

# Risk Assessments and Hazard Mitigation Strategies for Hartland

## Introduction

What can be done today to lessen the severity of a natural hazard that may strike tomorrow? This is the fundamental question addressed by this report.

In recent years, the Litchfield Hills Region has been hard hit by severe winter storms, high winds, and flooding. These three types of events represent the major natural hazards of concern in the region. All three events can pose a threat to public safety, and the buildings and infrastructure in the regional area. Other natural hazards of concern include drought, forest fires, and earthquakes.

Each town in the Litchfield Hills Region has developed a local emergency operations plan to guide their efforts in contending with these natural disasters with provisions for preparedness, response, and recovery. In 2006, the LHCEO initiated a concerted effort to identify mitigating measures that could lessen the severity of a natural hazard. This effort resulted in the preparation of the "Litchfield Hills Natural Hazard

Mitigation Plan" which was endorsed by FEMA and subsequently adopted by the LHCEO.

This document represents Hartland's local hazard mitigation actions and challenges and represents part of a regional analysis for Litchfield Hills. This portion of the document provides a town description, an analysis of risks and vulnerabilities, and the municipality's' hazard mitigation plan. Also included is a list of hazard mitigation actions and a map illustrating critical facilities and flood zones for Hartland.

All of the town's individual hazard mitigation reports will be included in the update for the Regional Hazard Mitigation Plan.

## Town of Hartland Risk Assessment and Hazard Mitigation Plan

### General Town Description

The Town of Hartland is a lightly developed, rural town in the Litchfield Hills Region. The town is bordered on the east by Granby, on the south by Barkhamsted, on the west by Colebrook, and on the north by Massachusetts (see Figure 1).

