	Description	Damage
July, 1911	New England	11-day heat wave in New Hampshire	Unknown
Late June to September, 1936	North America	Temps to mid 90s in the northeast	Unknown
Late July, 1999	Northeast	13+ days of 90+ degree heat	Unknown
Early August, 2001	New Hampshire	Mid 90s and high humidity	Unknown
August 2-4, 2006	New Hampshire	Regional heat wave and severe storms	Unknown

Potential Future Extreme Heat Events

Extreme heat would impact the entire town though those with air conditioning in their homes would have less impact. The costs of extreme heat are most likely to be in human life. The elderly are especially susceptible to extreme heat. The State did not develop a county risk factor for extreme heat in its *NH Hazard Mitigation Plan*. The Committee determined extreme heat to be a low/medium risk in Lempster.

Erosion

Soil erosion, although a natural process, can be greatly accelerated by improper construction practices. Because of the climate in New Hampshire and the general nature of our topography, eroded soils can be quickly transported to a wetland, stream, or lake. The New Hampshire Department of Environmental Services (DES) regulates major construction activities to minimize impacts upon these resources. A properly conducted construction project should not cause significant soil erosion.

Soil becomes vulnerable to erosion when construction activity removes or disturbs the vegetative cover. Vegetative cover and its root system play an extremely important role in preventing erosion by: (1) Shielding the soil surface from the impact of falling rain drops; (2) Reducing the velocity of runoff; (3) Maintaining the soil's capacity to absorb water, and (4) Holding soil particles in place.

Because of the vegetation's ability to minimize erosion, limiting its removal can significantly reduce soil erosion. In addition, decreasing the area and duration of exposure of disturbed soils is also effective in limiting soil erosion. The designer must give special consideration to the phasing of a project so that only those areas actively under construction have exposed soils. Other factors influencing soil erosion are: (1) Soil types, (2) Land slope, (3) Amount of water flowing onto the site from up-slope, and (4) Time of year of disturbance.

Past Erosion Events

There have been several erosion events in Lempster. The Town has had several road agents in the past four years, and due to the lack of continuity many road issues have not been addressed. Many were primarily road washes associated with flooding and are addressed in that section. There are also several road washes associated with major storms, most recently in April 2007 and October 2005.

Table III-11: EROSION AREAS

Location	Description	Proposed Improvement
All dirt roads in Lempster	Wash damage due to lack of maintenance	Ditch, rip rap slopes, clean culverts, grade
Dodge Hollow Road	Washed out April 2007 & October 2005	
Dodge Hollow Road by Phil Tirrell's at Lovejoy Road	Asphalt breaking up due to water	
Mountain Road	Potential to wash out again in heavy rains; it has been ditched but needs more work	
Grandview Road	Road damage	
Benway Hill	Washed in past; severe crumpling of asphalt	Rip up road and rebuild
Lovejoy Road	Washing	Culvert between transfer station and Route 10 should be raised
Dodge Hollow Road (upper)	Hill by Henry Hoyt's washing and the asphalt is falling apart due to the water	Ditch, replace culvert, and re-slope
All paved roads in Lempster	Wash damage due to lack of maintenance	Ditch, rip rap slopes, clean culverts
Charlestown Turnpike by Lovejoy Road	Washed in past	
Charlestown Turnpike	Washed out	
Cutler Road	Washed in past; put RAP on it	
Hurd Road	Washed out April 2007 and October 2005	
School Road	Hill by Caron Drive washed out in past	
Allen Road near town line with Acworth	Road washed in October 2005	
South Road above intersection with Mountain Road	Washed in October 2005	
South Road	Washed in October 2005	

Potential Erosion Events

Due to the topography of the town, there is always potential for erosion. As properties are developed there will be less vegetative buffer to protect the town from erosion during rainstorms. Several roads need improvement as shown above to mitigate erosion from future rainstorms. The Committee determined that erosion is a medium risk in Lempster.

Wildfire

Wildfire is defined as any unwanted and unplanned fire burning in the 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 unsafe land-use practices, fire suppression and fire exclusion. Vegetation buildup can lead to more severe wildfires.

Increased severity over recent years has decreased capability to extinguish wildfires. Wildfires are unpredictable and usually destructive, causing both personal property damage and damage to community infrastructure, cultural and economic resources. Negative short term effects of wildfires include destruction of timber, forage, wildlife habitats, scenic vistas and watersheds. Some long term effects include erosion and lowered water quality.

There are many types and causes of fires. Wildfires, arson, accidental fires and others all pose a unique danger to communities and individuals. Since 1985, approximately 9,000 homes have been lost to urban/wild land interface fires across the United States (Northeast States Emergency Consortium: www.nesec.org). The majority of wildfires usually occur in April and May, when home owners are cleaning up from the winter months, and when the majority of vegetation is void of any appreciable moisture making them highly flammable.

The threat of wildland fires for people living near wildland areas or using recreational facilities in wilderness areas is real. Dry conditions at various times of the year and in various parts of the United States greatly increase the potential for wildland fires. Advance planning and knowing how to protect buildings in these areas can lessen the devastation of a wildland fire. To reduce the risk to wildfire, it is necessary to consider the fire resistance of structures, the topography of property and the nature of the vegetation in the area.

Past Wildfire Events

There have been few wildfire events in Lempster. The Committee recalled a small wildfire in 2007 started by a lightning strike. It was located above Blueberry Lane in the northeastern portion of town. There have been other small fires caused by human carelessness due to brush fires, camp fires, cigarettes, and a motorcycle turning over and starting a fire.

Potential Future Wildfire Events

There are many large, contiguous forest tracts in Lempster. Where development interfaces with the forested areas is called the “urban interface.” These are the areas where structures could be impacted by a wildfire. Appendix E provides a map which displays the areas where housing and forest interface or are intermixed. The Committee considers all structures within Lempster to be in an urban interface, and wildfire could affect the entire town in structural and timber loss. As mentioned in the severe winter section, ice storms cause downed trees and limbs along South Road providing fuel for wildfires. The Silver Mountain area has little access due to

logging roads being blocked by downed trees possibly from past ice storms. This might pose a problem in fighting a wildfire. According to the State's mitigation plan, Sullivan County has substantial debris to fuel a wildfire remaining from the ice storm of 1998 and heavy forest cover. The plan gives the county a high risk of wildfire. The Committee determined that the risk of wildfire in Lempster is medium.

Natural Water & Air Contaminants

Radium, radon and uranium are grouped together because they are radionuclides, unstable elements that emit ionizing radiation. These three particular substances are a health risk only if taken into the body by ingestion or inhalation. They occur naturally in the environment, uranium and radium as solids in rock while radon exists as a gas. Radionuclides are undetectable by taste, odor, or color, so only analytical testing can determine if they are present in water. Because they are associated with rock, wells drilled into bedrock are more likely to contain elevated levels of radionuclides than shallow or dug wells.

Radon gas can also be found in the soil. Openings between the soil and buildings, such as foundation cracks and where pipes enter, provide conduits for radon to move into structures. The difference in air pressure, caused by heated indoor air moving up and out of buildings, results in a flow of soil gas toward the indoors, allowing radon to potentially accumulate in structures. Air quality in a home can also be tested for radon.

There are many other natural contaminants which can render drinking water unsafe such as arsenic. The Drinking Water and Groundwater Bureau of the NH Department of Environmental Services has several fact sheets available to address these natural materials and suggests which materials to be included in testing. See their list of fact sheets at <http://www.des.state.nh.us/dwg.htm>.

Past Natural Water & Air Contaminant Events

There have been no known events related to natural water and air contamination in Lempster although uranium is a known water contaminant in neighboring towns. Concentrated amounts of uranium were also found during the construction of I-89.

Table III-12: RADON – LOW/MEDIUM RISK

RADON - LOW/MEDIUM RISK					
Summary Table of Short-term Indoor Radon Test Results in NH's Radon Database 11/04/2003)					
County	# Tests	G. Mean	Maximum	% > 4.0 pCi/l	% > 12.0 pCi/l
Belknap	744	1.3	22.3	14.4	1.3
Carroll	1042	3.5	478.9	45.4	18
Cheshire	964	1.3	131.2	15.6	2.3
Coos	1072	3.2	261.5	41	17
Grafton	1286	2.0	174.3	23.2	5.2
Hillsborough	2741	2.1	202.3	29.6	6.8
Merrimack	1961	2.0	152.8	25.2	6
Rockingham	3909	3.0	155.3	40	9.5
Strafford	1645	3.4	122.8	44	13
Sullivan	466	1.4	29.4	15.7	2.1
STATEWIDE	15860	2.4 pCi/L	478.9 pCi/L	32.4	8.6

Potential Future Natural Air & Water Contaminant Damage:

Although there are no known records of illness that can be attributed to radium, radon, or uranium or other contaminants in Lempster, residents should be aware that they are present. Houses with granite and dirt cellars are at increased risk to radon gas infiltration. According to the table above, Sullivan County radon levels are below average for the State. According to the State's mitigation plan, Sullivan County has a medium probability of a radon related hazard.