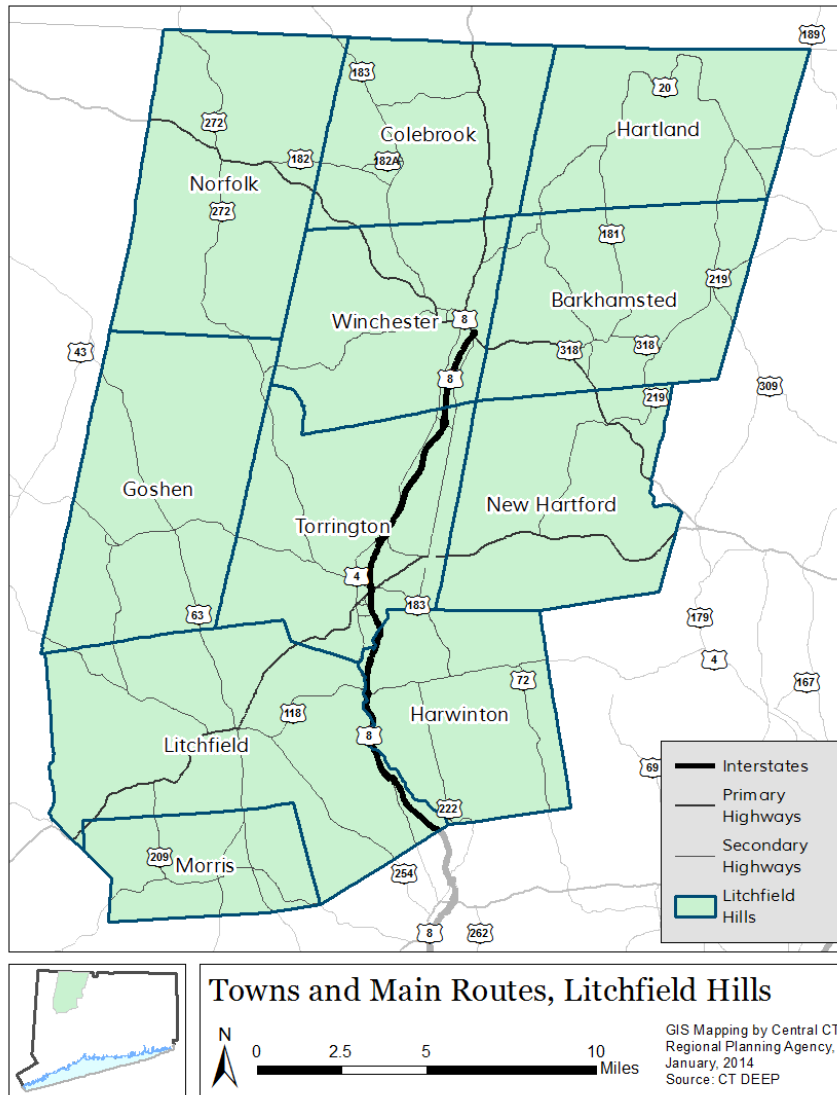


Figure 1

Hartland was incorporated in May of 1761 and has a total area of 34.6 square miles and a land area of 33.0 square miles. It has a population of 2,073 persons in 2011, and is run by a Selectman/Town Meeting form of government.

The Hartland Reservoir divides the town into East Hartland and West Hartland. The Tunxis State Forest Reserve, with 8,638 acres, and Water Company owned land (Metropolitan District Commission) around Barkhamsted Reservoir comprise about 2/3 of the land area of Hartland. A portion of People's State Forest is also located in Hartland. Hartland is part of the Northwest Highlands Ecoregion, and is characterized by moderately to steeply sloping wooded land, scattered wetlands and ponds, Barkhamsted Reservoir, and the West Branch of the Farmington River. Major highways serving the town include State Routes 20, 179 and 181. The bedrock is primarily metamorphic and granite, and the surficial material consists predominantly of fertile, stony glacial till soils.

A publication entitled "History of Hartland" was compiled by Stanley A. Ransom in 1961. According to this book, "Agriculture has been the dominant occupation of Hartland's inhabitants especially during the first 150 years" (p. 120), although Hartland "could never have been chosen by the early settlers as an utopia for agriculture purposes, The rock-ribbed hillsides offered little incentive to

settlement and it taxes our imagination to comprehend how so many farms and homesteads were eventually carved out of the rough terrain and virgin forests which confronted the first inhabitants." (p. 1). These farms were supplemented with various industries in the 1800's including a calico factory (the largest industry ever to operate in Hartland with nearly 50 employees), coach and wagon factories, a tannery, boot manufacturer, lumber yard, and numerous sawmills, cider mills, and grist mills.

As stated on page 136 of the "History of Hartland", "The need for an additional water supply by Hartford and the towns which later joined in the formation of the Metropolitan District was first voiced in the mid 1920's. The MDC formally proposed legislation to construct a dam and reservoir in 1929, and legislation was ultimately approved in 1931 to enable construction of the Hartland Reservoir and the Saville Dam. By this time, much of the land in "Hartland Hollow" had been purchased by the MDC. As stated by Mr. Ransom, "The ultimate result was the town being split into two separate communities having a reservoir occupying the entire breadth of the town and lying between the two sections called the East and the West Mountains" (p. 138).

The population of Hartland has increased an average of 21 persons per year over the past 50 years, from a population of 1,040 people in 1960 to 2,114 in 2010. The population

is projected to continue to increase to 2,168 persons by the year 2016, an increase of 0.9%. The median age in 2011 is 41. The vast majority of housing is owner occupied, with about 8% of the housing stock renter occupied, and 4% held for seasonal, recreational or occasional use (second homes). There are 805 existing housing units in town as of 2009.

Hartland has a labor force of 1,232 persons in 2011, but only 142 jobs are actually located within the town. Most of these jobs are in service producing industries. The unemployment rate is 6.5% in 2011.

According to the CT Economic Resource Center, Hartland has an equalized net grand list of \$280,976,604 in 2008 with commercial and industrial uses comprising 0.3% of this grand list. The equalized net grand list is an estimate of the market value of all taxable property in the municipality, and gives some indication of the value of property at risk in the event of a major natural disaster. There are 35 business firms in the community according to CERC as of 2011.

### Evaluation of Risks and Vulnerability

The major natural hazards of concern in Hartland are flooding, high winds, and severe winter storms. Forest fires, drought, and earthquakes occur much less frequently

in the community, and are therefore of somewhat lesser concern. The general risk and vulnerability posed by each of these six hazards is discussed in the preceding Section III of this report. More specific information on the flood vulnerability and critical facilities in the town of Hartland is presented below.

There is no mention of any natural disasters in the "History of Hartland". However, one eyewitness recounted that all roads out of town were effectively blocked by the Flood of 1955 (Resident Al Lilliendahl article at Town Hall) and that the flood washed out several roads and dams in town. There have also been instances of winter storms wreaking havoc in the community.

Floodprone areas in Hartland, as mapped by FEMA, are shown in Figure 2. As indicated by Figure 2, there are very few floodplain areas in the town. According to FEMA's webpage, only one (1) flood insurance policies are in force as of 2/28/2014 with an insurance value of \$350,000. An attempt was made to estimate the number of structures located within the FEMA floodplain boundaries using available GIS data for Connecticut, however the data is not considered precise enough for an accurate assessment.

There are eleven dams in Hartland (see Figure 2). Four of these dams are private dams, four are state owned, two are water company dams, and one dam is not classified. The

Hogback Dam is rated as Hazard Type C. Of the remaining dams, three are rated B or

BB, six dams are rated A, and one dam is not rated. For a description of these dam ratings, see section III.A of this report.

The major facilities at risk in the community in the event of a natural hazard are shown in Figure 2. These facilities include the Hartland Town Hall (which functions as the Town Emergency Operations Center), Hartland Elementary School (which serves as the town's emergency shelter), the Town Garage, the East Hartland Fire Station, and the West Hartland Fire Station. These are considered critical facilities in the event of a natural disaster because they might be needed for effective emergency response. All are potentially vulnerable to tornados, winter storms, wildfire, and earthquakes. None of the facilities are located within a floodplain.

The natural hazards of greatest concern in Hartland are winter ice storms with power outages and tornados. A severe snowstorm occurred in March of 1978 that brought close to three feet of heavy snow, and Hartland was without power for several days. In 2001 the town also experienced a microburst of wind that destroyed a number of trees in town. In 2002, Hartland suffered another major ice storm that resulted in downed power

lines, extensive tree damage, and expensive clean-up costs.