In addition radium, radon, and uranium as well as other natural materials can be present in drinking water. Residents, especially with bedrock wells, should be aware of the possibility of water contamination and the availability of testing and remediation. The Committee determined that the risk of natural contaminants is low/medium.

Hazardous Materials Spills

Hazardous materials spills or releases can cause loss of life and damage to property. Short or long-term evacuation of local residents and businesses may be required, depending on the nature and extent of the incident.

Past Hazardous Waste Spill Events

No known significant spills have occurred in Lempster though they are possible in transportation as there is substantial through traffic on Route 10. In addition, heating fuel is delivered to homes on many of the town's roads. Below is a list of active hazardous waste generators and above-ground storage tanks where potential on-site spills could occur. Spills could also occur at underground storage tanks during the filling of the tanks, but above-ground tanks are more susceptible to hazards such as earthquakes and wind events.

Table III-13: HAZARDOUS WASTE GENERATORS AND ABOVE-GROUND STORAGE TANKS

ACTIVE HAZARDOUS WASTE GENERATORS AND ABOVE-GROUND STORAGE TANKS - Medium Risk (Spills)			
Name	Location	Hazardous Waste	Above-Ground Storage Tanks
Formerly Jolly Farmer Products; now Town of Lempster on west side of road and Bonnie Plant on east side	Route 10	inactive	5,000 gallon – gas; 10,000 gallon – diesel; 12,000 gal, 20,000 gal, 2,000 gal – oil (also 8 underground tanks)
Lempster Hwy Dept	Olds Road	inactive	500 gal & 1,000 gal – diesel; 250 gallon - gas
Lempster Town Landfill & Transfer Station	Lovejoy Road	inactive	No tanks listed
Chuck Pierce Restoration	26 Mtn View Road	SQG (less than 220 lbs. non-acute hazardous waste)	None
Tri-State Recycling; Formerly East Lempster Garage	Route 10	Anti-freeze, batteries, used oil collection center	None
Fulton Construction	Route 10	SQG; spent mineral spirits; waste petroleum distillate; tetrachloroethylene; waste oil	None
<i>Source: NH Department of Environmental Services One-Stop Website</i>		<i>SQG = small quantity generator</i>	

Potential Future Hazardous Waste Spill Damage

There conceivably could be spills near any home in Lempster due to home heating fuel delivery. The property owner is responsible for clean-up. The State oversees these reported spills. Larger spills are possible from non-residential fuel tanks as shown above in Lempster. There is also a potential for hazardous materials spills on all roads, especially the highly traveled NH Route 10. The cost for clean-up would be assigned to the transporter. However, there should be an emergency plan to immediately respond to the site to minimize water and ground contamination. The State did not determine county risk for hazardous waste spills in the *NH Hazard Mitigation Plan*. The Committee determined a hazardous waste spill is a medium risk.

C. HAZARD RISK RATINGS

The Town of Lempster Hazard Mitigation Committee reviewed each potential hazard and rated the probability of occurrence and vulnerability (cost if the hazard actually occurs) to come up with an overall risk rating. The ratings were based on past occurrences of hazards affecting the State of New Hampshire, Sullivan County, and the Town of Lempster. Although several hazards were determined to fall in the medium risk range, Flooding and Severe Winter Weather were ranked numerically as the highest risks in Lempster in the medium range. No hazards were ranked within the medium/high or high risk range.

Assessing Probability

The process involved assigning a number to each hazard type based on its potential of occurring determined using the committee’s knowledge of past events:

- 1 – Unlikely: may occur after 25 years
- 2 – Possible: may occur within 10-25 years
- 3 – Likely: may occur within 10 years

An n/a score was given if there was insufficient evidence to make a decision. To ensure some balance with a more scientific measurement, the plan also identifies the probability of occurrence from the State Hazard Plan as shown in Table III-10. For comparative purposes the Low rating was given a designation of “1,” the Medium rating a designation of “2,” and the High rating a designation of “3.” Finally, the Committee determined probability and the State determined probability were averaged for the final probability ranking. These figures are shown in Table III-11 and III-12.

Table III-14: PROBABILITY OF HAZARD

Probability of Hazard Occurring in Sullivan County from State Plan											
Flood	Dam Failure	Drought	Wildfire	Earthquake	Land-slide	Radon	Tornado	Hurricane	Lightning	Severe Winter	Avalanche
H	L	M	H	M	M	M	M	M	M	H	L

Assessing Vulnerability

A relative scale of 1 to 3 was used to determine the impact and cost for human death and injury, property losses and damages, and business/agricultural impact: 1 – limited damage and cost; 2 - moderate amount of damage and cost, and 3 – high damage and cost.

The Committee determined vulnerabilities were then averaged with the “low” vulnerability determined for Sullivan County in the *NH Natural Hazard Mitigation Plan*.

Table III-15: VULNERABILITY OF EXISTING DEVELOPED AREAS

Committee Assessment of Vulnerability	Human Impact	Property Impact	Economic Impact	Vulnerability
	Probability of death or injury	Physical losses and damages	Cottage businesses & agriculture	Avg. of human/ property/ business impact
Dam Failure	1	2	3	2.0
Flooding	2	3	3	2.7
Hurricane	1	2	2	1.7
Tornado & Downburst	1	1	1	1.0
Thunderstorm/Lightning/Hail	3	3	2	2.7
Severe Winter/Ice Storms	2	2	2	2.0
Earthquake	1	1	1	1.0
Drought	1	1	2	1.3
Extreme Heat	2	1	1	1.3
Erosion	2	3	3	2.7
Wildfire	1	2	2	1.7
Natural Contaminants	1	1	1	1.0
HazMat Spills	2	2	1	1.7

Assessing Risk

The averages of each vulnerability and probability were multiplied to arrive at the overall risk the hazard has on the community. The overall risk or threat posed by a hazard over the next 25 years was determined to be high, medium, or low. Table III-12 provides the result of this evaluation.

HIGH: (1) There is strong potential for a disaster of major proportions during the next 25 years; or (2) history suggests the occurrence of multiple disasters of moderate proportions during the next 25 years. The threat is significant enough to warrant major program effort to prepare for, respond to, recover from, and mitigate against this hazard. This hazard should be a major focus of the town’s emergency management training and exercise program.

MEDIUM: There is moderate potential for a disaster of less than major proportions during the next 25 years. The threat is great enough to warrant modest effort to prepare for, respond to, recover from, and mitigate this hazard. This hazard should be included in the town’s emergency management training and exercise program.

LOW: There is little potential for a disaster during the next 25 years. The threat is such as to warrant no special effort to prepare for, respond to, recover from, or mitigate this hazard. This hazard need not be specifically addressed in the town’s emergency management training and exercise program except as generally dealt with during hazard awareness training.

Table III-16: RISK ASSESSMENT

Risk Assessment								
0-1.9 Low 2-3.9 Low/Med 4-5.9 Med 6-7.9 Med-High 8-9 High								
Hazards	Probability based on Committee Review	Probability based on State Hazard Plan	Average of Probabilities	Vulnerability based on Committee Review	Vulnerability based on State Hazard Plan	Vulnerability Average	Risk Rating (Probability x Vulnerability)	Risk
Dam Failure	3	1	2.0	2.0	1	1.5	3.0	Low/Medium
Flooding	3	3	3.0	2.7	1	1.9	5.7	Medium
Hurricane	2	2	2.0	1.7	1	1.4	2.8	Low/Medium
Tornado & Downburst	2	2	2.0	1.0	1	1.0	2.0	Low/Medium
Thunderstorm/Lightning/Hail	3	2	2.5	2.7	1	1.9	4.8	Medium
Severe Winter	3	3	3.0	2.0	1	1.5	4.5	Medium
Earthquake	2	2	2.0	1.0	1	1.0	2.0	Low/Medium
Drought	3	2	2.5	1.3	1	1.2	3.0	Low/Medium
Extreme Heat	2	n/a	2.0	1.3	1	1.2	2.4	Low/Medium
Erosion	3	n/a	3.0	2.7	1	1.9	5.7	Medium
Wildfire	3	3	3.0	1.7	1	1.4	4.2	Medium
Natural Contaminants	2	2	2.0	1.0	1	1.0	2.0	Low/Medium
HazMat	3	n/a	3.0	1.7	1	1.4	4.2	Medium

IV. CRITICAL FACILITIES/LOCATIONS

The Critical Facilities list, identified by the Lempster Hazard Mitigation Committee, is divided into three categories. The first category contains facilities needed for emergency response in the event of a disaster. The second category contains non-emergency response facilities that are not required in an event, but that are considered essential for the everyday operation of the Town of Lempster. The third category contains facilities/populations that the Committee wishes to protect in the event of a disaster. Values for all buildings in this document were obtained from town tax records for main structures plus assessed value for accessory structures for 2006. The equalization to current values is very close to 100%. A list of bridges with State condition designation follows.

Table IV-1: EMERGENCY RESPONSE FACILITIES, SERVICES & STRUCTURES

Critical Facility	Hazard Vulnerability	Value
Fire Station (Emergency Operations Center)	Winter storms; hurricanes, tornado/downburst, earthquake	\$135,000
Goshen-Lempster Cooperative Elementary School (shelter)	Winter storms; hurricanes, tornado/downburst, earthquake; HazMat	2,840,000

Table IV-2: NON-EMERGENCY RESPONSE FACILITIES & STRUCTURES

Critical Facility	Hazard Vulnerability	Value
Highway Garage	Winter storms; hurricanes, tornado/downburst, earthquake	\$230,000
Roads & Bridges	All Hazards	Unknown
Infrastructure	All Hazards	Unknown

Table IV-3: FACILITIES & POPULATIONS TO PROTECT

Critical Facility	Hazard Vulnerability	Value
Transfer Station	Winter storms; hurricanes, tornado/downburst, earthquake	\$43,000
Town Offices	Winter storms; hurricanes, tornado/downburst, earthquake; HazMat	106,000
Miner Memorial Library	Winter storms; hurricanes, tornado/downburst, earthquake; HazMat	41,000
Town Hall (Meeting House)	Winter storms; hurricanes, tornado/downburst, earthquake	260,000
Community Methodist Church	Winter storms; hurricanes, tornado/downburst, earthquake	201,000
All non-residential	All Hazards	2,100,000
All homes	All Hazards	90,000

Table IV-4: BRIDGES

Bridge #	Owner	Road	Feature	Location	Year Built/Reconstructed	Recommended Posting	Bridge Condition
119/159	State	NH Route 10	Cold Brook	0.8 mile S of Goshen T/L	1947/1976	NPR	Red
143/064	Town	Long Pond Road	Richardson Brook	0.6 mile SW 2 nd NH Tpk	1970/NA	NPR	Pink
148/067	Town	Mountain Road	Ashuelot River	0.4 mile from Wash. T/L	1936/1992	C1	Yellow
117/156	Town	Schrenk Road	Cold Brook	150' from NH Route 10	1984/2005	6 tons	Green
119/151	State	NH Route 10	Cold Brook	1.5 miles S of Goshen T/S	1956/2008	NPR	Green
085/063	State	NH Route 10	Dodge Brook	1.93 miles N of Marlow T/L	1937/NA	NPR	Green
057/134	Town	Wheeler Lane	Cold River	Town Road	1985/NA	NPR	Green
042/161	Town	Crescent Lake Road	Cold River	Acworth T/L	1930/2008	NPR	Green
055/151	Town	Keyes Hollow Road	Cold Brook	0.4 mile from Acworth T/L	1935/1960	NPR	Green
123/171	State	NH Route 10	Cold Brook	0.4 mile from Goshen T/L	1934/1976	NPR	Green
122/167	State	NH Route 10	Cold Brook	0.5 mile S of Goshen T/L	1948/NA	NPR	Green
096/081	Town	Olds Road	Dodge Brook	0.3 mile E of NH Route 10	1976/1998	NPR	Green
<p><i>State Bridge Condition Category: Red – Red List priority for repair; Pink – Close to priority list; Yellow – Needs repair, non-priority; Green – Does not need repair; The E-2 designation is to exclude all combination and single unit certified (weights per NH RSA 216-18-b) vehicles from crossing a specific bridge. NPR = No Posting Required; Bridges 117/156 and 119/151 assumed to be removed from red and pink list as repaired</i></p>							

V. DETERMINING HOW MUCH WILL BE AFFECTED

A. IDENTIFYING VULNERABLE FACILITIES

It is important to determine which critical facilities and other structures are the most vulnerable and to estimate potential losses. The first step is to identify the facilities most likely to be damaged in a hazard event. To do this, the locations of critical facilities were compared to the location of past and potential hazard events. Facilities and structures located in federally and locally determined flood areas, wildfire prone areas, etc. were identified and included in the analysis. There is neither large land areas slated for potential development nor large development projects in the works, so vulnerability of undeveloped land was not analyzed.

Table V-1: VULNERABILITY OF EXISTING DEVELOPED AREAS

Hazard	Area/ Designation	Critical Facilities	Buildings	Infrastructure	Natural Resources	Total Known Building Value
Dam Failure	Cold Brook Pond Inundation Area	None	Three mobile homes; four houses; outbuildings	Roads & Bridges	Wildlife habitat, vegetation, stream banks & bed; forest	\$590,000
	May Pond Dam Inundation Area	None	None	Road & Bridge		-0-
Flooding	Cold River/FEMA	None	Two houses	Roads & Bridges	Wildlife habitat, vegetation, stream banks & bed; forest	\$2.6 Million
	Dodge Brook/FEMA		17 houses, seven mobile homes, and a boys scout camp			
	Ashuelot River & Richardson Brook/FEMA		One house			
	Lovejoy Rd/Committee	None	One house	Road	Wildlife habitat, vegetation, stream banks & bed; forest	\$111,000
Hurricane	Town-wide	All	All	All	All	Unknown
Tornado & Downburst	Town-wide	All	All	All	All	Unknown
Thunderstorm/Lightning/Hail	Town-wide	All	All	All	All	Unknown
Severe Winter/Ice Storms	Town-wide	All	All	All	All	Unknown
Earthquake	Town-wide	All	All	All	All	Unknown

Hazard	Area/ Designation	Critical Facilities	Buildings	Infrastructure	Natural Resources	Total Known Building Value
Drought	Town-wide	All	All	Individual wells	Wildlife habitat; vegetation; forest; crops	Unknown
Extreme Heat	Town-wide	All	NA	NA	Wildlife habitat; vegetation; forest; crops	Unknown
Erosion	Town-wide	None	None	Roads & Bridges	Water quality	Unknown
Wildfire	Forest/Urban Interface	All	All	All	Wildlife habitat; vegetation; forest; crops	Unknown
Natural Contaminants	Site Specific	NA	NA	NA	NA	Unknown
HazMat Spills	Site Specific	NA	NA	NA	NA	Unknown

B. IDENTIFYING VULNERABLE SPECIAL POPULATIONS

Other than the school and the boys scout camp, there are no centers of special populations in Lempster such as elderly housing. The elderly and physically or mentally impaired residents are located within the community, but scattered throughout the town in their homes. Town-wide programs will have to take this into account. Town officials having knowledge of its residents will assist in protection of those with special needs.

Most of Lempster's population is located along the maintained roads throughout town.

C. POTENTIAL LOSS ESTIMATES

This section identifies areas in town that are most vulnerable to hazard events and estimates potential losses from these events. It is difficult to ascertain the amount of damage caused by a natural hazard because the damage will depend on the hazard's extent and severity, making each hazard event quite unique. In addition, human loss of life was not included in the potential loss estimates, but could be expected to occur. FEMA's *Understanding Your Risks: Identifying Hazards and Estimating Losses* (August 2001) was used in estimating loss evaluations. The value of structures was determined by using town records. The Town's tax maps were used to determine number of units within each hazard area. The land damage cost, structure content loss costs, and function loss cost were not determined.

Dam Failure – Low/Medium Risk - \$146,000 Estimated Cost

There are approximately three houses and outbuildings valued at \$521,000 in the Cold Brook Pond Dam inundation area. There are no structures in the May Pond Dam inundation area. Assuming a 28% structural damage to the buildings, the damage could total an estimated \$146,000.

Flooding – Medium Risk - \$1 million Estimated Cost

There are approximately 17 residential houses, seven mobile homes, and a boys scout camp in Lempster that are located within the FEMA designated Special Flood Hazard areas. These areas are all “Zone A” meaning they have no base flood elevation. There is also one house located within a Committee determined flood area. The total value of the buildings is about \$2.7 million. The total value of the mobile homes is about \$158,000. Assuming a 28 % structural damage to the houses and boys scout camp buildings and 78% structural damage to the mobile homes, the damage would total close to \$1 million. There are no critical facilities within the determined flood areas. The only portion of major road within a flood zone is Route 10. There are five bridges in these flood areas.

Hurricane – Low/Medium Risk – No Recorded or Estimated Cost

Damage caused by hurricanes can be severe and expensive. Lempster has been impacted in the past by both wind and flooding damage as a result of hurricanes. The total assessed value of all structures within Lempster is approximately \$76 million. It is random which structures would be impacted and how much. There is no standard loss estimation available and no record of past costs.