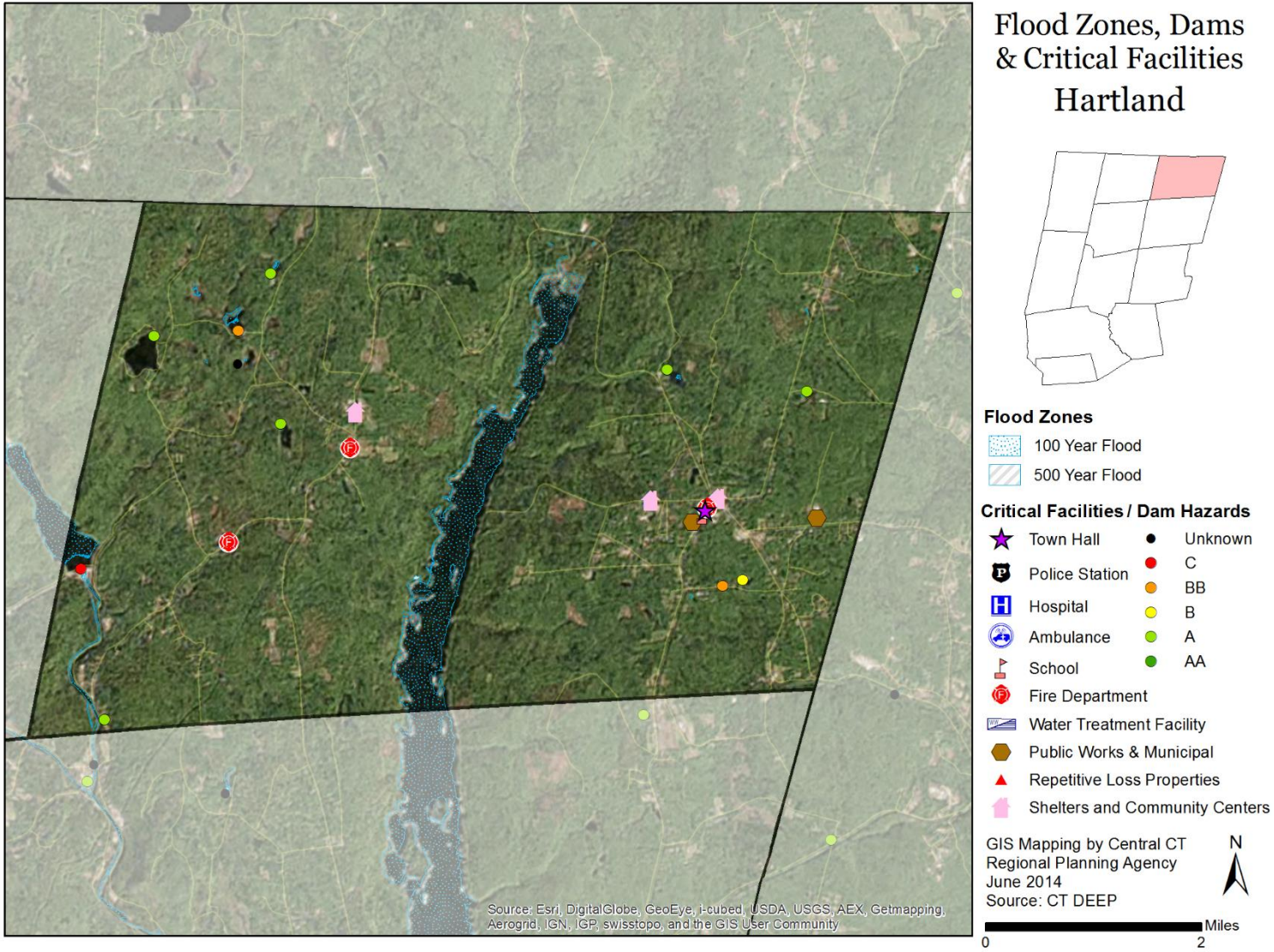


Figure 2 Repetitive Loss Property locations represents general location.

## Hazard Mitigation Plan

### Mitigation Goals and Objectives

The principal goals of Hartland's natural hazard mitigation plan are:

1. To minimize the risks to life and property from natural hazards, and
2. To prevent losses from natural hazards to the extent practicable

In addition to these over-arching goals, the town has also established the following objectives to help the town become more disaster resistant:

- 1: Educate the public regarding natural hazards of concern, mitigation activities, and community preparedness
2. Ensure proper functioning of critical facilities during emergency response.
3. Expand maintenance activities and implement specific projects that address known drainage issues within the town.

### Potential Mitigation Measures

Table 4.B in the previous section of this report presents a listing of potential mitigation measures that can be taken to reduce the impacts of the major natural hazards of concern in the Litchfield Hills Region. In the context of Hartland's risk and vulnerability analysis presented above,

and the existing mitigation strategies in the town, only some of these measures will be both needed and cost-effective. The purpose of this Natural Hazards Mitigation Plan is to identify reasonable and appropriate mitigation measures for each hazard from the Table 4.B listing and other sources, and to develop an implementation strategy for the priority mitigation measures.

### Existing Mitigation Strategies

The Town of Hartland has a number of existing programs and regulations that serve to mitigate the impact of natural hazards. Land use regulations exist to protect natural resources, including erosion and sediment control regulations for new development, stormwater control regulations to minimize drainage problems, and a floodplain district to control development in flood prone areas.

New construction or substantial improvement of any structure shall be prohibited within the floodplain district without special exception from the Planning and Zoning Commission. Where exceptions are granted, the lowest floor, including the basement, a structure shall be elevated at or above the base flood elevation.