Tornado & Downburst – Low/Medium Risk – No Recorded or Estimated Cost

Tornadoes, downbursts, and microbursts are relatively uncommon natural hazards in New Hampshire, although microbursts in 2007 caused substantial damage. On average, about six tornado events strike each year. In the State of NH, the average annual cost of tornadoes between 1950 and 1995 was \$197,000 (The Disaster Center). These wind events occur in specific areas, so calculating potential town-wide losses is not possible. There is no standard loss estimation model available for tornadoes due to their random nature.

Thunderstorm/Lightning/Hail – Medium Risk – No Recorded or Estimated Cost

According to the Federal Alliance for Safe Homes, in an average year, hail causes more than \$1.6 billion worth of damage to residential roofs in the United States, making it, year in and year out, one of the most costly natural disasters. Lightning is one of the most underrated severe weather hazards, yet it ranks as the second-leading weather killer in the United States. More deadly than hurricanes or tornadoes, lightning strikes in America each year killing an average of 73 people and injuring 300 others, according to the National Weather Service. There is no cost estimation model for thunderstorms due to their random nature.

Severe Winter Weather – Medium Risk – No Recorded or Estimated Cost

Ice storms often cause widespread power outages by downing power lines, and these storms can also cause severe damage to trees. New England usually experiences at least one or two severe snowstorms, with varying degrees of severity, each year. All of these impacts are a risk to the community and put all residents, especially the elderly, at risk.

According to a study done for the Institute for Catastrophic Loss Reduction (Canada) and the Institute for Business and Home Safety (U.S.), the 1998 Ice Storm inflicted \$1.2 billion (U.S.) worth of damage in the U.S. and Canada. In New Hampshire alone, over 67,000 people were without power ([http://www.meteo.mcgill.ca/extreme/Research Paper No 1.pdf](http://www.meteo.mcgill.ca/extreme/Research_Paper_No_1.pdf)). The U.S. average insurance claim was \$1,325 for personal property, \$1,980 for commercial property, and \$1,371 for automobiles.

Earthquake – Low/Medium Risk - \$7.6 million Estimated Cost

Earthquakes can cause buildings and bridges to collapse, disrupt gas, electric and phone lines, and precipitate landslide and flash flood events. Four earthquakes in NH between 1924 and 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. Buildings have not been subject to any seismic design level requirement for construction and would be susceptible to structural damage. The dams, bridges, and roads would be vulnerable to a sizable earthquake event.

FEMA's *Understanding Your Risks: Identifying Hazards and Estimating Costs*, August 2001 provides that an earthquake with a 5% peak ground acceleration (as determined by the US Geologic Survey for the area) could cause damage to single family residences by around 10% of the structural value. If all buildings in Lempster were impacted by an earthquake, the estimated damage could be around \$7.6 million.

Drought – Low/Medium Risk – No Recorded or Estimated Cost

A long drought would cause damage to crops and dry up wells. There is no cost estimate for this hazard in Lempster.

Extreme Heat – Low/Medium Risk – No Recorded or Estimated Cost

Excessive heat kills more people in the U.S. than tornadoes, hurricanes, floods, and lightning combined. The elderly, very young, obese and those who work outdoors or have substance abuse problems are most at risk from succumbing to heat. Additionally, people in urban areas are more susceptible as asphalt and cement tend to hold in heat throughout the night (Federal Alliance of Safe Homes website). The costs for this hazard are in terms of human suffering. It is not anticipated that there would be any structural or infrastructure costs.

Erosion – Medium Risk – No Recorded or Estimated Cost

Development on steep slopes can cause substantial erosion in the adjacent area. This can impact the adjacent roads in the area by making them more susceptible to erosion and washout. Construction itself can cause erosion if best management practices are not used to control run-off from disturbed soils, and the rooftops of buildings displace water which would have gone into the ground. This is then exacerbated by the steep slopes where the run-off moves more quickly and can cause more damage. Since the subdivision regulations (there is no zoning ordinance) do not restrict development in steep slopes, it is anticipated that erosion issues could arise in the town other than road washouts.

Wildfire – Medium Risk – No Recorded or Estimated Cost

The risk of fire is difficult to predict based on location. Forest fires are more likely to occur during drought years. In addition, areas and structures that are surrounded by dry vegetation that has not been suitably cleared are at high risk. Fire danger is generally universal, however, and can occur practically at any time. Dollar damage would depend on the extent of the fire and the number and type of buildings burned. Since the entire developed area of Lempster interfaces with forest, all structures are potentially vulnerable to wildfire. About 70% of the town is in the current use taxation program which indicates the larger lots which are primarily forested. The estimated value of all structures is approximately \$76 million.

According to the Grafton County Forester, there are no reliable figures for the value of timber in New Hampshire; and excluding the last big fires of the early 1940s, the acres and timber values affected by fires would not be supportive of major investment in fire prevention in this region (v. fire-prone western regions). (The Sullivan County Forester was not available at the time of researching this issue.)

Natural Contaminants – Low/Medium Risk – No Recorded or Estimated Cost

The cost of a radon hazard would be the health of individuals exposed to radon. No cost estimate is provided for this hazard.

Hazardous Material Spills - Medium Risk – No Recorded or Estimated Cost

The cost of a hazardous material spill would depend upon the extent of the spill, the location of the spill in relation to population, structures, infrastructure, and natural resources, as well as the type of hazardous material. The cost of any clean-up would be imposed upon the owner of the material. However, other less tangible costs such as loss of water quality might be borne by the community. No cost estimate has been provided for this possible hazard. There are no significant hazardous waste generators in Lempster—so any spills would likely be from heating fuel delivery or transport of materials through the town on Route 10.

VI. EXISTING MITIGATION ACTIONS

The next step involves identifying existing mitigation actions for the hazards likely to affect the Town and evaluating their effectiveness. Table VI-1 is a list of current policies, regulations and programs in the Town of Lempster that protect people and property from natural and human-made hazards as well as effectiveness and proposed improvements.

Table VI-1: EXISTING MITIGATION ACTIONS

Existing Mitigation Action	Description	Hazard Type/Service Area	Responsible Local Agent	Effectiveness (Low, Average, High)	Proposed Improvements
Road Design & Road/Bridge Maintenance	State and Local Control of Roads and Bridges	Flood, Erosion/Town-wide	Road Agent	Low	Several areas are in need of repair; See the following table
Emergency Back-Up Power	Stationery generator at Fire Station; two portable generators on fire apparatus; one built into the truck	Multi-hazard/Town-wide	Fire Chief	Low	Need generator at town building, school, and highway department
Land Use Regulations	Conservation District overlays; curb cut approval; Driveway grade regulations	Flood, Erosion/Town-wide	Planning Board & Road Agent	Low	Amend land use regulations to include NH Flood Insurance Program requirements to participate in program; Adopt zoning ordinance
Town Master Plan	Goals/Objectives to plan for growth	Multi-hazard/Town-wide	Planning Board	High	None; just updated in 2008
School Evacuation Plan	Plan for evacuation/lock down...	Multi-hazard/School	Principal	High	None
Building Code Enforcement & Occupancy Permits	Inspects buildings and issues permits	Flood & Wildfire/Town-wide	Building Inspector/ Selectboard	Average	No local building codes. Use State codes; enforce occupancy permit requirement
Fire Safety Inspections	Checks oil burners, wood stoves, daycares, school, etc...	Fire/Town-wide	Fire Chief	High	None
Town Radio	Fire & Rescue; Highway; Sheriff	Multi-Hazard/Town-wide	Town emergency services	High	None; three towers
Emergency Operations Plan	Plan to deal with emergencies	Multi-Hazard/Town-wide	Emergency Management Director	Average	Need to Update

Existing Mitigation Action	Description	Hazard Type/Service Area	Responsible Local Agent	Effectiveness (Low, Average, High)	Proposed Improvements
Safety Awareness Program	Fire Prevention and Safety Training at School	Fire/Town-wide	Fire Chief	High	None; add program to Old Home Day event
Public Education	Educate the public about hazard preparation	Multi-Hazard/Town-wide	EMD/Fire Chief	Low	Develop brochure and distribute at Old Home Day and Town Meeting
Tree Maintenance Program	Performed by State and Town	Multi-Hazard/Town-wide	Road Agent	Low	Rent chipper; need program to cut dead trees on a regular basis
HazMat Spill Program	Southwest Fire Mutual Aid brings trailer to Lempster; Keene HazMat team will come if needed	HazMat/Town-wide	Fire Chief	High	None
Mutual Aid	Police/Fire/Ambulance	Multi-Hazard/Town-wide	Sheriff/Fire/Rescue	High	None
Forest Fire Program	Issues and enforces burn permits	Wildfire/Town-wide	Town Forest Warden	High	None

Table VI-2 examines the proposed improvements and evaluates them as 1: Low; 2: Average; and 3: High for effectiveness looking at several criteria as shown in the table. The totals are then ranked to prioritize the improvements to help the Committee focus on the most effective strategy improvements.

Table VI-2: PRIORITIZING EXISTING MITIGATION STRATEGY IMPROVEMENTS

Rank	Strategy Improvement	Reduce Damage	Community Objectives	Existing Regulations	Quickly Implemented	Socially Acceptable	Technically Feasible	Administration Possible	Benefit - Cost	TOTAL SCORE	Mitigate Existing or New Development or Both
1	911 Program – Correct addresses	3	3	3	3	3	3	3	3	24	Both
1	Fire Safety – Add more dry hydrants	3	3	3	3	3	3	3	3	24	Both
1	Safety Awareness Program: Add program to Old Home Day event	3	3	3	3	3	3	3	3	24	Both
1	Public Education: Develop brochure and distribute at Old Home Day and Town Meeting	3	3	3	3	3	3	3	3	24	Both
2	Emergency Back-Up Power: Need generator at town building, school, and highway department	3	2	3	3	3	3	1	3	21	Both
2	Building Code Enforcement & Occupancy Permits: Enforce occupancy permit requirement	3	2	3	3	1	3	3	3	21	New
3	Road Design & Road/Bridge Maintenance: Several mitigation strategies listed in Table III-2.	3	3	3	2	3	3	1	2	20	Both
4	Road Design & Road/Bridge Maintenance: New Highway Equipment and road closure signs, barricades, and cones	3	2	3	1	2	3	1	3	18	Both
5	Tree Maintenance Program: Rent chipper; need program to cut dead trees on a regular basis	3	2	2	2	2	2	2	2	17	Both
6	Emergency Operations Plan: Need to Update	2	2	2	2	2	2	2	2	16	Both
7	Land Use Regulations: Amend land use regulations to include NH Flood Insurance Program requirements to participate in program; Adopt zoning ordinance; require cisterns for major subdivisions and sprinkler systems for some structures	2	1	1	1	1	3	1	3	13	Both

VII. GOALS AND NEWLY IDENTIFIED MITIGATION ACTIONS

A. GOALS & OBJECTIVES

The Lempster Hazard Mitigation Committee reviewed its goals and developed objectives to meet these goals.

Goals

1. To protect the general population, the citizens of the town and guests, from all natural and human-made hazards.
2. To reduce the potential impact of natural and human-made disasters on the town's critical support services, critical facilities, and infrastructure.
3. To reduce the potential impact of natural and human-made disasters on the town's economy.
4. To reduce the potential impact of natural and human-made disasters on the town's natural environment.
5. To reduce the potential impact of natural and human-made disasters on the town's specific historic treasures and interests as well as other tangible and intangible characteristics which add to the quality of life of the citizens and guests of the town.
6. To identify, introduce, and implement cost effective hazard mitigation measures to accomplish the town's goals (above) and to raise awareness and acceptance of hazard mitigation.

Objectives

- Protect structures and roads in known flood areas.
- Reduce of erosion impact on roads.
- Prohibit new development in areas where hazards will occur.
- Participate in the National Flood Insurance Program.
- Protect houses in the wildland – urban interface from wildfire.
- Educate the public to prepare for hazard emergencies and remove vegetation around structures to reduce wildfire danger.

B. POTENTIAL MITIGATION ACTIONS

The Lempster Hazard Mitigation Committee brainstormed potential mitigation actions at a meeting on January 24, 2008. The new proposed measures are organized by the type(s) of hazard event that the mitigation action is expected to mitigate.

Multiple Hazards

- Develop an educational outreach program to educate residents about the Town's vulnerability to hazards and how to prepare for them; testing for natural contaminants; reduction of brush around buildings to reduce fuel for fire; conservation of water during a drought; susceptibility to high heat....
- Amend land use regulations to restrict building in areas prone to hazard (steep slopes, wet, flood areas....).
- Provide sign to inform residents of storm forecasts, hazard preparation, road closures...
- Construct new municipal building to provide for fire, police, rescue, emergency operations center, shelter, and town offices.
- Develop Reverse 911 program
- Install traffic light at four corners in East Lempster to prevent accidents at main intersection.

Flooding

- Participate in the FEMA Flood Insurance Program and amend zoning ordinance to meet requirements.
- Amend zoning ordinance to prohibit new building in flood areas and restrict additions to existing structures in flood areas.

Wildfire

- Purchase 4x6 ATV to access woods for rescue and fire
- Provide forestry truck with tank and pump including tools and GPS.

C. SUMMARY OF CRITICAL EVALUATION

The Lempster Hazard Mitigation Committee reviewed each of the newly identified mitigation strategies using the following factors:

- Does it reduce disaster damage?
- Does it contribute to community objectives?
- Does it meet existing regulations?
- Can it be quickly implemented?
- Is it socially acceptable?

- Is it technically feasible?
- Is it administratively possible?
- Does the action offer reasonable benefits compared to cost of implementation?

Each mitigation strategy was evaluated and assigned a score (High – 3; Average – 2; and Low – 1) based on the criteria.

Table VII-1: PRIORITIZING PROPOSED MITIGATION STRATEGIES

Rank	Strategy	Reduce Damage	Community Objectives	Existing Regulations	Quickly Implemented	Socially Acceptable	Technically Feasible	Administration. Possible	Benefit - Cost	TOTAL SCORE	Mitigate Existing or New Development or Both
1	Reverse 911	3	3	3	1	3	3	3	3	25	Both
2	New Municipal Building	3	3	3	1	2	3	3	3	21	Both
3	Traffic light at four corners	3	3	3	1	3	3	1	3	20	Both
3	Purchase forestry truck with tank and pump	3	3	3	1	3	3	1	3	20	Both
4	Public Notice Sign	3	3	1	3	3	3	1	2	19	Both
5	Purchase 4x6 ATV to access forest for rescue and fire	3	2	3	1	2	3	1	2	17	Both

The Lempster Hazard Mitigation Committee assigned the following scores to each strategy for its effectiveness related to the critical evaluation factors listed above, and actions had the following scores, with the highest scores suggesting the highest priority.

VIII. PRIORITIZED IMPLEMENTATION SCHEDULE

The Lempster Hazard Mitigation Committee created the following action plan for implementation of priority mitigation strategies:

Table VIII-1: PRIORITIZED IMPLEMENTATION SCHEDULE FOR EXISTING PROGRAM IMPROVEMENTS

Location: Mitigation Action	Who (Leadership)	When (Start)	How (Funding Sources)	Cost (Estimated)
911 Program – Correct addresses	Fire Chief	2008	Volunteer Time	None
Fire Safety – Add more dry hydrants	Fire Chief	2008	Grants & Taxes	\$3,000-7,500 (\$1,500/hydrant)
Safety Awareness Program: Add program to Old Home Day event	Fire Chief	2008	Publications from FEMA	None
Public Education: Develop brochure and distribute at Old Home Day and Town Meeting	Hazard Mitigation Committee	2010	Grants	None
Emergency Back-Up Power: Need generator at town building, school, and highway department	Selectboard & School Board	2009	Grants & Taxes	\$50-75,000
Building Code Enforcement & Occupancy Permits: Enforce occupancy permit requirement	Building Inspector	2008	Taxes	Paid % of fees plus \$50/occupancy permit
Road Design & Road/Bridge Maintenance: Several mitigation projects listed in Table III-11.	Road Agent & Selectboard	2008 - 2010	Grants & Taxes	\$350,000 to replace Benway Hill; \$420,000 for remaining specific projects; regular maintenance not included
Road Design & Road/Bridge Maintenance: New Highway Equipment and road closure signs, barricades, and cones	Road Agent & Selectboard	2009	Grants & Taxes	Grader - \$80-\$100,000 Excavator - \$50-75,000 Computer - \$2,000 Barricades, signs, & cones - \$1,000
Tree Maintenance Program: Purchase chipper; need program to cut dead trees on a regular basis	Town and State	2010	Grants & Taxes	\$10-20,000

Location: Mitigation Action	Who (Leadership)	When (Start)	How (Funding Sources)	Cost (Estimated)
Emergency Operations Plan: Need to Update	Emergency Operations Director	2009	Grants	None
Land Use Regulations: Amend land use regulations to include NH Flood Insurance Program requirements to participate in program; Adopt zoning ordinance; require cisterns for major subdivisions and sprinkler systems for some structures	Planning Board	2009	None	None

Table VIII-2: PRIORITIZED IMPLEMENTATION SCHEDULE FOR PROPOSED PROGRAMS

Location: Mitigation Action	Who (Leadership)	When (Start)	How (Funding Sources)	Cost (Estimated)
Reverse 911	Fire Chief	2008	Volunteer Time	None
New Municipal Building	Selectboard	2009	Grants & Taxes	\$3 million
Traffic light at four corners	State/Selectboard	2008	State funds	None to Town
Purchase forestry truck with tank and pump	Forest Warden	2010	Grants & Taxes	\$70,000
Public Notice Sign	Selectboard	2010	Grants & Taxes	\$2,000
Purchase 4x6 ATV to access forest for rescue and fire	Fire Chief	2010	Grants & Taxes	\$14,000

IX. ADOPTION & IMPLEMENTATION OF THE PLAN

A good plan needs to provide for periodic monitoring and evaluation of its successes and challenges, and to allow for updates of the Plan where necessary. In order to track progress and update the Mitigation Strategies identified in the Plan, the Town of Lempster will revisit the Hazard Mitigation Plan *annually, or after a hazard event*. The Lempster Emergency Management Director will initiate this review and should consult with the Hazard Mitigation Committee. Changes will be made to the plan to accommodate for projects that have failed, or that are not considered feasible after a review for their consistency with the evaluation criteria, the timeframe, the community's priorities, and funding resources. Priorities that were not ranked highest, but that were identified as potential mitigation strategies, will be reviewed as well during the monitoring and update of this plan, to determine feasibility for future implementation. The plan will be updated and submitted for FEMA approval at a minimum every five years as required by the Disaster Mitigation Act 2000.