Hartland's subdivision regulations have detailed standards for the planning, design and construction of storm drainage systems in order to minimize adverse impacts associated with new construction activity. The Hartland Wetlands Commission enforces regulations to direct

development away from wetlands, watercourses and floodplains. In addition to these regulations, the Hartland Public Works Department routinely examines and clears public storm drains and catch basins of debris following periods of rainfall, snowfall, or windstorms. The town's DPW also monitors weather reports and maintains loaded trucks in preparation of winter storm events.

The Hartland Volunteer Fire Department, Department of Public Works, and Emergency management Director all possess emergency equipment that can be deployed as needed in the event of an emergency. Procedures are also in place to open and maintain the Emergency Operations Center and Emergency Shelter in town.

Hartland has also been working with other towns in the Litchfield Hills Region through the Northwestern CT/Litchfield Hills Public Safety Task Force to enhance communication and coordination. This has included efforts to standardize communication equipment and the equipment in local emergency operation centers, and also

the upgrading of supplies at emergency shelters. Other activities being pursued are a regionally coordinated public notification system, a badging registration system for emergency responders, improved training opportunities, and the development of written mutual aid agreements.

In addition to these local and regional mitigation programs, the municipality also benefits from numerous federal and state mitigation programs such as the "Automated Flood Warning System", the "Connecticut Drought Preparedness and Response Plan", the "National Weather Service Early Warning System", and the annual tree trimming maintenance program by Northeast Utilities.



## Recommended Hazard Mitigation Measures

Objective 1: Educate the public regarding natural hazards of concern, mitigation activities, and community preparedness. *Natural Hazard Addressed: All hazards.*

Strategies	Who	When	Priority
1. Make literature available on natural hazards and preparedness at Hartland Town Hall.	Emergency Director and Selectman	Management and First going	High
2. Maintain local Emergency Operations Plan and continue to coordinate with the Regional Public Safety Task Force on community planning, preparedness, response, and training.	Emergency Director and Selectman	Management and First going	Medium

Objective 2: Ensure proper functioning of critical facilities during emergency response. *Natural Hazard Addressed: All hazards.*

Strategies	Who	When	Priority
1. Routinely inspect emergency response equipment, and train for response to natural disasters.	Volunteer Fire Depts. and Emergency Management Director	Ongoing	High
2. Cooperate with the Metropolitan District Commission in emergency response training exercises and updates of the Goodwin Dam Emergency Action Plan.	Emergency Director and Selectman	Management and First As requested by MDC and DEEP	Medium
3. Acquire additional emergency response equipment such as needed communication equipment. Also acquire	Emergency Director, Fire Chief	Management On-going	High

additional sleeping cots for use at the EOC and at the Fire Stations.

4. Promote the use of interoperable communication equipment, and the development of standard operating procedures for emergency response in the regional area.	Emergency Management Director, Fire Chief, and First Selectman	On-going	High
5. Develop a Memorandum of Understanding with schools to utilize school buses for mass transportation during an emergency.	Emergency Management Director and First Selectman	2015	Moderate

Objective 3: Expand maintenance activities and implement specific projects that address known drainage issues within the town. *Natural Hazard Addressed: flooding*

Strategies	Who	When	Priority
1. Implement control measures to mitigate the flooding created by beavers.	Public Works Dept.	On-going	Medium
2. Develop clean-out schedules for all catch basins and drainage facilities	Public Works Dept.	Annually	Medium
3. Review floodplain regulations and update as necessary based on DEEP's "Model Floodplain Management Regulations" and FEMA Guidelines	Planning and Zoning Commission	2016	Medium

The priority assigned to the above strategies was based on cost-benefit discussions with local officials, and an evaluation using the STAPLEE criteria defined in FEMA's "How-To Guide #3: Developing the Mitigation Plan". STAPLEE is short for the social, technical, administrative, political, legal, economic, and environmental criteria used in the evaluation process. It is anticipated that the low-cost strategies will be implemented during the first year after plan adoption. The higher-cost projects will be implemented as funding becomes available.