A. IMPLEMENTATION THROUGH EXISTING PROGRAMS

The Plan will be adopted locally as an Annex to the recently updated Emergency Operations Plan (EOP), and it will be updated annually along with the EOP. In addition, the Board of Selectmen, during the Capital Improvement Process, will review and include any proposed structural projects outlined in this plan.

B. CONTINUED PUBLIC INVOLVEMENT

The public will continue to be involved in the hazard mitigation planning process. In future years, a public meeting will be held (separate from the adoption hearing) to inform and educate members of the public. Additionally, a press release will be distributed, and information will be posted on the Town website.

Copies of the Hazard Mitigation Plan have been or will be sent to the following parties for review and comment:

- Selectmen's Offices in neighboring towns
- Jeremy LaPlante, Field Representative, NH Homeland Security & Emergency Management
- Richard Verville, NH Homeland Security & Emergency Management
- Board of Selectmen, Lempster
- Upper Valley Lake Sunapee Regional Planning Commission

RESOURCES USED IN THE PREPARATION OF THIS PLAN

Guide to Hazard Mitigation Planning for New Hampshire Communities, prepared for NH HSEM by the Southwest Regional Planning Commission (October 2002)

FEMA *Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000* (March 2004, Last Revised June 2007)

FEMA 386-1 *Getting Started: Building Support for Mitigation Planning* (September 2002)

FEMA 386-2 *Understanding Your Risks: Identifying Hazards and Estimating Costs* (August 2001)

FEMA 386-3 *Developing the Mitigation Plan: Identifying Mitigation Actions and Implementation Strategies* (April 2003)

Ice Storm '98 by Eugene L. Lecomte et al for the Institute for Catastrophic Loss Reduction (Canada) and the Institute for Business & Home Safety (U.S.) (December 1998) www.meteo.mcgill.ca/extreme/Related_Info.htm#disname

Town of Lempster Emergency Operations Plan, 1992

Town of Lempster Master Plan, 2008

NH HSEM's *State of New Hampshire Natural Hazard Mitigation Plan* (2004)

www.fema.gov/news/disasters.fema: Website for FEMA's Disaster List

www4.ncdc.noaa.gov/cgi-win/wvcgi.dll?wwevent~storms: Website for National Oceanic & Atmospheric Administration Disaster List

www.tornadoproject.com: Website for The Tornado Project

www.crrel.usace.army.mil/: Website for Cold Regions Research and Engineering Laboratory Website (CRREL)

www.nesec.org: Website for Northeast States Emergency Consortium

http://earthquake.usgs.gov/research/hazmaps/products_data/2002/ceus2002.php: Website for area earthquake information

APPENDICES

- Appendix A: Technical Resources**
- Appendix B: Hazard Mitigation Assistance Grants**
- Appendix C: Meeting Documentation**
- Appendix D: Map of Hazard Areas and Critical Facilities**
- Appendix E: Map of Wildland – Urban Interface for Wildfire Hazard Areas**
- Appendix F: Map of Cold Brook Pond Dam Inundation Area**
- Appendix G: Map of May Pond Dam Inundation Area**

APPENDIX A:
Technical Resources

APPENDIX A: TECHNICAL RESOURCES

1) Agencies

New Hampshire Homeland Security and Emergency Management	
Hazard Mitigation Section	271-2231
Federal Emergency Management Agency	(617) 223-4175
NH Regional Planning Commissions:	
Upper Valley Lake Sunapee Regional Planning Commission	448-1680
NH Executive Department:	
Governor's Office of Energy and Community Services	271-2611
New Hampshire Office of State Planning	271-2155
NH Department of Cultural Affairs:	271-2540
Division of Historical Resources	271-3483
NH Department of Environmental Services:	271-3503
Air Resources	271-1370
Waste Management	271-2900
Water Resources	271-3406
Water Supply and Pollution Control	271-3504
Rivers Management and Protection Program	271-1152
NH Office of Energy and Planning	271-2155
NH Municipal Association	224-7447
NH Fish and Game Department	271-3421
NH Department of Resources and Economic Development:	271-2411
Natural Heritage Inventory	271-3623
Division of Forests and Lands	271-2214
Division of Parks and Recreation	271-3255
NH Department of Transportation	271-3734
Northeast States Emergency Consortium, Inc. (NESEC)	(781) 224-9876
US Department of Commerce:	
National Oceanic and Atmospheric Administration:	
National Weather Service; Gray, Maine	207-688-3216

US Department of the Interior:	
US Fish and Wildlife Service	225-1411
US Geological Survey	225-4681
US Army Corps of Engineers.....	(978) 318-8087
US Department of Agriculture:	
Natural Resource Conservation Service	868-7581

2) Mitigation Funding Resources

404 Hazard Mitigation Grant Program (HMGP)	NH Homeland Security and Emergency Management
406 Public Assistance and Hazard Mitigation	NH Homeland Security and Emergency Management
Community Development Block Grant (CDBG).....	NH HSEM, NH OEP, also refer to RPC
Dam Safety Program	NH Department of Environmental Services
Disaster Preparedness Improvement Grant (DPIG)	NH Homeland Security and Emergency Management
Emergency Generators Program by NESEC‡	NH Homeland Security and Emergency Management
Emergency Watershed Protection (EWP) Program	USDA, Natural Resources Conservation Service
Flood Mitigation Assistance Program (FMAP)	NH Homeland Security and Emergency Management
Flood Plain Management Services (FPMS)	US Army Corps of Engineers
Mitigation Assistance Planning (MAP)	NH Homeland Security and Emergency Management
Mutual Aid for Public Works	NH Municipal Association
National Flood Insurance Program (NFIP) †	NH Office of Energy and Planning
Power of Prevention Grant by NESEC‡	NH Homeland Security and Emergency Management
Project Impact.....	NH Homeland Security and Emergency Management
Roadway Repair & Maintenance Program(s)	NH Department of Transportation
Section 14 Emergency Stream Bank Erosion & Shoreline Protection.....	US Army Corps of Engineers
Section 103 Beach Erosion.....	US Army Corps of Engineers
Section 205 Flood Damage Reduction.....	US Army Corps of Engineers
Section 208 Snagging and Clearing	US Army Corps of Engineers
Shoreland Protection Program.....	NH Department of Environmental Services
Various Forest and Lands Program(s).....	NH Department of Resources and Economic Development
Wetlands Programs.....	NH Department of Environmental Services

‡NESEC – Northeast States Emergency Consortium, Inc. is a 501(c)(3), not-for-profit natural disaster, multi-hazard mitigation and emergency management organization located in Wakefield, Massachusetts. Please, contact NH OEM for more information.

† Note regarding National Flood Insurance Program (NFIP) and Community Rating System (CRS):

The National Flood Insurance Program has developed suggested floodplain management activities for those communities who wish to more thoroughly manage or reduce the impact of flooding in their jurisdiction. Through use of a rating system (CRS rating), a community’s floodplain management efforts can be evaluated for effectiveness. The rating, which indicates an above average floodplain management effort, is then factored into the premium cost for flood insurance policies sold in the community. The higher the rating achieved in that community, the greater the reduction in flood insurance premium costs for local property owners. The NH Office of State Planning can provide additional information regarding participation in the NFIP-CRS Program.

3) Websites

Sponsor	Internet Address	Summary of Contents
Natural Hazards Research Center, U. of Colorado	http://www.colorado.edu/litbase/hazards/	Searchable database of references and links to many disaster-related websites.
Atlantic Hurricane Tracking Data by Year	http://wxp.eas.purdue.edu/hurricane	Hurricane track maps for each year, 1886 – 1996
National Emergency Management Association	http://nemaweb.org	Association of state emergency management directors; list of mitigation projects.
NASA – Goddard Space Flight Center “Disaster Finder:	http://www.gsfc.nasa.gov/ndrd/disaster/	Searchable database of sites that encompass a wide range of natural disasters.
NASA Natural Disaster Reference Database	http://ltpwww.gsfc.nasa.gov/ndrd/main/html	Searchable database of worldwide natural disasters.
U.S. State & Local Gateway	http://www.statelocal.gov/	General information through the federal-state partnership.
National Weather Service	http://nws.noaa.gov/	Central page for National Weather Warnings, updated every 60 seconds.
USGS Real Time Hydrologic Data	http://h20.usgs.gov/public/realtime.html	Provisional hydrological data
Dartmouth Flood Observatory	http://www.dartmouth.edu/artsci/geog/floods/	Observations of flooding situations.
FEMA, National Flood Insurance Program, Community Status Book	http://www.fema.gov/fema/csb.htm	Searchable site for access of Community Status Books
Florida State University Atlantic Hurricane Site	http://www.met.fsu.edu/explores/tropical.html	Tracking and NWS warnings for Atlantic Hurricanes and other links

Sponsor	Internet Address	Summary of Contents
National Lightning Safety Institute	http://lightningsafety.com/	Information and listing of appropriate publications regarding lightning safety.
NASA Optical Transient Detector	http://www.ghcc.msfc.nasa.gov/otd.html	Space-based sensor of lightning strikes
LLNL Geologic & Atmospheric Hazards	http://wwwep.es.llnl.gov/wwwep/ghp.html	General hazard information developed for the Dept. of Energy.
The Tornado Project Online	http://www.tornadoobject.com/	Information on tornadoes, including details of recent impacts.
National Severe Storms Laboratory	http://www.nssl.uoknor.edu/	Information about and tracking of severe storms.
Independent Insurance Agents of America IAA Natural Disaster Risk Map	http://www.iaa.iix.com/ndcmap.htm	A multi-disaster risk map.
Earth Satellite Corporation	http://www.earthsat.com/	Flood risk maps searchable by state.
USDA Forest Service Web	http://www.fs.fed.us/land	Information on forest fires and land management.

APPENDIX B:
Hazard Mitigation Assistance Grants

APPENDIX B: HAZARD MITIGATION ASSISTANCE GRANTS

Hazard Mitigation Assistance (HMA) grant programs of the Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA), presents a critical opportunity to protect individuals and property from natural hazards while simultaneously reducing reliance on Federal disaster funds. The HMA programs provide pre-disaster mitigation grants annually to local communities. The statutory origins of the programs differ, but all share the common goal of reducing the loss of life and property due to natural hazards. Eligible applicants include State-level agencies including State institutions; Federally recognized Indian Tribal governments; Public or Tribal colleges or universities (PDM only); and Local jurisdictions that are participating in the National Flood Insurance Program (NFIP).

The HMA grant assistance includes four programs:

1. *The Pre-Disaster Mitigation (PDM) program:* This provides funds for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event. Funding these plans and projects reduces overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations. PDM grants are awarded on a competitive basis.
2. *The Flood Mitigation Assistance (FMA) program:* This provides funds so that cost-effective measures can be taken to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the NFIP. The long-term goal of FMA is to reduce or eliminate claims under the NFIP through mitigation activities.
3. *The Repetitive Flood Claims (RFC) program:* This program provides funding to reduce or eliminate the long-term risk of flood damage to structures insured by NFIP that have had one or more claim payments for flood damages. The long-term goal of the RFC program is to reduce or eliminate claims under the NFIP through mitigation activities that are in the best interest of the NFIP.
4. *The Severe Repetitive Loss (SRL) program:* This program provides funding to reduce or eliminate the long-term risk of flood damage to severe repetitive loss residential structures insured under the NFIP.

Potential eligible projects are shown in the following table by grant program. For further information on these programs visit the following FEMA websites:

PDM – www.fema.gov/government/grant/pdm/

FMA – www.fema.gov/government/grant/fma

RFC – www.fema.gov/government/grant/rfc

SRL – www.fema.gov/government/grant/srl

Mitigation Project:	PDM	FMA	RFC	SRL
1. Property Acquisition and Demolition or Relocation Project				
Property Elevation	X	X	X	X
2. Construction Type Projects				
Property Elevation	X	X	X	X
Mitigation Reconstruction ¹				X
Localized Minor Flood Reduction Projects	X	X	X	X
Dry Floodproofing of Residential Property ²		X		X
Dry Floodproofing of Non-residential Structures		X	X	
Stormwater Management	X	X		
Infrastructure Protection Measure	X			
Vegetative Management/Soil Stabilization	X			
Retrofitting Existing Buildings and Facilities (Wind/Earthquake)	X			
Safe room construction	X			
3. Non-construction Type Projects				
All Hazard/Flood Mitigation Planning	X	X		
1. The SLR Program allows Mitigation Reconstruction projects located outside the regulatory floodway or Zone V as identified on the effective Flood Insurance Rate Map (FIRM), or the mapped limit of the 1.5-foot breaking wave zone. Mitigation Reconstruction is only permitted if traditional elevation cannot be implemented.				
2. The residential structure must meet the definition of “Historic Structure” in 44 CFR§59.1.				

Appendix C: Meeting Documentation

AGENDAS:

Meeting # 1:

June 16, 2008: 5:30 – 8:30 PM Lempster Town Offices

- Why do a Hazard Mitigation Plan? Lessen impact; grant qualification
- Goals of the plan
- \$5,000 In-Kind Match – tracking time
- What hazards may occur in Lempster? Go through flip chart list. Eliminate irrelevant hazards.
- Identify and map past/potential hazards (map);
- Identify general areas where structures could be damaged;
- Potential development areas in town (especially in hazard areas);
- Identify & Locate critical facilities (emergency response & non-response);
- Identify special populations if any;
- Identify hazard mitigation efforts already in place; and
- Identify gaps in the current mitigation efforts/programs.

Meeting #2

Thursday, July 10, 2008: 5:30 – 8:30 PM Lempster Town Offices

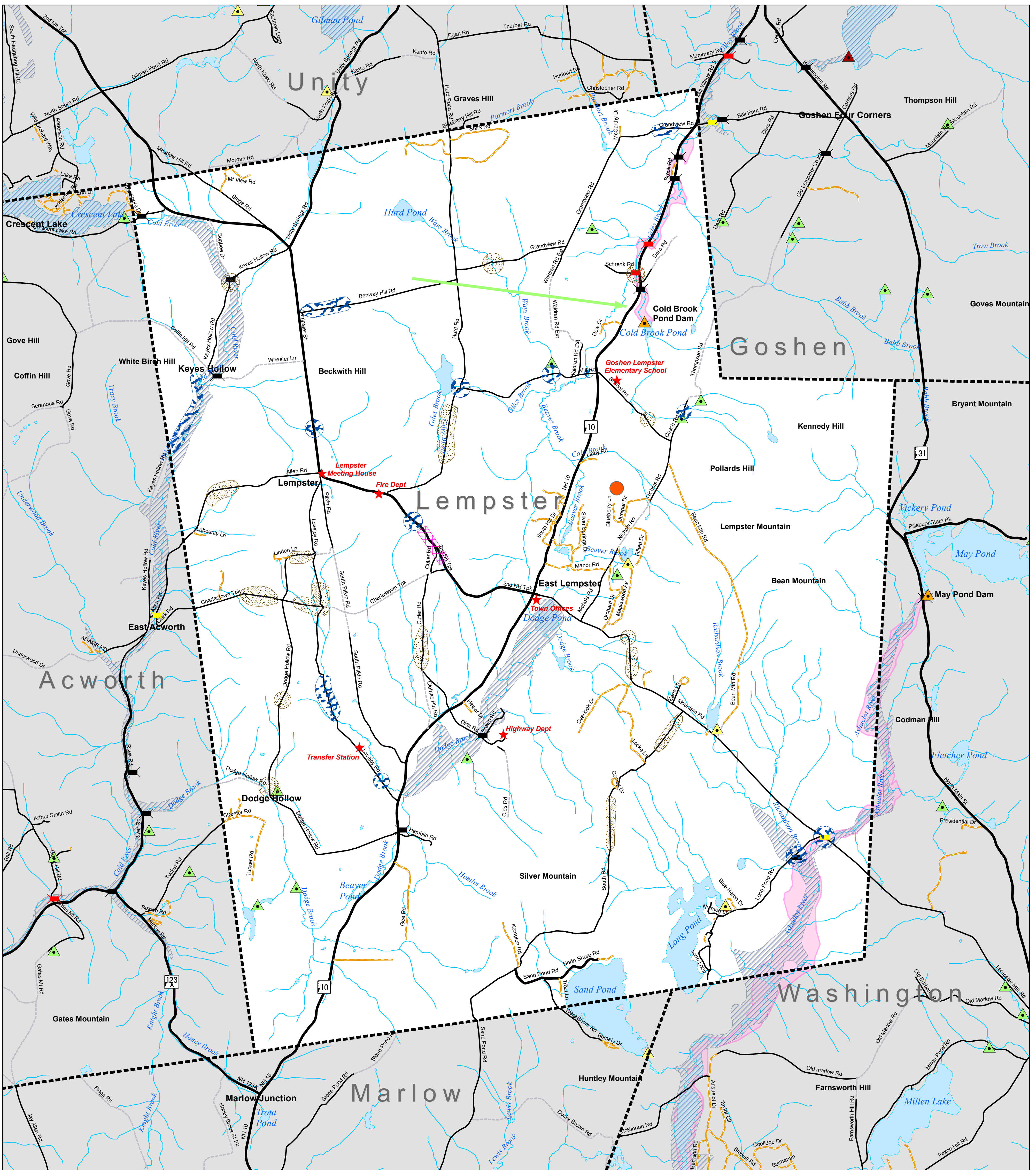
- Determine probability of each hazard
- Determine vulnerability of developed areas
- Determine risk assessment based on previous two items
- Prioritize existing mitigation strategy improvements determined at first meeting
- Develop implementation schedule for these strategies
- Brainstorm potential NEW mitigation efforts for all hazards
- Prioritize New mitigation efforts
- Develop a prioritized implementation schedule and discuss the adoption and monitoring of the plan

Meeting #3

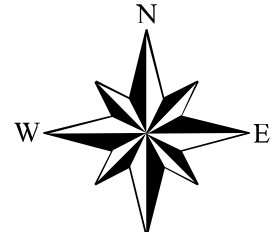
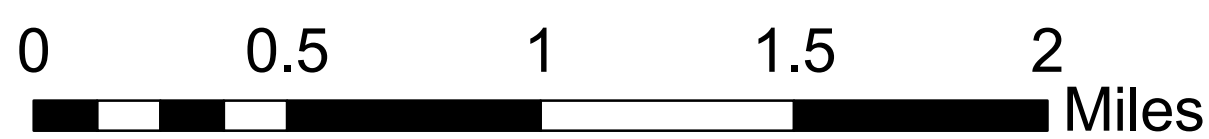
Thursday, July 31, 2008: 5:30 – 6:30 PM Lempster Town Offices

Review and revise draft plan.

APPENDIX D:
Map of Hazard Areas and Critical Facilities



Hazard Areas and Critical Facilities Map Lempster, NH



Upper Valley Lake Sunapee
Regional Planning Commission

MAP PREPARED BY UVLSRPC
FOR LEMPSTER HAZARD MITIGATION PLAN,
AUGUST 2008

Data drawn from NH GRANIT, the state's GIS clearinghouse, and represents the best available data. Bridge condition from NH DOT. Dam inundation data from NH DES Dam Bureau. Critical Facilities and Hazard Areas data developed by UVLSRPC with the Lempster Hazard Mitigation Committee.

Data Source Disclaimer: Digital data in NH GRANIT represent the efforts of the contributing agencies to record information from the cited source materials. Complex Systems Research Center (CSRC), under contract to the Office of Energy and Planning (OEP), and in consultation with cooperating agencies, maintains a continuing program to identify and correct errors in these data. OEP, CSRC, and the cooperating agencies make no claim as to the validity or reliability or to any implied uses of these data.

Legend








- Town Boundaries
- Critical Facilities
- Roads**
 - State
 - Local
 - Not Maintained
 - Private
- Water Features**
 - Lake or Pond
 - River or Stream
- Bridges by Condition**
 - Red List: More Frequent Inspection Required
 - Structurally Deficient or Functionally Obsolete
 - Other Bridges
- Hazard Areas**
 - 100-Year Floodplain, FEMA
 - Inundation Area if Dam Fails, in the case of a 100-year storm breach
 - Downburst
 - Wildfire
 - Severe Winter Weather
- Dams by Hazard Class**
 - Significant hazard potential
 - Low hazard potential
 - Non Menace
- Local Flooding
- Erosion

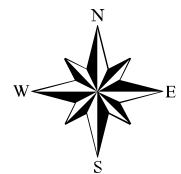
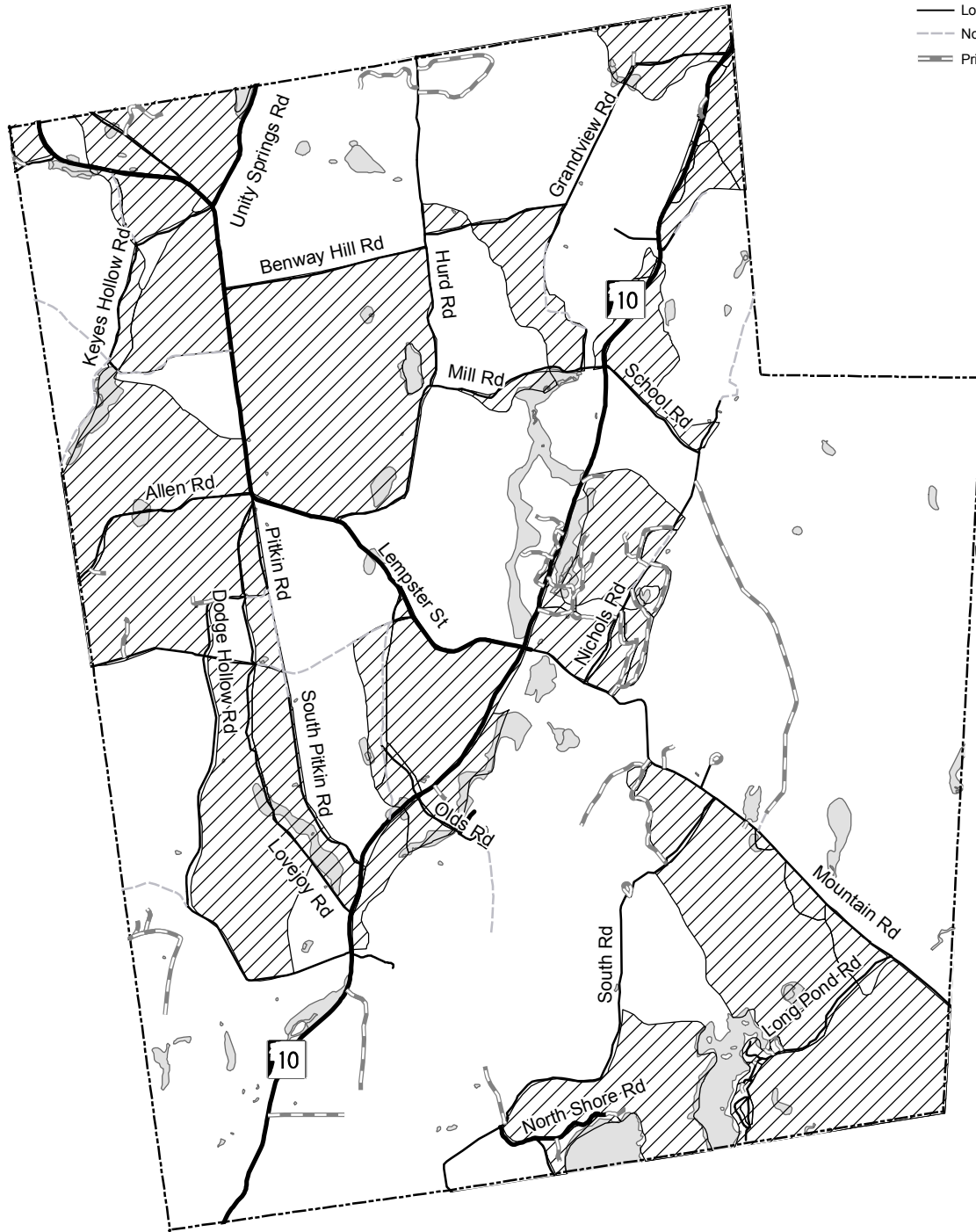
APPENDIX E
Map of Wildland – Urban Interface Map
for Wildfire Hazard Areas

Town of Lempster, NH

NH Wildland - Urban Interface Map

Legend

- | | |
|--|---|
|  Town Line |  Wildfire Risk Areas |
| Road Network | |
|  State |  Lake/Pond |
|  Local | |
|  Not Maintained | |
|  Private | |

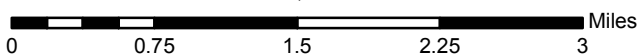


Source Data:
 Radeloff, V. C., R. B. Hammer, S. I Stewart, J. S. Fried, S. S. Holcomb,
 and J. F. McKeefry. 2005. The Wildland Urban Interface in the United States.
 Ecological Applications 15:799-805.

Base map features from NH GRANIT, digitized by Complex Systems
 Research Center, UNH.

Disclaimer:
 Digital data in NH GRANIT represent the efforts of the contributing
 agencies to record information from the cited source materials.
 Complex Systems Research Center (CSRC), under contract to the
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 implied uses of these data.

1:64,000



Map created by
 Upper Valley Lake Sunapee Regional Planning Commission,
 August 2008.